

Part 1:
Sustainable production and consumption patterns

ANNEXES TO THE FINAL REPORT



**Methodology and Feasibility of Sustainability Impact Assessment.
Case: Federal Policy-making Processes**

CP/46

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May 2006

Annexes

The following Annexes are an integral part of the research report.

Annex 1:

Heyerick, A.; Paredis, E. (2005). “Sustainability Impact Assessment: Overview of methodological, institutional and scientific questions”. Preparatory document for users committee of 5 october 2005.

Annex 2:

Risse, N. (2004). “Revue de littérature et synthèse de l'état de l'art en évaluation environnementale stratégique”. Working Paper. SMG-ULB. 62p.

Annex 3:

Wäktare M. (2005), “L'Analyse d'Impacts de la Commission Européenne. Revue de la littérature et analyse de cas”. Working paper, ULB-IGEAT. 49p.

Annex 4:

Lussis, B. (2004). “EU extended impact assessments review”. Working paper, Institut pour un Développement Durable.

Annex 5:

Lussis, B. (2005). “Overview of economic assessment models available at the Belgian Federal Policy level and at the EU Commission” Working paper, Institut pour un Développement Durable.

Annex 6:

Questionnaire

Annex 7:

List of Interviewed persons

Annex 8:

Bauler T., Wäktare M. (2006). “Towards a screening mechanism for SIA: process and content issues related to the federal Belgian case”. Working Paper, February 2006, ULB-IGEAT. 77p.

Annex 9:

Thomaes, P.; Paredis, E. (2005). “Report on the institutional/juridical integration of SIA in the Belgian federal governmental structures”. Working Paper, August 2005, CDO-UGent / CEL-UGent, 63p.

Annex 10:

Heyerick, A.; Paredis, E. (2005). “Integration of the participation principle in the Belgian SIA process”. Working Paper, September 2005, CDO- UGent, 35p.

Annex 11:

Boulanger, P.-M. (2005): "Integration in Sustainability Impact Assessment: Meanings, Patterns and Tools". Working paper, Institut pour un Développement Durable.

Annex 12:

Heyerick, A; Paredis, E. (2005). “Report of the case study on Ethical Public Purchasing”. Working Paper. CDO – Ugent.

Annex 13:

Lussis, B. (2005). “L’impact environnemental des biocarburants”. Working paper, Institut pour un Développement Durable.

Annex 14:

Defeyt, P. (2005). “Données et enjeux économiques des biocarburants”. Working paper, Institut pour un Développement Durable.

Annex 15:

Boulanger P.-M. (2006). “The Actions-Consequences-Objectives Framework. An integrative tool for SIA?”. Working paper, Institut pour un Développement Durable.

Annex 16:

Bauler, T; Boulanger, P.-M.; Heyerick, A; Paredis, E. (2006). “Sustainability Impact Assessment at federal level: an overview of (provisional) conclusions, policy implications and scenario’s for implementation”. Preparatory document for expert seminar on 26 January 2006.

**Sustainability Impact Assessment: an overview of
methodological, institutional and scientific questions**

PODO-II PROJECT SUSTAINABILITY IMPACT ASSESSMENT (SIA)

USERS COMMITTEE OF 5 OCTOBER 2004

PREPARATORY DOCUMENT



1. INTRODUCTION

The two main tasks of this research project are the development of a methodology for Sustainability Impact Assessment (SIA) and the analysis of the feasibility of the application of this instrument in the Belgian context. During the first months of the project (July – September), most time has been dedicated to a study of the scientific and policy literature on integrated assessments in general and existing SIA-practices in particular. This literature study has demonstrated that SIA as it is understood for this project (strategic, integrated, ex ante, participatory) is still in an early developing phase. However, the literature study strongly confirmed that many initiatives are in being developed at several levels. Individual interpretations of SIA diverge largely both from the historical, political and social bearing and context, as well as from the scientific stance taken. These developments of SIA practices give rise to numerous questions, which also emerge when elaborating a framework for SIA in Belgium; some of them being on the methodological level, others on the level of institutional embedment of SIA, still others point to the need for more fundamental scientific reflection. These central questions and discussion points will be concisely described in this document and an overview of the methodological, institutional and scientific issues to be elaborated is presented in the diagram on page 8.

2. SIA-PROCESS

When elaborating a methodology for sustainability impact assessment of strategic policy proposals in Belgium, several technical and procedural problems will have to be discussed and decisions will have to be made concerning various methodological aspects of a SIA.

Definition of SIA: As said above, integrated evaluations exist in many forms, at several institutional levels and in different degrees of refinement. It is thus of particular importance to understand the Belgian federal demands for such an instrument, in order to translate them coherently into a scheme for integrated assessment. In consultation¹ with potential future users, a comprehensive definition of a Belgian SIA will be elaborated and described. The research team has been working on the clarification of terminology and different approaches encountered. (Integrated Assessment, Sustainability Impact Assessment, strategic Impact Assessment, Strategic Environmental Assessment, Regulatory Impact Analysis ...).

Preliminary assessment: Because of time and resource constraints, not every proposal can be subjected to a detailed and in-depth impact analysis. The costs of ex ante policy assessment have to be justified by the potential of avoiding or mitigating negative impacts as well as strengthening positive effects. Therefore all of the studied evaluation instruments and processes contain some form of preliminary assessment (variously referred to as screening, scoping, preliminary assessment, relevance analysis...) to determine which proposals should be further examined. Their aim is to

¹ This consultation will partly be based on the meetings of the Users' Committee, but also on a series of interviews during the following of months with stakeholders from the federal administration, politics and civil society. A provisional list of interviewees and a canvas for the interview will be presented at the forthcoming Users' Committee.

develop a number of rules, criteria or thresholds allowing to decide which policy proposals are to undergo a more in-depth assessment.

Within the different experiences considered, preliminary assessments range from a very short and general overview of potential impacts (e.g. 1 desk policy officer, 2-3 hours, 1 form with a couple of general questions in relation to the expected results and limits of the policy or program) to a more intensively constructed methodology implying some consultation with other departments or even general stakeholders. The more detailed the preliminary assessment, the better it can be used to scope (i.e. set the boundaries of the impacts and effects to be considered,...) and scale (i.e. define the correct focus,...) the subsequent extended assessments. However in a general context of scarce resources and sharp timing, preliminary assessments should strive to be as synthesizing as possible. Several existing practices make use of a checklist approach for this selection (ASSIPAC / VUB), but a more descriptive (European Commission's Preliminary Impact Assessments for major policy proposals) or more extensive methodology is also possible (Relevance analysis in Swiss framework). In some specific cases (e.g. Health Impact Assessments in the UK), preliminary assessments are even developed in 2 phases: a quick assessment as a first general skimming exercise, and a subsequent preliminary "audit which will develop more extensively into a second selection of those policies which should undergo assessment."

Extended assessment: The extended assessment is in fact the principal component of a SIA, but this part also remains the most ambiguous one. Existing practices are relatively unclear about how to effectuate the actual assessment and generally offer a non-elaborated range of methods to adopt or to adapt according to priorities, resources and other contextual circumstances. Several existing analytical methods can be used for assessing the impacts of a proposal, which differ in concept and coverage (ex. cost-benefit analysis, cost-effectiveness analysis, multicriteria analysis, risk assessment, causal chain analysis, comparative value analysis, utility analysis, ...). Applying a single evaluation method appears impossible, considering the fact that SIA is a tool for evaluating a range of different policies diverging widely in scope, scale and depth of impacts. Rather than rigidly applying one single method of evaluation, part of the SIA process is to search for the best possible relation between the object of the evaluation and the method and process to be used. To a certain extent, SIA will thus have to be adapted procedurally to the object of the evaluation. Developing such a resilient methodological framework is a challenge for the present project. Significant and concrete decisions will have to be made on how to identify, how to measure and how to evaluate the potential impacts. When evaluating the potential impacts several additional aspects should be taken into consideration such as the existing problem situation, trend lines, the irreversibility of the predicted impacts, spatial impacts, burden-shifting onto future generations, ... Moreover questions arise concerning the amount of policy options to be taken into account when assessing a policy proposal.

Uncertainties: When assessing potential impacts, uncertainties are inevitable and occur at least at 4 different levels: technical uncertainty (i.e. malfunctioning of evaluation methods, e.g. through lack of data), methodological uncertainty (i.e. wrong choice of methodology, e.g. cost-benefit where multi-criteria would have been more consistent), epistemological uncertainty (i.e. vague definition of the

scope of impacts to be considered) and fundamental uncertainty (i.e. impossibility to determine impacts, e.g. situation of high impact for very small probability of occurrence). Those uncertainties should be acknowledged and dealt with in a transparent manner. Information should be provided concerning the implications of these uncertainties for the results of an impact assessment. Also the risks should be mentioned (potential negative impacts which are not likely, but which cannot be ruled out completely).

Transparency and accessibility: The process of a SIA should be as transparent as possible. All assumptions and information on which the assessment process is based should be accessible for all interested parties and all decisions have to be well-founded and clearly explained. Transparency and accessibility can increase stakeholders and public confidence in a SIA-system and lessons can be learned for quality improvements in the SIA process.

Participation: Stakeholders' consultation and participation are generally considered to be very important aspects of SIA-practice and decisions will have to be made concerning this participation process. Several levels of interactions can be identified: inter- and intradepartmental participation to enhance capacity-building, vertical participation through the whole decision-making process (e.g. from policy definition to political decision-maker and judiciary control mechanisms), participation with major stakeholders, ...

Previous research has indicated several points of attention when elaborating participation within SIA methodologies: identification of proper stakeholders (broad inclusion vs. depth of contributions), time and resource constraints (financial support), lack of technical knowledge (capacity building), need for genuine dialogue, problem with electronic consultation (digital divide), need for transparency in the way the contributions were used and clear demonstration that contributions have been taken seriously, participation must be rightly timed to have the potential to truly affect policy decisions, open access to information for all participants, centralized versus decentralized organization of participation.

Ex-post monitoring: Ex-post monitoring is essential to evaluate whether the policies adopted lead to the effects envisioned during the policy decision stage. It helps in detecting misjudgments in the decision process and in assessing the implementation of policy measures. Flexibility in the policy response, but also in the methodological SIA-framework will be required to respond to this ex-post monitoring (e.g. when effects observed in reality differ seriously from predicted or expected impacts). In this way, ex-post monitoring will contribute to more effective and evidence-based policy making. Linkages with existing ex post evaluation mechanisms need to be established, as well as with other assessments requirements (e.g. court of auditors, financial inspection...).

Quality control: As observed by some (meta-)evaluations of sustainability evaluation practices, SIAs are often conducted against the background of poor knowledge, great uncertainties and without objective criteria (Ex. Martinuzzi, Wilkinson). Consequently some of the existing assessments are of more or less poor quality. Therefore quality standards should be developed and the institutionalization of quality control should be considered.

3. INSTITUTIONAL FRAMEWORK

The development of a Belgian SIA does not end with the elaboration of a consistent methodology; the institutional framework for implementation of the methodology has to be considered as well and is in fact essential for the effective integration of the methodology into the decision-making process. Consequently, several aspects of the institutional context have to be analyzed:

Sustainability-based policy: The realization of a sustainability impact assessment for proposed strategic policy measures will probably be insufficient for shifting policy towards sustainability-sensitive decision-making. A more inclusive approach to sustainability policy should be considered. An overall framework for sustainability-based governance can guarantee the inclusion of sustainability issues during all phases of the policy cycle. Consequently, sustainability objectives can be integrated into the whole of the decision making process.

Institutional responsibility: The final responsibility over the SIA practices has to be appointed to an esteemed institutional department. The initiation and coordination of Belgian SIA-practices will have to emanate from an influential establishment and political commitment at the highest level is needed in order for SIA to have the potential to grow into a credible and accepted assessment practice.

Who will provide the resources for the assessment: Introducing the idea of impact assessments for policy initiatives is a first step to more sustainability-based policy decisions. The implementation of this idea however has to be paired with the necessary financial and human resources. The provision of adequate resources is a condition sine qua non for an effective SIA-system.

Who will conduct the analysis: Decisions will have to be made concerning the profile and position of the actor(s) that will be involved in the implementation of a SIA-framework. The assessment can be done by external or by internal (self-assessment) actors, with different implications for the objectiveness, professionalism and support for the practice. Several researchers point out the need for assessors to be well-trained and well acquainted with the concept of sustainable development (ex. Devuyst, Wilkinson).

Interdisciplinary approach: Sustainability assessment requires co-operation between different disciplines, sectors and departments. This interdisciplinary approach is not evident in Belgian's vertically oriented state structure. Guidance will be needed to pull down the walls between the disciplines and to find a common language for effectuating sustainability impact analyses.

How will the results be integrated in the policy decisions: It is obvious that the results from Sustainability Impact Assessments have to be taken seriously by policy makers and should be taken into account during the decision process. Policy makers have to be convinced of the relevance of a SIA-process and it should be clearly discussed how the assessment results will be integrated in the policy decisions.

4. SCIENTIFIC REFLECTION

In parallel with the methodological and institutional issues, some more fundamental questions directly linked to the development of a SIA-methodology, need to be reflected upon from a scientific point of view. Several broader issues, which have been discussed for some time within the scientific world, meet within SIA-practices. The convergence of these issues asks for a thorough scientific reflection to make solid and well-founded decisions when developing a Belgian SIA- methodology.

Policy evaluation: Policy evaluations can take several forms, depending on the subject of evaluation, on the place and the function of the evaluation within the policy process and on the purpose of evaluation. This policy context and the subsequent potentials and restrictions of evaluations have to be taken into account. Policies concerned with sustainable development are often characterised by complexity, uncertainty and conflicting interests, with considerable influence on evaluation practices and results. Two problems in particular are very pertinent when evaluating sustainability issues. The first difficulty is determining causal relationships between policy measures and (potential) policy effects or impacts. It is extremely difficult to determine whether the observed (potential) impacts are solely contributable to the specific policy measures or whether other influencing factors are involved (socio-economic trends, technological evolutions, other policies or policy instruments, other competent authorities and actors, ...). Secondly, sustainability evaluators are often confronted with the fact that the policy domain is not clearly defined. Policies promoting sustainable development are often the result of compromises, with often very general objectives, not always clearly defined target groups, a non-elaborated mix of instruments and so on.

Operationalising sustainability: One of the most important (and most controversial) aspects of SIA is the frame of reference used. Sustainable development is often defined in a general and vague manner, susceptible for interpretation. There is a significant lack of a common, operationalised understanding of sustainable development. Consequently evaluation results can be strongly biased by the concept of sustainable development chosen. A clear 'conception of sustainability' has to be defined against which policy proposals will be assessed. Decisions need to be taken on how to translate sustainability into applicable evaluation concepts. Issues such as weak versus strong conception of sustainability, bottom-up (Triple Bottom Line) or top-down (principles) approach, evaluation criteria and indicators, how to handle conflicting principles and trade-offs, minimum thresholds, etc. have to be thoroughly considered.

Operationalising participation: Stakeholder consultation practices often aim at broad participation and a representative selection. Several researchers however warn for the fact that the more extensive the consultation process, the less focused and proficient the results will be. An inevitable trade-off has to be made between width and depth of the consultation process.

Simplicity versus complexity: Several existing evaluation practices formulate prerequisites for good SIA's. Sustainability Impact Assessment is supposed to be simple, user-friendly and flexible. It should in no way slow down the decision making process. A detailed assessment however of the potential impacts on the broad scale of sustainability issues is bound to be complex. Can these opposing

requirements (integration versus simplicity) be combined in an applicable evaluation framework or is a simple and user-friendly sustainability impact assessment a 'contradictio in terminis'?

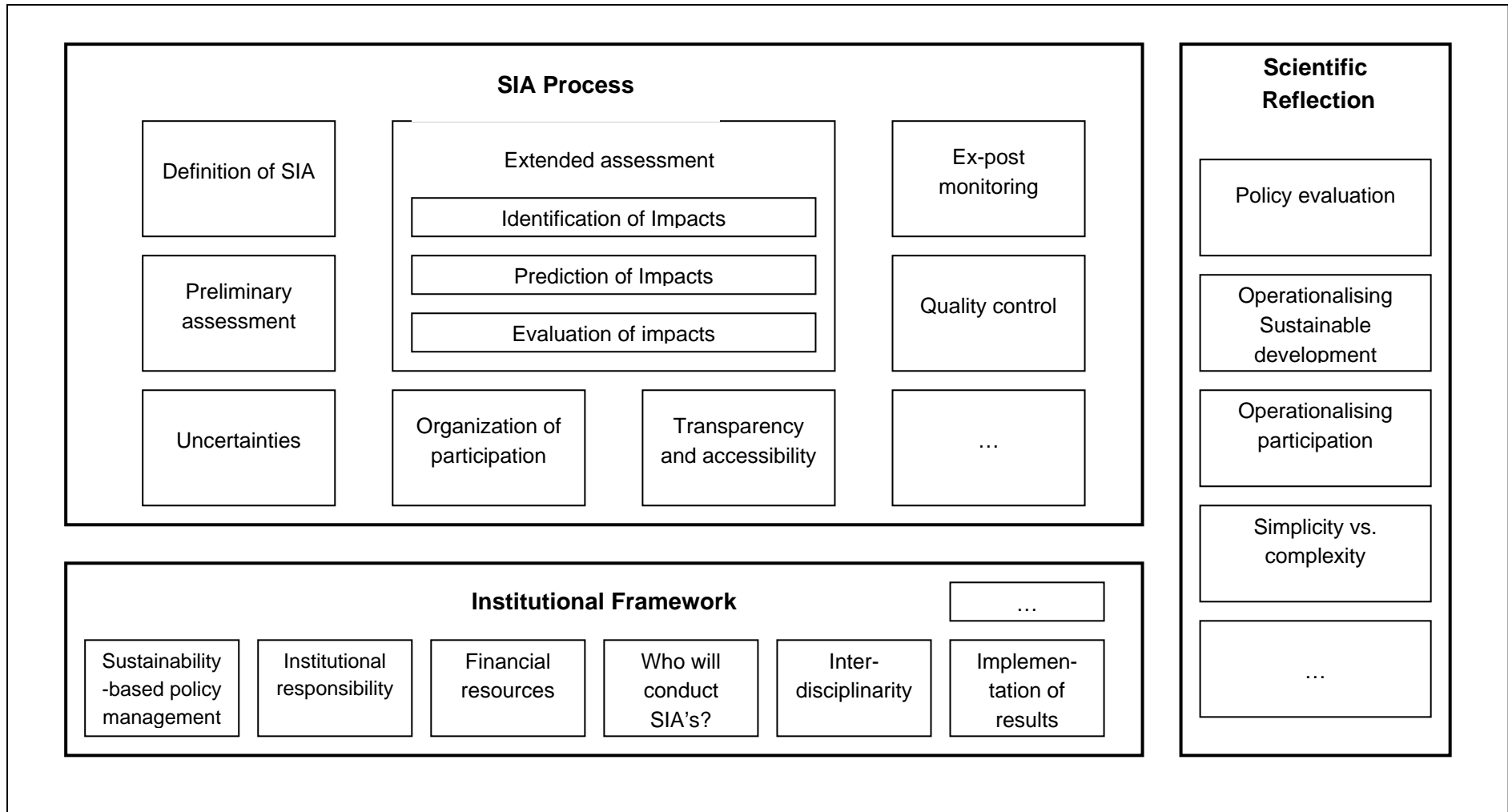


Figure: Overview of methodological, institutional and scientific issues for developing a SIA-framework

5. LITERATURE

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REVUE DE LITTÉRATURE ET SYNTHÈSE DE L'ÉTAT
DE L'ART EN ÉVALUATION ENVIRONNEMENTALE STRATÉGIQUE

Travail réalisé par Nathalie Risse sous la supervision de Philippe Vincke
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pour le Centre d'Études du Développement Durable

dans le cadre du projet intitulé : « Exploration de la méthodologie et de la faisabilité des évaluations
stratégiques sur le développement durable (études d'impact des décisions sur le développement
durable – EIDDD)

Université Libre de Bruxelles

Novembre 2004

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MISE EN CONTEXTE ET STRUCTURE DU RAPPORT

Le travail faisant l'objet du présent rapport s'inscrit dans le cadre d'un projet de recherche financé par le Service Public Fédéral de Programmation Politique Scientifique sur l'exploration de la méthodologie et de la faisabilité des évaluations stratégiques sur le développement durable (études d'impacts des décisions sur le développement durable - EIDDD). Il est réalisé à la demande du Centre d'Études du Développement Durable (CEDD), lequel figure comme un des partenaires du projet.

Son objectif consiste à dresser une revue de littérature et à préparer une synthèse de l'état de l'art dans le domaine de l'évaluation environnementale stratégique (ÉES). Il vise ainsi à contribuer à l'une des tâches prescrites dans le projet de recherche susmentionné, à l'égard de l'analyse des évolutions récentes en matière d'évaluations sectorielles (tâche Ex 1.1.3 des spécifications techniques du projet).

Il aborde en ce sens six principales sections. La première section explique la méthodologie adoptée pour réaliser la revue de littérature et expose brièvement les types de sources consultées pour la mettre en œuvre. La seconde section introduit l'évaluation environnementale stratégique en mettant en évidence quelques définitions qui lui sont attribuées, ses objectifs, l'état de son application à l'échelle internationale et en Belgique ainsi que ses intérêts et limites. La troisième section présente brièvement différents éléments du contexte institutionnel de l'ÉES, incluant les modes d'assujettissement qui lui sont généralement associés, les différents modèles régissant son intégration dans les processus de planification ainsi que son effet sur la structure organisationnelle des administrations. La quatrième section s'intéresse aux aspects administratifs de l'ÉES, c'est-à-dire aux coûts et aux délais généralement entraînés par sa mise en application. La cinquième section s'attarde aux aspects méthodologiques de l'ÉES, en se concentrant sur les étapes du processus généralement mises en place, sur les acteurs rencontrés et leurs rôles et sur les outils principalement utilisés. Enfin, la sixième section porte sur les démarches participatives de l'ÉES. Elle présente les objectifs recherchés par la participation en ÉES, les étapes faisant le plus communément intervenir le public et les modes de participation les plus fréquemment utilisés.

L'ensemble de ces sections se termine par une conclusion. Cette dernière rappelle les éléments abordés dans le cadre de cette recherche et identifie les composantes de l'ÉES qui mériteraient d'être précisées davantage. Elle est suivie d'annexes portant sur des informations non abordées explicitement dans ce document mais qui pourraient s'avérer utiles à la réalisation du projet. Il s'agit, d'une part, d'une bibliographie commentée sur l'ÉES et, d'autre part, d'une présentation succincte de l'expertise dont dispose actuellement la Belgique en ÉES.

1 MÉTHODOLOGIE

La démarche entreprise pour réaliser ce rapport se base sur une recherche documentaire. Elle s'inspire en partie d'informations déjà collectées par l'auteure pour les fins d'une thèse de doctorat présentée récemment à l'Institut de Gestion de l'Environnement et d'Aménagement du Territoire de l'Université Libre de Bruxelles (Risse 2004).

Les sources utilisées pour la réalisation du rapport proviennent des principaux documents techniques, gouvernementaux et revues scientifiques du domaine (Environmental Impact Assessment Review, Impact Assessment and Project Appraisal, Journal of Environmental Policy and Management). Elles font état de la théorie mais également des considérations pratiques issues de l'application de l'ÉES à des contextes de décision publique (administrations fédérales le plus souvent).

Nous noterons par ailleurs que le choix des thématiques traitées dans ce travail est motivé par des considérations d'utilité par rapport au projet. Ainsi, l'intitulé des sections a été discuté et sélectionné en collaboration avec le CEDD.

2 PRÉSENTATION GÉNÉRALE DE L'ÉVALUATION ENVIRONNEMENTALE STRATÉGIQUE (ÉES)

Bien qu'elle soit appliquée depuis plus d'une dizaine d'années par des administrations aux niveaux international, national et infra-national, l'ÉES est un concept relativement large et peu circonscrit. Les termes et les composantes qui lui sont associés ne sont pas définis de façon unanime par les auteurs du domaine et les administrations concernées.

Comme en atteste le nombre de conférences, d'articles et de monographies sur le sujet, l'ÉES constitue néanmoins un domaine de plus en plus expérimenté. Les façons de la mettre en œuvre ainsi que ses effets sur le processus décisionnel sont, de ce fait, de mieux en mieux connus.

Afin de permettre une compréhension préliminaire de la nature et des applications de l'ÉES, les sections suivantes présentent quelques données théoriques sur sa signification et sur ses aspects opérationnels.

2.1 Définitions

Selon Dalal-Clayton et Sadler (2003 : 15), le terme « strategic environmental assessment - SEA » (traduction d'évaluation environnementale stratégique – ÉES) est né d'un rapport préliminaire sur le sujet, adressé à la Commission européenne en 1989, et repris sous forme de publication en 1992 (Wood et Djeddour 1992). La première apparition officielle du concept s'est toutefois faite plusieurs années auparavant (1969), dans le cadre de la *National Environmental Policy Act* des États-Unis, qui préconisait une évaluation des incidences environnementales des actions du gouvernement fédéral susceptibles d'affecter la qualité de l'environnement.

Depuis cette apparition officielle, aucun commun accord sur l'appellation de l'ÉES n'a été convenu. La littérature fait ainsi état d'une série de travaux recourant à des appellations différentes pour faire référence à ce domaine. Mentionnons à titre d'exemple :

- l'évaluation environnementale des politiques, plans et programmes (*environmental assessment of policies, plans and programmes*) (Ministry of the Environment - Finland 1999; Canadian Environmental Assessment Agency 2004; Falque 1995);
- l'évaluation environnementale des politiques (*policy environmental assessment, policy impact assessment*) (de Boer et Sadler 1996; Ministère de l'Aménagement du Territoire et de l'Environnement - France 1999; Ministry of Housing, Spatial Planning and the Environment - The Netherlands 1995);
- l'évaluation environnementale des plans et programmes (*environmental assessment of plans and programmes*) (Aménagement et Nature 1998) ou l'évaluation des incidences des plans et programmes sur l'environnement (Parlement européen et Conseil de l'Union européenne 2001);
- l'évaluation stratégique environnementale (Commission économique pour l'Europe - Nations Unies 2003).
- l'évaluation environnementale sectorielle (*sectoral environmental assessment*) (World Bank 1993);
- l'évaluation environnementale régionale (*regional environmental assessment*) (World Bank 1996);
- l'évaluation environnementale programmatique (*programmatic environmental impact statement – PEIS*) (Falque 1991);
- l'évaluation environnementale des propositions gouvernementales (*EA of government proposals*) (Sadler et Brooke 1998 : 1, chap. 2).

Dans le même ordre d'idées, des définitions variées ont été proposées pour expliciter le sens à conférer à l'ÉES, sans que celles-ci ne conduisent à une définition générale pouvant servir de référence dans le domaine.

Ainsi, la définition de Thérivel *et al.* (1992 : 19-20), souvent reprise dans les documents portant sur le sujet, présente l'ÉES comme un processus systématique, formel et exhaustif servant à évaluer les effets environnementaux de politiques, plans ou programmes ainsi que leurs alternatives, donnant lieu à un rapport écrit dont les conclusions sont utilisées dans la prise de décision par des autorités publiques imputables.

La définition de Sadler et Verheem (1996 : 27) décrit, pour sa part, l'ÉES comme un processus systématique servant à anticiper et à évaluer les incidences environnementales des politiques, plans ou programmes proposés afin d'assurer que celles-ci soient pleinement intégrées et adressées de façon appropriée le plus tôt possible dans le processus de prise de décision, au même niveau que les considérations économiques et sociales.

La définition de Sadler et Brooke (1998 : 3, chap. 4) considère l'ÉES comme l'un des nombreux instruments politiques visant à assurer la prise en compte des considérations environnementales dans le processus décisionnel, dont l'application devrait être réalisée en coordination avec d'autres instruments comparables de même qu'avec les autres politiques, plans ou programmes élaborés.

La définition, plus récente, de Sheate *et al.* (2001a : 7) aborde l'ÉES sous l'angle d'une procédure systématique d'aide à la décision visant à évaluer les incidences des différentes alternatives sur l'environnement dans tout le processus d'élaboration des politiques, plans et programmes, et s'accompagnant d'un rapport écrit ainsi que d'une implication du public dans le processus.

Enfin, Dalal-Clayton et Sadler (2004, chap. 2 : 10) présentent l'ÉES comme un processus visant à identifier les dimensions, effets et conséquences sur l'environnement (incluant de plus en plus les considérations sociales et économiques) des politiques, plans et programmes et d'autres initiatives se situant en amont des projets¹. Cette approche devrait constituer une contribution à la formulation des politiques, plans et programmes en s'intégrant dans les prises de décision inhérentes à cette formulation.

L'ensemble de ces définitions a pour intérêt de se compléter en abordant différents aspects à considérer pour la mise en œuvre de l'ÉES, tels que la prise en compte des alternatives, le recours à un rapport écrit, l'imputabilité, l'intégration précoce de l'ÉES dans le processus de planification, l'utilité de coordonner l'ÉES avec les autres outils intervenant dans le processus de planification, la caractérisation de l'ÉES sous l'angle de l'aide à la décision et la prise en

¹ Nous entendons par « projets » les activités concrètes dont la localisation est bien délimitée dans l'espace (ex. : industries, barrages, etc.).

considération de l'implication du public. Elles font également ressortir une certaine évolution dans la compréhension et dans l'utilisation du concept. Les premières définitions sur l'ÉES (non exclusives à celles évoquées ici) présentent en effet cette dernière comme un moyen d'appréhender les enjeux strictement environnementaux (au sens bio-physico-chimique du terme) des politiques, plans et programmes déjà formulés alors que les définitions plus récentes élargissent la portée de l'ÉES, en incluant également l'évaluation des enjeux sociaux (et parfois économiques), et l'intégration de l'ÉES dans la formulation même des politiques, plans et programmes.

Ces définitions ne sont toutefois pas très explicites à propos des frontières qui délimitent l'ÉES ni en ce qui concerne son contenu. Cela est assez révélateur de ce que Dalal-Clayton et Sadler (2004, chap. 2 : 12) appellent le manque de clarté dans le domaine de l'ÉES : « At present there is anything but clarity ».

Ce manque de clarté peut être attribuable à différents facteurs, notamment, le développement rapide des applications, au détriment de l'élaboration d'un cadre théorique clair dans le domaine de l'évaluation environnementale (Lawrence 1997) ainsi que la diversité des ÉES développées indépendamment les unes des autres pour répondre aux différents contextes socio-politiques de prises de décisions.

On remarquera néanmoins que les définitions susmentionnées réfèrent toutes à des objets d'application communs : les **politiques**, les **plans** et les **programmes** (également dénommés PPP). Ces objets d'application constituent des documents visant à présenter les résultats du processus de planification² dans lequel s'insère l'ÉES. Leur signification varie en fonction des auteurs du domaine et des contextes politiques et institutionnels des administrations qui les mettent en place.

La littérature consultée (notamment, Sadler 1996 : 172; Sadler et Verheem 1996 : 28;. Conférence Européenne des Ministres des Transports 2000 : 13; Commission européenne 1999a : 31) permet néanmoins de dégager quelques définitions de nature générique :

Politique: Orientations générales qui concourent à un même but.

Exemple: Politique nationale de transport ayant pour orientations de réduire les émissions de gaz à effet de serre et de promouvoir en ce sens l'utilisation du transport en commun.

² Dans le contexte de l'ÉES, le processus de planification peut être vu comme une série de décisions prises par un ou plusieurs acteurs pour orienter les actions à prendre à l'échelle supra-nationale, nationale ou infra-nationale et ce, à court, moyen ou long terme (Risse 2004 : 5).

Plan: Ensemble d'objectifs coordonnés et planifiés dans le temps en vue de la mise en œuvre d'une politique dans un secteur ou un territoire particulier.

Exemple: Plan national de transport visant à augmenter de X% le transport en commun dans le pays d'ici les 10 prochaines années de façon à répondre aux orientations susmentionnées dans la politique.

Programme: Ensemble coordonné de mesures, précisément défini dans ses objectifs opérationnels et visant à répondre à une finalité de développement (ces mesures s'inscrivent généralement dans les objectifs du plan).

Exemple: Programme national de transport visant à financer les mesures d'accompagnement nécessaires à l'accroissement du transport en commun dans le pays (ex.: programme de sensibilisation dans les écoles, dans les entreprises, etc.) pour répondre aux objectifs et orientations formulés dans le cadre du plan et de la politique présentés ci-dessus.

Comme l'illustrent les exemples précités, les politiques, plans, programmes peuvent être en relation hiérarchique entre eux. Ils peuvent, de ce fait, influencer le développement des projets qui en découlent. Par exemple, un document de planification (tel un plan national favorisant le transport en commun) peut être structuré par des décisions prises dans le cadre d'un document de planification en amont (comme une politique nationale de transport) et avoir un effet structurant sur la ou les décision(s) relative(s) au document de planification en aval (comme un programme national de financement des mesures d'accompagnement associées au transport en commun).

Dans certains cas, c'est-à-dire lorsque la répartition des compétences décisionnelles le permet, cette hiérarchisation peut également impliquer des autorités décisionnelles différentes (ex.: politique nationale de transport => plan régional favorisant le transport en commun=> programme local de financement des mesures d'accompagnement associées au transport en commun).

Bien entendu, ces trois niveaux stratégiques ne sont pas toujours situés systématiquement en amont des projets. La relation hiérarchique qui les caractérise ne fait, en outre, pas l'objet d'une reconnaissance généralisée.

S'inspirant des considérations de Boothroyd (1995 : 102), on peut en effet reprocher à cette relation de ne pas tenir compte des interactions latérales entre les secteurs d'activités (ex.: effet des politiques budgétaires globales sur les politiques sectorielles comme les politiques agricoles ou de transport) ainsi que des boucles de rétroaction existant entre les niveaux stratégiques (politiques, plans, programmes) et les projets. Précisons par rapport à ce dernier point que la performance des projets réalisés sur le terrain peut non seulement être influencée par les orientations, objectifs et mesures définis dans les PPP situés en amont mais

qu'elle peut elle-même affecter la révision de ces mêmes PPP. Il en est de même pour les politiques, plans et programmes, qui peuvent s'influencer mutuellement suite à leur mise en oeuvre (ex.: révision du contenu du plan national favorisant le transport en commun suite à l'application du programme national de financement des mesures d'accompagnement associées au transport en commun).

On peut également souligner que la distinction entre les politiques, les plans et les programmes n'est pas toujours évidente à réaliser puisque leur signification peut varier d'un endroit à un autre. En Région de Bruxelles-Capitale par exemple, le plan régional de développement constitue le maître-plan d'une structure hiérarchisée composée d'un plan régional d'affectation du sol, de plans communaux de développement et de plans particuliers d'affectation du sol.

Il semble par ailleurs important de rappeler qu'il existe, outre le concept de hiérarchisation des politiques, plans et programmes, celui de hiérarchisation des ÉES réalisées aux différents niveaux stratégiques.

L'objet de cette dernière démarche est de permettre aux différents niveaux d'évaluation environnementale de se compléter et de parvenir à une synergie de leur valeur individuelle en se consacrant spécifiquement sur les éléments propres au niveau de prise de décision associé, sans empiéter sur les éléments des autres niveaux d'évaluation (Saint-Amant 2002 : 7). Tout comme pour la hiérarchisation des politiques, plans et programmes, la hiérarchisation des évaluations peut impliquer des autorités décisionnelles distinctes (ex.: nationales, régionales, locales).

Par exemple, une ÉES pourrait être entreprise à l'échelle d'une politique nationale de gestion des déchets de façon à éclairer les décideurs sur le choix des modes (alternatives) de traitement des déchets à adopter pour répondre aux engagements du pays en matière d'émissions de gaz à effet de serre (ex.: incinération, collecte sélective, compostage). Une évaluation environnementale stratégique (allégée) pourrait, par la suite, être effectuée au niveau du plan régional de gestion des déchets afin d'éclairer la décision relative à l'emplacement des installations de traitement définies au niveau national. Enfin, une ÉES (allégée) pourrait être réalisée au niveau d'un programme local de gestion des déchets de manière à évaluer les incidences inhérentes à chacune des installations de traitement des déchets (ex.: incidences liées au chantier, etc.) choisies et localisées en fonction notamment des évaluations stratégiques antérieures.

Une démarche similaire à cet exemple a été réalisée aux Pays-Bas, dans le cadre d'un programme national de gestion des déchets, supervisé par le Conseil de gestion des déchets, en collaboration avec les autorités locales, régionales et nationales (Commission européenne 1999b : 50-51 ; Dalal-Clayton et Sadler 2004, chap. 3 : 70). Cette façon de faire est par ailleurs préconisée par la Directive 2001/42/CE du Parlement européen et du Conseil du 27 juin 2001 relative à l'évaluation des incidences de certains plans et programmes sur l'environnement

(Parlement européen et Conseil de l'Union européenne 2001) qui stipule à l'article 4 (paragraphe 3) que: « Lorsque les plans et les programmes font partie d'un ensemble hiérarchisé, les États membres, en vue d'éviter une répétition de l'évaluation, tiennent compte du fait qu'elle sera effectuée, conformément à la présente directive, à différents niveaux de l'ensemble hiérarchisé ».

Bien que cette démarche nécessite une volonté de coopération et de communication entre tous les acteurs impliqués dans le processus de planification et d'évaluation, elle a pour finalité d'éviter le dédoublement et de réduire l'ampleur des évaluations réalisées aux différents niveaux stratégiques de même qu'au niveau des projets.

2.2 Objectifs

De la même façon que pour la plupart des concepts appartenant au domaine de l'ÉES, les objectifs de cette dernière ne se présentent pas sous une forme unique dans la littérature mais sont abordés de diverses façons selon les auteurs.

Néanmoins, deux principaux motifs sous-jacents à la réalisation de l'ÉES ressortent assez communément des écrits sur le sujet (voir notamment à cet effet Fischer 1999; Sadler 1996; Therivel et Partidário 1996; Shepherd et Ortolano 1996; Sadler et Brooke 1998; Partidário 2000a; Lee et Walsh 1992). Il s'agit de la contribution de l'ÉES au développement durable et de sa complémentarité par rapport à l'évaluation environnementale des projets.

D'une part, l'ÉES est perçue comme un outil contribuant au développement durable puisque, selon la définition plus ou moins large qui lui est attribuée, elle peut permettre de soulever des questions de durabilité afin de les intégrer dans différents types de PPP (ex. : politique économique, programme de transport, plan de gestion touristique, etc.). Elle peut également favoriser l'implication du public dans la conception de ces PPP, ce qui est considéré, par la Convention d'Århus (Commission économique pour l'Europe - Nations Unies 1998) comme un des moyens de mise en oeuvre du développement durable (ces aspects sont davantage détaillés dans Risse 2002).

D'autre part, l'ÉES est considérée comme un complément à l'évaluation environnementale de projets (également appelée ÉIE) puisqu'elle permet de prendre en compte des éléments de portée générale qui peuvent être ignorés ou difficiles à considérer au niveau des projets. Mentionnons à ce titre, les alternatives liées aux modes de production à préconiser à une échelle nationale (ex. : modes de production énergétique), les différentes possibilités de localisation de ces modes de production dans l'ensemble d'un pays, ainsi que les incidences cumulatives liées à la mise en oeuvre de plusieurs projets dans une aire donnée. Cette complémentarité entre l'ÉES et l'ÉIE est importante à considérer puisque l'ÉES n'envisage pas de constituer un processus de remplacement de l'ÉIE mais plutôt un processus coordonné

avec l'ÉIE. Si elle est bien réalisée, cette coordination entre les processus d'ÉES et d'ÉIE, appelée également « arrimage », peut notamment permettre d'éviter que les décisions prises aux niveaux supérieurs de la planification (comme au niveau des politiques ou des plans) soient remises en question à des niveaux subséquents de la planification (par exemple, au niveau des projets). Elle peut également contribuer, à moyen terme, à réduire les délais et les coûts associés aux évaluations environnementales de différents niveaux de planification³.

Cette fonction de complémentarité avec l'ÉIE révèle bien sûr des similitudes entre l'ÉIE et l'ÉES mais soulève également des différences considérables. Au titre des similitudes, on peut remarquer que ces deux types d'évaluation environnementale constituent des approches préventives. Elles peuvent se caractériser par des rapprochements au niveau des étapes nécessaires à leur mise en œuvre (processus), ainsi qu'au niveau de certains acteurs et outils considérés. En revanche, elles se différencient par la portée géographique de l'évaluation (étendue dans le cas de l'ÉES et plutôt restreinte au projet dans le cas de l'ÉIE), les types d'alternatives analysées (alternatives liées à des décisions de planification générale dans le cas de l'ÉES et à des décisions de conception technique dans le cas de l'ÉIE), les types d'enjeux ou d'incidences analysés (plus globales dans le cas de l'ÉES que dans le cas de l'ÉIE), etc. (voir notamment Risse 2002 ; Crowley 2000 pour des détails à ce sujet).

2.3 État de la situation à l'échelle internationale et en Belgique

Les objectifs mentionnés ci-dessus se concrétisent, depuis quelques années, par la mise en application de l'ÉES à des niveaux de compétences variés faisant principalement référence au secteur public.

À l'échelle européenne par exemple, le Parlement européen et le Conseil de l'Union européenne ont adopté, en juin 2001, une directive imposant aux États Membres de l'Union européenne, de réaliser l'évaluation des incidences de certains de leurs plans et programmes sur l'environnement (Directive 2001/42/CE). Celle-ci est entrée en vigueur le 21 juillet 2001 et laissait trois ans États membres ou à leurs entités régionales ou locales pour prendre les dispositions législatives, réglementaires et administratives nécessaires pour s'y conformer (Parlement européen et Conseil de l'Union européenne 2001).

³ Les ouvrages de Nootboom (1999) et de Saint-Amant (2002) détaillent davantage les éléments relatifs à la complémentarité et à l'arrimage des processus d'ÉES et d'ÉIE.

À une plus large échelle, le « Protocole à la Convention sur l'évaluation de l'impact sur l'environnement dans un contexte transfrontière, relatif à l'évaluation stratégique environnementale » (Commission économique pour l'Europe - Nations Unies 2003) a été adopté et signé par 35 pays⁴ et par la Commission européenne lors de la Conférence ministérielle « Environnement pour l'Europe » (*Environment for Europe*), à Kiev (Ukraine) le 21 mai 2003. Ce Protocole implique la réalisation d'une évaluation environnementale pour les plans et programmes adoptés par les parties signataires ainsi que la prise en compte de l'environnement dans les textes politiques et législatifs desdites parties⁵.

Outre la Directive 2001/42/CE et le Protocole relatif à l'ÉES, l'ÉES est également préconisée par diverses banques de développement et agences de coopération, telles que la Banque Mondiale, la Banque Africaine de Développement, l'Agence Canadienne de Développement International et la Banque européenne de reconstruction et de développement. Depuis 2001, l'Organisation de Coopération et de Développement Économiques (OCDE) soutient également la mise en place d'un groupe de travail sur l'ÉES (OECD Development Assistance Committee – DAC - Task Force on SEA) dont l'un des mandats est de constituer un forum inter-organisationnel et inter-sectoriel pour favoriser l'échange d'expériences et l'apprentissage relatifs à l'application de l'ÉES dans la coopération au développement (voir Dalal-Clayton et Sadler 2004 pour plus de détails sur le sujet).

À l'échelle nationale, des processus d'ÉES sont adoptés officiellement⁶ depuis quelques années par une vingtaine de pays et juridictions. Figurent parmi ceux-ci l'Australie, le Canada, les États-Unis (niveau fédéral et État de Californie), la Grande-Bretagne, la Chine (niveau national et Hong Kong), le Danemark, la Norvège, la Finlande, les Pays-Bas, la Bulgarie, la République tchèque, la Pologne et la Slovaquie. Des expériences volontaires (ne faisant pas référence à un système d'ÉES officialisé) ont également été réalisées dans certaines juridictions, telles que les villes de Sollentuna et Karlskoga (Suède), la ville d'Ottawa (Canada), Anvers, etc.

On recense, à ce titre, plusieurs études de cas concernant l'application de l'ÉES à des problématiques spécifiques, notamment l'aménagement du territoire, la gestion des ressources naturelles, la gestion des déchets, le transport, le budget, les finances, l'économie, le commerce (voir entre autres European Commission 1998, Risse 2002, Dalal-Clayton et Sadler 2004, Sheate *et al.* 2001b). Parmi ces dernières, les applications les plus courantes de l'ÉES

⁴ Notamment l'Albanie, l'Arménie, l'Autriche, la Belgique, la Bosnie, la Bulgarie, la Croatie, la République tchèque, le Danemark, l'Estonie, la Finlande, la France, la Georgie, l'Allemagne, la Grèce, la Hongrie, la République tchèque, l'Irlande, l'Italie, la Lituanie, le Luxembourg, les Pays-Bas, la Norvège, la Pologne, le Portugal, la Roumanie, la Serbie et le Montenegro, la Slovénie, l'Espagne, la Suède, l'Ukraine, le Royaume-Uni. À noter que le Protocole n'entrera en vigueur que lorsque 16 des pays de la Commission économique pour l'Europe l'auront ratifié.

⁵ Le contenu de ce protocole est similaire à celui de la Directive 2001/42/CE en ce qui concerne les plans et programmes.

⁶ Par le biais d'exigences légales ou administratives.

concernent les problématiques liées à l'aménagement du territoire, à l'énergie, au transport, aux déchets et à l'eau (Dalal-Clayton et Sadler 2004, chap. 2 : 27).

Au niveau belge, quelques initiatives ont été entreprises au cours des dernières années, malgré l'absence de dispositifs contraignants sur le sujet. Ainsi, une certaine forme d'ÉES, visant à comparer différentes options pour la ligne de TGV entre Anvers et Rotterdam a été réalisée à la demande du Ministre de l'Environnement à la fin des années 1980 (avant la régionalisation) (voir Risse 2002 pour plus d'information). En Région flamande, différentes démarches volontaires ont été menées. On compte parmi celles-ci l'octroi d'un mandat de recherche (par le gouvernement) visant à formuler une méthodologie d'ÉES pouvant être introduite par l'administration flamande (Devuyst *et al.* 2000 : 66) ainsi que trois projets-pilote visant à tester l'application de l'ÉES : l'ÉES du « Masterplan » d'Anvers (étude d'options d'infrastructures routières pour désengorger la ville sujette à problèmes de congestion), l'ÉES du plan-maître de transport de la Région flamande (van Straaten *et al.* 2001 : 79) et l'ÉES du plan Sigma (plan de gestion des crues) (van Straaten 2004). Au niveau du gouvernement fédéral, un projet portant sur la proposition de lignes directrices pour l'application de l'ÉES aux notes stratégiques utilisées dans la coopération au développement a également été réalisé (Fernagut 2004 ; Hens 2004 ; de Dixmude 2004)⁷.

En plus de ces démarches, la Directive 2001/42/CE a été transcrite récemment dans le droit régional. Différents documents légaux portant sur l'évaluation environnementale de plans et programmes ont, en ce sens, été adoptés dans les trois Régions belges. Ainsi, l'ÉES a été officialisée en Région flamande par le *Décret du 18 décembre 2002 complétant le décret du 5 avril 1995 contenant des dispositions générales concernant la politique de l'environnement par un titre relatif à l'évaluation des incidences sur l'environnement et la sécurité*. En Région de Bruxelles-Capitale, les exigences de la Directive ont été transcrites dans l'*Ordonnance du 18 mars 2004 relative à l'évaluation des incidences de certains plans et programmes sur l'environnement*. Enfin, en Région wallonne, ces exigences ont été intégrées dans le *Décret du 27 mai 2004 relatif au Livre I^{er} du Code de l'environnement*, après avoir inspiré le contenu du *Décret du 18 juillet 2002 venant modifier le Code wallon de l'aménagement du territoire, de l'urbanisme et du patrimoine (CWATUP)*.

Cela étant, l'application des exigences de la Directive et, ultérieurement, du Protocole de la Commission économique pour l'Europe devrait permettre d'assister à de nouveaux cas d'étude et à une diversification des applications recensées en Belgique comme dans les autres pays concernés.

⁷ Ce projet a fait l'objet d'un financement par le Vlaamse Interuniversitaire Raad (Conseil interuniversitaire flamand) et par la Direction Générale de la Coopération au Développement du gouvernement fédéral belge.

2.4 Intérêts et limites de l'ÉES

Outre les objectifs conférés à l'ÉES, différents avantages peuvent également être avancés pour justifier la mise en œuvre de cette démarche. Selon un document réalisé par le Groupe de travail sur l'évaluation environnementale stratégique du Québec (1999), l'ÉES peut s'avérer intéressante à appliquer pour contribuer à la prise en compte des préoccupations environnementales dans les décisions de toute nature (juridique, administrative, fiscale, économique, etc.) et pour favoriser la responsabilisation des décideurs en regard des implications environnementales des activités qu'ils envisagent de mettre en place.

Comme le démontre la pratique (ex. : Dalal-Clayton et Sadler 2004; Partidário et Clark 2000; Thérivel et Partidário 1996), l'ÉES contribue en effet à élargir le champ d'application de l'évaluation environnementale en encourageant les administrations ou organismes n'ayant pas nécessairement une vocation de protection de l'environnement à prendre en compte les considérations environnementales dans leurs activités (au même titre que les considérations économiques par exemple). Elle se traduit également par la responsabilisation des décideurs sur les implications environnementales des décisions prises en amont des projets, et favorise la consultation entre les administrations impliquées ou concernées.

Malgré ces points positifs, l'ÉES est confrontée à différentes limites d'application. On recense dans la littérature des limites liées notamment aux incertitudes inhérentes à l'ÉES, aux connaissances et à l'expérience, à la consultation du public et aux obstacles institutionnels sous-jacents à l'application de l'ÉES.

D'une part, l'ÉES est intrinsèquement incertaine puisque les évaluations qui en découlent sont basées sur des PPP qui ne sont pas aussi clairement élaborées que les propositions de projets (European Commission 1999 : 45 ; Thérivel *et al.* 1992 : 41; Xiuzhen, Jincheng et Jinhu 2002 : 106). Cette incertitude peut également être attribuée à plusieurs autres facteurs, tels que le contexte politique entourant la réalisation de l'ÉES (ex. : modification des objectifs d'un PPP soumis à ÉES suite à un changement de législature), la nature proactive et prédictive de l'ÉES: incertitude relative aux conditions environnementales et aux développements technologiques futurs; incertitude relative aux développements qui résulteront des PPP (ex. : manque d'information sur la nature exacte, la localisation et la portée réelle des activités prévues par les PPP), etc. (Thérivel et Partidário 1996 : 10; Thérivel *et al.* 1992 : 42).

D'autre part, les connaissances et les expériences relatives à l'ÉES sont lacunaires sur certains aspects. Comme l'affirme Partidário (2000b : 23), plusieurs questions relatives aux aspects méthodologiques de l'ÉES ne sont pas résolues. Citons entre autres les possibilités et les moyens permettant d'intégrer l'ÉES avec d'autres outils de gestion comme la planification régionale et municipale, la certification et la vérification, l'évaluation de risques, etc. La formation des acteurs impliqués ou concernés par l'ÉES est également déficiente dans plusieurs cas pratiques (Dom 1997 : 10 ; Dalal-Clayton et Sadler 2004, chap. 2 : 25), risquant

d'affecter la qualité du processus mis en place et/ou d'alourdir la démarche d'évaluation environnementale.

On constate par ailleurs, une certaine réticence à consulter le public sur l'ÉES et les PPP sous-jacents. Comme l'affirment Gauthier *et al.* (2000 : 98), malgré la reconnaissance du bien-fondé de la participation du public au processus décisionnel, celle-ci est souvent perçue comme problématique par la plupart des planificateurs et des administrateurs qui estiment que la participation accroît l'inefficacité du processus décisionnel en augmentant les délais, en exigeant des coûts supplémentaires et en introduisant des contraintes dans le processus de planification.

Enfin, au niveau institutionnel, l'application de l'ÉES est parfois remise en cause. On remarque en effet un certain scepticisme parmi les concepteurs des PPP quant à l'expansion des activités d'évaluation environnementale au-delà du niveau du projet et quant à la mise à disposition de moyens pour la mettre en œuvre (Brown et Thérivel 2000 : 184 ; Thérivel et Minas : 2002 : 90). Le manque de ressources (financières, humaines, etc.) et les problèmes de coordination entre les ministères et les organismes gouvernementaux constituent également des éléments qui ralentissent la mise en application de l'ÉES (Partidário 1996 : 39).

3 CONTEXTE INSTITUTIONNEL⁸

En tant que dispositif d'évaluation, l'ÉES vient généralement s'ajouter aux outils de planification déjà en place dans les administrations. Des approches variées sont, en ce sens, adoptées par les administrations pour la mettre en œuvre.

Afin de donner un aperçu de certaines de ces approches, nous exposons ci-dessous quelques tendances observées dans les administrations ayant appliqué l'ÉES à leurs processus de planification. À cette fin, nous portons une attention particulière aux modes d'assujettissements considérés pour soumettre les PPP à l'ÉES ; aux modèles préconisés pour intégrer l'ÉES dans la planification et aux implications de l'ÉES sur la structure organisationnelle des administrations.

⁸ Les informations données dans les sections 3 à 6 de ce rapport, et ayant trait à l'application de l'ÉES à certains États Membres de l'Union européenne, font référence aux processus d'ÉES établis avant la transposition de la Directive 2001/42/CE. Cela s'explique par le fait que la transposition de la Directive est très récente et que, par conséquent, peu d'information est actuellement disponible sur les nouveaux processus d'ÉES établis.

3.1 Modes d'assujettissement

À l'heure actuelle, les dispositifs utilisés pour appliquer l'ÉES dans les administrations sont relativement diversifiés.

La dernière étude sur l'état de la situation en matière d'ÉES à l'échelle internationale (Dalal-Clayton et Sadler 2004) énonce en effet que les dispositifs légaux et institutionnels des systèmes d'ÉES varient d'un endroit à l'autre, allant principalement des obligations légales aux dispositions administratives.

Certains pays prévoient ainsi des exigences relatives à la réalisation de l'ÉES dans le cadre de lois portant sur la planification et sur les ÉIEs (ex. : soumission des plans et programmes néerlandais à l'ÉES par la Loi néerlandaise sur l'EIE - *Netherlands EIA Act*). Le processus prévu pour l'ÉES est alors fortement inspiré du processus en vigueur pour l'évaluation environnementale des projets, et s'applique particulièrement aux plans et aux programmes.

D'autres pays utilisent des dispositions administratives (ex. : Directive, lignes directrices) comme moyen d'encadrement de l'ÉES. Ces dispositions envisagent généralement l'ÉES comme un processus séparé et différent de l'ÉIE. Mentionnons à titre d'exemple la Directive du Cabinet sur l'évaluation environnementale des projets de politiques, de plans et de programmes (gouvernement fédéral du Canada), la Directive du Cabinet sur le Test Environnemental (ÉES appliquée aux propositions de loi nationales, aux Pays-Bas), la Circulaire du Bureau du Premier Ministre Danois sur l'évaluation environnementale des projets de loi et d'autres propositions (*Denmark Environmental Assessment of Government Bills and other proposals by Prime Minister's Office*), etc.

3.2 Modèles d'intégration dans les processus de planification

Tenant compte notamment des modes d'assujettissement susmentionnés et de la variété des processus d'évaluation environnementale existants, différents modèles d'intégration de l'ÉES dans les processus de planification peuvent être identifiés. De manière générale, ces modèles se divisent en deux grandes catégories.

La première catégorie réfère à un processus séparé et distinct de la planification. Dans ce cas, l'ÉES intervient en parallèle de l'élaboration du PPP sans toutefois en influencer réellement la conception (l'ÉES intervient dans le processus une fois que la plupart des décisions sur le contenu du PPP ont déjà été prises).

La seconde catégorie repose sur une démarche intégrée. Dans ce contexte, l'ÉES agit comme outil d'éclairage sur les enjeux environnementaux qui devraient être pris en compte dans la planification. Elle est introduite dès le début du processus de planification en coordination avec

les autres évaluations réalisées. Cette coordination peut se traduire par exemple par l'établissement d'une structure centrale d'évaluation chargée de coordonner les activités des acteurs impliqués dans les différentes évaluations sectorielles. Elle peut également se concrétiser par l'élaboration d'un cadre de référence commun aux différentes évaluations, fixant des points de rencontre entre ces dernières (ex.: agendas établissant des délais et des moments de prises de décisions communes aux évaluations, à différentes étapes de la planification).

Des exemples de ces modèles sont illustrés dans European Commission (1998) et dans d'autres rapports décrivant la pratique dans le domaine de l'ÉES (notamment Sheate *et al.* 2001b ; Thérivel et Partidário 1996). Nous conseillons le lecteur de s'y référer pour plus d'information sur le sujet.

3.3 Effet de l'ÉES sur la structure organisationnelle des administrations

Les effets de l'ÉES sur la structure organisationnelle des administrations sont, à notre connaissance, relativement mal documentés. La littérature recensée permet néanmoins d'identifier quelques grandes tendances.

La première tendance, plus courante, repose sur le renforcement des capacités des structures administratives responsables d'élaborer les PPP, au sein même de l'administration. Comme en témoigne l'étude de Dalal-Clayton et Sadler (2004, chap. 3 : 37) sur l'état de la pratique en ÉES à l'échelle internationale, la plupart des ÉES sont en effet réalisées par le(s) responsable(s) de l'élaboration des PPP. Les raisons pouvant expliquer ce phénomène sont variées. Un sondage (Levett-Thérivel 2002 : 28) conduit à l'automne 2001 auprès de différentes autorités locales du Royaume-Uni suggère par exemple que les évaluations effectuées par le personnel de l'administration où est élaboré le PPP sont plus à même d'entraîner des changements dans la planification que ceux conduits par des organismes externes. Selon Levett-Thérivel (2002 : 28), les responsables de l'élaboration d'un PPP peuvent, en effet, se sentir mieux placés qu'un organisme externe pour comprendre les enjeux associés à la planification et pour les inclure dans la planification selon un processus itératif. En revanche, la réalisation des ÉES par le(s) initiateur(s) des PPP se caractérise par différentes lacunes. D'une part, ceux-ci n'ont pas toujours l'expertise permettant de réaliser ces évaluations, et sont assez souvent confrontés à des problèmes de ressources (humaines, financières) et de temps. D'autre part, ils risquent d'être critiqués à l'égard de leur manque d'indépendance et d'impartialité par rapport à l'évaluation réalisée (Levett-Thérivel 2002 : 28).

La seconde tendance identifiée concerne la réalisation de l'ÉES (ou d'une partie de l'ÉES) par des organismes externes⁹. Tout comme le premier cas de figure, elle présente des avantages mais également des inconvénients. En un premier temps, le fait de recourir à des organismes externes spécialisés en ÉES permet de bénéficier d'une expertise non négligeable dans le domaine et, éventuellement, d'éviter des erreurs pouvant être causées par une insuffisance de connaissances et de compétences. En un second temps, le recours à des organismes externes contribue généralement à une plus grande indépendance et à une plus grande impartialité de l'évaluation, et est susceptible de donner lieu à des idées et à des visions qui ne seraient pas nécessairement envisagées au sein de l'administration qui élabore le PPP. En revanche, on constate parfois un manque de compréhension des organismes externes par rapport au contexte et aux circonstances entourant la réalisation du PPP. Le financement de ces organismes risque également d'engendrer des coûts supplémentaires aux administrations, surtout s'ils sont impliqués activement dans la plupart des étapes du processus d'ÉES (Levett-Thérivel 2002 : 28).

Ces deux grandes tendances, qui représentent une vision très simplifiée de la pratique, s'accompagnent bien sûr de particularités. Ainsi, dans le cas de certaines ÉES, les organismes externes agissent en collaboration avec l'administration pour réaliser l'évaluation. Dans ce cadre, l'organisme externe agit comme soutien à la réalisation de l'évaluation, et aide l'administration à mener à bien le processus (Risse 2004 : Annexe 5). Dans d'autres cas, des unités formées d'experts sont formées au sein de l'administration pour fournir une assistance à la réalisation de l'ÉES (ce que nous dénommerons « organismes-conseils » dans la section 5.2).

Au Canada par exemple, le Ministère fédéral de l'Environnement (Environnement Canada) a pour mandat de fournir des analyses et avis (politiques, scientifiques et techniques) en ce qui a trait au développement durable et aux incidences environnementales potentielles des initiatives de politiques, de plans et de programmes. Pour ce faire, il consulte au besoin les autres ministères et organismes et agit en étroite collaboration avec l'Agence Canadienne d'évaluation environnementale¹⁰. Cette dernière a la responsabilité de promouvoir l'application de l'ÉES aux projets de politiques, de plans et de programmes du gouvernement fédéral et fournit, de concert avec les ministères et les organismes, de l'orientation et de la formation visant à améliorer la mise en oeuvre de l'ÉES (Canadian Environmental Assessment Agency 2004 : 9). Aux Pays-Bas, le Joint Support Center for Draft Legislation¹¹, composé de

⁹ Dans ce cas, l'organisme externe peut n'être associé qu'à certaines des étapes du processus d'ÉES telle que l'étape d'évaluation et de comparaison des alternatives (étape 3 du processus présentée à la section 5.1) ou être impliqué activement dans la plupart des étapes du processus.

¹⁰ L'Agence canadienne d'évaluation environnementale est une institution fédérale indépendante, redevable au Parlement par le biais du Ministre de l'Environnement fédéral. Ses fonctions consistent notamment à administrer la Loi canadienne sur l'évaluation environnementale ; à fournir un soutien administratif et des conseils dans le cadre des commissions d'examen, des médiations, des études approfondies ; d'encourager la participation du public ; de gérer des programmes de R&D, de formation et d'orientation dans le domaine de l'évaluation environnementale (Agence canadienne d'évaluation environnementale 2004 : 1).

¹¹ Le nom du Joint Support Centre a récemment été changé pour « Proposed Legislation Desk ».

fonctionnaires provenant des Ministère de l'Environnement et de l'Économie, a notamment pour mandat de fournir de l'expertise en matière d'ÉES, et de financer des projets de recherche qui permettraient de répondre aux préoccupations de certains ministères à cet effet (Groupe de travail sur l'évaluation environnementale stratégique – Québec 1999 : 34).

4 ASPECTS ADMINISTRATIFS

Outre ses implications sur le contexte institutionnel des administrations, l'adoption d'un processus d'ÉES se traduit également par des répercussions variées au niveau des coûts et des délais associés à la planification. Les rubriques suivantes présentent brièvement une estimation de ces coûts et délais, en fonction du peu d'information disponible sur le sujet.

4.1 Coûts

Les coûts associés à la mise en application de l'ÉES constituent évidemment des éléments importants à considérer pour les administrations publiques qui ont généralement un budget défini avec lequel elles doivent fonctionner.

Selon une étude de la Commission européenne (European Commission 1996) basée sur 20 études de cas couvrant une variété d'initiatives (politiques, programmes d'infrastructure majeurs, plans régionaux et locaux d'affectation du sol), il a été mis en évidence que l'introduction de l'ÉES au niveau de la planification relative à l'affectation du sol locale et régionale pouvait augmenter le coût de la planification de 5 à 10 %. Dans certains cas, ce coût pouvait être réduit à moins de 5 %.

Les facteurs qui permettent d'expliquer ces variations sont nombreux et diversifiés (variations dues à l'organisation de la publicité; au type et au nombre de publications réalisées; au type et au nombre d'experts affectés à l'évaluation; à l'existence de données de base pour la réalisation de l'évaluation, etc.). Il semble toutefois que plus de 90 % du coût des ÉES soient liés à la rémunération du personnel affecté à l'évaluation (European Commission 1996 : 5).

4.2 Délais

Une revue des expériences réalisées au niveau mondial dans le domaine de l'ÉES (Risse 1998 : 20) semble montrer que le temps consacré à la préparation des ÉES varie considérablement d'un cas à un autre. Aux États-Unis par exemple, une ÉES réalisée en matière de restauration environnementale et de gestion des déchets a duré cinq ans (Sadler, 1996 : 193) alors qu'au Royaume-Uni, certaines évaluations environnementales stratégiques ont nécessité moins de cinq mois de préparation pour être mises en œuvre (évaluation du plan structurel du Lancashire) (Commission européenne 1994 : 30). En vertu de l'étude internationale sur l'efficacité de l'évaluation environnementale (Sadler, 1996 : 193), il appert par ailleurs que les ÉES approfondies réalisées sur des plans et programmes d'aménagement sectoriels durent environ six mois (en moyenne).

Ainsi, différents facteurs peuvent intervenir comme éléments influençant la durée du processus. Mentionnons notamment la compétence et le mode d'organisation de l'équipe désignée pour prendre des décisions et effectuer les choix dans le processus d'évaluation stratégique, le niveau de détail du rapport d'évaluation environnementale (*Cf. étape 3, section 5.1*) et les procédures mises en place, particulièrement en ce qui a trait à l'importance accordée à la participation du public (Falque, 1995 : 110; Commission européenne 1994 : 43) :

Le délai de réalisation de l'ÉES peut par ailleurs être écourté au fur et à mesure que les intervenants impliqués dans le processus d'ÉES acquièrent de l'expérience, maîtrisent le processus d'évaluation ainsi que les outils utilisés, etc.. Il peut également être diminué, selon nous, si l'ÉES se fait de manière hiérarchisée (*Cf. section 2.1*) compte tenu de l'allègement possible de l'ÉES à chaque niveau d'évaluation.

5 ASPECTS MÉTHODOLOGIQUES

Étant donné la diversité des processus d'ÉES existants, il n'existe pas de démarche méthodologique unique pour l'application de l'ÉES. On recense plutôt plusieurs démarches qui varient en fonction des contextes socio-politiques d'application et des traditions diversifiées en matière d'évaluation environnementale.

Malgré cette diversité, il est possible d'identifier plusieurs convergences en matière d'étapes, d'acteurs et d'outils communément rencontrés dans le domaine. Ces dernières ne font pas l'unanimité des systèmes d'ÉES établis mais constituent néanmoins des tendances.

5.1 Processus (étapes généralement rencontrées)

Le fonctionnement général d'un processus d'ÉES peut se résumer en six grandes étapes, lesquelles répondent à une démarche itérative, c'est-à-dire à une démarche impliquant des rétroactions d'une étape sur l'autre accompagnées de mises au point progressives. Il s'agit **j** du tri préliminaire, **k** du cadrage, **l** de l'évaluation, de la comparaison des alternatives et de l'identification des mesures à prendre pour réduire les incidences environnementales négatives ou valoriser les incidences environnementales positives de la ou des alternative(s) retenue(s), **m** de la révision, **n** de la prise de décision relative à l'adoption du PPP et **o** de la mise en œuvre et du suivi.

Ces étapes sont reprises de façon plus détaillée ci-dessous.

Étape 1 : Tri préliminaire (appelé également screening, filtrage, balayage ou tamisage)

Le tri préliminaire vise à déterminer la nécessité de réaliser une ÉES et, le cas échéant, l'envergure qu'elle devra prendre (European Commission 1999 : 30; André *et al.* 1999 : 249).

De façon générale, la nécessité d'une telle évaluation est déterminée au cas par cas ou par le biais d'une liste réglementaire identifiant les PPP à soumettre ou non à évaluation (Risse 1998 : 13). D'un point de vue opérationnel, elle se concrétise le plus souvent par une caractérisation préliminaire des incidences et par l'établissement de seuils, de critères ou de questions permettant de trancher s'il est essentiel de procéder à une évaluation environnementale. Ces derniers éléments (seuils, critères, questions) sont plus ou moins clairement établis suivant les administrations. En effet, comme l'affirme Cloutier (2001 : 6) dans son rapport portant notamment sur la comparaison des mécanismes de tri préliminaire adoptés par neuf administrations et organisations¹², la majorité de celles-ci n'entreprend une ÉES que pour les politiques, plans et programmes susceptibles d'entraîner des incidences significatives sur l'environnement. La notion d'incidence significative n'étant toutefois pas souvent définie, ces entités font plutôt référence à des thèmes environnementaux fréquemment associés à des incidences notables (ex. : circulation routière) en guise de critères d'assujettissement.

En plus de son objectif de délimitation quant à la nécessité d'entreprendre une ÉES, le tri préliminaire peut également permettre de préciser l'ampleur de l'évaluation à réaliser. La démarche préconisée par le Ministère de l'Environnement du Québec (qui réfléchit actuellement à la mise au point d'une démarche officielle d'ÉES applicable au niveau du Gouvernement québécois) illustre relativement bien cette fonction.

¹² Pays-Bas, Danemark, Finlande, États-Unis, Royaume-Uni, Australie occidentale, Canada, Union européenne, Banque Mondiale.

L'évaluation préconisée dans ce cas se scinde en trois niveaux incluant (Ministère de l'Environnement du Québec 2002)¹³:

- une ÉES approfondie, comprenant une consultation publique à l'extérieur du gouvernement, pour les PPP susceptibles d'avoir des répercussions environnementales majeures sur différentes composantes des milieux bio-physico-chimiques et humains ;
- une ÉES succincte, ne nécessitant qu'une consultation interministérielle, pour les PPP ayant des répercussions environnementales potentielles moins marquées que pour les PPP dont une ÉES approfondie est nécessaire, mais étant tout de même suffisamment préoccupantes pour qu'elles soient prises en compte dans la planification.
- aucune ÉES pour les PPP susceptibles de ne pas avoir d'incidences ou d'avoir des incidences négatives négligeables sur l'environnement.

Étape 2 : Cadrage (appelé également scoping)

Le cadrage vise, en quelque sorte, à structurer la démarche d'ÉES en identifiant ce qu'elle doit prendre en compte (European Commission 1999 : 34) et en concentrant les efforts de l'évaluation sur les enjeux environnementaux les plus importants (André *et al.* 1999 : 257).

Son contenu varie selon les documents consultés dans le domaine de l'ÉES. À la lumière de différentes possibilités existantes (identifiées notamment par André *et al.* 1999; Thérivel et Brown 1999; Thérivel et Partidário 1996; Devuyt *et al.* 2000; Gauthier *et al.* 2000; European Commission 1999), les points suivants présentent néanmoins une liste relativement exhaustive d'éléments pouvant être pris en considération au cours de cette étape :

- la description du PPP et de ses objectifs, reposant sur la présentation de son domaine d'application (ex. : aménagement du territoire, énergie...); de sa limite d'application spatio-temporelle (surface délimitée par l'application du PPP et période de mise en vigueur du PPP); de ses objectifs environnementaux en regard, par exemple des normes environnementales, des exigences légales ou des ententes internationales (European Commission 1999 : 34; Thérivel et Brown 1999 : annexe 6; Gauthier *et al.* 2000 : 14) ;
- le contexte inhérent au PPP et à l'ÉES, incluant notamment l'identification des contraintes (ex. : temporelles, politiques) et des objectifs de l'ÉES, l'identification des principaux acteurs à impliquer dans le cadre du processus d'ÉES (Thérivel et Brown 1999 : annexe 6) ainsi que des incertitudes à prendre en compte ;
- l'identification des limites d'application spatio-temporelles de l'ÉES (European Commission 1998 : 272) ;

¹³ Une démarche similaire est adoptée notamment par la Banque mondiale dans le cadre des ÉES sous-jacentes aux décisions de financement pour certains secteurs d'activités (énergie, foresterie, transport, aménagement du territoire, etc.) (Groupe de travail sur l'évaluation environnementale stratégique - Québec 1999 : 53; World Bank 1993 : 3).

- les alternatives à évaluer (Thérivel et Brown 1999 : 14) ;
- les principales incidences du PPP à évaluer (European Commission 1999 : 34) ;
- le contenu du rapport d'évaluation environnementale (Devuyst *et al.* 2000 : 76-78) ;
- les approches ou outils à adopter pour réaliser l'évaluation et pour organiser la participation du public (European Commission 1999 : 34; Devuyst *et al.* 2000 : 76-78).

Étape 3 : Évaluation, comparaison des alternatives et identification des mesures à prendre pour réduire ou valoriser les incidences environnementales de la ou des alternative(s) retenue(s)

Cette étape consiste à procéder à l'évaluation des incidences environnementales du PPP et de ses alternatives¹⁴ et à comparer ces dernières de façon à identifier celle(s) qui est(sont) la(les) plus favorable(s) à l'environnement (Conférence Européenne des Ministres des Transports 2000 : 21). L'évaluation se fait, en général, en considérant la différence entre l'état de l'environnement actuel ou envisagé en l'absence de l'application du PPP et l'état de l'environnement envisagé en présence du PPP (et de ses alternatives) (Thérivel et Brown 1999 : 13). Elle s'accompagne la plupart du temps de recommandations sur les moyens qui permettraient de réduire ou de valoriser les incidences environnementales de la ou des alternative(s) retenue(s) à l'issue de la comparaison.

Soulignons que la présente étape se matérialise généralement par la réalisation d'un rapport d'évaluation environnementale dont l'objet est de présenter l'information liée à la réalisation de l'ÉES afin d'en informer les acteurs intéressés (ex.: public; autorités compétentes, etc. – Cf. *section 5.2*).

Ce rapport peut se résumer à un paragraphe ou une page, ou prendre la forme d'une étude plus élaborée (Sadler 1996 : 199). Il peut présenter les éléments identifiés dans le cadrage (étape 2) qui ont été utilisés pour les fins de l'ÉES ainsi que les principaux éléments d'information qui ressortent de la réalisation de l'étape 3 (notamment, les conclusions issues de l'évaluation et de la comparaison des alternatives ainsi que les principales mesures proposées pour réduire ou valoriser les incidences de la ou des alternative-s retenue-s). Dans certains cas, le rapport peut également faire état de la participation des acteurs (ex. : mention des intervenants impliqués pour chacune des étapes du processus ; discussion sur les approches utilisées pour entreprendre cette consultation/participation) et présenter brièvement le plan envisagé pour la mise en œuvre du suivi, incluant les démarches à adopter pour le réaliser, les acteurs à consulter, etc. (European Commission 1999 : tableau 10 annexe).

¹⁴ Les alternatives peuvent être envisagées comme différentes possibilités d'atteindre les objectifs et de répondre aux besoins fixés à l'origine d'un PPP (Thérivel et Brown 1999 : 14 ; European Commission 2003 : 25).

Étape 4 : Révision (appelée également examen, analyse, évaluation ou contrôle de la qualité)

L'étape de révision consiste principalement à s'assurer que le rapport d'évaluation environnementale réalisé est complet et de qualité. Elle peut également servir à juger de l'acceptabilité du PPP d'un point de vue environnemental.

Pour ce faire, elle donne généralement lieu à des analyses techniques et à des consultations de différents types (ex. : consultations interministérielles, consultations d'experts, consultations publiques ciblées ou élargies).

Dans certains cas, elle recourt également à des critères pour attester de la qualité et du stade de réalisation du rapport (ex. : complet, non complet). Ceux-ci varient généralement en fonction des administrations ou des auteurs oeuvrant dans le domaine de l'ÉES. Selon Sadler (1996 : 199) par exemple, le rapport est considéré comme étant de bonne qualité lorsqu'il fournit: une description claire et concise du PPP à l'étude et du contexte d'ensemble de la planification; des conséquences environnementales des alternatives proposées; des difficultés observées pendant l'évaluation; du coefficient d'incertitude des résultats de l'ÉES; des recommandations relatives aux conditions d'approbation et à la mise en œuvre du PPP, accompagnées d'éclaircissements au sujet des compromis; des dispositions pour la surveillance et l'analyse postérieure à la décision.

Étape 5 : Prise de décision relative à l'adoption du PPP

Cette étape consiste à rendre une décision sur le rejet, l'acceptation ou l'amendement d'un PPP (European Commission 1999 : 54) ayant fait l'objet d'une ÉES. La décision, normalement rendue par les autorités compétentes (ex.: Gouvernement), est généralement basée sur plusieurs critères ou composantes tels que la pertinence du PPP en regard des objectifs fixés, l'efficacité du PPP ou l'atteinte des objectifs fixés au meilleur coût, et l'importance des incidences du PPP sur l'environnement (Commission européenne 1999a : 74-75).

Étape 6 : Mise en œuvre et suivi

La mise en œuvre consiste à appliquer les orientations, objectifs, mesures énoncés dans le PPP, une fois ce dernier approuvé ou amendé par les autorités compétentes.

Cette étape est parfois accompagnée de la démarche de suivi qui a notamment pour objet (Thérivel et Partidário 1996 : 43) :

- d'identifier et de remédier aux incidences négatives associées à la mise en œuvre du PPP qui n'ont pas été identifiées dans le rapport d'évaluation environnementale;

- d'assurer que les mesures proposées dans le rapport d'ÉES pour réduire ou valoriser les incidences environnementales sont bel et bien mises en place et qu'elles s'avèrent adéquates.

Par sa nature, le suivi a donc comme fonction de vérifier par l'expérience les données environnementales intégrées dans la planification à l'issue de l'ÉES, et d'apporter les ajustements en conséquence. Il permet, par le fait même, de tirer des leçons de la pratique en mettant en évidence les éléments à considérer dans le cadre d'évaluations environnementales ultérieures portant sur des propositions similaires¹⁵.

Au cours des dernières années, la mise en œuvre du suivi n'a pas connu de grand succès dans les processus d'ÉES adoptés à l'échelle internationale.

Cette situation n'est d'ailleurs pas spécifique à l'ÉES mais également à l'ÉIE (Sadler 1996 : 153). Des problèmes relevés à cet égard dans le domaine de l'ÉIE permettent d'expliquer, du moins en partie, ce phénomène (Comité de l'Association québécoise pour l'évaluation d'impacts sur le suivi environnemental 1999 : 6):

- tous les intervenants ne s'entendent pas sur la définition à donner au suivi. Les confusions les plus fréquentes concernent la surveillance environnementale qui est parfois assimilée au suivi;
- le suivi est souvent perçu par le promoteur, c'est-à-dire le responsable du projet soumis à ÉIE, comme un pensum qui lui est imposé sans qu'il corresponde à un réel besoin lié à son projet ou qu'il y voit une réelle utilité;
- certains organismes gouvernementaux utilisent parfois le suivi pour faire réaliser par le promoteur des études qu'ils n'ont plus les moyens de financer à l'interne;
- les enjeux politiques et les médias orientent parfois le contenu des suivis au détriment des besoins réels;
- l'analyse du contenu des rapports de suivi et la rétroaction au promoteur sont insuffisantes de la part des organismes gouvernementaux;
- la durée et les objectifs du suivi sont mal définis;
- les informations provenant du suivi sont dispersées, mal répertoriées, peu ou pas diffusées ou disponibles pour consultation;
- les études de suivi ne font pas l'objet de bilans sectoriels permettant de tirer des conclusions précises ou de faire la synthèse des expériences dans un champ donné;
- les résultats de suivi ne sont pas toujours validés par l'organisme réglementaire;
- les rapports de suivi dans un domaine donné, font souvent appel à des méthodes différentes qui ne permettent pas la comparaison ou la synthèse des résultats;

¹⁵ Ex. : Évaluation environnementale du plan national de transport 2011-2020 faisant suite à l'évaluation environnementale du plan national de transport 2002-2010.

- les mandats des différents intervenants ne sont pas toujours clairs surtout lorsque plusieurs organismes gouvernementaux sont impliqués;
- souvent, le public n'est pas impliqué et n'a pas facilement accès aux résultats du suivi;
- le suivi est rarement conçu comme un processus dynamique d'amélioration des projets.

En outre, l'étape de suivi n'est pas évidente à mener. Selon Arts (1998 : 169), la nature abstraite et indicative des PPP ainsi que les longues périodes de temps auxquelles elles font référence rendent difficile la mise en évidence de relations entre le contenu du PPP et ses incidences sur l'environnement.

Malgré ces difficultés, le suivi est maintenant davantage admis et intégré dans la pratique. Il est en effet préconisé dans de nombreux documents à caractère administratif et réglementaire, et fait l'objet d'applications diverses (pour des exemples, voir entre autres Arts 1998 ; Gagnon *et al.* 2002).

5.2 Acteurs principalement rencontrés et rôles associés

L'application des étapes susmentionnées implique différents types d'acteurs qui occupent des rôles diversifiés et qui interagissent selon des dynamiques variées (en fonction des PPP et des administrations concernés).

Ces acteurs peuvent être regroupés sous cinq grandes catégories :

- l'initiateur du PPP, responsable de l'élaboration du PPP. L'initiateur peut être, par exemple, un Ministère des transports décidant de mettre en œuvre un plan sur les infrastructures de transports (Risse 1998 : 12 ; Dalal-Clayton et Sadler 2004, chap. 3 : 37) ;
- le chargé d'étude, responsable de la réalisation de l'ÉES et de l'élaboration du rapport d'évaluation environnementale (Thérivel et Partidário 1996 : 7 ; Risse 1998 : 12) ;
- l'autorité compétente, responsable de la prise de décision relative à l'adoption du PPP. En général, elle fait partie de la même organisation que l'initiateur du PPP (Thérivel et Partidário 1996 : 7 ; Risse 1998 : 12) et est fréquemment représentée par le Gouvernement ;
- les autorités environnementales, telles que le Ministère de l'Environnement, qui agissent souvent comme organismes-conseils à l'égard de la réalisation de l'ÉES en procédant à la formulation des recommandations relatives aux principes directeurs à considérer pour réaliser l'évaluation environnementale (tri préliminaire, cadrage, règles de l'art) et en intervenant comme organismes consultatifs au cours de l'étape de révision (Thérivel et Partidário 1996 : 7 ; Risse 1998 : 12 ; Dalal-Clayton 2004, chap. 3 : 37). Dans

certains cas, les autorités environnementales sont également impliquées dans la démarche de suivi. Tel est le cas au Danemark où le Ministère de l'Environnement et de l'Énergie est chargé d'élaborer un rapport de suivi en matière d'ÉES et d'acheminer ce rapport aux autres ministères du gouvernement de façon à les encourager à améliorer leur processus d'évaluation environnementale (Risse 1998 : 12).

Bien entendu, le Ministère de l'Environnement n'est pas le seul à intervenir comme organisme-conseil. Comme nous avons pu le voir à la section 3.3, cette fonction est parfois réalisée par d'autres intervenants ou en collaboration avec d'autres intervenants ;

- le public, qui a pour fonction de donner son avis et/ou de participer plus étroitement à l'élaboration du PPP et de l'évaluation, en contribuant notamment à l'identification des éléments et des enjeux à considérer (ex. : mise à profit des connaissances traditionnelles et locales d'une population pour identifier les incidences appréhendées d'une politique donnée sur son territoire). Ce dernier peut intervenir à différentes étapes de la démarche – généralement au niveau du cadrage et de la révision – et sous différentes formes selon le mode de participation publique adopté (Gauthier *et al.* 2000; ERM Nederland B.V. 2002 ; Rauschmayer et Risse 2004).

L'implication du public dans le processus d'ÉES est davantage détaillée dans la section 6 de ce rapport portant sur les démarches participatives.

5.3 Outils fréquemment utilisés

Les outils utilisés pour mettre en œuvre les étapes des processus d'ÉES sont relativement nombreux et proviennent de sources variées (outils déjà utilisés en ÉIE, outils associés aux études de planification et à l'analyse des politiques) (Conférence Européenne des Ministres des Transports 2000 : 22). Leur choix dans le cadre de l'ÉES d'un PPP donné ne fait généralement pas référence à des cadres de référence clairement établis (ex. : critères pour aider à la sélection des outils) mais est déterminé par plusieurs facteurs, dont la nature du problème, la disponibilité des outils, les étapes du processus concerné, les coûts, les délais, etc.

Par ailleurs, leur intervention dans le processus d'ÉES varie en fonction des étapes du processus et des niveaux de planification auxquels ils sont appliqués. On reconnaît, en effet, que les outils issus de l'ÉIE et des études de planification (ex.: listes de vérification, matrices, techniques de modélisation) sont davantage utilisés lorsque des activités concrètes sont directement influencées par le PPP concerné. En revanche, les outils issus de l'analyse des politiques (ex.: analyse coûts-avantages) sont plutôt associés aux PPP qui se caractérisent par un haut niveau d'abstraction ou de généralisation (Conférence Européenne des Ministres des Transports 2000 : 22; Sadler et Verheem 1996 : 108-109 ; Noble et Storey 2001 : 488).

De façon à avoir un aperçu des outils les plus fréquemment utilisés dans le domaine de l'ÉES ainsi que de leurs principales forces et faiblesses, le ministère de l'Environnement du Québec a mandaté la réalisation d'une étude sur le sujet (Pacaut 2000).

Celle-ci a été élaborée sur la base d'une revue de littérature portant sur les écrits théoriques et pratiques relatifs à l'ÉES (ouvrages de référence, revues scientifiques en évaluation environnementale et rapports gouvernementaux). Des critères d'analyse de ces outils, identifiés à partir de documents consultés (notamment Canter et Sadler 1997 ; Bureau fédéral d'examen des évaluations environnementales – Canada 1992 ; Partidário 1996), ont été utilisés pour décrire les outils recensés et pour identifier leurs forces et leurs faiblesses. Ces critères, exprimés sous forme d'une série de questions, portaient sur : la diversité d'application (l'outil peut-il être appliqué à plusieurs niveaux stratégiques – politiques, plans et programmes – et à plusieurs étapes du processus général d'ÉES ?) ; la complexité de compréhension et d'utilisation (l'outil s'avère-t-il complexe, difficile à comprendre et à utiliser pour les non-initiés ?) ; les ressources nécessaires (quelles sont les ressources nécessaires à l'application de l'outil, en ce qui concerne le nombre de personnes requises, leur niveau de compétence, l'utilisation de matériel ou de technologies particulières, la quantité de données nécessaires ?) ; les coûts et les délais associés à l'application de l'outil ; le niveau d'objectivité (l'application de l'outil implique-t-elle une grande part de subjectivité de la part de l'utilisateur ?) ; la quantification de l'évaluation (l'outil permet-il une évaluation quantitative des incidences sur l'environnement ?) ; l'analyse spatio-temporelle (l'outil permet-il d'examiner les aspects spatiaux et temporels dans l'évaluation des incidences ?). Par ailleurs, des études de cas d'ÉES entreprises dans différents types de contextes ont été sélectionnées (sur la base de la revue de littérature) de façon à compléter le bilan critique des forces et des faiblesses des outils, et pour rendre compte des expériences menées en ÉES dans différents domaines et à divers niveaux de planification.

La synthèse de cette recherche est présentée ci-après dans le Tableau 1. La liste des outils recensés et leur intervention dans le processus d'ÉES est, pour sa part, reprise dans le Tableau 2.

Tableau 1 : Synthèse des principaux outils utilisés en ÉES ainsi que de leurs forces et de leurs faiblesses (modifié de Pacaut 2000 : 55-58).

MÉTHODE (DÉFINITION)	PRINCIPALES FORCES	PRINCIPALES FAIBLESSES
<p>1. Liste de vérification Liste spécifique de paramètres environnementaux traduisant soit les incidences potentielles d'un PPP, soit les actions d'un PPP reconnues comme sources d'incidences potentielles.</p>	<ul style="list-style-type: none"> • Simple à utiliser • Versatile (peut s'appliquer à de nombreuses étapes du processus d'ÉES) • Quantité minimale de ressources humaines et matérielles • Peu coûteux 	<ul style="list-style-type: none"> • Omission d'incidences ou d'actions lorsque ceux-ci ne sont pas inscrits sur la liste. • Identification sans évaluation (quantitative ou qualitative) des incidences. • Aucun lien causal entre les actions et les incidences.
<p>2. Matrice Grille identifiant les interactions entre les actions découlant d'un PPP et les éléments de l'environnement susceptibles d'être affectés par les actions.</p>	<ul style="list-style-type: none"> • Peu coûteux • Simple à utiliser • Utilisation courante en évaluation environnementale de projets • Lien causal entre les actions et les incidences 	<ul style="list-style-type: none"> • Peut entraîner un double comptage des incidences • Comparaison difficile de matrices d'évaluation de scénarios afin de déterminer le meilleur scénario
<p>3. Revue de littérature et comparaison de cas Recensement d'ouvrages spécialisés et de rapports d'ÉES pertinents.</p>	<ul style="list-style-type: none"> • Utilisation de données existantes • Réduction de coûts et des délais • Utilisée selon la banque d'ÉES disponible 	<ul style="list-style-type: none"> • Coûts associés à la recherche et à l'achat de documents • Données existantes inappropriées dans certains cas
<p>4. Avis d'experts Sollicitation d'opinions de spécialistes identifiant et évaluant les incidences.</p>	<ul style="list-style-type: none"> • Largement utilisé en évaluation environnementale • Souple • Versatile (application à de nombreuses étapes du processus d'ÉES) 	<ul style="list-style-type: none"> • Coûts peuvent être élevés selon les experts consultés • Résultats peuvent manquer de crédibilité • Manque d'experts dans certains domaines • Subjectivité et biais
<p>5. Élaboration de scénarios Actions ou solutions possibles pour la mise en œuvre des PPP.</p>	<ul style="list-style-type: none"> • Usage généralisé en analyse de politiques, en évaluation de programmes et maintenant en ÉES • Ajoute de la crédibilité au processus d'ÉES 	<ul style="list-style-type: none"> • Évaluations lourdes si les scénarios sont trop détaillés
<p>6. Indicateurs Paramètres de mesure et de représentation d'un type d'incidence ou d'une composante de l'état de l'environnement.</p>	<ul style="list-style-type: none"> • Couramment utilisés en évaluation environnementale • Utiles pour le suivi 	<ul style="list-style-type: none"> • Difficulté de concevoir des indicateurs synthétiques et significatifs • Quantité importante de données pour obtenir de résultats

MÉTHODE (DÉFINITION)	PRINCIPALES FORCES	PRINCIPALES FAIBLESSES
<p>7. Modélisation Représentation simplifiée, souvent mathématique, des éléments ou processus d'un système donné. Permet de simuler de façon quantitative les changements de l'environnement avec ou sans le PPP proposé.</p>	<ul style="list-style-type: none"> • Très utile pour l'évaluation temporelle des incidences • Apporte un degré élevé de détail à l'évaluation • Utile pour l'élaboration des scénarios 	<ul style="list-style-type: none"> • Nécessite des coûts importants • Généralement complexe à concevoir et à utiliser • Nécessite une quantité importante de données pour conduire à des résultats satisfaisants • Nécessite une formation et une expertise poussées • Difficulté d'adaptabilité et de reproductibilité à d'autres cas
<p>8. Système d'information géographique (SIG) Outil informatique conçu pour l'analyse et la modélisation de la distribution spatiale des phénomènes. Sert à localiser dans l'espace les incidences environnementales d'un PPP.</p>	<ul style="list-style-type: none"> • Méthode par excellence pour l'évaluation spatiale des incidences • Permet de traiter une grande quantité de données • Permet d'évaluer rapidement une multitude de scénarios • Utile en aménagement du territoire, dans les études spatiales et dans l'évaluation des incidences cumulatives 	<ul style="list-style-type: none"> • Coûts et délais d'utilisation élevés • Coûts élevés d'achat de matériel • Aucune évaluation de la durée des incidences. • Complexe à utiliser • Ne s'applique pas aux situations sans composantes spatiales • Manque de données numérisées
<p>9. Analyse coûts-avantages Méthode économique qui permet une estimation en valeur monétaire de chacune des incidences. Le rapport entre la somme des incidences positives et négatives constitue la base de comparaison des options évaluées.</p>	<ul style="list-style-type: none"> • Évaluation quantitative et uniforme des incidences • Facilite l'agrégation des incidences et la comparaison des scénarios 	<ul style="list-style-type: none"> • Technique de calcul peu transparente • Difficulté d'évaluation de certains types d'incidences sur une base monétaire
<p>10. Aide multicritère à la décision Méthode servant à porter un jugement comparatif. On estime chacune des incidences positives et négatives à l'aide de cotes individuelles. On pondère ensuite les résultats de l'évaluation des incidences pour procéder enfin au classement des différentes options du PPP proposé.</p>	<ul style="list-style-type: none"> • Permet d'évaluer tous les types d'incidences • Existence de logiciels simples à comprendre pour les participants 	<ul style="list-style-type: none"> • Niveau élevé de ressources matérielles (informatique) et humaines • Technique souvent perçue comme complexe.

Tableau 2 : Étapes d'intervention des outils les plus fréquemment utilisés dans le processus d'ÉES (modifié de Pacaut 2000 : 61).

OUTILS**	ÉTAPES DU PROCESSUS D'ÉES					
	1. TRI PRELIMINAIRE	2. CADRAGE	3. ÉVALUATION, COMPARAISON DES ALTERNATIVES ET PROPOSITION DE MESURES A PRENDRE POUR REDUIRE OU VALORISER LES INCIDENCES...	4. RÉVISION	5. PRISE DE DECISION RELATIVE A L'ADOPTION DU PPP	6. MISE EN ŒUVRE ET SUIVI
LISTE DE VÉRIFICATION	X	X	X	X *		
MATRICE		X	X		X *	
REVUE DE LITTÉRATURE		X	X			
AVIS D'EXPERTS	X	X	X	X		
ÉLABORATION DE SCENARIOS		X				
INDICATEURS			X			X
MODELISATION			X			X
SYSTEMES D'INFOMATION GEOGRAPHIQUE (SIG)			X			X
ANALYSE COUTS-AVANTAGES			X			X
AIDE MULTICRITERE A LA DECISION			X		X*	

* L'utilisation des listes de vérification, des matrices et de l'aide multicritère à la décision aux étapes de révision et de prise de décision n'est pas présentée par Pacaut (2000) mais par European Commission (1999 : 50), Sadler et Verheem (1996 : 109) et Commission européenne (1999c : 129).

** Outre les outils susmentionnés, des nouveaux outils utilisés dans d'autres domaines de la gestion environnementale, tels que l'analyse du cycle de vie sont progressivement appliqués à l'ÉES.

6 DÉMARCHES PARTICIPATIVES

La participation du public, c'est à dire l'engagement du public¹⁶ dans les processus de prise de décision des administrations (modifié de Roberts, 1995: 224 *In André et al.*, 1999: 171) soulève différentes interrogations auprès des administrations chargées de mettre en application l'ÉES.

Afin d'apporter des éléments de réponses à certaines de ces interrogations, les sections suivantes font état des objectifs attribués à la participation dans le domaine de l'ÉES, des effets réellement associés à cette démarche, des étapes du processus les plus souvent concernées et des modes de participation adoptés.

6.1 Objectifs recherchés par la participation en ÉES et effets associés

Comme nous l'avons évoqué dans la section 2.2, l'ÉES est perçue, notamment, comme un moyen de favoriser l'implication du public dans la conception de ces PPP. Cela dit, les expériences entreprises au cours des dernières années en matière d'ÉES ne se sont pas systématiquement concrétisées par une implication du public. Plusieurs évaluations ont en effet été menées en vase clos, selon le modèle rationnel de prise de décision, axé principalement sur le savoir technocratique et scientifique. Comme l'énoncent Thérivel et Partidário (1996 : 8), seules quelques ÉES entreprises à l'échelle internationale jusqu'au milieu des années 1990 ont été réalisées de façon à prendre en compte les opinions du public. Cela peut être attribuable notamment à des raisons de confidentialité, parce que les PPP sont parfois considérées comme trop délicats à soumettre au débat public avant leur approbation ou à cause de la complexité qu'implique la consultation du public sur des questions d'intérêt national ou régional.

Cette situation tend toutefois à changer. À l'heure actuelle, la participation est en effet revendiquée par bon nombre d'administrations.

Différentes raisons sont évoquées dans la littérature pour promouvoir l'intégration des démarches participatives dans le processus de planification. On peut mentionner à ce titre : l'amélioration de la transparence des processus décisionnels, l'apport d'une meilleure crédibilité aux PPP soumis à ÉES, la nécessité d'éviter que des controverses, confrontations ou délais ne se produisent suite à l'adoption d'un PPP pour cause d'opposition du public, etc. (voir notamment Gauthier *et al.* 2000 ; Thérivel et Partidário 1996; Sadler et Verheem, 1996; Sadler 1996; European Commission 1999; ERM Nederland B.V. 2002 ; Rauschmayer et Risse 2004 pour plus de détails à cet effet).

¹⁶ Le public peut être défini comme toute personne, organisation, ou association concernée par l'adoption du PPP sur lequel l'ÉES est réalisée. Il peut s'agir, par exemple, d'organisations non gouvernementales, de citoyens, de groupes de pression préoccupés par l'application d'un PPP donné.

En outre, des études de cas entreprises au cours des dernières années dans le domaine de l'ÉES (voir notamment Partidário et Clark 2000 ; Thérivel et Partidário 2000 : 275) illustrent les apports réels que présente la participation du public à différentes étapes du processus :

- 1) la participation permet la prise en compte des savoirs traditionnels et donc, fournit de nouvelles données (issues du savoir traditionnel) pour concevoir et évaluer les alternatives ;
- 2) elle sert à refléter davantage la pluralité des intérêts et les valeurs environnementales associées au développement des activités prévues dans les PPP ;
- 3) elle contribue à l'identification des mesures à adopter pour réduire les incidences environnementales négatives ou valoriser les incidences environnementales positives du PPP ;
- 4) elle incite les pouvoirs publics à réellement appliquer les activités et mesures définies dans les PPP ;
- 5) elle sensibilise les acteurs impliqués dans la planification aux enjeux environnementaux des décisions associées.

Évidemment, ces apports doivent être interprétés en fonction des particularités des expériences entreprises et des modalités de participation définies. Certains des avantages susmentionnés peuvent ainsi s'avérer pertinents pour des cas d'études en particulier. D'autres avantages non clairement décrits dans la littérature, peuvent également ressortir de l'application de démarches participatives à l'ÉES. Les apports évoqués constituent néanmoins quelques éléments de plus-value apportés par la participation et font ressortir l'intérêt d'impliquer le public dans les processus d'évaluation environnementale.

Or, la mise en œuvre de la participation publique peut s'accompagner de difficultés qui méritent selon nous d'être énoncées. À la lumière d'une étude réalisée sur la participation du public à l'ÉES (Gauthier *et al.* 2000 : 98-99), on peut entre autres soulever le manque de sensibilisation et de formation des fonctionnaires en regard de la participation et de l'ÉES, la difficulté de cibler les publics concernés en raison de la portée très vaste des PPP par rapport à l'évaluation des projets (territoire, juridictions, activités), le fait que l'ÉES n'exclut pas l'évaluation environnementale des projets et ne favorise pas une participation forte des publics qui ont une capacité limitée d'investissement en temps et en ressources. On peut également évoquer les difficultés que posent les choix entourant l'organisation de la participation compte tenu des effets attendus de cette démarche : une enquête publique menée par une commission indépendante, et prévoyant des délais ainsi que des ressources suffisantes pour permettre aux participants de préparer leurs avis sur l'ÉES (et sur le PPP l'accompagnant) sera en effet plus lourde à gérer du point de vue des coûts et des délais mais plus légitime qu'une consultation sur internet menée avec peu de ressources financières et dans des délais serrés (Risse *et al.* 2003 : 463).

6.2 Étapes du processus d'évaluation faisant généralement intervenir le public

La notion de participation en ÉES recouvre plusieurs mécanismes et pratiques qui diffèrent selon leurs modalités, leur caractère plus ou moins formel, le niveau d'implication des acteurs (information vs consultation, négociation) et le moment d'intervention dans le processus de prise de décision (Gauthier *et al.* 2000: 19; Ministère wallon de l'Équipement et des Transports 2001: 4).

Une étude réalisée par ERM Nederland B.V. (2002) montre à cet effet que la participation du public peut être intégrée sous différentes formes (Cf. section 6.3) à différentes étapes du processus. Comme l'évoque un rapport (Gauthier *et al.* 2000 : 96) analysant la participation dans les processus d'ÉES établis au niveau de pays relativement avancés dans le domaine de l'ÉES (ex. : Canada, États-Unis, Australie occidentale, Nouvelle-Zélande, Pays-Bas) celle-ci semble toutefois être plus communément rencontrée aux étapes de cadrage et de révision.

Ces deux étapes se prêtent particulièrement bien à la participation. D'une part, le cadrage est l'occasion, pour l'initiateur du PPP de faire connaître au public (par information), les premières idées concernant le PPP à mettre en œuvre. Par sa fonction de structuration, le cadrage est également l'occasion de bénéficier des connaissances de représentants du public (ex. : ONG, groupes de pression) sur les différents enjeux, incidences, contraintes, alternatives qu'il pourrait être utile considérer dans le cadre de l'évaluation.

L'étape de révision est également une étape particulièrement appropriée pour une ouverture du débat en donnant au public l'opportunité de commenter le contenu du rapport d'évaluation, de se prononcer sur l'acceptabilité environnementale du PPP et sur différentes considérations environnementales (ex. : mesures de gestion des nuisances) qui n'auraient pas été considérées dans le rapport mais qui mériteraient peut-être d'être abordées.

Outre ces moments-clés, nous considérons que l'étape de suivi constitue également une occasion pertinente de prendre en compte les perceptions du public sur les effets réels de l'application du PPP. Telle que le démontre l'expérience des comités de suivi¹⁷ au Québec, ces derniers permettent non seulement aux participants de vérifier la justesse des évaluations environnementales réalisées mais servent également de lieu de concertation, voire de médiation, entre les initiateurs des activités (initiateurs des PPP, dans le cas de l'ÉES) et les citoyens (Gagnon *et al.* 2002 : 147).

Différentes modalités de participation sont d'ailleurs adoptées pour intégrer le public à l'ÉES. Celles-ci varient notamment en fonction des étapes du processus et des cultures de participation en vigueur dans les administrations.

¹⁷ Gagnon *et al.* (2002 : 13) définit les comités de suivi comme des « comités composés de divers groupes de participants (entreprises, élus locaux, citoyens, experts, fonctionnaires, groupes environnementaux, etc.) chargés d'assurer la mise en œuvre des programmes de suivi, de contrôle et de surveillance, voire de vigilance concernant l'environnement ».

6.3 Modes de participation utilisés

Les approches participatives utilisées en ÉES semblent évoluer avec les contextes de prises de décision qui caractérisent les administrations publiques depuis les dernières années. Il semble en effet y avoir, à l'échelle des administrations publiques, une certaine volonté d'ouvrir davantage les processus décisionnels et de rejoindre les préoccupations soulevées à différents niveaux en matière de gouvernance, de participation et de démocratisation (voir notamment Commission des Communautés européennes 2001).

Ainsi, bien que l'ÉES puisse se prêter à une multitude de démarches participatives (voir notamment ERM Nederland B.V. 2002 à ce sujet), il semble qu'elle ait consisté (du moins jusqu'au milieu des années 1990) à renseigner le public ou à consulter certains groupes concernés (Cf. section 6.1). Des consultations sélectives, prenant la forme d'invitations des groupes de pression, des représentants des collectivités locales et des autres groupes visés directement par un PPP étaient alors fréquemment utilisées (Gauthier *et al.* 2000 : 96).

À l'heure actuelle, les approches adoptées semblent être plus diversifiées. Elles se traduisent notamment par des consultations élargies sur internet, des audiences publiques, des procédures de résolution de conflits (ex. : médiation), etc. Dans le cadre du processus d'ÉES des négociations de la Zone de libre-échange des Amériques (ZLÉA) par exemple, le gouvernement fédéral canadien a organisé une consultation sur internet visant à permettre au public de soumettre ses commentaires concernant ladite évaluation (Ministère des Affaires étrangères et du Commerce international du Canada 2003). Dans le cas de l'ÉES du plan d'affectation de Bratislava (en Slovaquie), le public a été impliqué dans l'évaluation du plan au travers d'audiences publiques (ERM Nederland B.V. 2002 : 23). Ces audiences permettent aux citoyens d'exprimer leur opinion sur les incidences des activités envisagées par les pouvoirs publics. Enfin, en Nouvelle-Zélande, les méthodes de résolution de conflit et la médiation constituent des pratiques admises en matière d'ÉES. Celles-ci sont prévues notamment par la *Resource Management Act*¹⁸ (Dixon and Fookes, 1995 *In* Partidário, 1996, p. 49).

Ces exemples illustrent bien la diversité des approches existantes en ÉES. Ils ne permettent toutefois pas une analyse des points forts et des points faibles des approches adoptées, ni des modalités techniques selon lesquelles elles ont été appliquées. La littérature en matière d'ÉES est en effet relativement déficiente sur ces aspects. Ceux-ci mériteraient néanmoins d'être étayés davantage pour aider les administrations intéressées à sélectionner des approches participatives appropriées à leurs besoins et à leur contexte.

¹⁸ La Resource Management Act a pour objet de promouvoir une gestion durable des ressources à l'échelle de la Nouvelle-Zélande et prévoit, entre autres, certains dispositifs pour la réalisation de l'ÉES.

7 CONCLUSION

En cohérence avec l'objectif qui lui a été conféré *a priori*, ce rapport a dressé un état de l'art sur l'ÉES, en fonction d'une recension des écrits issus de documents techniques, gouvernementaux et de revues scientifiques du domaine. Tenant compte des composantes jugées utiles pour la réalisation du projet, cinq thématiques (portant sur la signification et les applications de l'ÉES, son contexte institutionnel, ses aspects administratifs et méthodologiques ainsi que son volet participatif) ont été abordées.

Celles-ci ont permis de donner un aperçu de la diversité des façons de faire dans le domaine et des tendances se dégageant de l'application de l'ÉES à des contextes de décision publique. Elles ont également permis de faire ressortir l'aspect encore peu circonscrit et peu délimité de l'ÉES.

En revanche, la revue de littérature n'a pas permis d'aborder en profondeur une série d'éléments qui auraient pu s'avérer utiles pour une compréhension plus précise du sujet. Ces éléments sont énoncés ci-dessous sous forme de pistes de recherche qu'il pourrait être intéressant de considérer dans le cadre de travaux futurs :

- 1) les expériences entreprises jusqu'à maintenant en matière d'ÉES gagneraient à être plus systématiquement soumises à une évaluation *ex post*. À l'heure actuelle, relativement peu de travaux ont été réalisés à cet effet, malgré l'importance de l'analyse *a posteriori* pour tirer des leçons de la pratique ;
- 2) le contexte institutionnel, administratif et participatif des administrations nécessiterait d'être mieux documenté. Une analyse précise d'une gamme variée d'ÉES (par la consultation de rapports gouvernementaux, l'envoi de questionnaire ou la réalisation d'entrevues) pourrait ainsi s'avérer utile pour mettre plus clairement en évidence les conséquences de l'introduction de l'ÉES dans les administrations, les ressources administratives et temporelles nécessaires à sa mise en place et les démarches de participation publique adoptées dans les expériences étrangères ;
- 3) enfin, vu l'élargissement de la portée de l'ÉES vers les considérations sociales et économiques (Cf. *section 2.1*), il pourrait être pertinent de s'attarder davantage aux différences et similarités entre l'ÉES et l'évaluation de la durabilité dans le but notamment d'en identifier les spécificités et les apports croisés éventuels.

Tenant compte de ces différents aspects, nous considérons que l'ÉES laisse encore le champ ouvert à plusieurs types de contributions théoriques et pratiques. Elle laisse toutefois derrière elle une série de connaissances utiles à considérer dans le cadre d'évaluations plus globales (telles que l'évaluation de la durabilité). Ainsi comme l'affirme Bina (2004 : 56) :

« Strategic environmental assessment (SEA), deemed a very promising step forward from Environmental Impact Assessment (EIA) in the late 1980s and early 1990s, now appears to have been superseded by a range of new processes and tools, which appear to respond more explicitly to the demand of integration (in its various interpretations) and sustainable

development...However, it is argued that, before embracing new solutions, we should seek to learn from experience of three decades of environmental assessment theory and practice, as this can help us to understand the nature of the problem that underlies our seemingly endless search for new processes and tools ».

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ANNEXE 1

BIBLIOGRAPHIE COMMENTÉE

Remarque : Les ouvrages choisis pour les fiches de lecture sont ceux qui nous semblent être les plus complets pour les composantes de l'ÉES abordées dans ce rapport (ex. : cadre institutionnel, aspects méthodologiques, démarches participatives)

Fiche de lecture

Référence bibliographique :

Dalal-Clayton B., Sadler B. (2004), *Strategic environmental assessment : an international review*. Final draft. London: International Institute for Environment and Development (IIED), London.

Nom de fichier / référence d'archivage:

http://www.iied.org/docs/spa/SEAbook/title_contents.pdf

Mots clés :

Évaluation environnementale stratégique (ÉES), état de la situation

Matières abordées – table des matières :

Revue des concepts de base de l'ÉES (termes, définitions, principes, intérêts et contraintes, etc.).
Revue des expériences menées en matière d'ÉES dans les pays développés, dans les pays en transition (ex. : pays de l'Europe de l'Est), dans la coopération au développement, et dans les pays en voie de développement.

Cadre géographique ou institutionnel :

International

Résumé :

Ce rapport porte principalement sur une présentation des approches utilisées par différents pays, organisations et agences d'aide au développement pour appliquer l'ÉES.

Les points suivants en reprennent les grandes conclusions (*ces dernières sont présentées dans leur langue d'origine pour une reproduction exacte des propos avancés dans le rapport*) :

- the development and implementation of SEA systems and elements represents the most striking trend in impact assessment during the past decade although its dimensions may not be fully appreciated;
- SEA comprises a family of processes and tools that individually and collectively are being applied to new aspects and areas, leading to continued extensions of the field that have procedural and methodological implications;
- the emergence of SEA symbolises and forms part of a more fundamental and potentially far-reaching change in approach, that of integrating the environment into the policy and planning mainstream in support of sustainable development;
- the initial phase of SEA development has been characterised by diversified arrangements, increasing adoption by countries and international agencies, and a steady extension in coverage of levels and types of decisions;
- a second phase of SEA development is underway, driven by supra-national and multi-lateral legal instruments;
- currently, a new, third phase, of SEA development in developing countries is being opened through the activities of international assistance and lending agencies;
- most developed countries now have SEA arrangements in place but many have yet to implement them and only a relatively small number have in-depth experience in this area. The

quality and effectiveness of much SEA practice remain questionable and increasing attention is being given to this area, although much more needs to be done;

- there is a strong planning tradition in countries in transition that has typically incorporated SEA elements and provided a sound basis for their further development, including the establishment of a new generation of SEA systems. There are significant variations between the systems in Newly Independent States and CEE countries. In the latter, in some cases, advances in SEA legislation and practice have been impressive, even by international standards;
- while much is happening at the level of international agencies, SEA at the domestic level in developing countries is best described as a mixed and difficult to interpret. Only a small number of developing countries have established recognisable SEA-type processes or elements, although many more have considerable experience of para-SEA processes;
- the quality and effectiveness of SEA are becoming subjects of increasing concern and attention for process administrators and practitioners, as evidenced by the discussion at the 8th Intergovernmental Policy Forum on Environmental Assessment, held in association with IAIA 2004 (Vancouver). Recent evaluation of SEA implementation, including work reported in this volume, have helped to clarify these concerns and identify ways and means of improving SEA procedure and practice. In summary, there are three main building blocks for improving SEA quality and effectiveness. First, strengthen the institutional arrangements that serve as quality "controls". At a minimum, these include procedural requirements and guidance to ensure compliance and consistency of implementation, "basics" that are lacking even in some well-established SEA systems. The main steps and elements of SEA process themselves provide means of quality assurance, particularly scoping, review of report quality, public comment, and monitoring and follow-up (which is widely recognised as lacking). Second, undertake reviews of SEA effectiveness and performance, using a systematic framework and criteria to evaluate the lessons of practical experience (learning by doing). This should apply both to the micro level of SEA of an individual policy or plan proposal and to the marco level of the implementing SEA systems. In both cases, the focus should be on the contribution of SEA to decision-making and, as far as possible, on the results achieved. Ultimately, the outcomes of the SEA process define how well it works and whether it meets its fundamental purpose(s). Third, promote SEA good practice through benchmarking standards and measures for carrying out the process and the main activities and elements. A start to this has been made already, notably through IAIA activities in specifying principles and performance criteria. In our view, this work now should be extended beyond the procedural and focus on environmental safeguards and required outcomes, i.e. substantive performance – at the end of the day, this is what really matters.

Analyse (points forts / points faibles):

Donne une bonne idée des initiatives prises en matière d'ÉES à l'échelle internationale. Vu le nombre d'administrations couvertes par l'étude, la description du fonctionnement de l'ÉES dans les expériences recensées (incluant les aspects institutionnels, méthodologiques) est toutefois relativement succincte.

Pertinent pour quelle partie de l'étude ?

Cadre institutionnel et procédural, aspects méthodologiques

Liens à établir avec (personnes, littérature, organismes...):

Barry Dalal-Clayton (IIED, Londres) et/ou Barry Sadler, actuellement conseiller international au REC – Regional Environmental Centre for Central and Eastern Europe (Plzen, République tchèque).

Fiche de lecture

Référence bibliographique :

European Commission. (1998), *Case studies on strategic environmental assessment: Final report*, vol. 2. Office for Official Publications of the European Communities, Luxembourg.

Nom de fichier / référence d'archivage:

Document sous format papier uniquement. Épuisé à l'Office des Publications Officielles des Communautés Européennes. Un exemplaire disponible au bureau de N. Risse.

Mots clés :

Évaluation environnementale stratégique (ÉES), études de cas.

Matières abordées – table des matières :

Description d'expériences d'ÉES entreprises dans les États Membres de l'Union européenne (en 1998)

Cadre géographique ou institutionnel :

Europe

Résumé :

Ce rapport décrit des études de cas entreprises dans certains États Membres de l'Union européenne en abordant différents thèmes récurrents, notamment : le contexte de l'ÉES (ex. : description de l'initiative – politique, plan, programme, sur laquelle l'ÉES est appliquée), le processus d'ÉES mis en place (incluant par exemple, la portée géographique de l'évaluation, les données utilisées pour réaliser l'ÉES, les acteurs impliqués, les objectifs environnementaux poursuivis, les méthodes utilisées pour réaliser l'évaluation environnementales, la forme sous laquelle l'ÉES est présentée à l'issue de la démarche d'évaluation, les délais et les coûts encourus par l'ÉES, la capacité organisationnelle, la motivation et l'expertise sous-jacentes à la réalisation de l'ÉES), les dispositions prévues pour la consultation et la participation du public (ex. : acteurs, délais et méthodes associés à la réalisation de la consultation et de la participation du public), l'intégration des résultats de l'ÉES et de la consultation/participation dans le processus de prise de décision (ex. : liens établis entre l'ÉES et les autres évaluations réalisées, hiérarchisation avec les autres niveaux d'évaluation environnementale, tels que l'évaluation environnementale de projets – ÉIE), l'évaluation globale de l'ÉES réalisée (ex. : coûts et bénéfices associés à l'ÉES).

Il a pour intérêt d'illustrer de façon relativement détaillée les particularités des expériences d'ÉES entreprises dans différentes administrations.

Analyse (points forts / points faibles):

Donne une vision assez complète de composantes méthodologiques et institutionnelles considérées pour la mise en œuvre de l'ÉES dans diverses études de cas.

Analyse partielle puisqu'appliquée à des cas issus du contexte européen uniquement.

Pertinent pour quelle partie de l'étude ?

Cadre institutionnel et procédural, aspects méthodologiques, aspects administratifs.

Liens à établir avec (personnes, littérature, organismes...) :

Client : Commission européenne (DG XI)

Réalisation : GOPA Consultants (Francfort), Universidade Nova de Lisboa (Lisbonne),
Mens en Ruimte (Bruxelles)

En collaboration avec : DHV Milieu en Infrastructuur (Amersfoort, Pays-Bas) et Tyréns
Infrakonsult (Sundbyberg, Suède).

Fiche de lecture

Référence bibliographique :

Gauthier M., Simard L., Waaub J.P. (2000), « Participation du public à l'évaluation environnementale stratégique ». *Les Cahiers de recherche de l'Institut des sciences de l'environnement (Université du Québec à Montréal)*, no. 2, 116 p.

Nom de fichier / référence d'archivage:

<http://www.bape.gouv.qc.ca/sections/mandats/prod-porcine/documents/dura.htm>

Voir rubrique : DURA 33

Mots clés :

Évaluation environnementale stratégique (ÉES), participation du public

Matières abordées – table des matières :

- Définition du cadre conceptuel de l'étude (définitions et objectifs de l'ÉES, typologie des approches d'ÉES, méthodes et pratiques d'ÉES, évaluation de l'efficacité de l'ÉES ; définition et objectifs de la participation du public, typologie des approches de participation).
- État de la situation en matière de participation du public à l'ÉES dans certains des pays apparaissant comme les plus avancés dans la pratique de l'ÉES.
- Analyse des modalités de participation établies dans les pays et juridictions décrites, en fonction du cadre conceptuel présenté au préalable.
- Recommandations relatives à la participation du public qui pourraient s'avérer utiles au contexte québécois (sur la base des informations recueillies et de l'analyse susmentionnée).

Cadre géographique ou institutionnel :

Amérique du Nord (Canada, États-Unis), Océanie (Nouvelle-Zélande, Australie Occidentale), Europe (Pays-Bas, Commission européenne). Recommandations élaborées spécifiquement pour le Québec.

Résumé :

Ce rapport présente une analyse des modalités de participation adoptées ou préconisées au Canada, aux États-Unis, en Nouvelle-Zélande, en Australie Occidentale, aux Pays-Bas et à la Commission européenne pour la réalisation de l'ÉES. Il fait principalement état des constats, dispositions originales et contraintes en matière de participation du public à l'ÉES, et identifie les dispositions qui pourraient être considérées pour la mise en œuvre d'une démarche d'ÉES à l'échelle du gouvernement québécois. Il évoque notamment que :

- la participation du public, lorsqu'elle a lieu, se fait, même de manière non officielle, dès l'étape de cadrage (détermination du champ de l'ÉES) et lors de la révision (examen externe) de l'étude d'incidences ;
- la pratique aux États-Unis, en Australie Occidentale, en Nouvelle-Zélande et aux Pays-Bas offre des exemples variés des avantages de la participation du public à l'élaboration de plans et de programmes, dont celle de permettre une implication des citoyens au moment de l'évaluation comparative des options ;
- dans les faits, la participation du public prend souvent la forme de consultations sélectives, sur invitation, auprès des groupes de pression, des représentants des collectivités locales et autres

- groupes directement visés par une politique, un plan ou un programme (PPP) ;
- peu d'efforts sont consacrés à accroître la participation aux différentes étapes du processus d'élaboration des PPP ;
- la variété des processus de planification et d'élaboration des PPP dans les ministères complique l'implantation d'une ÉES qui pourrait servir de modèle de référence.

Sur la base de ces aspects et des pratiques déjà établies en matière de participation du public au niveau du gouvernement québécois, le rapport propose de considérer, à l'échelle du Québec, une approche intégrée d'ÉES. Pour ce faire, il recommande d'inclure les principes de l'évaluation environnementale dans la formulation des PPP par l'identification des besoins, des enjeux et des options de développement évalués dans une perspective de développement durable, et d'intégrer la participation du public à deux moments principaux de la démarche : à l'étape de cadrage et à l'étape de révision.

En ce qui a trait à l'étape de cadrage, le rapport suggère d'opter pour une consultation sélective, sur invitation, auprès des principaux acteurs concernés, en s'inspirant entre autres des expériences novatrices en ce domaine aux États-Unis et aux Pays-Bas. En ce qui a trait à la révision, il propose de formaliser, par des dispositions légales, la démarche développée par le Bureau d'Audiences Publiques sur l'Environnement du Québec (BAPE)¹⁹, laquelle comprend une phase d'information et une phase d'audiences publiques en deux parties.

En outre, le rapport suggère de considérer différents moyens pour favoriser l'adoption de mesures visant à promouvoir une approche intégrée d'ÉES comme outil d'élaboration des stratégies ministérielles de développement durable, tels qu'un programme de promotion et de sensibilisation des ministères aux avantages de l'ÉES intégré à l'élaboration des PPP ; des modules de formation et d'éducation sur l'ÉES (formation des fonctionnaires, axé sur le développement des capacités) ; un programme de recherche et de développement comprenant l'élaboration de recueils sur les pratiques exemplaires en matière d'ÉES adaptés aux contextes nord-américain et québécois ; des études de cas portant sur des méthodes novatrices d'ÉES.

Enfin, le rapport suggère de réaliser des recherches supplémentaires sur la participation publique à l'ÉES, en particulier :

- de développer les connaissances sur les expériences étrangères par des études de cas plus précises (consultation des rapports gouvernementaux, questionnaires, interviews) ;
- d'améliorer le bilan des expériences d'audiences publiques du BAPE portant sur des politiques, notamment en développant une méthode d'évaluation de la portée réelle de ces consultations sur les décisions ;
- de mieux connaître les procédures d'élaboration des PPP existantes dans les ministères pour proposer des mesures plus adaptées aux principes du développement durable ;
- de faire l'évaluation de l'efficacité du programme d'aide financière permettant de soutenir la participation en tenant compte des études déjà réalisées sur cette question.

Analyse (points forts / points faibles):

Rapport innovant, axé sur une composante qui est peu abordée dans la littérature sur l'ÉES (les modalités de participation du public à l'ÉES).

¹⁹ Organisme ayant pour mission d'informer et de consulter la population sur des questions relatives à la qualité de l'environnement que lui soumet le ministre de l'Environnement afin d'éclairer la prise de décision gouvernementale.

Pertinent pour quelle partie de l'étude ?

Participation des acteurs sociétaux principalement.

Liens à établir avec (personnes, littérature, organismes...) :

Michel Crowley, Ministère de l'Environnement du Québec, Direction des évaluations environnementales.

Jean-Philippe Waaub, Université du Québec à Montréal, Département de géographie.

Fiche de lecture

Référence bibliographique :

Pacaut P. (2000), *Description et analyse des méthodes les plus fréquemment utilisées en évaluation environnementale stratégique*. Rapport de recherche présenté comme exigence partielle de la Maîtrise en sciences de l'environnement, Université du Québec à Montréal, Montréal.

Nom de fichier / référence d'archivage:

Document sous format papier uniquement. Disponible à la Direction des évaluations environnementales du Ministère de l'Environnement du Québec, auprès de Michel Crowley. Un exemplaire est disponible au bureau de N. Risse.

Mots clés :

Évaluation environnementale stratégique (ÉES), méthodes d'application

Matières abordées – table des matières :

- Définition du cadre général de l'ÉES (définitions et concepts, avantages et limites, processus général d'ÉES).
- Présentation des méthodes les plus couramment utilisées en ÉES et analyse comparative de ces méthodes.
- Conclusion et recommandations sur les méthodes qui pourraient servir à l'utilisation de l'ÉES au sein du gouvernement québécois.

Cadre géographique ou institutionnel :

International avec recommandations élaborées spécifiquement pour le Québec.

Résumé :

Ce rapport dresse un bilan des connaissances sur les méthodes les plus couramment employées en ÉES. Plus précisément, il identifie et décrit les méthodes les plus fréquemment utilisées en ÉES au niveau international²⁰, analyse leurs principales forces et faiblesses (sur la base de critères d'analyse préalablement identifiés) et propose quelques pistes de réflexion et d'action concernant leur utilisation éventuelle à l'échelle du gouvernement du Québec.

Les résultats de cette recherche montrent que chacune des méthodes analysées possède son lot de forces et de faiblesses, que ce soit en terme de ressources requises, de coûts et de délais d'application, de complexité de compréhension, de diversité d'application, de degré d'objectivité d'évaluation, de niveau de quantification (évaluation quantitative des incidences sur l'environnement) et de capacité d'analyse spatio-temporelle. Ils mettent en évidence que même si des améliorations sont souhaitables, les méthodes actuellement utilisées s'avèrent suffisamment souples, versatiles et développées pour assurer une pratique efficace et dynamique de l'ÉES.

²⁰ Listes de vérification, des matrices, de la revue de littérature et de la comparaison de cas, des avis d'experts, de la consultation publique, de l'élaboration de scénarios, des indicateurs, de la modélisation, des systèmes d'information géographique, de l'analyse coûts-avantages et de l'analyse multicritère.

Les résultats de la recherche mettent également en évidence la nécessité (pour le Québec) :

- de baser le choix des méthodes sur les critères de simplicité et de coûts (considérant le contexte de réduction des effectifs dans la fonction publique) tout en considérant d'autres facteurs tels que le niveau de généralités de la politique, du plan ou du programme (PPP), la nature des actions à évaluer, la portée, l'ampleur et l'importance des incidences à évaluer, les impératifs du processus décisionnel ainsi que le temps et les ressources disponibles pour l'évaluation ;
- de prévoir des programmes de formation des fonctionnaires aux méthodes plus complexes ou moins connues, de façon à favoriser une prise de décision éclairée quant aux choix de la méthode à utiliser ;
- de recourir à des bases de données intégrées pour réduire de façon substantielle les ressources nécessaires et la durée totale de l'ÉES ;
- d'entreprendre des recherches plus approfondies sur différents aspects des méthodes d'ÉES, tels que les nouvelles méthodes en émergence (entre autres, l'analyse du cycle de vie, l'analyse de l'impact cumulé, l'analyse de risques, etc.) ayant été utilisées avec succès dans différentes ÉES à travers le monde ;
- de réaliser des projets-pilotes d'ÉES au Québec à l'aide de méthodes diverses.

Analyse (points forts / points faibles):

L'étude aborde une description relativement détaillée des méthodes et présente leur application à des études de cas ; ce qui est relativement innovant dans le domaine de l'ÉES. Elle aurait toutefois lieu d'être complétée par des entrevues ou questionnaires avec les personnes (ou administrations) les ayant utilisées.

Pertinent pour quelle partie de l'étude ?

Aspects méthodologiques

Liens à établir avec (personnes, littérature, organismes...):

Michel Crowley, Ministère de l'Environnement du Québec, Direction des évaluations environnementales.

Fiche de lecture

Référence bibliographique :

Sheate W., Dagg S., Richardson J., Aschemann R., Palerm J., Steen U. (2001), *SEA and integration of the environment into strategic decision-making*. Vol. 1, Main report. Final report to the European Commission, DG XI.
Contract no. B4-3040/99/136634/MAR/B4, 112 p.

Nom de fichier / référence d'archivage:

<http://europa.eu.int/comm/environment/eia/sea-support.htm>

Mots clés :

Évaluation environnementale stratégique (ÉES), intégration, processus de décision.

Matières abordées – table des matières :

Identification des processus, des contextes institutionnels et des outils utilisés pour intégrer les considérations environnementales dans les processus de décision de différentes administrations étudiées à l'échelle européenne et ailleurs à l'étranger.

Analyse et identification des facteurs de succès pour intégrer les considérations environnementales dans les processus de décision, et du rôle que l'ÉES peut jouer à cet effet.

Cadre géographique ou institutionnel :

Européen principalement (l'étude inclut aussi l'analyse de quelques pays et institutions non membres de l'Union européenne, comme l'Australie, le Canada, la Nouvelle-Zélande, la Norvège, les États-Unis, la Banque européenne de reconstruction et de développement, la Banque Mondiale).

Résumé :

Ce rapport vise à décrire le contexte décisionnel ainsi que les facteurs à considérer pour une application efficace de l'ÉES en tant qu'instrument d'intégration des considérations environnementales dans le processus décisionnel des administrations. Il consiste spécifiquement à : 1) identifier et décrire les principaux modèles institutionnels, l'organisation structurelle et les mécanismes de communication utilisés pour intégrer l'environnement dans les processus de décision stratégiques ; 2) identifier les outils et les méthodologies permettant l'intégration des considérations environnementales dans les processus de décision stratégiques, ainsi que leurs relations avec l'ÉES ; 3) identifier les facteurs de succès et énoncer des recommandations pour l'application efficace de l'ÉES, et pour l'intégration de l'environnement dans les processus de décision.

Les conclusions du rapport portent sur les points suivants (*ceux-ci sont laissés dans leur langue d'origine pour une reproduction exacte des propos avancés*) :

Key success factors :

- SEA needs to be a transparent process that allows environmental considerations to be highlighted;
- successful SEA assesses the impacts of alternative options rather than option alternatives;
- widespread involvement of stakeholders, policy makers and the wider public is crucial for successful SEA;
- SEA needs to be a systematic process involving different institutions in a common reporting framework;
- the most successful SEA generally occurs where there is a legal obligation to require it;
- successful SEA involves wide use and dissemination of baseline and assessment information;
- an independent body that can review or audit the assessment process and content is needed to provide sufficient incentive to carry out SEA and accountability;
- successful SEAs have been the start rather than the end of a process of integration, and may be a catalyst for developing further guidance and training;
- successful SEA is an active, participatory and educational process for all parties, in that stakeholders are able to influence the decision-maker, and the decision-maker is able to raise awareness of the strategic dimensions of the policy, plan or programme;
- successful SEA is a continuing and iterative process in which the decision-maker is constantly being updated with the consequences of the implementation of the policy;
- successful SEA depends on high quality and rigorous application of assessment methodologies, whether qualitative, quantitative or both.

Recommendations :

- EIA-inspired or policy appraisal-inspired SEA, even if only partial, can provide a useful starting point for subsequent development into more extensive and integratory SEA ;
- a flexible form of SEA is needed at policy-making levels, and existing strategic processes should be examined for compatibility to the SEA process;
- SEA should be promoted as a means of changing attitudes and culture within organisations and government departments;
- the scope of SEA should not be unduly constrained, otherwise it will not be strictly strategic;
- effort should be concentrated on establishing appropriate communication processes and networks, and putting in place engines for change;
- a tiered approach of SEA should be adopted to help promote the integration of the environment into decision-making;
- auditing, monitoring and quality control should be an integral component of any SEA process;
- effectiveness of integration should be measured in the long term, rather than simply by short-term output and outcome performance measures;
- good SEA needs transparent and participatory processes and decisions;
- stakeholders and the public should be encouraged to think as strategically as possible, to help avoid the "hijacking" of the SEA by more parochial views;
- SEA and sustainability appraisal should be seen as complementary and not substitutes for each other;
- SEA can strengthen wider sustainability appraisal where it brings baseline information together with objective led assessment;
- the reasons for including certain socio-economic impacts, and to what extent, within SEA should be made explicit;
- there should be a named, senior individual responsible for the co-ordination and delivery of any SEA and also a named individual responsible for the communication of any SEA process;
- emphasis needs to be placed on "building the right team" of experts in any SEA or wider

appraisal;

- greater effort is needed to improve the quality of baseline information against which policies and options can be assessed;
- lessons should be learned from the implementation of the SEA Directive at plan and programme level for wider application to policies;
- guidance and training is essential to take forward SEA;
- mechanisms need to be developed within government departments and organisations to foster and retain “institutional memory”;
- guidance should be developed by the European Commission for carrying out SEA at the most strategic policy levels.

Analyse (points forts / points faibles):

Étude relativement exhaustive, portant sur une grande variété de pays européens et d'études de cas

Pertinent pour quelle partie de l'étude ?

Cadre institutionnel, intégration

Liens à établir avec (personnes, littérature, organismes...):

Rapport financé par la Commission européenne.

Réalisé par l'Imperial College Consultants Ltd (ICON) en collaboration avec :

- CESAM (Université d'Aarhus, Danemark)
- Babbie Allott & Lomax (Grande-Bretagne)
- Wissenschaftsladen Graz/Institut autrichien pour le développement de l'évaluation environnementale (ANIDEA), Autriche
- ECA (Espagne)

ANNEXE 2

EXPERTISE EN ÉES AU NIVEAU BELGE

Par ordre alphabétique

Nom	Adresse	Spécialités
Dimitri Devuyst	MEKO - GF Vrije Universiteit Brussel Laarbeeklaan 103 B-1090 Brussel Tel: 02 477 4934 Fax: 02 477 4964 E-mail: dimitri.devuyst@vub.ac.be	A travaillé sur un projet visant à formuler une méthodologie d'ÉES pouvant être adoptée par le Gouvernement flamand. A également travaillé sur l'évaluation de la durabilité.
Emmanuel d'Ieteren	Université Libre de Bruxelles IGEAT CP 130 / 02 Av. F. D. Roosevelt, 50 B-1050 Bruxelles Tél: +32 (0)2 650 4414 Fax: +32 (0)2 650 4324 E-mail: edieter@ulb.ac.be	Réalise une thèse de doctorat sur l'application de l'ÉES au secteur touristique.
Marianne Fernagut	UNEP/GRID-Arendal Longum Park Service Box 706 E-mail: marianne.fernagut@grida.no	A travaille avec Luc Hens sur un projet portant sur la proposition de lignes directrices pour l'application de l'ÉES aux notes stratégiques utilisées en matière de coopération au développement (projet financé par le Vlaamse Interuniversitaire Raad et la Direction Générale de la Coopération au Développement du gouvernement fédéral belge). Travaille actuellement pour UNEP/GRID-Arendal en Norvège.
Marie-Françoise Godart	Université Libre de Bruxelles IGEAT CP 130 / 02 Av. F. D. Roosevelt, 50 B-1050 Bruxelles Tél: +32 (0)2 650 43 28 Fax: +32 (0)2 650 43 24 E-mail: mfgodart@ulb.ac.be	A coordonné et réalisé différentes évaluations environnementales (de projets surtout) en Région wallonne et à en Région de Bruxelles-Capitale (principalement).
Luc Hens	Vrije Universiteit Brussel Vakgroep Menselijke Ecologie Laarbeeklaan 103 B-1090 Brussel Tel: 02 477 4281 Fax: 02 477 4964 E-mail: human.ecology@vub.ac.be	A coordonné et participé à plusieurs projets et travaux sur l'ÉES (a supervisé notamment les projets de Dimitri Devuyst et Marianne Fernagut mentionnés ci-dessus).

Nom	Adresse	Spécialités
Nathalie Risse	Université Libre de Bruxelles SMG CP 210/01 Boulevard du Triomphe B-1050 Bruxelles Tel.: 02 650 5505 Fax: 02 650 5970 E-mail : nrisse@ulb.ac.be	A collaboré aux travaux sur l'application de l'ÉES au niveau du gouvernement du Québec. A terminé une thèse de doctorat et est en voie de terminer un contrat portant sur des contributions méthodologiques pour l'application de l'ÉES aux processus de décision publics.
Pascal Van Ghelue	Ministry of Flemish Community AMINAL – Environment Administration Koning Albert II-laan 20 B – 1000 Brussels BELGIUM Tel: 02 553 8076 Fax: 02 553 8075 E-mail: pascaljm.vanghelue@lin.vlaanderen.be	A été impliqué dans la transposition de la Directive européenne 2001/42/CE (évaluation de certains plans et programmes sur l'environnement) au niveau de la Flandre.
Dick Van Straaten	Informatiesysteem MMIS MMIS-cel, Koningsstraat 93, bus 2, 1000 Brussel Tel: 02 2271471 GSM: 0476 505012 Fax: 02 2271475 E-mail: dick.van.straaten@milieuinfo.be Website: http://www.milieuinfo.be	A participé à quelques ÉES, dont celle de la ligne de TGV entre Anvers et Rotterdam et l'ÉES du plan-maître de transport de la Région flamande

L'ANALYSE D'IMPACT DE LA COMMISSION EUROPÉENNE
REVUE DE LA LITTÉRATURE ET ANALYSE DE CAS

Travail réalisé par Marco Wåktare
Centre d'Études du Développement Durable

dans le cadre du projet intitulé : « Exploration de la méthodologie et de la faisabilité
des évaluations stratégiques du développement durable (études d'impact des
décisions sur les développement durable – EIDDD)

Université Libre de Bruxelles

Décembre 2004

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MISE EN CONTEXTE ET STRUCTURE DU RAPPORT

Ce rapport est lié au projet de recherche financé par le Service Public Fédéral de Programmation Politique Scientifique sur l'exploration de la méthodologie et de la faisabilité des évaluations stratégiques sur le développement durable (études d'impacts des décisions sur le développement durable - EIDDD).

Il propose une revue de littérature sur les évaluations des incidences sur le développement durable. Il se concentre plus particulièrement sur celle employée par la Commission Européenne (Analyse d'impact, AI ou *impact analysis, IA*) et analyse également cinq cas. Ces cas permettront d'identifier les avantages et inconvénients de la méthode actuellement employée au sein de la Commission. Ce rapport vise ainsi à contribuer à l'une des tâches prescrites dans le projet de recherche susmentionné, à l'égard de l'analyse des évolutions récentes en matière d'évaluations sectorielles (tâche Ex 1.1.3 des spécifications techniques du projet). Il aborde plusieurs sections et est divisé en deux parties principales.

La première partie du rapport se concentre sur les aspects théoriques et donne également une description du contexte et du processus relatif à ces analyses d'impact. Dans cette partie, la première section décrit la méthodologie utilisée pour effectuer la revue de littérature et mentionne les types sources consultées. La seconde section présente de manière générale les évaluations des incidences sur le développement durable, par quelques définitions provenant de plusieurs auteurs. La troisième section décrit l'état de la situation au sein de la Commission, en faisant une distinction entre les analyses effectuées au sein des différentes Directions Générales et celles de la Direction générale Commerce. La quatrième section s'intéresse au contexte institutionnel et décrit brièvement les types d'analyses qui avaient lieu dans le passé au sein de la Commission. La cinquième section se focalise sur les aspects administratifs et le timing de ce type d'analyse. La sixième section s'attarde sur les aspects méthodologiques, en se concentrant sur les étapes du processus généralement mises en place, les acteurs fréquemment rencontrés et leurs rôles ainsi que les outils principalement utilisés. Finalement, la septième section porte sur les démarches participatives de l'analyse d'impact. Elle présente les processus de consultation établis par la Commission permettant de recueillir les avis des parties intéressées.

La deuxième partie du rapport se concentre sur l'analyse de cinq cas. La première section décrit la méthodologie employée pour ces cinq analyses d'impact, notamment la grille d'analyse utilisée. Elle donne également un commentaire sur le choix des cas repris et les limites de cette analyse. Les sections suivantes reprennent les étapes caractérisant l'analyse d'impact. La deuxième section propose une analyse des problèmes décrits dans les cinq cas. La troisième section se focalise sur l'analyse des objectifs tandis que la quatrième analyse la qualité des options proposées. La cinquième section observe la manière dont les impacts ont été analysés, et identifie les incidences les plus prises en considération. La sixième section se concentre sur les méthodes employées dans les rapports, et tente de voir

avec quelle fréquence elles ont été reprises. La septième section propose un commentaire sur les aspects de suivi mentionnée ou non dans ces documents. La huitième section mentionne brièvement les changements que la Commission entend apporter à la façon actuelle d'effectuer les analyses d'impact, elle se base sur une communication très récente, parue en octobre 2004¹.

Finalement, le travail se termine par une conclusion résumant les résultats trouvés. Cette partie formule également des critiques quant aux analyses d'impact de la Commission. La conclusion est suivie d'annexes portant sur la grille d'analyse employée dans les cinq cas observés, et inclut une analyse préliminaire type.

¹ Commission report on Impact Assessment: Next steps - In support of competitiveness and sustainable development SEC(2004)1377 of 21 October 2004.

PARTIE I : CONTEXTE ET DESCRIPTION DES ANALYSES D'IMPACT

1. MÉTHODOLOGIE

Cette première partie du travail est basée sur une revue de la littérature. Elle a comme objectif de proposer différentes définitions sur les évaluations des incidences sur le développement durable et de décrire ses objectifs. Par la suite elle se concentre sur les analyses d'impact existant au sein de la Commission européenne en faisant une distinction entre d'une part, les analyses d'impact effectuées dans les différentes Directions Générales et qui font l'objet de ce travail et d'autre part, les études de l'impact sur le développement durable de la Direction Générale Commerce.

Les sources utilisées pour la réalisation du rapport proviennent de nombreux documents de la Commission Européenne, des revues scientifiques spécialisées dans ce domaine, et de certains ouvrages sur les évaluations des incidences sur le développement durable ou de rapports sur le sujet. Il faut remarquer que peu de pays ou organisations ont à ce jour adopté de telles analyses d'impact et que les expériences sont relativement limitées. La Commission Européenne est parmi les acteurs les plus actifs dans ce domaine et a commencé à employer ce genre d'analyses en 2003.

2. PRÉSENTATION GÉNÉRALE DES ANALYSES D'IMPACT INTEGRES.

Les évaluations des incidences sur le développement durable sont relativement récentes et employées dans peu d'administrations à ce jour. Certains auteurs estiment qu'elles découlent des évaluations environnementales stratégiques. Cependant, vu leur caractère intégré, elles peuvent également avoir comme point de départ des analyses déjà existantes au sein des administrations auxquelles l'une ou l'autre dimension a été ajoutée. Quoi qu'il en soit, les évaluations des incidences sur le développement durable sont un concept assez large et les termes associés ne sont pas définis de manière stricte.

Afin de donner une première impression de ce genre d'analyse, la section suivante présente quelques définitions et les objectifs poursuivis par les évaluations des incidences sur le développement durable. La définition de l'analyse d'impact de la Commission Européenne sera remise dans un contexte plus large en incluant des définitions de la littérature scientifique. Le reste de cette première partie s'attardera ensuite uniquement sur les analyses d'impact de la Commission Européenne.

a) L'analyse d'impact de la Commission Européenne

La Commission Européenne, par sa communication de juin 2002², a introduit une nouvelle méthode intégrée d'analyse de l'impact, comme convenu lors des Conseils européens de

² Communication de la Commission sur l'analyse d'impact, COM (2002)276f final

Göteborg et de Laeken. Cette mesure fait partie du Plan d'action pour simplifier et améliorer l'environnement réglementaire³.

Cette analyse d'impact est maintenant appliquée au sein de la Commission Européenne depuis 2003. Elle marque un changement face aux analyses précédentes car elle intègre dans un seul instrument toutes les analyses sectorielles concernant les incidences directes et indirectes d'une mesure proposée.

Le terme « analyse de l'impact » utilisé par la Commission, se réfère à une analyse intégrée de l'impact. Elle prend en considération les incidences économiques, sociales et environnementales des principales initiatives de la Commission.

Dans son introduction, la communication de la Commission⁴ décrit l'analyse d'impact comme étant un instrument destiné à améliorer la qualité et la cohérence du processus d'élaboration des politiques. Elle veut contribuer à un environnement réglementaire efficace et performant ainsi qu'à une mise en oeuvre plus cohérente de la stratégie européenne de développement durable. La communication mentionne également que l'analyse d'impact identifie les effets positifs et négatifs probables des actions proposées, permettant ainsi de porter une appréciation politique sur la proposition en toute connaissance de cause. Elle prend également en compte les principes de subsidiarité et de proportionnalité.

b) Autres analyses d'impact

Cette description fournie par la communication de la Commission peut être comparée à la littérature scientifique. Il est important de remarquer que pour ce genre d'analyse intégrée, les termes et définitions abondent.

Ainsi, par exemple, Devuyst (2001, in Pope, 2004) définit les évaluations de la durabilité (*sustainability assessment*) comme :

“Sustainability assessment is. ..a tool that can help decision-makers and policy-makers decide what actions they should take and should not take in an attempt to make society more sustainable” (Devuyst, 2001).”

Verheem (2002, in Pope, 2004) utilise le même terme de « *sustainability assessment* », mais pour la définition suivante :

“The aim of sustainability assessment is to ensure that “plans and activities make an optimal contribution to sustainable development” (Verheem, 2002).”

³ Communication de la Commission, Plan d'action « simplifier et améliorer l'environnement réglementaire » COM (2002)278

⁴ Communication de la commission COM (2002)276 final

Le gouvernement britannique emploie des RIA (*regulatory impact assessments*), qui pourraient être traduits comme étant des évaluations des incidences réglementaires. Leur définition est la suivante⁵ :

“A Regulatory Impact Assessment (RIA) is a tool which informs policy decisions. It is an assessment of the impact of policy options in terms of the costs, benefits and risks of a proposal.”

Il a aussi effectué une étude sur les IPA (*integrated policy appraisals*), ou évaluation intégrée des politiques. La section développement durable du gouvernement britannique⁶ le définit comme étant :

“A good practice tool designed within Government to assess the potential impact of policy proposals by linking together a number of existing appraisal requirements and commitments which would otherwise need to be carried out separately.”

Comme le montre la quantité de définitions, il n'y a pas encore de consensus quant aux caractéristiques précises de ce genre d'analyse. Cependant, ces évaluations se situent généralement au niveau des politiques, plans et programmes et sont de nature intégrée, c'est-à-dire qu'elles considèrent les différents aspects du développement durable. Il faut remarquer que la majorité des évaluations actuellement utilisées font la distinction entre les incidences environnementales, sociales et économiques et sont de type ex-ante pour la plupart. La majorité inclut également les parties concernées dans une ou plusieurs étapes de l'analyse, soit sous forme de consultation ou dans certains cas de façon plus active, sous forme de participation.

3. ETAT DE LA SITUATION AU SEIN DE LA COMMISSION EUROPEENNE.

3.1. L'analyse d'impact

3.1.1. Contexte

La mise en oeuvre de l'analyse d'impact de la Commission a eu lieu, comme susmentionné en 2003. Lors de la première année de mise en œuvre de cette analyse d'impact, des 580 propositions incluses dans le programme de travail de la Commission, 43 ont été formellement identifiées pour subir une analyse d'impact approfondie. Cela représente environ 7% des propositions initialement incluses.

Sur le site de la Commission⁷, il est maintenant possible d'avoir accès aux analyses d'impact effectuées à ce jour, pour l'année 2004, plus d'une vingtaine de rapports sont déjà disponibles.

⁵ Better Policy Making: A Guide to Regulatory Impact Assessment, site visité en août 2004

<http://www.cabinet-office.gov.uk/regulation/docs/ria/pdf/ria-guidance.pdf>

⁶ <http://www.sustainable-development.gov.uk/sdig/integrating/whatis.htm>

3.1.2. Objectifs

L'analyse d'impact de la Commission comporte deux objectifs principaux clairement définis⁸ :

- L'analyse d'impact est un outil d'aide à la décision et ne remplace pas l'appréciation politique

« Elle est un instrument destiné à améliorer la qualité et la cohérence du processus d'élaboration des politiques. L'analyse doit permettre de porter une appréciation politique sur la proposition en toute connaissance de cause et d'identifier les compromis dans la réalisation d'objectifs concurrents. L'appréciation politique implique des considérations complexes qui vont bien au-delà des effets prévus d'une proposition. Une étude d'impact n'aboutira pas nécessairement à des conclusions ou à des recommandations claires et nettes. Elle constitue toutefois un apport essentiel en informant les décideurs des conséquences des choix politiques. »

- L'analyse d'impact est également un outil de communication efficace et appréciable.

« Les consultations des parties concernées susciteront un débat utile et fourniront des informations et une analyse riches d'enseignements. »

La communication ajoute également un point sur les aspects participatifs :

« Lors d'une analyse d'impact, la Commission veillera à recueillir un vaste éventail d'avis et fera preuve d'ouverture et de transparence dans le processus, comme le souligne sa communication sur les principes généraux et les normes minimales en matière de consultation. »

De plus cette analyse d'impact apporte un changement majeur face aux méthodes passées :

« L'analyse d'impact remplacera les exigences actuelles en matière d'étude de l'impact sur les entreprises, sur l'égalité entre hommes et femmes, sur l'environnement, sur les petites et moyennes entreprises, sur le commerce, la réglementation, etc. En fait, la nouvelle méthode d'analyse intégrée de l'impact s'appuie sur ces pratiques existantes et les incorpore dans le nouvel outil. »

L'analyse d'impact de la Commission se veut donc intégrée, emploie des méthodes participatives, ou du moins consultatives et est de type ex-ante, ayant pour but d'informer les décideurs des conséquences de leurs choix politiques.

⁷ http://europa.eu.int/comm/secretariat_general/impact/practice.htm

⁸ COM(2002)276

3.2. Les études de l'impact sur le développement durable

Il est important de remarquer qu'au sein de la Commission Européenne, la Direction Générale Commerce emploie sa propre analyse intégrée, à ne pas confondre avec l'analyse d'impact de la Commission. Cette analyse appelée « études de l'impact sur le développement durable » ou « évaluation de l'impact sur la durabilité » (EID) (*sustainable impact assessment, SIA*) est utilisée pour évaluer les négociations commerciales qu'elle entreprend avec des pays tiers. Les EID sont décrites de la manière suivante⁹ :

« Une EID s'inscrit dans le cadre d'un processus entrepris au cours d'une négociation commerciale visant à identifier les incidences économiques, sociales et environnementales d'un accord commercial. »

L'introduction de ce genre d'évaluation a eu lieu en 1999. Quand la Commission décida de mettre en pratique de telles évaluations, l'approche méthodologique et les bases devaient être développées du début car presque toutes les études se concentraient sur les aspects environnementaux du développement durable¹⁰. Ce type d'évaluation que la DG Commerce effectue avec des consultants externes s'étend sur différentes années et inclut des sujets complexes¹¹. Par exemple, une étude pilote consacrée à un sous-secteur agricole, les cultures vivrières, dans lequel des négociations ont été engagées en 2000 (agenda incorporé du cycle de négociations d'Uruguay) a été menée par le "Stockholm Environment Institute" en 2001-2002¹². Actuellement, des études en cours concernent les relations commerciales entre l'Europe et les pays ACP (Afrique, Caraïbes, Pacifique).

Selon la DG Commerce, les EID sont un moyen d'intégrer la durabilité dans les politiques commerciales européennes:

- En analysant les problèmes d'une négociation commerciale du point de vue du développement durable.
- En informant les parties de la négociation des conséquences sociales, environnementales et économiques possibles d'un accord commercial.
- En fournissant des lignes directrices aidant à l'élaboration de mesures d'accompagnement pour maximiser les incidences positives et réduire les incidences négatives des négociations commerciales en question.

⁹ Évaluation de l'impact sur le développement durable (EID) des accords commerciaux – Vers un commerce durable? Document de réflexion, Séminaire de la DG Commerce, Bruxelles, 6 et 7 février 2003

¹⁰ <http://europa.eu.int/comm/trade/issues/global/sia/background.htm>

¹¹ Évaluation de l'impact sur le développement durable (EID) des accords commerciaux – Vers un commerce durable? Document de réflexion, Séminaire de la DG Commerce, Bruxelles, 6 et 7 février 2003

¹² Stockholm Environment Institute, May 2002, Sustainability Impact Assessment of WTO negotiations in the major food crops sector. Final Report <http://www.sei.se/policy/SIA-Food.html>

Les EID fournissent également des indicateurs qui permettent à la Commission d'évaluer la manière pour atteindre les objectifs d'une politique commerciale durable.

L'objectif final des EID n'est pas d'évaluer l'opportunité d'une plus grande libéralisation à tous les niveaux mais plutôt de

- de fournir des éléments d'information des étendues possibles des incidences, permettant ainsi de s'assurer que les décisions finales soient optimales.
- d'accompagner et d'optimiser leur mise en oeuvre, ce qui est souvent essentiel pour la durabilité de l'accord.

A côté des avantages mis en avant par la Direction Générale Commerce, plusieurs parties concernées ont formulé des critiques. Le commissaire de l'époque était conscient des limites de telles analyses et des aspects nécessitant des améliorations (Lamy, 2003):

- Il n'y a pas de méthode uniforme spécifique pour les EID, et il y a encore des problèmes méthodologiques liés aux difficultés de modélisation du secteur de régulation, au manque de données ou à leurs incohérences.
- Les EID souffrent de problèmes de consultation, de collecte de données et les acteurs concernés ont du mal à consacrer les ressources nécessaires pour une consultation efficace.
- Certains partenaires commerciaux ne comprennent pas la démarche de la commission et la suspectent d'être protectionniste.

D'autres acteurs ont émis les critiques suivantes:

- Il y a peu de preuves concernant l'influence des EID dans la formulation des politiques commerciales. Il faut remarquer, cependant, le caractère mondial que peuvent prendre les négociations et la marge de manœuvre limitées des acteurs. Les EID des accords de partenariat économique sont parmi les plus compliquées en raison du vaste programme de négociations commerciales à examiner, de la dimension régionale et du manque de données pertinentes (Szepesi, 2003).
- Les scénarios n'incluent pas les cas où ne pas poursuivre les buts de libéralisation serait envisageables. Les EID proposent des mesures d'atténuation des incidences négatives (Epawatch, 2003).
- Le poids accordé aux EID dépend de la volonté des décideurs à les prendre en considération (Epawatch, 2003).
- Les EID ne sont formulées qu'après la formulation du mandat concernant les négociations commerciales, et l'analyse se limite à quelques scénarios déterminés (Szepesi, 2003).
- Les EID sont aussi parfois critiquées pour le manque de participation ou de consultation de certaines parties (Epawatch, 2003).

Le reste de ce rapport va se baser sur les analyses d'impact qui ont lieu dans toutes les Directions Générales de la Commission à l'exception de la DG Commerce.

4. CONTEXTE INSTITUTIONNEL

Avant d'employer cette nouvelle analyse d'impact, les Institutions Européennes, ont fait appel à différentes évaluations pour analyser leurs initiatives. Elles se limitaient à des analyses spécifiques et n'étaient pas intégrées.

La qualité de ces différents types d'évaluations était très variable au sein des Institutions, certaines étant très bien menées mais un grand nombre toujours beaucoup trop vagues pour permettre une bonne aide à la prise de décision. Une analyse des coûts et bénéfices était rarement menée et peu d'arguments étaient fournis pour justifier les avantages que les nouvelles politiques procureraient (European Policy Center, 2001). Les différentes évaluations sont brièvement décrites ci-dessous:

- Les évaluations budgétaires: Celles-ci identifient les impacts financiers d'une nouvelle mesure pour les institutions européennes. Les évaluations budgétaires sont encore d'actualité.
- Les évaluations des incidences sur les entreprises (*Business Impact Assessment, BIA*) avaient lieu lorsque des impacts importants touchaient des secteurs de l'économie. Ses objectifs étaient de ne pas mettre trop de pression législative sur les entreprises, stimuler le dialogue avec elles et informer le Conseil et le Parlement des incidences de nouvelles initiatives potentielles. Ce système d'évaluation fut mis en place en 1986 (Commission Européenne, Direction Générale Entreprises).
- Les évaluations d'incidences ex-ante ont aussi eu lieu à la Commission, à la fin des années 1990, à la DG SANCO (santé et protection des consommateurs), celles-ci concernent les incidences de nouvelles propositions de politiques sur les consommateurs.
- La DG Emploi a eu recours à des procédés pour estimer l'impact des dépenses des Fonds structurels sur l'emploi. Elle employa aussi des évaluations d'incidences sur l'égalité de traitement entre hommes et femmes (*gender impact assessment*), dès 1997.
- Les évaluations d'incidences environnementales, effectuées lorsque les conséquences environnementales d'une nouvelle mesure étaient jugées importantes. Elles concernaient les mesures sur les projets principalement et n'avaient jusqu'à il y a peu jamais atteint le niveau des politiques.

La nouvelle analyse d'impact vise à intégrer, renforcer, rationaliser et remplacer tous les mécanismes distincts d'analyse d'impact qui existent actuellement pour les propositions de la Commission. Elle s'applique aux initiatives majeures, c'est-à-dire celles qui sont présentées par la Commission dans sa stratégie politique annuelle ou dans son programme de travail.

Pour ce qui concerne le champ d'application de l'analyse d'impact, la communication de la commission (COM(2002)276) mentionne que :

« Un premier principe veut que toutes les propositions législatives et les autres propositions d'action de la Commission proposées pour la stratégie politique annuelle ou pour le programme de travail de la Commission dans le cadre du cycle de planification stratégique et de programmation fassent l'objet de la procédure d'analyse d'impact, pour autant qu'elles aient des incidences économiques, sociales et/ou environnementales potentielles et/ou que leur mise en oeuvre exige l'une ou l'autre forme de mesure réglementaire. Le critère de base est donc la présentation d'une proposition en vue de son incorporation dans la stratégie politique annuelle et/ou le programme de travail de la Commission. »

Un deuxième principe veut que, parmi les propositions présentées pour la stratégie politique annuelle ou le programme de travail, l'analyse d'impact soit requise uniquement pour:

- les propositions réglementaires telles que les directives et règlements,*
- sous une forme appropriée, les autres propositions telles que les livres blancs les programmes de dépenses et les orientations de négociation des accords internationaux qui ont un impact économique, social ou environnemental. »*

5. ASPECTS ADMINISTRATIFS

L'analyse d'impact est intégrée dans le cycle stratégique de planification et de programmation de la Commission. Les initiatives et propositions que les Directions Générales désirent inclure dans la stratégie annuelle en février ou plus tard dans le programme législatif en novembre sont en principe soumises à une analyse d'impact.

La Direction Générale définit comment le principe d'analyse proportionnée s'applique à l'initiative en question. L'unité en charge de la proposition va donc évaluer si une analyse d'impact est nécessaire et l'importance de l'analyse¹³. Pour ce faire, l'analyse débute par une analyse préliminaire.

a) L'analyse préliminaire

Il s'agit d'une note d'une ou deux pages. Elle comporte les problèmes à analyser par la proposition, les objectifs, les options non réglementaires et réglementaires et les incidences sociales, environnementales et économiques. La note doit mentionner si des actions au niveau européen sont nécessaires, selon les principes de proportionnalité et de subsidiarité. Les conclusions de l'analyse d'impact préliminaire devraient clairement indiquer si la Direction Générale menant l'analyse recommande une analyse plus poussée. Cette étape a lieu entre décembre et janvier.

¹³ cette section se base sur le document "Impact assessment in the Commission, guidelines".
http://europa.eu.int/comm/secretariat_general/impact/docs/ia_guidelines.pdf

En février, les analyses préliminaires sont à la disposition des autres Directions Générales pour des commentaires. Au cas où de nouvelles propositions seraient identifiées, les analyses préliminaires doivent être complétées le plus rapidement possible et envoyées au Secrétariat Général pour que celles qui nécessitent une analyse plus poussée soient identifiées dans les plus brefs délais.

Certaines propositions après cette analyse préliminaire, sont sélectionnées pour subir une analyse plus poussée appelée analyse approfondie (*extended impact assessment*). La communication de la Commission n'apporte malheureusement que peu d'information concernant ce passage d'une analyse à l'autre. Dans les faits, il se peut que cela passe par une phase de négociations, comme cela a eu lieu pour l'analyse d'impact de REACH, exclue puis incluse par la suite. Plus de détails sont fournis dans le point suivant.

b) L'analyse approfondie

La deuxième partie de l'analyse d'impact est constituée d'une analyse approfondie. La Commission décide dans sa stratégie annuelle ou dans son programme de travail quelles propositions nécessitent une analyse d'impact approfondie. Pour ce faire, la Commission prend entre autres les critères suivant en compte :

- Si la proposition provoquera des incidences environnementales, sociales ou économiques majeures sur certains secteurs et si la proposition aura des incidences majeures sur les parties intéressées ou
- Si la proposition représente une réforme politique majeure dans un ou plusieurs secteurs.

Les principes directeurs seront généralement les mêmes pour toutes les analyses d'incidences approfondies. Leur forme, contenu, volume et niveau de détail va cependant varier en fonction de la nature de la proposition et de son influence supposée.

La Direction Générale en charge de l'analyse d'impact organise l'exercice comme elle le désire mais est tenue responsable pour la pertinence et la qualité de l'analyse, la coordination avec les autres Directions Générales et le Secrétariat Général. La Direction Générale est responsable de l'information, consultation et coordination avec les autres Directions Générales intéressées, dès le début du processus. La Commission identifie, lors de l'adoption de la stratégie annuelle ou du programme de travail, les propositions qui nécessitent la coordination de l'analyse d'impact par un groupe inter service¹⁴. Il s'agit des initiatives qui ont des incidences potentielles dans beaucoup de secteurs ou qui sont jugées être très importantes par la Commission. Le Secrétariat Général coordonne la structure de support de base pour les analyses d'impact. Il effectue un contrôle des propositions soumises à ces analyses.

¹⁴ Cela a par exemple été le cas pour l'analyse de la réforme de la politique sucrière européenne.

Au plus tard en novembre, le rapport de l'analyse d'impact est soumis avec la proposition en question à la Commission pour son adoption finale. Après cela, l'analyse est envoyée aux autres institutions avec la proposition disponible sur le site de la Commission.

Voici un exemple concernant les délais d'une analyse d'impact approfondie, elle concerne la réforme de la politique sucrière de l'Union Européenne¹⁵.

- Identification des problèmes et des enjeux principaux: Mi-février 2003
- Identification des options: Fin février 2003
- Identification des impacts : Début Mars 2003
- Consultation des stakeholders: Mars à juin 2003
- Evaluation des impacts: Mi mai 2003
- Rapport final : Fin juillet 2003.

6. ASPECTS MÉTHODOLOGIQUES

6.1. Processus (étapes généralement rencontrées)

Comme susmentionné, le processus d'analyse d'impact de la Commission comporte deux phases, une analyse préliminaire et une analyse approfondie.

a) L'analyse d'impact préliminaire¹⁶ :

L'analyse préliminaire fait office de filtre qui permet d'identifier les propositions qui feront l'objet d'une analyse d'impact approfondie. La décision de la Commission confirmera la sélection des principales propositions en vue des analyses d'impact approfondies dans la stratégie politique annuelle.

La première phase d'analyse débouchera sur un compte-rendu succinct axé sur les principaux facteurs suivants:

- identification du problème / des objectifs et du résultat souhaité;
- identification des principales possibilités d'action disponibles pour atteindre le but poursuivi, compte tenu des principes de proportionnalité et de subsidiarité et d'indications préliminaires sur l'impact attendu;
- description des travaux préparatoires déjà entrepris et prévus en indiquant si une analyse d'impact approfondie est nécessaire.

¹⁵ Commission staff working paper, reforming the European Unions's sugar policy, summary of impact assessment work, SEC(2003) 1022, Brussels, 23.9.2003

¹⁶ En Annexe, le format employé pour l'analyse préliminaire

b) L'analyse d'impact approfondie

La Commission décide, sur base des analyses préliminaires, des propositions qui nécessiteront une analyse approfondie dans sa stratégie politique annuelle ou, au plus tard, dans son programme de travail pour l'année suivante. Les analyses d'impact devraient comporter les parties suivantes¹⁷.

Etape 1 : Analyse du problème

La première étape du processus d'analyse d'impact concerne l'identification et l'analyse du ou des problèmes dans un ou plusieurs domaines. Le ou les problèmes doivent être décrits en termes économiques, sociaux et environnementaux. Ils sont exprimés le plus concrètement possible en termes qualitatifs, quantitatifs et, si possible, monétaires. La communication mentionne également qu'il est nécessaire de déterminer l'urgence de l'action et tout risque lié à la situation initiale. Il est aussi primordial de fournir une description précise et objective des liens de causalité.

Etape 2 : Identification de l'objectif

Sur la base de l'analyse du problème, les objectifs d'action seront exprimés en termes de résultats escomptés dans un délai donné.

Etape 3 : Identification des options possibles.

Pour atteindre les objectifs fixés lors de l'étape précédente, différentes options devraient être formulées, dès les premiers stades de la rédaction des propositions. De plus, les principes de subsidiarité et de proportionnalité doivent être pris en compte à ce stade de l'analyse. L'auteur de l'analyse doit préciser pourquoi le problème doit être traité au niveau européen et quelle est la valeur ajoutée de l'intervention communautaire par rapport à l'absence d'action réglementaire ou à une action par les États membres.

Le scénario "politique inchangée" doit, selon les lignes directrices de la Commission, toujours figurer dans l'analyse comme point de référence dans la comparaison avec les autres possibilités. Dans la majorité des analyses d'impact, en pratique, le nombre d'options proposées varie entre 2 et 4, avec une préférence marquée pour l'une d'entre elles. Certains rapports ne proposent directement qu'une seule option.

¹⁷ Annexes de la communication de la Commission, Com (2002)276

Etape 4 : Analyse de l'impact.

Pour la possibilité d'action choisie et, si possible, pour les autres options retenues, il y a lieu d'examiner toutes les incidences positives et négatives correspondantes et d'en faire état dans l'analyse d'impact, en insistant sur leurs dimensions environnementales, économiques et sociales. Ce processus comporte deux phases: les incidences concernées sont d'abord identifiées et ensuite évaluées ensuite en termes qualitatifs, quantitatifs et monétaires si possible.

a) Identifier les effets ("*screening*")

L'analyse d'impact doit identifier l'impact direct et indirect des possibilités d'action retenues. Dans la mesure du possible, l'impact identifié est exprimé en termes économiques, sociaux et environnementaux. La principale tâche de cette partie consiste à déterminer tous les effets (positifs et négatifs) pertinents. En fonction du problème concerné, il est important de préciser quels groupes sociaux, quels secteurs économiques ou quelles régions sont concernés par un effet donné.

b) Évaluer l'impact ("*scoping*")

Pour effectuer l'évaluation des impacts. Les personnes en charge de l'analyse peuvent employer différentes méthodes. Le choix de la méthode et le niveau de détail varieront en fonction de la nature du problème et des avis en matière de faisabilité. Il est souhaitable cependant de quantifier les impacts en termes matériels et, le cas échéant, en termes monétaires (en plus de l'appréciation qualitative). Cela facilite la comparaison entre les différents impacts et permet d'identifier les compromis.

L'analyse de l'impact doit avant tout se concentrer sur les impacts qui sont susceptibles d'être les plus significatifs et/ou auront des effets de répartition importants. Il faut les replacer dans une dimension temporelle (impact à court, moyen et long terme).

Etape 5. Mise en œuvre, suivi et évaluation ex-post

L'analyse d'impact est sensée identifier toutes les difficultés éventuelles dans la mise en oeuvre des options évaluées et décrire comment elles seront prises en compte. Certaines analyses d'impact proposent des indicateurs de suivi dans le rapport.

6.2. Acteurs principalement rencontrés et rôles associés

La Direction Générale compétente

Normalement, c'est elle qui conduit l'analyse approfondie en informant le Secrétariat général et en faisant intervenir d'autres Directions Générales lorsque la proposition est susceptible de les concerner.

Le groupe interservices

Dans certains cas, la Commission peut décider que, pour les propositions qui ont un fort impact intersectoriel et sont de la plus haute importance politique, la Direction Générale responsable de l'analyse d'impact soit assistée par un groupe interservices, qu'en principe elle préside et qui comprend les Directions Générales les plus concernées et le Secrétariat général.

Le groupe interservices a pour tâche de définir la portée de l'analyse approfondie, d'en suivre l'avancement et de superviser la réalisation des rapports d'analyse d'impact pour les propositions transversales.

Le Secrétariat Général

Le Secrétariat général coordonne la sélection et le suivi des propositions qui font l'objet d'une analyse d'impact approfondie. Il coordonne également la délivrance des documents d'orientation, l'organisation de la formation, l'échange de bonnes pratiques et contrôle la qualité finale des analyses d'impact effectuées.

Les consultants

Lorsque cela s'avère nécessaire, la Direction Générale en charge de l'analyse d'impact peut faire appel à des consultants externes pour certaines parties de l'analyse qui peuvent s'avérer plus techniques.

Les stakeholders

La Commission demande également l'avis des différentes parties concernées par l'initiative en question. Elle recourt généralement à des consultations ouvertes par internet, où les parties intéressées répondent à un questionnaire en ligne. Parfois, des auditions ont également lieu.

6.3. Outils fréquemment utilisés

Pour toute analyse d'impact, les responsables devraient être en mesure, à la fin de l'exercice, de répondre aux cinq questions suivantes :

- Quel est le problème à résoudre ?
- Quels sont les objectifs ?
- Quelles sont les options disponibles ?
- Quels sont les impacts des différentes options proposées ?
- Quels sont les avantages et les inconvénients des différentes options ?

Il n'y a pas de méthode unique pour répondre à ces questions, l'intensité et la nature des incidences détermine l'ampleur des efforts à fournir. De même, la qualité des données disponible et l'expérience des personnes en charge de l'analyse influencent le choix des méthodes à utiliser.

Pour donner un aperçu des méthodes employées par la Commission pour effectuer les analyses d'impact, le tableau suivant est employé. Il s'inspire principalement de Pacaut (2000) et de Risse (2004), certains éléments ont été repris des annexes de la communication de la Commission sur l'analyse d'impact. Les méthodes mentionnées en premier lieu sont plus simples ou plus faciles à employer, bien que dans la deuxième partie du tableau, ce classement est plus relatif. Il faut aussi préciser que dans une analyse d'impact, une méthode n'exclut pas l'autre et que les auteurs des rapports en ont toujours employées au moins deux ou trois.

Méthode	Principaux avantages	Principaux inconvénients
1. Revue de littérature et comparaison de cas Recensement d'ouvrages spécialisés et de rapports pertinents.	<input type="checkbox"/> Emploi de sources d'information disponibles. <input type="checkbox"/> Méthode simple, rapide et peu coûteuse	<input type="checkbox"/> La méthode peut s'avérer coûteuse en cas d'achat de rapports et autres documents <input type="checkbox"/> Données existantes inappropriées dans certains cas car produites à d'autres fins.
2. Liste de vérification (checklist) Liste spécifique d'incidences potentielles de type économique, environnemental ou social d'une politique, plan ou programme (PPP).	<input type="checkbox"/> Simple à utiliser et permet d'identifier des incidences que l'on aurait pu oublier car en dehors des sujets de compétence de son utilisateur. <input type="checkbox"/> Versatile (peut s'appliquer à de nombreuses étapes du processus) <input type="checkbox"/> Demande peu de ressources humaines et matérielles <input type="checkbox"/> Peu coûteux	<input type="checkbox"/> Omission d'incidences ou d'actions lorsque ceux-ci ne sont pas inscrits sur la liste. <input type="checkbox"/> Identification sans évaluation (quantitative ou qualitative) des incidences. <input type="checkbox"/> Ne donne pas une structure cohérente et systématique, doit être complétée par d'autres outils.
3. Matrice d'incidences Grille identifiant les interactions entre les actions découlant d'un PPP et les éléments de type	<input type="checkbox"/> Peu coûteux <input type="checkbox"/> Simple à employer <input type="checkbox"/> Permet de structurer l'identification des incidences les plus importantes	<input type="checkbox"/> Peut entraîner un double comptage des incidences <input type="checkbox"/> Ne permet pas de distinguer les impacts directs des impacts indirects.

environnemental, social ou économique susceptibles d'être affectés par les actions.		
4. Méthodes de dialogue Méthode considérant les utilisateurs ou stakeholders concernés comme étant une source d'information nécessaire pour effectuer l'évaluation.	<input type="checkbox"/> La Commission emploie ces méthodes via internet relativement facilement <input type="checkbox"/> Si les avis sont publiés, cela accroît la transparence du procédé d'évaluation	<input type="checkbox"/> Parfois la gestion des informations peut s'avérer difficile <input type="checkbox"/> Il peut être difficile d'avoir une bonne répartition par type de stakeholder
5. Avis d'experts Sollicitation d'opinions de spécialistes identifiant et évaluant les incidences.	<input type="checkbox"/> Largement utilisé dans différents types d'évaluation <input type="checkbox"/> Souple <input type="checkbox"/> Versatile (application à de nombreuses étapes du processus d'évaluation)	<input type="checkbox"/> certains experts consultés peuvent être coûteux ou rares <input type="checkbox"/> Résultats peuvent manquer de crédibilité <input type="checkbox"/> Subjectivité et biais possibles
6. Analyse coûts-efficacité Méthode de calcul des coûts nécessaires pour atteindre un objectif, permettant ainsi la comparaison des coûts de différentes options	<input type="checkbox"/> Permet une approche plus aisée pour la mesure des avantages que la méthode coûts-bénéfices. <input type="checkbox"/> Utile pour comparer des alternatives supposées mener au même résultat.	<input type="checkbox"/> Ne résout pas le choix du niveau optimal des bénéfices <input type="checkbox"/> Se concentre sur un type de bénéfice (l'effet escompté de la mesure) en excluant les autres effets
7. Analyse coûts-bénéfices Méthode d'identification et d'évaluation des coûts et bénéfices de nature économique, sociale et environnementale permettant d'effectuer des comparaisons entre les différentes options.	<input type="checkbox"/> Prend en compte les incidences positives et négatives <input type="checkbox"/> Permet le classement des différentes options	<input type="checkbox"/> Difficulté d'inclure des incidences sans données quantitatives <input type="checkbox"/> Peut être coûteux et long à effectuer <input type="checkbox"/> Des problèmes de distribution des incidences pourraient être oubliés
8. Analyse multicritère Méthode combinant une étendue d'incidences positives et négatives dans une même structure pour permettre une comparaison plus aisée des scénarios ou de mesures. On estime chacune des incidences positives et négatives à l'aide de cotes individuelles. On pondère ensuite les résultats de l'évaluation des incidences pour procéder enfin au classement des différentes options.	<input type="checkbox"/> Permet d'évaluer tous les types d'incidences <input type="checkbox"/> Permet une présentation claire des problèmes clés et identifie les compromis.	<input type="checkbox"/> Niveau élevé de ressources matérielles (informatique) et humaines <input type="checkbox"/> Technique souvent perçue comme complexe <input type="checkbox"/> Méthode incluant des éléments subjectifs, spécialement dans l'étape de pondération
9. Modélisation Représentation simplifiée, souvent mathématique, des éléments ou processus d'un système donné. Permet de simuler de façon quantitative	<input type="checkbox"/> Très utile pour l'évaluation temporelle des incidences <input type="checkbox"/> Apporte un degré élevé de détail à l'évaluation <input type="checkbox"/> Utile pour l'élaboration des scénarios	<input type="checkbox"/> Méthode onéreuse <input type="checkbox"/> Généralement complexe à concevoir et à utiliser <input type="checkbox"/> Méthode demandant beaucoup de données <input type="checkbox"/> Nécessite une formation et une expertise poussées

les changements de l'environnement avec ou sans le PPP proposé.		<input type="checkbox"/> Difficulté d'adaptabilité et de reproductibilité à d'autres cas
10. Élaboration de scénarios Méthode permettant de cadrer des possibilités incertaines d'évolution de systèmes. Dans ce cas, on le reporte au niveau des PPP.	<input type="checkbox"/> Permet d'intégrer des informations qualitatives et quantitatives <input type="checkbox"/> Faciles à communiquer à des « non-scientifiques » <input type="checkbox"/> Peut inclure l'opinion des stakeholders dans sa conception	<input type="checkbox"/> Évaluations lourdes si les scénarios sont trop détaillés <input type="checkbox"/> Le pouvoir prédictif diminue avec des horizons de temps plus longs et une complexité croissante

7. DÉMARCHES PARTICIPATIVES

Un des objectifs principaux des analyses d'impact est de stimuler la communication avec les différents stakeholders. Les consultations des parties concernées sont, selon la Commission, une bonne occasion pour fournir des informations intéressantes sur le problème en question et les options proposées, pour rassembler des données sur les incidences possibles et pour valider les informations et analyses existantes¹⁸.

La Commission renvoie les responsables des analyses d'impact à sa communication sur les principes généraux et les normes minimales en matière de consultation¹⁹ et sur l'obtention et l'utilisation d'expertise par la Commission²⁰. Elle ne donne pas beaucoup de détails quant à la manière à suivre dans ce type d'analyse. Elle ajoute que :

« Le processus de consultation doit permettre un débat sur des questions plus vastes telles que les aspects éthiques et politiques. Les principaux résultats de cette consultation doivent être résumés dans le rapport d'analyse d'impact. »

Parmi les analyses effectuées par les différentes Directions Générales, beaucoup d'entre elles ont mis en place des consultations internet pour demander l'avis des différentes parties touchées par les initiatives. Des auditions entre les responsables de l'analyse et toutes les parties concernées par les initiatives proposées par la Commission ont eu lieu dans moins de cas. Certaines Directions Générales qui ont réalisé des auditions n'ont pas mélangé les différents types de parties, préférant les rencontrer séparément. Les résultats des consultations internet sont souvent résumés dans les rapports de l'analyse. Pour de plus amples informations, les auteurs renvoient le lecteur vers le site de la Commission car il est possible de consulter les commentaires reçus.

¹⁸ Annexe "how to do an impact assessment" de la communication de la Commission sur l'analyse d'impact

¹⁹ COM(2002)277 Document de consultation : vers une culture renforcée de consultation et de dialogue - proposition relative aux principes généraux et aux normes minimales applicables aux consultations engagées par la Commission avec les parties intéressées

²⁰ COM(2002)713 Communication de la Commission sur l'obtention et l'utilisation d'expertise par la Commission: Principes et lignes directrices. "Améliorer la base de connaissances pour de meilleures politiques"

Il est difficile de comprendre comment les Directions Générales sélectionnent les parties concernées en cas d'organisation de réunions relatives à l'analyse d'impact. La communication reste floue à ce sujet et préfère se reporter aux normes minimales de consultation. On remarque également que la Commission a opté pour des processus de consultations et non pas de participation des parties concernées.

PARTIE II : EVALUATION DE CINQ ANALYSES D'IMPACT

1 MÉTHODOLOGIE

Cette deuxième partie du document se concentre sur cinq analyses d'impact effectuées par différentes Directions Générales entre 2003 et 2004. Le but de cette partie est d'analyser le contenu de ces évaluations, d'identifier à quel point les consignes de la communication sont effectivement suivies et de mettre en évidence les aspects à améliorer dans les analyses qui seront entreprises dans le futur. Les conclusions et critiques des cas observés ainsi que de l'analyse d'impact de la Commission se trouvent à la fin du travail.

Quatre évaluations²¹ et une évaluation non encore finalisée²² ont donc été sélectionnées pour effectuer une analyse²³. Il s'agit de:

- "Reforming the European Union's sugar policy", Summary of impact assessment work, Brussels, 23.9.2003, SEC(2003) 1022, (DG AGRI)
- "Regulation of the European Parliament and of the Council concerning the registration, evaluation, authorisation and restrictions of chemicals (REACH) establishing a European Chemicals Agency and amending directive 1999/45/EC and regulation (EC) {on Persistent Organic Pollutants}." Extended Impact Assessment, Brussels, 29.10.2003, SEC(2003) 1171, (DG ENV)
- "Proposal for a Council Regulation establishing measures for the recovery of the Southern hake stock and the Norway lobster stocks in the Cantabrian Sea and Western Iberian waters (ICES divisions VIIIc and IXa)." Extended Impact Assessment, Brussels, 23.12.2003, SEC(2003) 1481, (DG FISH)
- "Proposal for a Directive of the European Parliament and of the Council establishing an infrastructure for spatial information in the Community (INSPIRE)". Extended Impact Assessment, Brussels, 23.7.2004, SEC(2004) 980 (DG ENV)

L'évaluation non encore finalisée s'intitule:

- "Report on the combined extended impact assessment and the ex-ante evaluation for a programme of community support for entrepreneurship and enterprise competitiveness". Draft, Brussels, 26.7.2004. (DG ENTR)

²¹ Tous ces documents sont maintenant disponibles sur le site :

http://europa.eu.int/comm/secretariat_general/impact/practice.htm

²² L'évaluation de PACE n'est pas encore finalisée car il se pourrait que ce programme financier soit regroupé dans un programme plus important, en décembre 2004, les décisions finales n'étaient pas encore prises.

²³ En Annexe, un tableau reprend les analyses d'impact effectuées à ce jour.

Ces cinq évaluations ont été sélectionnées sur base des documents disponibles, et en essayant d'obtenir une bonne répartition entre les différentes Directions Générales impliquées. De plus, ces évaluations concernent des thèmes qui normalement ont des incidences sur plus d'un pilier du développement durable. Le dernier rapport (évaluation de PACE) se limite plus à des incidences économiques mais a été repris grâce à l'opportunité de consulter certains documents internes qui ont permis son élaboration. Les évaluations concernant INSPIRE et la réforme du sucre ont aussi été choisies car elles sont jugées être de bonne qualité (Wilkinson et al., 2004). L'évaluation menée par la DG Pêche a été sélectionnée car elle est considérée de qualité médiocre. De cette façon, il est possible de voir les contrastes entre les rapports.

Pour analyser ces différentes évaluations, une grille d'analyse a été réalisée. Elle se base sur les documents officiels de la Commission, plus particulièrement sur le format indicatif du rapport d'analyse d'impact approfondie, qui est l'annexe 3 de la communication de la commission COM (2002) 276 final. Elle s'inspire aussi du questionnaire que l'IEEP a employé pour effectuer ses analyses de cas (Wilkinson et al., 2004). Cette grille a la fonction d'une liste de vérification et met en évidence les points forts et les lacunes des évaluations d'impacts, elle est présentée et expliquée plus en détail dans les annexes.

Ce travail se base sur cinq cas analysés, il est évident qu'un plus grand nombre de cas aurait apporté une vision plus précise des caractéristiques de cette analyse d'impact. Néanmoins, les cas sélectionnés sont très variés, proviennent de différentes Directions Générales et sont de qualité variable. De cette façon, il est possible d'identifier leurs propriétés majeures et de formuler des critiques. Ces dernières sont reprises à la fin de cette deuxième partie.

Les sections suivantes vont aborder les différentes étapes de l'analyse d'impact. Pour chaque étape, un tableau reprend différentes caractéristiques reprises ou non dans les 5 analyses d'impact. Cela fournit un aperçu clair et synthétique et permet également de comparer les 5 cas entre eux.

2 ANALYSE DU PROBLEME

	Sucre	REACH	Poissons	INSPIRE	PACE
Description du problème	Détaillée, qualitative et chiffrée pour les exportations importations	Limitée à ½ page, peu détaillée	Pas fournie dans une section	Bien décrit, problèmes majeurs résumés	Différents problèmes longuement décrits et chiffrés
Facteurs de tension	Détaillés, qualitatifs	Peu détaillés ici, repris dans les impacts	Repris dans les impacts	Expliqués	Pas vraiment le cas, protection de la compétitivité

Groupes touchés	Identifiés dans et hors UE	Pas dans cette partie	Repris dans les impacts	Repris dans les impacts	Concerne les PME
Tendances non durables	Identifiées, surtout focalisé sur les aspects économiques	En arrière-plan dans la suite du rapport	Mentionnées sans preuves, de manière qualitative	Ne concerne pas cette analyse	Ne concerne pas cette analyse
Considérations économiques	Prépondérantes	Prépondérantes	Importantes	Importantes	Prépondérantes
Considérations environnementales	Secondaires	Secondaires	Prépondérantes	Importantes	Mineures
Considérations sociales	Secondaires mais plus que les environnementales	Secondaires	Relativement importantes	Secondaires	Secondaires
Description de la situation actuelle	Détaillée et chiffrée	Peu détaillée, description de l'industrie par la suite.	Peu de données pour décrire le problème	Détaillée, qualitative	Détaillée, reprise par sections comparaisons UE US Japon

1) La réforme de la politique du sucre

L'analyse d'impact de la réforme du sucre donne une description détaillée commençant par une présentation de l'industrie sucrière et de son économie, ensuite le rapport décrit l'organisation commune du marché (OCM) et les facteurs de tension touchant les différents groupes impliqués. Concernant les tendances non durables, on insiste avant tout sur l'aspect économique de l'OCM, bien que les pays ACP et la situation des agriculteurs soit mentionnée tout comme les pressions environnementales d'une culture extensive. L'analyse permet d'identifier les parties les plus touchées par les mesures de l'OCM.

2) REACH

La section décrivant le problème que REACH doit résoudre est limitée à une demi page. Le rapport prend comme point de référence le livre blanc de 2001 sur la stratégie future de la politique concernant les produits chimiques. Les problèmes de la législation actuelle sont succinctement décrits dans cette première partie. Ils sont mentionnés sans donner de preuves concrètes, peu de détails sont fournis. Ils ne donnent aucun détail quant aux acteurs touchés, on ne mentionne pas de tendances non durables.

3) Protection des stocks de merlu et de langoustines

L'analyse d'impact commence par la description des objectifs, ce n'est que plus tard dans le rapport que le problème est très brièvement décrit, dans la justification de la proposition. On donne pour certain le mauvais état des stocks de langoustines et de merlu dans la région, sans donner beaucoup de preuves ni les sources. Une comparaison avec la biomasse de stocks de 1984 est fournie.

4) INSPIRE

Le rapport décrit en plus de trois pages le problème, d'abord dans un contexte global expliquant la situation actuelle au niveau des pays européens, ensuite en présentant une liste de problèmes majeurs. Le document fournit aussi les problèmes identifiés lors d'une étude antérieure avec des exemples. Pour comprendre qui est atteint par la situation, les avantages et inconvénients de INSPIRE, il faut cependant se reporter à une autre section, décrivant les différentes parties concernées.

5) PACE

Le rapport décrit longuement les problèmes des entreprises européennes, avec une attention particulière aux aspects économiques. On perçoit qu'une multitude d'études de la Commission ont permis, au fil du temps de mieux cerner les besoins des entreprises. Certains aspects sont comparés aux performances des PME aux Etats-Unis.

Le document se focalise essentiellement sur les problèmes de type économique des entreprises. Il n'insiste pas sur les aspects environnementaux. La partie qui leur est dédiée reste très vague et générale. PACE est avant tout un programme pour améliorer le dynamisme et la compétitivité des entreprises européennes. Les aspects sociaux sont décrits plus longuement car les auteurs font le lien entre compétitivité et emploi. Les pertes ou gains de productivité par personne sont quantifiées et comparées. Le rapport ne s'attarde pas sur les pertes d'emploi mais plutôt sur les postes de travail que la création d'entreprises et la croissance peuvent générer.

Conclusions

Ces cinq cas montrent que le degré de détail accordé à la description du problème et aux facteurs de tensions est fort variable. Certains cas permettent au lecteur de se faire une idée claire de la situation, d'autres cas restent vagues, le niveau de détail étant insatisfaisant. L'identification des groupes touchés est reprise dans cette partie de l'analyse ou plus tard dans l'analyse. Les problèmes comportent avant tout des considérations économiques, qui passent en premier lieu, avant celles environnementales ou sociales. Finalement, trois rapports donnent une description détaillée de la situation actuelle, nécessaire pour une bonne compréhension de la suite de l'analyse.

3 ANALYSE DES OBJECTIFS

	Sucre	REACH	Poissons	INSPIRE	PACE
Clairement exprimés	Oui, mais très larges	Oui, mais très larges	Oui mais larges, après on cite la réduction de 10% des prises	Oui, objectifs larges puis plus précis	Généraux et également spécifiques, repris dans un tableau
Quantitatifs ou qualitatifs	Qualitatifs	Qualitatifs	Quantitatifs	Qualitatifs	Qualitatifs
Considérations économiques	Majeures	Majeures	Secondaires	Importantes	Majeures
Considérations environnementales	Mineures	Importantes mais après cons. écon.	Majeures	Importantes	Mineures
Considérations sociales	Après les considérations économiques	Importantes mais après cons. écon.	Secondaires	Mineures	Secondaires
Situation conflictuelle, aspect prépondérant	Les trois piliers sont concernés, équilibre difficile	Difficile équilibre entre les trois piliers	Sauvegarde des stocks (environnement) prioritaire dans ce cas	Pas de situation conflictuelle	Non, Pace a peu de liens directs avec les deux autres piliers

1) La réforme de la politique du sucre

Une section du rapport décrit clairement les différents objectifs de l'OCM réformé, mais en termes uniquement qualitatifs. Les auteurs du rapport reconnaissent que ces objectifs sont larges et ne permettent pas de répondre à des questions plus concrètes sur la réforme. Ils ne donnent pas non plus d'éléments de réponse face aux conséquences de la réforme pour les pays tiers bénéficiant de l'actuel prix du sucre sur le marché européen. Les objectifs du nouveau OCM sont ambitieux car ils demandent des actions à plusieurs niveaux, ce qui peut être difficile à coordonner. L'équilibre à trouver entre les trois piliers paraît difficile (amélioration de la situation dans les trois piliers incertaine).

2) REACH

L'objectif global décrit dans le rapport est le respect des principes du développement durable en assurant un niveau de protection élevé de la santé humaine et de l'environnement et la compétitivité des industries chimiques. L'équilibre est difficile à trouver entre les trois piliers. Les objectifs plus détaillés sont ensuite mentionnés, ils restent à un niveau qualitatif.

3) Protection des stocks de merlu et de langoustines

Ce rapport est le seul parmi les cinq analysés à proposer un objectif décrit en termes quantitatifs: on veut une réduction de 10% de la mortalité des espèces en question, ce qui implique une réduction des prises de 10%. Cette réduction peut avoir des incidences relativement importantes sur certains pêcheurs. Ce chiffre n'est cependant pas exprimé dans la section des objectifs. Dans cette dernière on retrouve un objectif large et peu précis quant à sa durée.

4) INSPIRE

Il est difficile de directement saisir la raison d'être de INSPIRE, il faut déjà avoir lu un certain nombre de pages pour avoir d'avoir une idée plus précise du sujet. Les objectifs sont décrits en termes qualitatifs, brièvement dans une petite partie du rapport. Ils sont divisés en objectifs larges et en objectifs plus précis.

5) PACE

Les objectifs de PACE sont présentés dans un tableau, en une page. Ils sont divisés en objectifs généraux et ensuite pour chacun d'eux, en objectifs spécifiques. Tous ces objectifs sont de nature qualitative. Parmi les 12 objectifs spécifiques, un d'entre eux est directement lié aux objectifs du développement durable.

Plus loin dans le rapport, les objectifs sont repris sous la section des impacts attendus. Là, il y a également quelques objectifs spécifiques qui sont exprimés en termes quantitatifs (par exemple, le nombre de PME que le programme compte aider financièrement). Sur la base de l'analyse du problème, les objectifs d'action seront exprimés en termes de résultats escomptés dans un délai donné.

Conclusions

Les objectifs sont décrits, dans trois des cinq cas, de façon très large. Cela pourrait poser un problème de suivi ultérieurement. Si les objectifs restent vagues et peu contraignants, ou à un niveau uniquement qualitatif, il sera plus difficile de juger le niveau d'efficacité des initiatives entreprises. Le poids donné aux considérations économiques est dans beaucoup de cas plus important que les considérations sociales ou environnementales. Des cinq cas observés, trois proposent des objectifs difficiles à mettre en œuvre (équilibre difficile entre les trois piliers), les deux autres cas ne se situent pas dans une situation conflictuelle.

4 ANALYSE DES OPTIONS PROPOSÉES

	Sucre	REACH	Poissons	INSPIRE	PACE
Nombre d'options	4	1	1	6	3
Options retenues	3	1	1	2	1

BAU repris	Non	Non	Non	Non	Oui
Aspect le plus mis en évidence	Économique	Économique	Environnemental	Economique/ environnemental	Économique
Considérations économiques	Prépondérantes	Prépondérantes	Importantes	Prépondérantes	Principales (programme de financement)
Considérations environnementales	Mineures	Importantes	Prépondérantes	Liées au sujet analysé, mais moins importantes	Pas concernées
Considérations sociales	Importantes	Importantes, reprises dans un contexte de compétitivité et de maintien de l'emploi	Importantes	Secondaires	Secondaires, pas concernées directement

1) La réforme de la politique du sucre

L'évaluation propose 4 familles d'options (statu quo, qui est rejetée, quotas fixes, diminution des prix, libéralisation), elles se basent sur des études déjà existantes ou sur le travail des consultants. Aucune des trois options restantes ne semble avoir la préférence des auteurs pour atteindre l'objectif. Ces options sont avant tout préoccupées par les aspects économiques, cependant, pour toute option considérée, divers éléments sociaux sont analysés (revenus décents pour les agriculteurs et pertes d'emplois possibles en cas de restructuration, impact dans les autres pays hors-UE) et la pression environnementale de ces activités est mentionnée.

2) REACH

Cette évaluation ne propose pas d'options en particulier, elle ne prend pas l'effort de décrire l'option "continuation de la politique actuelle" ou "pas d'action". L'unique option indique la nécessité d'un équilibre au niveau économique compatible avec un niveau de protection élevé de la santé et de l'environnement. Le rapport insiste sur la nature équilibrée de la nouvelle législation qui s'efforce de ne pas être excessive en termes d'ampleur, de coûts et de démarche administratives.

3) Protection des stocks de merlu et de langoustines

On ne propose pas d'autres options que celle vaguement décrite dans le rapport. Le document se concentre sur l'option future et ne met nullement en doute son application dans le court terme. On donne la priorité à la sauvegarde des stocks et des mesures d'atténuation

des effets socio-économiques sont proposées. Il s'agit principalement d'employer les fonds structurels européens, plus particulièrement ceux concernant le secteur de la pêche. D'une certaine façon, dans cette évaluation, la priorité est donnée aux aspects environnementaux. Le rapport décrit la nécessité d'agir pour sauvegarder les stocks. Mais aucun aspect n'est quantifié et les aspects socio-économiques ne sont pas décrits en profondeur.

4) INSPIRE

INSPIRE est le rapport qui propose le plus d'options en début d'analyse. On retrouve l'option « inaction » 'exclue dès le début, l'option de coopération volontaire entre Etats membres (écartée en vue des expériences passées) et une série de quatre options comportant des instruments juridiques. Lors de la formulation des politiques, deux de ces options (3 et 4) ont été retenues.

Elles font appel à une directive, basée sur le principe de subsidiarité, laissant beaucoup de marge de manoeuvre aux Etats membres lors de la mise en oeuvre d'INSPIRE. L'option 4 a été retenue par des arguments essentiellement économiques. Elle concerne les données spatiales les plus utilisées. Bien que les options 3 et 4 ont un rapport coûts-bénéfices très favorables, l'option a été retenue car elle demande moins d'investissements. Le choix final des options ne dépend donc pas des incidences sociales ou environnementales. Les options que l'évaluation propose ne doivent pas réellement trouver un compromis entre les trois piliers du développement durable. Il s'agit plutôt de trouver la meilleure option du point de vue coûts bénéfices.

5) PACE

Le rapport fait la distinction entre les options rejetées tôt dans le processus et celles retenues pour effectuer une évaluation plus poussée. Trois options ont été retenues :

- L'inaction, qui implique l'arrêt du programme actuel
- Pas de changements donc continuation avec le programme actuel
- Un nouveau programme capable de mieux répondre aux exigences des entreprises

Les deux premières options sont donc incluses pour la forme, la seule option valable étant PACE, qui est d'ailleurs décrite plus en profondeur. Les auteurs indiquent clairement que ce nouveau programme n'essaie pas de faire directement face aux problèmes sociaux ou environnementaux. Des tableaux reprennent des objectifs généraux et les actions possibles pour les atteindre. Ici aussi, les données sont qualitatives. Les options (l'unique option) que l'évaluation propose ne doivent pas réellement trouver un compromis entre les trois piliers du développement durable. Ce programme est très vaste et mentionne avant tout les mesures qu'il compte améliorer pour établir un environnement favorable aux entreprises européennes.

Conclusions

Le nombre d'options varie de une à six dans les cas observés. Les options retenues varient de trois à une. Il est évident que lorsque les analyses d'impact se limitent à une option analysée et sélectionnée, les auteurs passent à côté de certains objectifs d'une telle initiative. Un seul cas, PACE, a pris le scénario 'business as usual' en compte en détail. Ici aussi, les considérations économiques sont prépondérantes.

5 ANALYSE DES IMPACTS

	Sucre	REACH	Poissons	INSPIRE	PACE
Économiques	Analyse très poussée, de type quantitatif	Différentes analyses, quantifiées (coûts) sur les entreprises et consommateurs	Analyse limitée par le manque de données, tentative de calcul de la diminution des prises	Analyse très poussée, coûts, investissements et bénéfices monétisés	Le nombre de PME que le programme peut concerner a été quantifié
Environnementaux	Beaucoup moins poussée, qualitative	Beaucoup moins poussée, descriptive (manque de données)	Analyse qualitative très courte, hypothèses, manque de données	Gains en efficacité évalués monétairement	Brièvement qualitatif
Sociaux	Poussée, quantitative	Difficulté d'évaluer les effets de REACH sur la santé. Possibilité de pertes d'emploi dues à moins de compétitivité	Analyse sommaire relative aux pertes d'emploi	Analyse moins poussée, tentative de monétisation	Brièvement qualitatif
Coûts	Quantifiés	Quantifiés	Pas chiffrés	Quantifiés	Budget du programme mentionné
Bénéfices	Qualitatifs	Réduction de coûts quantifiés, bénéfices qualitatifs	Environnementaux, non quantifiés	Quantifiés	Qualitatif, difficile de chiffrer la création de richesse
Distinction entre groupes, distribution des effets	Distinction par groupes de pays, par pays et par type d'acteur dans la « supply chain.»	On distingue les pays UE et non UE, les consommateurs, les entreprises et PME	Distinction entre le secteur de la pêche les activités auxiliaires et en amont et les stocks de poisson.	Distinction entre niveau UE, nationaux et régionaux/locaux Identification des « gagnants et perdants »	Ce programme concerne les PME, on cite les autres acteurs
Conflits entre les	Difficile équilibre	Difficile équilibre entre les aspects	Conflit entre les objectifs	Pas de conflits majeurs.	Pas de conflits

incidences	entre les trois piliers et pays	avant tout économiques et environnementaux, aspect économique/social mis en avant par les industries	environnementaux et socio-économiques, du moins à court terme.		identifiés par le rapport
Facteurs de compensation mentionnés	Pour les agriculteurs, à un niveau monétaire global	Attention particulière pour l'industrie et les PME et volonté de rendre le système de test et enregistrement peu onéreux	Les Etats Membres sont encouragés à employer les fonds structurels pour atténuer les impacts, peu de détails fournis	Pas de facteurs de compensation mentionnés mais section reprenant les risques potentiels	Programme de financement de PME
Dimension temporelle	Les scénarios se limitent à 2010-15	Horizon de 11 ans (création et mise en fonction de l'agence)	Peu mentionnée, imprécisions dues au manque de données.	10 ans de la période d'investissements	Sur la durée du programme

1) La réforme de la politique du sucre

Pour les impacts économiques, les auteurs du rapport prennent comme référence le nouveau prix du sucre car celui-ci détermine les quantités produites en Europe et hors Europe. Les 4 familles d'options sont reprises dans un tableau qui indique les quantités produites et les importations, avec les réductions de revenus dans les pays ACP et les États Membres qui devraient cesser leurs activités en cas de chute des prix.

Au niveau social, on donne les impacts négatifs, on ne mentionne pas d'impacts positifs. De même que pour les aspects économiques, le rapport distingue les effets des 4 options. On distingue les incidences sur l'emploi, sur les revenus des producteurs de betteraves, le cas des régions périphériques et des pays ACP.

Pour ce qui est de l'environnement, les trois options principales sont brièvement analysées, en termes qualitatifs. Le rapport prend en considération les incidences sur le sol, l'eau et la biodiversité.

Il y a des incohérences potentielles entre les incidences, le rapport montre les équilibres à trouver entre concurrence et revenu des producteurs/agriculteurs. Il est conscient des antagonismes entre les aspects économiques et sociaux.

Concernant la quantification, les impacts économiques et sociaux ont pu être quantifiés. Les premiers en termes de quantités de sucre produite, importée et exportée. En termes monétaires, on fournit les données des revenus perdus par les pays ACP et les dépenses de compensation. Les impacts sociaux sont quantifiés en termes de pertes d'emplois. Les impacts environnementaux sont mentionnés en termes qualitatifs. Pour déterminer les

méthodes de quantification des incidences, il faudrait rechercher les rapports des consultants. Dans le document, les modèles ne sont pas spécifiés. On se base sur des études antérieures. Les auteurs montrent les effets d'une baisse des prix sur les quantités produites et sur les pays producteurs.

Les scénarios vont font des prévisions jusque 2010-15. Les options reprennent des éléments de compensation principalement pour les agriculteurs, pas les autres types de stakeholders. L'analyse fournit des données monétaires globales pour certaines options.

2) REACH

En ce qui concerne les impacts de type économique, elle prend en considération les impacts des coûts pour le secteur chimique, pour les consommateurs, les effets sur l'innovation, sur la compétitivité et la concurrence.

Au niveau de la santé humaine, le rapport mentionne les impacts sur la santé des substances chimiques dégagées dans notre milieu (santé des travailleurs et impacts sur la santé publique). Pour illustrer les avantages à long terme, le rapport présente des calculs indiquant les effets potentiels de REACH sur la santé humaine, avec des résultats monétaires.

Au niveau de l'environnement, on insiste sur le manque de données disponibles et on se contente d'une description qualitative et d'un exemple. La section se termine avec les avantages potentiels de REACH (avec les impacts provenant des mesures pour réduire les risques et ses effets potentiels sur le long terme). Elle conclut qu'à ce stade une analyse quantitative est impossible par manque de données.

Au niveau social, le rapport indique que les coûts des tests et d'enregistrement entraînant une réduction de substances chimiques produites pourraient avoir des conséquences sur la compétitivité des entreprises ayant pour corollaire une chute du PNB et des pertes d'emploi.

Une grande importance est donnée aux aspects économiques, plus particulièrement, les répercussions des coûts de REACH sur l'industrie et les consommateurs. Les coûts des tests et d'enregistrement sont quantifiés monétairement et on donne les réductions de coûts de REACH en fonction des mesures prises. Le reste n'est pas quantifié. Pour ce qui est des facteurs de compensation, une attention particulière est donnée aux coûts que les nouvelles mesures feront supporter au secteur chimique. REACH propose que toute décision de gestion des risques soit accompagnée d'une évaluation socio-économique de type "coûts-bénéfices".

Au niveau des conflits et incohérences potentiels entre les impacts économiques, sociaux et environnementaux de la mesure, le rapport cite les pertes d'emplois possibles dues à moins de produits chimiques sur le marché. Cela s'expliquerait par des coûts accrus à cause des tests et enregistrements et serait répercuté le long de la "supply chain". On contre argumente en disant que soit les coûts sont transférés aux consommateurs, soit ceux-ci utilisent des

produits substitués. Un compromis est aussi trouvé pour les PME en leur imposant moins de tests pour les substances produites ne dépassant pas les 100 tonnes annuelles. On veut préserver leur compétitivité, cependant, des produits chimiques, même fabriqués en petites quantités peuvent être très nocifs pour l'environnement et nécessiter des tests plus complets.

Les auteurs identifient les différentes parties concernées par REACH. On parle des impacts potentiels sur l'industrie chimique, les consommateurs, les PME, les pays candidats (sans faire de vraie distinction avec les autres pays européens). On mentionne brièvement le recours à moins de tests sur les animaux grâce à REACH.

Concernant les méthodes employées pour les analyses, au niveau des impacts économiques, le rapport se base sur des travaux de la Commission et des calculs de consultants externes. Pas moins de dix études ont été réalisées, basées sur des modèles microéconomiques. Il y a cependant peu de mesures précises des impacts. Les incidences environnementales n'ont pas fait l'objet d'analyses poussées, ni les incidences sociales.

3) Protection des stocks de merlu et de langoustines

L'analyse donne une description des impacts socio-économiques et environnementaux. Le rapport analyse d'abord les incidences sur les revenus de la pêche. Ensuite, le rapport décrit les conséquences sur les activités (moins de jours de pêche ou pêche ailleurs). On donne aussi la quantité pêchée des espèces concernées par la mesure communautaire par pays, et la moyenne par bateau. Ce chiffre a peu de sens car d'un type de bateau à l'autre, l'espèce a un impact économique variable. On sent un manque de données à ce niveau de l'analyse et des difficultés pour déterminer les incidences économiques. Le rapport ne propose aucune donnée chiffrée pour les incidences sur l'emploi.

Les incidences environnementales sont très brièvement décrites, de façon qualitative. Les mesures vont permettre aux stocks de se régénérer et favoriser les espèces vivant à proximité des stocks par la diminution des pressions dues à la pêche.

Les intérêts environnementaux (positifs) sont en conflit avec les intérêts socio-économiques (négatifs) sur le court terme, sur le long terme, on suppose que la mesure permettra d'atteindre des stocks plus importants et de recommencer à pêcher autant que dans le passé. Cependant, le rapport mentionne aussi la possibilité de cesser des activités de pêche et de donner des aides à la reconversion provenant des fonds structurels pour le secteur de la pêche (une sorte d'atténuation des incidences négatives). De plus, aucune limite de temps n'est imposée à ces mesures.

On ne connaît pas, par cette analyse, la distribution et l'ampleur des impacts. De plus, la liste reprenant les genres de bateaux concernés et les moyennes par pays sont de faible utilité pour essayer d'en savoir plus.

L'évaluation se base sur des rapports existants et sur la littérature. Aucun modèle n'a été employé. La raison fournie est le manque de données disponible et la trop grande complexité de tels modèles.

4) INSPIRE

Du point de vue économique, le rapport n'a pas pu se baser sur beaucoup d'études antérieures décrivant les coûts et bénéfices de l'introduction d'une telle infrastructure. Pour quantifier les incidences, le groupe de travail s'est basé sur les avis d'experts et sur des études de cas. L'évaluation identifie les parties concernées par INSPIRE et les incidences de cette mesure. La majeure partie du rapport est consacrée à la quantification des coûts et des bénéfices et à leur comparaison.

Les incidences environnementales et sociales sont citées dans le résumé, tout comme les avantages pour le secteur privé. Dans le rapport, on cite les bienfaits de INSPIRE sur l'environnement grâce à des données plus précises.

Une page est consacrée aux incidences sociales. Elle décrit les avantages de données plus précises permettant une meilleure prise de décision, des jugements plus informés, et l'accès des données au secteur privé. On pense aussi que INSPIRE va créer de l'emploi (on se base sur la même expérience aux U.S.A.).

Il n'y a pas vraiment de conflits entre les différentes incidences, ce qui facilite la rédaction du rapport. De plus il a pu se baser sur des projets dans le même secteur et sur la collaboration de nombreux experts. On peut dire qu'une partie non négligeable du travail était déjà disponible. Cependant, les auteurs ont fait l'effort de quantifier en termes monétaires les coûts et les bénéfices de INSPIRE, pour une période de dix ans. C'est la grosse partie de l'évaluation.

Quant à la distribution des incidences, on énumère les différents acteurs en leur attribuant soit les avantages ou les inconvénients de INSPIRE. Plus loin, il y a une section "winners and losers". On a aussi quantifié monétairement les avantages du système, par type d'emploi des données et les coûts, par type d'administration concernée.

Le rapport décrit longuement les méthodes employées pour l'évaluation des incidences. Au niveau de la monétisation des incidences, les auteurs ont d'abord effectué une estimation des coûts et bénéfices comme étant une proportion des coûts (ou bénéfices) d'activités liées et par la suite ils ont quantifié ces coûts et bénéfices financièrement.

5) PACE

La section des incidences est combinée avec une partie décrivant les résultats attendus. Ces derniers sont repris dans un tableau et découlent des objectifs généraux. La partie sur les incidences attendues est, comme le précisent les auteurs, avant tout de type économique. Certains impacts sont quantifiés, même monétairement. Les incidences sociales et environnementales sont très peu décrites. On ne cite que des incidences positives. Les incidences environnementales sont sensées être positives et indirectes provenant de la promotion de méthodes de production soutenables et d'un accès accru au financement pour les PME (ce qui inclut le financement pour des technologies plus propres). Le rapport aurait pu développer davantage cette section sur les incidences environnementales et sociales.

La taille des dépenses et la dimension micro-économique du programme sont trop limitées, selon les auteurs, pour créer des conflits entre les incidences sociales, économiques et environnementales. Ils ajoutent cependant qu'à un niveau opérationnel, le programme contribuera à des évaluations d'incidences de mesures communautaires spécifiques et que ces dernières examineront les conflits potentiels entre les trois piliers.

Conclusions

Les impacts les plus analysés sont de type économique. Les auteurs ont eu la possibilité de fournir des données quantifiées dans la majorité des cas, sauf pour l'analyse d'impact concernant les stocks de poissons. Les incidences sur l'environnement sont analysées mais de façon moins poussée, il en est de même pour les impacts sociaux. Ces cas quantifient plus les coûts que les bénéfices des initiatives proposées, ce qui peut poser des problèmes pour prouver leur utilité. Les rapports distinguent à chaque fois les groupes concernés et identifient la distribution des effets. Néanmoins, dans certaines analyses, cela reste relativement vague. Généralement peu de détails sont fournis quant aux facteurs de compensation si ils sont mentionnés. Finalement, la dimension temporelle se limite généralement à la durée de l'initiative, ou de l'investissement initial, souvent entre cinq et dix ans.

6 MÉTHODES EMPLOYÉES

Voici un tableau reprenant les méthodes utilisées par les unités ou leur consultants. Il se peut qu'il soit incomplet vu qu'il n'est pas toujours évident d'identifier toutes les méthodes employées pour ces cas. Évidemment, les rapports mentionnent certaines techniques, mais il est nécessaire de consulter les études des consultants pour avoir un aperçu plus complet, or elles ne sont pas toutes disponibles.

Tableau des méthodes employées dans les cas analysés

Outils employés	Réforme Sucre	REACH	Poissons	INSPIRE	PACE
Revue de la littérature	X	X	X	X	X

Méthodes de dialogue avec les parties concernées	X	X	X (mais mineure)	X	X
Avis d'experts	X	X	X	X	X
Analyse coûts-efficacité					X
Analyse coûts-bénéfices				X	
Modélisation	X	X			
Scénarios	X				

On remarquera que toutes les études ont employé les méthodes de base (revue de la littérature, avis d'experts). L'analyse d'impact sur la conservation des stocks de poisson en est restée à ce niveau. Cependant, déjà au niveau des méthodes participatives, il y a des différences. Bien que certains rapports aient fait appel aux parties intéressées, ils n'ont bénéficié que d'une réunion. Certaines unités, au contraire, avaient instauré un dialogue beaucoup plus fréquent lors de leurs analyses.

REACH et la réforme du sucre sont aussi basées sur des modèles économiques, provenant de consultants ou de la Commission (modèle de la DG Entreprises pour REACH). Ces modèles ne sont cependant pas intégrés, pour la majorité d'entre eux, seules les incidences économiques étaient analysées.

PACE a bénéficié d'une analyse coût-efficacité mais ses résultats n'ont pas pu être aussi précis que ceux de INSPIRE qui a atteint un niveau supérieur en proposant une analyse coûts-bénéfices. Cela a été possible grâce à la quantité de données disponibles, et les expériences de cas passés. Cette analyse n'est néanmoins pas complète, les incidences sociales étant plus vagues.

Finalement, le cas de la réforme du sucre a été présenté sous forme de scénarios. Les quatre scénarios sont les options proposées avec leurs conséquences futures. Les scénarios sont composés de différentes analyses rassemblées sous une même option future. Ils ont le mérite de donner une image potentielle compréhensible pour le preneur de décision.

Pour tout ces cas, il est difficile de parler de méthodes intégrées. Ils emploient des méthodes diverses couvrant un ou deux aspects par analyse, ce n'est qu'ensuite que ces parties sont unifiées. Les interrelations entre les trois piliers du développement durable devraient être identifiées plus en profondeur.

7 MISE EN ŒUVRE, SUIVI ET ÉVALUATION EX POST

Réforme de la politique du sucre

Le document ne mentionne pas de politiques de suivi. Au moment de la parution de l'analyse d'impact, aucune des 4 options n'avait été sélectionnée. Par la suite, en juillet 2004, la Commission a finalement opté pour l'option « baisse des prix » proposée dans l'étude sur les incidences.

REACH

Une brève section, qui reste à un niveau très général, insiste sur l'importance d'un suivi des différents impacts pour assurer une bonne application de la nouvelle législation. La Commission observera le niveau de compétitivité de l'industrie chimique, ses performances environnementales et les variations dans les emplois au cours du temps. Une importance est aussi donnée à un dialogue continu avec les ONGs et les organisations de consommateurs. Les auteurs indiquent que la Commission va publier un rapport après six ans sur le sujet puis tous les dix ans.

Protection des stocks de merlu et de langoustines

On ne mentionne pas de contrôle de qualité de cette évaluation, et pour un bon suivi de cette mesure, il est indispensable de collecter plus de données. De plus, la mise en oeuvre est laissée aux Etats membres.

INSPIRE

Une brève section de l'évaluation traite du monitoring. Elle mentionne qu'il serait utile d'avoir une mesure d'accompagnement à ce propos, sous la forme d'une groupe de monitoring, tout au long de la mise en oeuvre de INSPIRE. L'analyse d'impact prend aussi en compte les risques potentiels liées à INSPIRE, en quelques lignes, mais ils n'ont pas été quantifiés. Elles citent aussi des risques commerciaux propres à la mise en pratique système.

PACE

Ce rapport consacre une partie importante aux aspects de suivi et de monitoring. Il mentionne également des méthodes de prévention de fraude et inclut des indicateurs capables de mesurer l'efficacité. Des rapports intérimaires informeront les décideurs de la performance de PACE.

Conclusions

En général, les rapports ne mentionnent que peu ou pas d'éléments à propos du suivi et de l'évaluation ex-post. Ils restent très vagues à l'exception de PACE qui propose des mesures de suivi et des méthodes de prévention de fraude. INSPIRE quant à lui mentionne dans une courte section, les risques d'échec inhérent au projet.

8 CRITIQUE DE L'ANALYSE D'IMPACT DE LA COMMISSION EUROPÉENNE

Cette section est divisée en trois parties et va se concentrer sur les problèmes liés aux processus, aux résultats et aux moyens. Elle se base sur les résultats des cas analysés et sur une revue de la littérature au sujet des analyses d'impact de la Commission.

8.1. Problèmes liés au processus

- Sélection des cas à analyser

Lors du processus de sélection, les critères de sélection ne sont pas clairs, pas toujours respectés et peu transparents, même si la Commission a effectué des améliorations en proposant par exemple un site internet plus clair. Certains cas importants ne sont pas repris ou le sont par la suite, après négociations, comme cela fut le cas de REACH. D'autres cas ne valent sans doute pas la peine d'être analysés en profondeur, sous toutes les facettes du développement durable, dû à leur nature essentiellement économique, comme cela a été le cas avec PACE. Enfin, certains sujets sont très vagues ne permettant qu'une analyse d'impact superficielle (par exemple l'analyse d'impact sur le tourisme durable).

- Les options proposées

On peut déplorer le manque d'options proposées. Cela peut se justifier dans certaines analyses d'impact par la marge de manœuvre limitée (exemple de la réforme de la politique du sucre influencée par le contexte de l'OMC). Néanmoins, les auteurs des analyses d'impact peuvent proposer des options qui varient en fonction d'un ou deux paramètres. Par exemple, dans le cas de la protection des quotas de poissons, il aurait été envisageable de considérer une réduction de 5% ou de 20% des efforts de pêche. Dans certains cas, lorsque plusieurs options sont présentées, certaines sont incluses « pour la forme », car elles ne constituent pas des choix valables.

Certains auteurs semblent également construire leur rapport sur une option prédéterminée, décidée avant même le début de l'analyse d'impact. Cela va donc à l'encontre du principe de l'analyse d'impact qui est sensée fournir aux décideurs des informations utiles pour aider à la prise de décision.

- Les incidences et leur analyse

Bien que la méthode est supposée être intégrée, les aspects économiques sont les plus analysés. Le corps du rapport est constitué des analyses d'impacts, avant tout basés sur les coûts des initiatives entreprises. De plus, alors que les incidences économiques et environnementales sont bien perçues, il est plus difficile d'avoir une impression claire des incidences sociales et de ce qui doit ou peut être pris en compte à ce niveau. Cela pose le problème de l'analyse d'impact supposée intégrée, vu que des différences parfois importantes se retrouvent dans les trois piliers analysés.

La monétisation est relativement rare ou partielle et se rapporte avant tout aux coûts et aux investissements, les bénéfices économiques sont moins analysés. Cela peut poser des problèmes pour convaincre les acteurs des bienfaits des nouvelles politiques proposées. Les aspects sociaux et environnementaux viennent après les considérations économiques, ce qui conduit à un déséquilibre dans le poids accordé aux trois piliers.

- La consultation avec les parties intéressées

Les parties intéressées ont eu l'occasion, dans quatre des cinq rapports analysés, de se prononcer sur les initiatives en question. Seul le cas relatif à la sauvegarde des stocks de poissons n'a pas organisé de consultation publique. La Commission emploie généralement un système de consultation par internet, via un questionnaire en ligne. Les réponses sont ensuite collectées et analysées. Elles sont accessibles sur le site de la Commission. Il est possible de se poser des questions quant à la façon de contacter les parties concernées. Certaines consultations peuvent être biaisées si ce sont avant tout des entreprises ou organisations ayant une bonne connaissance des institutions européennes qui répondent ou qui sont contactées par ces dernières. Certains auteurs de rapports n'ont pas essayé de contacter les parties concernées afin d'avoir un échantillon représentatif, ils se sont basé sur des listes existantes.

La participation des parties prenantes devrait être plus transparente. Il est important de comprendre comment les participants aux consultations sont sélectionnés. Les mêmes efforts doivent être menés au sujet des réunions, au cas où elles ont lieu. La DG Agriculture avait invité différents acteurs pour un échange de points de vue sur les différentes options possibles dans le cas de la réforme du sucre. Elle avait organisé pas moins de cinq réunions, mais les parties concernées n'ont pas participé aux mêmes réunions. Un autre aspect important concerne le degré d'importance accordé aux contributions des parties, même si c'est la Commission qui décide du contenu des options proposées.

- Le suivi des analyses d'impact

Peu de rapports consacrent une partie importante aux aspects de suivi, certains ne les mentionnent même pas. L'analyse d'impact veut cependant être un processus continu qui ne s'arrête pas une fois l'identification des incidences terminée. Les documents devraient donc tous s'attarder sur ces aspects.

8.2. Problèmes liés aux résultats

- Manque de données

Un problème fréquent lié aux analyses d'impacts est le manque de données. Cela ne permet pas d'effectuer des analyses très poussées. Par conséquent beaucoup de rapports se basent sur les modèles d'analyse plus simples, moins demandeurs de données. Ce problème limite également la quantité d'incidences qui peuvent être quantifiées et la précision que l'on peut accorder aux prévisions des effets futurs des options proposées.

- Qualité variable

Les rapports analysés sont de qualité variable, cela est fonction de plusieurs facteurs. Les ressources mises à la disposition des fonctionnaires (temps, nombre de personnes employées, encadrement etc...) vont largement influencer la qualité du rapport. Si les auteurs disposent d'analyses semblables, cela facilitera beaucoup le travail, comme cela a été le cas pour INSPIRE. Autrement, l'analyse d'impact prendra beaucoup plus de temps et demandera plus de moyens. Le caractère conflictuel du sujet analysé est également à prendre en compte. Pas moins de dix analyses économiques ont eu lieu pour REACH et il y a eu, les opinions divergeaient quant aux incidences du nouveau programme, avant tout sur ses effets sur la compétitivité du secteur chimique européen, avec des prévisions de pertes d'emploi exagérées, puis revues à la baisse, de la part des lobbys chimiques. La possibilité de consulter des experts est un grand avantage qui peut contribuer à un rapport de bonne qualité. Cela a été le cas pour l'analyse d'impact de INSPIRE, dès le début, des groupes d'experts étaient inclus dans le processus. Ils ont pu fournir des conseils importants et des données permettant des analyses plus poussées.

- Influence de la méthode employée

Tous les rapports ont eu recours aux méthodes simples. Des experts ont été consultés, des revues de la littérature et des consultations ont eu lieu (partiellement dans le cas de la sauvegarde des stocks de poissons). Plus les méthodes sont poussées, plus elles sont difficiles à mettre en œuvre et moins elles sont employées. On ne peut parler de méthodes intégrées, mais d'un ensemble d'analyses qui se côtoient, si elles ont lieu, avec cependant une emphase sur les questions économiques. Par les cas analysés, on peut se demander si il n'est pas préférable de tenter de proposer des méthodes capables de reprendre les différents piliers, comme les analyses multicritères.

8.3. Problèmes liés aux moyens

Les premières analyses d'impact ont été de qualité variable, dans la majorité des cas, les fonctionnaires ont dû apprendre petit à petit, avec la pratique et en se basant sur des travaux antérieurs sur le même sujet. Il y a également eu la contribution des consultants, et des experts dans certaines études. Il faut remarquer qu'il y a cependant peu de personnes spécialisées dans les analyses d'impact au sein de la Commission. A l'époque de l'analyse des cinq cas, en plus des unités chargées des rapports, seulement trois personnes du Secrétariat Général travaillaient partiellement sur les analyses d'impact.

Certaines parties prenantes manquent de moyens pour pouvoir suivre les analyses d'impact qui les concernent, ou sont mal informées quant à leur existence. De plus, on note un déséquilibre entre les lobbys industriels et les organisations non gouvernementales environnementales ou sociales qui disposent de moins de ressources financières et souvent de moins de personnel.

9 MESURES ENTREPRISES PAR LA COMMISSION

Un document de la Commission vient de paraître et mentionne les prochaines initiatives au sujet des analyses d'impact²⁴. La Commission a l'intention d'améliorer les analyses d'impact en donnant une formation sur les méthodes à suivre à un nombre croissant de fonctionnaires. Dans certaines Directions Générales, des structures de support sont mises en place et des listes d'experts dans les analyses sont disponibles.

Il faudrait également, selon la Commission, une meilleure mise en application de la méthodologie dans les différents services. Le conseil et le Parlement Européen insistent sur une meilleure prise en compte des trois dimensions économiques, sociales et environnementales. La Commission souhaite de son côté une plus grande attention pour les aspects de compétitivité et de diminution des lourdeurs administratives.

Les outils pour les analyses d'impacts seront renforcés avec une liste des incidences a été améliorée , prenant comme susmentionné, plus en compte les aspects de compétitivité et de diminution de lourdeurs administratives.

La Commission est également consciente du temps requis pour effectuer certaines analyses et compte prendre des initiatives à ce sujet. Elle veut mieux mettre en œuvre le principe de l'analyse proportionnée. L'attention doit être portée aux incidences majeures et la profondeur de l'analyse doit être justifiée. Les analyses d'impacts de propositions sans incidences majeures doivent donc être évitées ou limitées. Il faut se rappeler qu'à ce jour, seulement 50 pourcent des propositions majeures du programme de travail de la Commission a subi une analyse d'impact.

²⁴ Impact Assessment : Next Steps, in support of competitiveness and sustainable development
SEC (2004) 1377

Les Directions Générales tenteront d'améliorer la qualité des analyses avec une meilleure évaluation des compromis et des liens entre les incidences, plus d'importance accordée à la quantification et monétisation des impacts et une meilleure prise en compte de la dimension temporelle.

Finalement, la Commission a l'intention de plus impliquer les autres unités concernées, de fournir des ressources en nombre suffisant, d'améliorer les compétences et de mettre le savoir des experts à la disposition des fonctionnaires lorsque cela s'avère nécessaire.

Quelques remarques s'imposent concernant cette communication :

- Premièrement, le document n'insiste pas sur les aspects de consultation ou de participation des différentes parties concernées, or cet aspect devrait également être amélioré dans le futur.
- Deuxièmement, un paradoxe concerne la volonté de proposer une analyse équilibrée considérant les trois dimensions économiques, sociales et environnementales de la même façon, face à une prise en considération plus marquée des aspects de compétitivité et de diminution des lourdeurs administratives. Il ne faudrait pas que ces analyses d'impact ne tendent démesurément vers des analyses principalement axées sur la dimension économique.
- Troisièmement, seulement 50% des propositions majeures ont bénéficié d'une analyse d'impact. La commission est consciente du temps nécessaire pour effectuer de telles évaluations. Il ne faudrait pas que les principes de proportionnalité soient une solution pour simplement diminuer le nombre de cas à analyser. Ce principe pose une nouvelle question : Comment juger si une proposition ne comporte que des incidences mineures pour qu'elle puisse échapper à une analyse d'impact ?

10 CONCLUSIONS

Ce rapport a été structuré en deux parties. Dans la première, il a proposé une revue de la littérature sur les évaluations des incidences sur le développement durable , et plus particulièrement sur les analyses d'impact de la Commission. Il s'est surtout basé sur les documents officiels de la Commission et sur les rapports et articles relatifs aux deux premières années de pratique. Dans la deuxième partie, le rapport a analysé cinq analyses d'impact effectuées dans différentes Directions Générales. L'analyse a suivi les étapes décrites dans la communication de la Commission et a synthétiquement proposé les résultats dans des tableaux, pour chaque point. La dernière section de cette partie a formulé des critiques concernant les analyses d'impact.

Vu que le sujet traité dans ce rapport est relativement récent, certains éléments n'ont pas pu être abordés en profondeur. Une série de questions restent ouvertes et sont formulées ci-dessous, elles se basent avant tout sur les remarques formulées à l'encontre des analyses d'impact de la Commission :

- 1) Le passage de l'analyse préliminaire à l'analyse approfondie n'est pas transparent. Il est difficile de comprendre les raisons qui font que certaines propositions de politiques se limitent à la première analyse et d'autres subissent une analyse complète. La question du screening est parmi les étapes les plus importantes mais reste floue.
- 2) Les analyses d'impact ont comme particularité de prendre en compte les effets cumulés des propositions de politiques. Proposer une méthode intégrée capable de prendre en considération les trois piliers est cependant une question complexe. Les cas analysés comprenaient, dans le meilleur des cas, trois analyses économiques, sociales et environnementales les unes à la suite des autres. Il ne s'agit pas d'une analyse intégrée à proprement parler. Ce point se réfère également à la question du choix des méthodes pour effectuer une analyse intégrée où les différents piliers du développement durable soient en équilibre, sans que l'un d'eux ne soit plus favorisé que les autres.
- 3) La question de la participation est également importante et reste ouverte. La Commission a préféré parler de consultation, où les différentes parties peuvent exprimer leur avis via une consultation internet. Ces aspects renvoient également à la question de la sélection des parties concernées, à l'organisation de réunions, à l'aspect de la représentativité des acteurs concernés ou encore à la capacité des parties concernées de disposer d'assez de ressources pour l'analyse de près.
- 4) Le suivi et la mise en œuvre des options proposées dans ces analyses doivent également être analysés d'avantage. Les rapports ne consacrent qu'une petite partie à ces aspects. L'analyse d'impact ne doit pas se limiter à un rapport vaguement suivi dans la réalité, il faut interpréter les analyses d'impact comme un processus et non pas comme une étape unique terminée avec la rédaction du rapport.

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12 ANNEXES

Annexe 1: Analyse d'impact préliminaire

ANNEXE 1 Fiche d'analyse préliminaire

1. IDENTIFICATION DU PROBLEME

Décrire le problème auquel l'action/la proposition doit faire face:

Indiquer les évolutions potentiellement non viables associées au problème au plan

- économique:

- social:

- environnemental:

Indiquer les incompatibilités potentielles entre ces trois dimensions ou avec d'autres politiques.

2. OBJECTIF DE LA PROPOSITION

Quel est l'objectif d'action global en termes d'impact escompté?

3. POSSIBILITES D'ACTION

Quelle est l'approche de base proposée pour atteindre l'objectif?

Quels instruments d'action ont été envisagés?

En quoi les possibilités d'action identifiées respectent-elles les principes de subsidiarité et de proportionnalité?

Quelles sont les possibilités d'action qui peuvent être exclues dans la présente phase initiale?

4. IMPACT – POSITIF ET NEGATIF

À titre préliminaire, indiquer quel est l'impact positif et négatif escompté des options retenues, notamment en termes d'effets économiques, sociaux et environnementaux?

Veillez indiquer qui est concerné ainsi que les éventuelles graves retombées pour une catégorie sociale, un secteur économique ou une région spécifique (à l'intérieur ou à l'extérieur de l'UE) à court, moyen et long terme.

5. SUIVI

Quels sont les travaux préparatoires déjà entrepris (consultations, études)?

Une analyse approfondie est-elle recommandée? Oui/non

Une consultation est-elle prévue? Oui/non

Annexe 2 : Grille d'analyse employée pour les 5 cas analysés.

Cette grille d'analyse est basée sur le format indicatif du rapport d'analyse d'impact et s'inspire aussi du questionnaire que l'IEEP a employé pour effectuer ses analyses de cas (Wilkinson et al., 2004). Comme susmentionné, elle a la fonction d'une liste de vérification et met en évidence les points forts et les lacunes des évaluations d'impacts. Parfois, les cas analysés comportaient une brève section ou pas de section concernant l'un ou l'autre point repris dans le filtre. Le tableau ci-dessous comporte deux colonnes. A droite se trouvent les aspects observés pour les cinq rapports, sous formes de questions à se poser et à gauche se trouvent des commentaires explicatifs.

<u>Filtre utilisé</u>	<u>Commentaires</u>
<p>1) Informations générales</p> <ul style="list-style-type: none">- Titre et références de l'analyse d'impact- Date de Publication- DG menant l'évaluation- Autres DGs impliquées- Combien de personnes impliquées dans l'analyse d'impact?- Longueur du rapport.- Structure proposée par la communication de la Commission suivie par les auteurs?- Méthodologie de l'analyse d'impact expliquée dans le rapport?- A-t-on fait appel à des consultants externes? <p>2) Consultations avec les parties concernées</p> <ul style="list-style-type: none">- A-t-elle eu lieu?- Si oui, avec quelle fréquence?- Quand a-t-on fait appel à eux dans le procédé?- Préférence à les consulter dès le début du procédé ou tard ?- Avec qui a-t-elle eu lieu?- Y a-t-il un bon équilibre entre les origines des participants?- Est-elle décrite? (Est-ce un processus transparent...)- Mentionne-t-on les conflits ou vues divergentes? <p>3) Problèmes</p> <ul style="list-style-type: none">- Le problème est-il bien décrit dans le rapport?- Fournit-on des preuves, sur quels éléments se base-t-on?- Les tendances non durables liées au problème sont-elles indiquées, au niveau économique, environnemental et social?- Quels sont les risques qui caractérisent la situation initiale?- Qui est atteint par cette situation?	<p>Cette partie identifie les informations de base concernant l'analyse d'impact. Elle tente de comprendre combien de ressources ont été fournies pour effectuer l'analyse d'impact et son ampleur.</p> <p>Cette section tente d'identifier comment les différents acteurs ont été impliqués dans le processus. Certaines questions n'ont pas pu être abordées car les rapports n'ont pas été assez détaillés (origines des participants, équilibre dans les réunions de consultation).</p> <p>Pour une bonne compréhension du rapport de l'analyse d'impact, il est nécessaire de bien définir le problème que la mesure compte résoudre. Cette partie analyse le degré de précision attribué à la description</p>

4) Objectifs

- La décision d'effectuer cette analyse est due aux impacts économiques, environnementaux ou sociaux majeurs? Ou est-ce dû à une réforme politique majeure?
- Les objectifs sont-ils décrits en termes qualitatifs, quantitatifs ou monétaires?
- Sont-ils fort différents par rapport à la situation actuelle?
- S'inscrivent-ils dans la durée? Considèrent-ils le court, moyen et long terme?

5) Options

- Combien d'options sont proposées?
- Le scénario "Business as Usual" est-il employé et est-ce la situation de référence?
- Quelle est l'approche de base pour atteindre l'objectif?
- Quels sont les équilibres (compromis) associés avec les options proposées?
- Les options sont-elles fort différentes de la situation actuelle?
- Certaines sont-elles critiquées dans l'analyse et rejetées? Si oui pourquoi? Sur base de quels critères?
- Une option a-t-elle été préférée rapidement dans l'analyse? Avec des arguments forts?
- Les options donnent-elles beaucoup d'importance aux aspects économiques, environnementaux, sociaux?
- Les options sont-elles globales et prennent en considération les autres aires de politiques et les autres DGs?

6) Impacts

- A-t-on identifié de nombreux impacts, de type économique, environnemental ou social.
- Donne-t-on pour toutes les options, les impacts négatifs et positifs?
- Quelle importance est donnée à chaque genre d'impact dans l'analyse d'impact?
- Y a-t-il des conflits et incohérences potentielles entre les impacts économiques, sociaux et environnementaux qui conduisent à des compromis?
- Les impacts ont-ils pu être quantifiés, même en termes monétaires ou sont juste de nature qualitative?
- Les impacts sont-ils considérés sur le court, le moyen et le long terme?
- Pour faire face aux impacts, a-t-on proposé des facteurs de compensation, ou d'élimination? (pour les aspects environnementaux, économiques et sociaux)
- A-t-on considéré les impacts hors de l'UE?
- Connaît-on les effets de distribution des impacts?

du problème.

Cette section observe les objectifs que la mesure proposée se fixe pour remédier au problème décrit précédemment dans le rapport. On observe aussi le degré de précision de ces objectifs et leur nature.

La partie de la grille d'analyse concernant les options identifie le nombre d'options proposées et celles qui sont réellement valables. Cette section remarque également les équilibres ou compromis que les auteurs proposent entre les trois piliers du développement durable.

Les parties sur les options et sur les impacts constituent le corps de l'analyse d'impact, même si toutes les parties de l'analyse sont importantes.

Les impacts ont été analysés via le filtre de plusieurs façons. On a essayé de distinguer les incidences économiques, environnementales et sociales pour chaque cas analysé. Ensuite, l'importance donnée à chaque type d'impact a été identifiée. L'aspect descriptif des impacts est fort important également (impacts qualitatifs, quantitatifs ou monétaires) car il permet de savoir jusqu'où les auteurs ont voulu ou pu pousser leur analyse.

C'est aussi dans cette partie que l'on tente de voir si des mesures compensatoires ou d'atténuations ont pu être formulées.

<p>Sont-ils pris en considération?</p> <ul style="list-style-type: none"> - La méthode a-t-elle identifié des groupes, acteurs, régions lésés par les impacts potentiels? - Quelles méthodes ont été employées pour mesurer les impacts? <p>7) <u>Présentation des résultats</u></p> <ul style="list-style-type: none"> - Les résultats, pour chaque option, sont-ils décrits de manière précise? - Les hypothèses de ces résultats sont-elles spécifiées? - Sont-ils fournis pour chaque option proposée? <p>8) <u>Données</u></p> <ul style="list-style-type: none"> - Les sources des données sont-elles mentionnées? - D'où proviennent les données environnementales, économiques et sociales? - A-t-on fait appel à des consultants pour certaines informations? Pour quelle partie de l'analyse? <p>9) <u>Transparence</u></p> <ul style="list-style-type: none"> - Les différentes sections ont-elles claires et précises. - Exprime-t-il la vue des différents acteurs? - Explique-t-on les analyses effectuées? <p>10) <u>Suivi</u></p> <ul style="list-style-type: none"> - Mentionne-t-on un projet de suivi après la réalisation de cette analyse d'impact, au niveau des politiques? 	<p>Finalement, on a recherché les personnes touchées par ces différents impacts, en et hors Europe.</p> <p>Cette petite section observe comment les résultats ont été présentés, si cela peut être satisfaisant pour les lecteurs et le degré de détail qui leur est donné.</p> <p>L'origine des données a été identifiée ici, en observant également si les unités en charge de l'analyse ont fait appel ou non à des consultants externes.</p> <p>La section sur la transparence tente de voir si le rapport est clair et si il est facile de retrouver les sources. Des éléments comme le nom des auteurs du rapport sont aussi pris en considération.</p> <p>Ici, on observe si les rapports parlent de mesures de suivi, et considèrent les risques possibles de leurs initiatives.</p>
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EU extended impact assessments overview

Draft

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1 Introduction

The main objective of the present document is to provide a brief analysis and comparison of the extended impact assessments (ExIA's) undertaken by the European Commission in 2004¹. These ExIA's concerned several policies or action plan promoted by different Directorate-General as: development, energy and transport, environment, fishery, information society, Justice and Internal market. Therefore, the 13 ExIA's analysed here cover a wide range of policies and domains of action of the Commission and provide us a good sample of practice in the area of impact assessment.

Our analysis will be focused on questions relative to the methods used in the assessment. Especially we will deal with three main issues:

- How are defined the criteria of the assessment?
- What is the method used to identify the potential impacts of the policy?
- What is the method used to predict these impacts and to assess them?

In a first part, we will describe the main objectives of the policies concerned by the 13 extended impact assessment in order to show the diversity of domains treated. Secondly, we will explore more in detail the methods used by the ExIA to define the criteria, identify the impacts, and predict and assess the impacts.

This overview will allow us first to identify "what is done" (which methods are used?) in the area of impact assessment in the EC and "what is not done" (where does still it exist a need for methods?). Secondly, this overview will allow us to describe briefly the most interesting methods used and see to what extent they could be used in other ExIA's.

¹ These extended impact assessments are available at:

http://europa.eu.int/comm/secretariat_general/impact/practice.htm.

2 The Commission's extended impact assessment

The policies concerned by the ExIA's analysed here are the following, the aim of each policy is briefly described as in the assessment document:

1. Proposal for a Council regulation concerning the establishment of a voluntary FLEGT licensing scheme for imports of timber into the European Community

The EU Action Plan for Forest Law Enforcement, Governance and Trade (FLEGT) aims to reduce illegal logging and the associated trade in illegally harvested timber by strengthening governance in affected wood-producing countries; and reinforcing these efforts with the incentives and legal framework offered by the EU market. (Commission of the European Communities, 2004a)

2. Extended impact assessment: Communication of the Commission on the Integration of Environmental Aspects into European Standardisation

The standardisation process results in voluntary technical specification that may define, for example, how a product is manufactured used or disposed of. These standards play a positive role in the economy (reduction of transaction costs, facilitate trade, increase competition, channel innovation, avoid technical barriers in the internal market) but the growing number of standardised products, processes and services poses questions about their effects on the environment. The aim of the policy is to promote the effective integration of environmental aspects into the European standardization process (Commission of the European Communities, 2004b).

3. Extended impact assessment: The European Environment & Health Action Plan 2004-2010

The issue tackled by the policy is the adverse impact of environmental degradation on human health, which is significant but difficult to quantify. It aims to improve human health via the environment, and is not focused on protection of ecosystems per se. The overall objective is to provide the information required to assess when, where and how to take preventive action on the environmental sources of health impacts, and to revise risk reduction policy accordingly. (Commission of the European Communities, 2004c)

4. Proposal for a Directive of the European Parliament and the Council, amending Directive 91/440/EEC on the development of the Community's railways to gradually open up the market for international passenger services by rail

The main objective is to allow the rail sector to maintain its modal share in 2010 at the same levels of 1998, which means that the decline must be stopped, and that rail transport must increase in absolute terms as the aggregated transport demand is expected to rise by approximately 40% during the period 1998-2010. This objective applies to both passengers as to freight transport. (Commission of the European Communities, 2004d)

5. Impact assessment and ex-ante evaluation: Proposal for a Council regulation establishing a community fisheries control agency

The objective of this proposal is to ensure uniform and effective application of the rules of the community fisheries control. This objective is achieved through the creation of a joint inspection framework (JIF) and the establishment of the Community Fisheries Control Agency (CFCA). Through these measures, the use of existing means of inspection and surveillance may be optimised as to provide the greatest possible contribution to the achievement of uniform and effective application of the rules of the CFP by Member States. (Commission of the European Communities, 2004e)

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6. Extended Impact assessment: Proposal for a Directive of the European Parliament and of the Council on the implementation of the principle of equal opportunities and equal treatment of men and women in matters of employment and occupation

The proposal aims to update existing secondary legislation, bringing it in line with recent judgements of the European Court of Justice which have clarified and further developed the concept of equality. It also serves the need to guarantee a high level of legal certainty by putting together provisions of Directives linked by their subject into one single text, thus providing a text more easily accessible and more easily readable. (Commission of the European Communities, 2004f)

7. Extended Impact assessment: Proposal for a Council Decision establishing the European Refugee Fund for the period 2005-2010

The main objective of the European Refugee Fund is to promote a balance of efforts between Member States in receiving and bearing the consequences of receiving refugees and displaced persons and, thus, to alleviate the pressures felt by Member States most affected by reception of refugees and displaced persons. (Commission of the European Communities, 2004g)

8. Proposal for a Framework decision on certain procedural rights in criminal proceedings throughout the European Union

The overall objectives are to enable European citizens to know that they can rely on the criminal justice systems of the Member States to offer protection to suspects and defendants by way of specific guarantees. In this respect, the aim is to ensure that throughout the EU, all persons encounter equivalent fair trial standards in the course of criminal proceedings regardless of the Member State in which those proceedings occur. (Commission of the European Communities, 2004h)

9. Proposal for a Directive of the European Parliament and of the Council establishing an infrastructure for spatial information in the Community (INSPIRE)

The overall objective of the INSPIRE legislation will be to make harmonised and high quality spatial (geographic) information readily available across public sector bodies in the European Union at local, regional, national and European level in order to support policies with a strong territorial dimension. (Commission of the European Communities, 2004i)

10. eEurope 2005 Action Plan: Update

The central goal of the current Action Plan, eEurope 2005, is to stimulate the creation and use of on-line services. The aim is that, by the end of 2005, Europe should have modern online public services (e-government, e-learning, e-health) and a dynamic e-business environment, based on widespread availability of broadband access at competitive prices and a secure information infrastructure. (Commission of the European Communities, 2004j)

11. Proposal for a Directive of the European Parliament and of the Council on reinsurance and amending Council Directives 73/239/EEC, 92/49/EEC and Directives 98/78/EC and 2002/83/EC

The main objectives of the project are: (i) the establishment of a sound and prudent regime in the interest of policyholders. Strong and well-supervised reinsurers contribute to a stronger internal market and international financial stability; (ii) building of essential coordination of Member States' legislation and mutual recognition of the supervision in the Member State where the reinsurance undertaking is licensed. Once licensed a company should automatically be allowed to conduct reinsurance business all over the European Community under the freedom of establishment and the freedom to provide services; (iii) the abolition of systems with pledging of assets to cover outstanding claims provisions. (Commission of the European Communities, 2004k)

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12. Proposal for a Directive of the European Parliament and of the Council relating to the taking up and pursuit of the business of credit institutions (recast) and Proposal for a Directive of the European Parliament and of the Council on the capital adequacy of investment firms and credit institutions (recast)

The objectives are: (i) to provide the EU with a state-of-the-art prudential standards framework to increase the soundness and the stability of the EU financial system; (ii) to provide a proportionate capital treatment: the new capital requirements framework should be proportionate and recognize the variations in risks arising from the context in which exposures to different types of borrowers are incurred; (iii) to provide an appropriate treatment for investment firms and investment services: the new capital requirements regime must apply in the EU to both credit institutions and investment firms. (Commission of the European Communities, 2004 l)

13. Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions on interoperability of digital interactive television services

The main objective of the Commission Communication is to address the lack of interoperability in interactive television that could adversely affect the free flow of information, media pluralism and cultural diversity by limiting freedom of choice for users. The question is whether one or more standards should be mandated – or other measures adopted - in order to improve interoperability for interactive television services in the EU. (Commission of the European Communities, 2004m)

3 Methodological comparison of the ExIA's

3.1 General comments

Table 1 provides a brief comparison of the criteria and methods used in the 13 ExIA's. The first feeling coming out from the analysis of these ExIA's is that the criteria and methods used are very different from an ExIA to another. The second feeling is that in many cases there is no real method used to identify, predict or assessed the impacts, this information is being usually provided through an "educated guess" (experts' judgement) or not provided at all.

There are also some fundamental differences in the way the impact assessment has been done. Some of them have been undertaken after the Commission's decision to implement a particular policy, so the assessment interest is only the impact assessment of one policy option. Others have been undertaken before the Commission decision and so the results could have been used to identify the best choice among different alternatives. Therefore, the ExIA's conclusions also differ: some of them conclude on the best alternatives regarding to the impacts assessed and others do not.

However, there are some similarities between these 13 documents. For example, all the documents are built on the same structure providing successively: a description of the policy and of the problem tackled by the policy, the objectives, the possible options (or alternatives) and the impact assessment. In addition, it is worth noting that the identification of policy options (or alternatives) is performed in most of the ExIA's (even if the identified alternatives are not always realistic ones). This structure is indeed recommended by the European Commission in his handbook for an extended impact assessment.

In Table 2 we propose an overview of the analysed ExIA's based on several criteria among which some are coming from the comparison elements used in Table 1. These criteria take the form of questions for which the response may be Yes, No or NA (except for question 9):

1. Is there a clear definition of the different policy options available before the assessment?
2. Are all the policy options assessed?
3. Does the assessment define some criteria before identifying the impacts?
4. Is any formal impact identification method used?
5. Are the impacts classified (according to the actors involved or the sustainable development pillars)
6. Is any formal impact prediction method used?
7. Is any formal impact evaluation method used?
8. Does the presentation of the results provide a clear comparison of the alternatives?
9. Is the assessment conclusive regarding to the policy option? (A= the best alternative is identify; B = the assessment compares the alternatives regarding to the impacts but does not choose one; C = the ExIA does not conclude).

The first 7 questions deal with the issues of policy options definition, criteria definition, impact identification, prediction and assessment that have been outlined in Table 1. The 2 last questions deal with the conclusion of the ExIA's and the use of the results in order to make a policy choice.

ExIA	Criteria	Impact identification	Impact prediction	Impact assessment
1	3 categories: economic, social, environmental 2 actors	Scenario analysis and comparison with “no action scenario” One scenario highlight one particular primary impact, the secondary impacts are derived	From case studies and derivation from primary impacts	economic assessment other impact listed but not assessed
2	3 categories: economic, social, environmental	From the description of each alternative	Educated guess	None
3	3 categories: economic, social, environmental	The 3 phases of the Action Plan are analysed separately but no more method is used	None	None
4	Several criteria, choice not justified	None	Modelling	The impact are assessed through a model and expressed in % of change regarding to a reference scenario
5	Several criteria, choice not justified	Documented guess	Educated guess	None
6	Several criteria, choice not justified	From the description of each alternative	Comparison with BAU Documented guess	Each alternative is evaluated against each criterion according to the extent to which it solves the problem: Yes, No, Partly, Negative effect
7	Several criteria, choice not justified	Considering the impact on each actors' categories	Educated guess	A table classifies the expected impacts according to: - the environmental, social or economic nature of the impact; - positive or negative impact; - the target group affected.
8	Criteria defined according to the actors concerned	Consultations with stakeholders and meetings	Educated guess	For some impacts, a score is provide for each couple actor-impact: + (increase), 0 (neutral) and – (decrease)
9	3 categories: economic, social, environmental	Expert groups and consultative process	Comparison with BAU	Quantitative impacts are translated in monetary terms other are just listed

10		A consultation process helps identify areas of interest. The alternative are considered with respect to these areas	Comparison of alternatives	None
11	3 categories: economic, social, environmental	Alternatives considered regarding to the different actors' categories	Several methods according to the impact: grid stakeholders/alternative list of pros and cons for each stakeholders economic simulation	none or economic simulation
12	Only 1 criterion	Differentiation of the actors involved		Economic calculation/simulation
13	3 categories: economic, social, environmental	Description of each alternative regarding to the environmental, social and economic issues	Educated guess	None

Table 1: Comparison of the 13 ExIA's regarding to the criteria and the methods used

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
EIA01	Y	N	N	Y	Y	Y	Y/N	N	B
EIA02	Y	Y	N	N	Y	N	N	N	A
EIA03	N	NA	N	N	Y	N	N	N	C
EIA04	Y	Y	Y	N	Y	Y	Y	Y	A/B
EIA05	N	NA	Y	N	N	N	N	N	C
EIA06	Y	Y	N	N	N	N	N	Y	A
EIA07	Y	Y/N	Y	N	Y	N	N	N	B
EIA08	Y	Y	N	N	Y	N	N	N	A
EIA09	Y	Y	N	N	Y	Y	Y	Y	A
EIA10	Y	Y	Y	N	Y/N	N	N	N	A
EIA11	Y	Y	N	N	Y	Y/N	Y/N	N	A
EIA12	Y	Y	N	N	Y/N				
EIA13	Y	Y	N	N	N	N	N	N	A

Table 2: ExIA comparison

Table 2 shows that most of the ExIA define policy alternatives and assess them. However, there is obviously a “methodological hole” in the areas of impact identification, prediction and assessment. In addition, we find that most ExIA’s do not bring up a clear comparison of the alternatives regarding the impact assessment. This could be provided by a simple table giving a score (+, -, neutral) for each alternative with respect to each impact.

3.2 The criteria definition

Of course, there is no list of criteria suitable to all the policies assessed by the ExIA’s. Each of them uses its own list of criteria. In most IEA’s, there is a confusion between the impacts and the criteria. In general, the policy alternatives are analysed in order to identify their potential impacts. In many cases, there is no step further to build a list of criteria but criteria are used in an implicit way and so impact is a word commonly used in the IEA both in the sense of criterion and impact.

The choice of the criteria is generally not justified. Sometime, the criteria (or impacts) are classified according to the 3 sustainable development pillars: economic, social and environmental and/or according to the actors.

3.3 Impact identification method

As explained above, there is in all ExIA a chapter concerning the impact identification. There is no one single method to identify the potential impacts of the policy alternatives but a wide range of practices. In many cases, there is no step dedicated to the impact identification. This does not mean that there is no impact identification but that this step is usually included (implicitly) in the policy options description.

The most commonly used method is a simple one that consists in describing each alternative in detail and identifying the impacts by this way (see ExIA n°2, 3, 5, 6 and 13). The experts in charge of the impact assessment have therefore the entire control of this process that seems not very transparent.

Another method more transparent and participative consists in organising consultations with stakeholders and eventually with experts groups and asking them to list all the potential impacts of

each alternative (see ExIA n° 8, 9 and 10). In this process, each actor or category of actors can describe the potential impact for themselves.

The third method consists in considering each alternatives regarding to each actors' category. The experts in charge of the impacts assessment perform this analysis without any consultative process. The only difference with the first method is that experts classify the impacts according to actors' categories. These categories are defined by the experts and reflect the groups of person or institutions that are affected by the policy.

One more elaborated method but used only once (ExIA n°1) is a scenario analysis. The policy concerned by the ExIA is a set of measure that each has an obvious impact on trade or on environment. These impacts are named "primary impacts". Several scenarios that highlight one particular primary impact (each scenario is in fact one single measure of the policy or of the alternatives) are defined and each of them are compared to a "no action scenario" in order to identify secondary impacts i.e; impacts that are the consequence of the primary impact.

3.4 Impact prediction

In this section, we distinguish the impacts prediction from the impact evaluation. The impact prediction aims at anticipating the "direction" of the impact: will it be positive or negative, affect more one stakeholders' category than another etc. but do not provide an estimation of the impact magnitude (that is provide by the impact evaluation).

The most commonly used method to predict the impact is the so-called "educated guess": in general the policy alternatives are described by the experts in charge of the assessment and the impact identification as well as the impact prediction come from this description. In many cases, the alternatives are compared to the BAU option in order to predict the impacts. This method is used in the ExIA n°2, 5, 6, 8, 9, 10 and 13.

The first ExIA analysed here (n°1) predicts the impacts by cases studies. The policies alternatives are fictively implemented using the specific data's of four countries chosen in order to be the most representative as possible of the global situation (all the countries concerned by the policy). The lesson drawn from these case studies are therefore generalised to the other countries by "educated guess" of the experts in charge of the assessment.

The method used in the ExIA n°4 is the modelling of the transport system and the prediction as well as the evaluation of each impact identified. Of course, the sector transport and this specific policy are particularly suitable for such a modelling and that could not be the case of other sectors and policies. It is also worth noting that the range of impacts that can be predicted by the modelling is could be limited. The model used in ExIE n°4 take into account a wide variety of impacts, however the environmental criteria is break down only in accident number, air pollution and CO₂ emission, excluding therefore for example land use, noise and landscape impacts that are more difficult to quantify in monetary terms.

Another method used by ExIA n°11 consists in building a grid stakeholders/alternatives and to predict the impacts of each alternatives regarding to each stakeholders. This grid shows the predicted impacts of three policy options (status quo, market mechanism/voluntary measure, supervisory alternative) for 4 actors' categories (reinsurance and insurance undertakings, policy holders, insurance supervisors).

	Status quo alternative	Market mechanism/ voluntary measures	Supervisory alternative
Reinsurance undertakings	None	Slight increase in disclosure requirements. Marginal extra costs.	Subjected to mandatory supervision and solvency requirements, but <i>only</i> in the home Member State. Certain compliance costs, but the latter are likely to be outweighed by benefits resulting from Single European licence.
Insurance undertakings	None	Slightly better information about available reinsurers.	Facilitated choice of reinsurer could make a prudent and cost-effective choice easier.
Policyholders	None	None	A derived benefit due to direct insurers facilitated choice of reinsurers, and potentially better monitoring of the solvency situation.
Insurance supervisors	None	Slightly better information about reinsurers.	Substantial benefits from harmonised supervision and the introduction of solvency requirements. Benefits also from increased cooperation between supervisors. Certain implementation costs, which could however be partly reduced thanks to the increased cooperation.

Figure 1: Grid of the predicted impacts of three policy options for 4 actors' categories in ExIA 11 (Commission of the European Communities, 2004)

3.5 Impact evaluation

The impact evaluation is generally a quite difficult task because the impacts cannot always be assessed in a quantitative way. In many ExIA the impacts are therefore not assessed. In general, an assessment is provided when the indicators are quantitative. That is the case in ExIA's n°4 where the impacts are assessed through a model and expressed in percentage of change regarding to a reference scenario. ExIA 9 measures some impacts in monetary terms but impacts for which

this method is not suitable are not assessed. ExIA n°1, 11 and 12 assess the economic impacts through economic calculation or simulation but the other impacts are not assessed.

4 Conclusion

In our conception, impact assessment should ideally imply the following successive steps: description of the objectives, policy options identification, impacts and criteria identification and definition, impacts prediction, impacts evaluation, comparison of the alternatives. The analysis outlined above shows that the latest extended impact assessments undertaken the European Commission have some points in common: the structure of the text is nearly the same in all ExIA. All the ExIA's provide for example a description of the objectives, a policy option identification and description of the likely impacts. However, the way these steps are implemented can be very different from one ExIA to another giving us the impression that there is still a need for more consistency.

This analysis showed in addition that in many cases there is a "methodological blank" in the area of impacts identification, prediction and assessment. In the area of impact identification, the most promising methods seem to be the identification through a stakeholders' participation, the decomposition of primary and secondary impacts or the checklist (that has not been used in the 13 ExIA's analysed here).

It is obvious that finding rules or guidelines in order to perform an impact prediction or assessment suitable to all ExIA is a really difficult task. Some tools are already available (as models for the transport or financial sectors) and can help the experts in assessing the impacts. However, these tools provide generally an assessment of a limited number of impacts that do not necessary cover all the sustainable development dimensions.

There is therefore a risk that some impacts take more importance than others in the overall assessment because of the possibility of quantification offered by these tools. It is also possible that the tools available influence the impacts identification as this seemed to be the case when financial or transport models were used.

Annexes: description of the 13 extended impact assessments

5 EU Action Plan for Forest Law Enforcement, Governance and Trade (FLEGT)

5.1 Objectives

The EU Action Plan for Forest Law Enforcement, Governance and Trade (FLEGT) aims to reduce illegal logging and the associated trade in illegally harvested timber by strengthening governance in affected wood-producing countries; and reinforcing these efforts with the incentives and legal framework offered by the EU market.

5.2 Assessment criteria

Assessment criteria can be classified into primary and secondary impacts. The primary assessment criteria are the impact on the wood production in the producer country and some other impacts directly linked as taxes revenues, employment and exported quantities. Other assessment criteria are classified in the economic, environment and social fields for both the producer (developing) country and the UE (importer).

The secondary criteria used are the following.

	Producer country	European Union
Economic	<p>Competitiveness and strengthen of legal operators</p> <p>Timber prices</p> <p>Effect of price increase on consumers</p> <p>Effect on the balance of payment (taking into account the unsustainable aspect of illegal logging)</p>	<p>Wood prices</p> <p>Effect on EU wood producers</p> <p>Market gains through the assurance of legality</p> <p>Support to the elaboration of a code of practice</p>
Environmental	<p>Respect of environmental regulations</p> <p>Reduction of unsustainable harvesting</p> <p>Pressure on protected areas</p>	<p>security over the global public goods provided by forests</p> <p>protection from climate change</p>
Social	<p>Respect of community's rights</p> <p>Worker's safety and health and payment of social security charges</p> <p>Employment (number)</p> <p>respect of customary rights and</p>	<p>Employment (number)</p>

	needs of local populations	
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5.3 Assessment methods

5.3.1 Impact identification method

A scenario analysis is used to highlight the potential impacts of the policy. Three “with regulation” scenarios were formulated to reflect potential impacts resulting from introduction of the policy. These scenarios are compared against a basic “without regulation” scenario.

Each of these scenarios highlights a particular impact of the policy. For example, the first scenario assumes that the policy results in the highest fiscal gain to the producer country by ending non-payment of log and export taxes and the second scenario assumes that the environmental benefits of the policy are maximized (the illegal production directed to EU is suppressed).

The scenarios are consistent with a foreseen primary consequence or impact of the policy. The purpose of these scenarios is to separate the primary impacts from each other in order to bring to light the secondary impacts. In fact, the policy will probably imply several primary (and thus also secondary) impacts identified in the three scenarios.

Each scenario leads to a primary impact. In the first case, the major impact is the increase of the taxes revenues; in the second one, the major impact is the reduction of illegal wood production and of the related employment. The consequences associated with this major impact are identified and classified into economic, environmental and social impacts for both the producer country and the EU. Thus, all the impacts (primary and secondary) identified are likely to occur.

The following step consists in broadening the scope of the analysis by considering other wood products and including other countries in the analysis.

5.3.2 Method to predict the impacts

Some case studies are used to predict the impacts. Four countries from the major regions that export wood to EU are chosen and the policy is applied (fictitiously) to each of these 4 countries.

5.3.3 Method to assess the impacts

The wood production (total, illegal and legal) is calculated with available production data's. The other primary impacts like employment or taxes revenues are derived from these results by an economic assessment. The secondary impacts are usually just listed and not quantified.

6 Communication of the Commission on the Integration of Environmental Aspects into European Standardisation

6.1 Objectives

Standardisation is a voluntary process carried out by and for the stakeholders within the structures and rules of standards organisations. The resulting technical specifications are voluntary consensus documents that may define, for example, how a product is manufactured, used or disposed of.

In recent years, the number of European standards has grown significantly. These standards play a positive role in the economy as they reduce transaction costs, facilitate trade, increase competition, and channel innovation. Moreover, European standards help to avoid technical barriers in the internal market. The growing number of standardised products, processes and services poses questions about their effects on the environment. Virtually all standardised goods and processes impact on the environment, although this impact may or may not be significant.

The aim is to promote the effective integration of environmental aspects into the European standardization process.

6.2 Assessment criteria and definition of alternatives

Three major alternatives are identified:

- No policy change scenario: the number of European standards continues to grow and the integration of environmental aspect remains un-systematic. The environmental pillar may be neglected.
- Encourage stakeholders to make further voluntary efforts by raising awareness and environmental care, setting priorities, enhancing wider stakeholders' participation and using tools and offering incentives.
- Use of legislative instruments: public authorities lay down detailed rules for technical issues. The associated costs are covered entirely by public funding.

The assessment criteria used are the following:

Environmental	The integration of the environmental pillar in the standardisation process
Social	Worker's health and safety Health in general Consumer protection Democratisation of the standardisation process Perception of the environmental debate Relation between the legislator and the standardisation system
Economic	Impact of existing standardisation work Efficiency (delay) of the standardisation process

	Financial support to the environmental stakeholders Cost for the public authorities Attractiveness of the system
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6.3 Assessment methods

6.3.1 Impact identification method

The impacts are identified for each scenario but there is no particular method used for this.

6.3.2 Method to predict the impacts

idem

6.3.3 Method to assess the impacts

There is no assessment of the impacts.

7 The European Environment & Health Action Plan 2004-2010

7.1 Objectives

The issue tackled by the policy is the adverse impact of environmental degradation on human health, which is significant but difficult to quantify. It aims to improve human health via the environment, and is not focused on protection of ecosystems per se.

The overall objective is to provide the information required to assess when, where and how to take preventive action on the environmental sources of health impacts, and to revise risk reduction policy accordingly. The expected impacts are:

- improved information on the links between environment and health
- a better assessment of the effectiveness of current risk reduction policy
- revision of risk reduction policy where necessary to make it more effective
- improved risk communication to the public, including workers
- improved professional and institutional capacity to deal with environment and health issues

7.2 Assessment criteria and definition of alternatives

The Extended Impact Assessment sorted first the Action Plan into 3 main phases of action:

- 1 Analysis of the information needs for policy development
- 2 Changes to information requirements
- 3 Risk reduction

The alternatives and criteria are defined regarding to these three phases.

Phases	Criteria	Alternatives
1	Economic effectiveness Social governance (stakeholders consultation) Environment environment information synergies between politics	none
2	Economic cost of the measures Social governance (stakeholders consultation) Environment optimisation of the monitoring system to deliver relevant information	a range of alternatives defined by the effectiveness of the measures (result for environment and health policy and cost)
3	Economic economic impact for sectors concerned by the	none

	measures economic implication of reduced health care costs Social improved well-being from prevention of adverse health effects employment implications exclusion implications governance (consultation of all parties) Environment synergies with ecosystem protection identified in the course of policy preparation	
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7.3 Assessment methods

7.3.1 *Impact identification method*

The impact identification method only consists in the analysis of each phase separately.

7.3.2 *Method to predict the impacts*

The impacts are not predicted.

7.3.3 *Method to assess the impacts*

No assessment is provided.

8 Proposal for a Directive of the European Parliament and the Council, amending Directive 91/440/EEC on the development of the Community's railways to gradually open up the market for international passenger services by rail

8.1 Objectives

The main objective is to allow the rail sector to maintain its modal share in 2010 at the same levels of 1998, which means that the decline must be stopped, and that rail transport must increase in absolute terms as the aggregated transport demand is expected to rise by approximately 40% during the period 1998-2010. This objective applies to both passengers as to freight transport.

8.2 Assessment criteria and definition of alternatives

The assessment criteria used are the following:

- Service levels in different market segments;
- Quality and prices for passengers;
- Passengers carried;
- Modal shift;
- Investment, turnover, profitability and state aids in the industry;
- The environment;
- Market structure;
- Railway safety and passenger security; and
- Employment and working conditions.

Six alternatives are identified and are distinguished according to the degree of openness of the passenger services:

- Opening of the market for international passenger services only without cabotage;
- Opening of the market for international passenger services only with cabotage;
- Opening of the market for international passenger services only with cabotage and links covered by a national or an international public service agreement are included
- Opening of the market for international and national passenger services;
- Opening of the market for international and national passenger services only without cabotage and links covered by national or international public service will be included;
- The BAU option: no changes in the current regulatory framework.

8.3 Assessment methods

8.3.1 *Impact identification method*

8.3.2 *Method to predict and assess the impacts*

An external consultant has carried out the impact assessment. It consists of:

- An overview and an assessment of the regulatory regimes for rail passenger transport for 4 selected countries (representatives of the different type of regimes)
- An analysis of the attitudes and interests of stakeholders with respect to rail passenger liberalisation

5 scenarios were examined and compared to a reference scenario

- **Scenario 1:** open access competition for international services with cabotage, with average cost access charges, five-year agreements for access to the infrastructure, regulated through ticketing, a limited service offering from the new entrants, and commercial (profit maximising) behaviour on the part of both operators;
- **Scenario 2:** open access competition between two major operators, with marginal-cost access charges, fifteen-year agreements for access to the infrastructure, regulated through-ticketing and profit-satisfying behaviour on the part of both operators;
- **Scenario 3:** as Scenario 2, but with open access replaced by restricted competition based on big passenger volumes (i.e. concession structures seeking to preserve and expand the network and social benefits of rail);
- **Scenario 4:** as Scenario 2, but with open access replaced by restricted competition based on cash bids, profit-maximising behaviour on the part of both operators and no through-ticketing (i.e. concession structures aimed at maximising cash paid to the public sector, and revenue risk transfer);
- **Scenario 5:** as Scenario 2, but extended to domestic services not covered by a public service agreement.

It is worth noting that these scenarios do not exactly match the alternatives identified above. These scenarios are analysed by modelling in order to assess the impacts listed above. The results are expressed in % of change compared to the reference scenario.

9 Proposal for a Council regulation establishing a community fisheries control agency

9.1 Objectives

The objective of this proposal is to ensure uniform and effective application of the rules of the community fisheries control. This objective is achieved through the creation of a joint inspection framework (JIF) and the establishment of the Community Fisheries Control Agency (CFCA). Through these measures, the use of existing means of inspection and surveillance may be optimised as to provide the greatest possible contribution to the achievement of uniform and effective application of the rules of the CFP by Member States.

The objective of the Joint Inspection Framework (JIF) is to establish rules for operational cooperation and coordination between Member States in the area of inspection and surveillance.

9.2 Assessment criteria and definition of alternatives

The alternatives solutions are based on voluntary cooperation between Member States and mutual cooperation between MS without the support of any agency. These options are considered as too costly and resources consuming.

The assessment criteria used are the following:

- Sustainable exploitation of fish stocks
- Perception by fishermen of the fairness of the rules + respect of the national rules;
- Quality of the relation of the Community with the national competent authorities and outside partners;
- Effective implementation of the rules of CFP;
- Transparency of the implementation of the rules;
- economic sustainability from the fish stock sustainability;
- social impact due to the new economic sustainability.
- Budget need of the policy.

9.3 Assessment methods

9.3.1 Impact identification method

There is no real method to identify the impacts. The list of impact seems to come from a “educated guess”.

9.3.2 Method to predict and assess the impacts

The prediction of impact is not detailed. The impacts are not assessed.

10 Proposal for a Directive of the European Parliament and of the Council on the implementation of the principle of equal opportunities and equal treatment of men and women in matters of employment and occupation

10.1 Objectives

The proposal aims to update existing secondary legislation, bringing it in line with recent judgements of the European Court of Justice which have clarified and further developed the concept of equality. It also serves the need to guarantee a high level of legal certainty by putting together provisions of Directives linked by their subject into one single text, thus providing a text more easily accessible and more easily readable.

10.2 Assessment criteria and definition of alternatives

4 alternatives are identified:

- the BAU scenario where nothing is done to modernize and simplify the legislation. The number of directives does not decrease;
- option 1 consists in a codification without substantial changes;
- option 2 consists in a revision of the Directives by putting together all the Directives implementing the principle of equal pay between men and women. This goes beyond a technical exercise because it implies an update of the secondary legislation;
- option 3 is an extension of option 2 : adding some provisions of the Directive on the introduction of measures to encourage improvements in the safety and health at work of pregnant workers and workers who have recently given birth.

The criteria used in the assessment are the following:

- access to legislation, coherent consolidated texts, clear structure, oversight, legal certainty
- Integration of fundamental case law
- Clarity in relation to the horizontal provision of Directive 2002/73
- Enhancing effective application of European equal treatment legislation
- additional costs for enterprises

10.3 Assessment methods

10.3.1 Impact identification method

There is no impact identification method. The impacts identification comes from the description of each alternative.

10.3.2 Method to predict and assess the impacts

There method used to predict the impacts is the description of the alternatives and the comparison with the BAU scenario.

The criteria are, in fact, problem areas. The text provides a grid where each alternative is evaluated against each criterion according to the extent to which it solves the problem: Yes, No, Partly, Negative effect. This grid is used to choose the better alternative.

11 Proposal for a Council Decision establishing the European Refugee Fund for the period 2005-2010

11.1 Objectives

The main objective of the European Refugee Fund is to promote a balance of efforts between Member States in receiving and bearing the consequences of receiving refugees and displaced persons and, thus, to alleviate the pressures felt by Member States most affected by reception of refugees and displaced persons.

The measures supported by the Fund should seek to complement and support the EU legislation in order to support the progressive implementation of a Common Asylum System at all levels.

11.2 Assessment criteria and definition of alternatives

The impact assessment was undertaken after the ERF was already in force so alternatives rejected before the implementation (no implementation of a fund) of the ERF are not considered by the assessment. The alternatives are therefore all based on the principle of financial support of the Community to the MS. The mid-term evaluation of the fund identified the main principle of the ERF and highlighted some weakness. Four policy options are therefore considered taking into account these considerations. The 4 options are:

- to abandon the ERF but mainstreaming measures aimed at refugees and asylum seekers into existing Community instruments (European Social Fund);
- the continuation of the ERF as a purely redistributive financial instrument covering the needs identified and expressed by MS;
- a completely centralised financial instrument where the Commission would both identify needs and priorities at a European level, select and co finance actions to be supported to encourage actions that correspond to needs at Community level;
- a more strategic “solidarity” instrument with a reinforced link to European asylum policy, and greater cooperation and cross-fertilisation dimension at national and European level.

The criteria are classified into 3 categories:

- Reception conditions and asylum procedures: improvement in quality / quantity of material reception conditions for persons seeking protection (health, housing, education, social benefits, access to the labour market), fairer and more effective asylum procedures;
- Integration : decrease in dependence on social welfare, improved access to the labour market for refugees enabling them to support themselves at an earlier stage, increased participation in social life through civil society organisations and other relevant channels, improved wellbeing and self-esteem;
- Voluntary return : changed or improved conditions enabling refugees and asylum seekers to return home in a sustainable way, development of skills of returnees with a positive impact on the country of origin.

11.3 Assessment methods

11.3.1 Impact identification method

The four policy alternatives are evaluated regarding to the actors categories involved:

- final beneficiaries (asylum seekers and refugees)
- Member States (MS)
- partners of asylum policy (NGO, refugees Community Organisations, local and regional authorities);
- EU citizens

The alternatives are therefore considered according to these categories in order to identified the potential impacts.

11.3.2 Method to predict and assess the impacts

A table classifies the expected impacts according to:

- the environmental, social or economic nature of the impact;
- positive or negative impact;
- the target group affected.

12 Proposal for a Framework decision on certain procedural rights in criminal proceedings throughout the European Union

12.1 Objectives

The overall objectives are to enable European citizens to know that they can rely on the criminal justice systems of the Member States to offer protection to suspects and defendants by way of specific guarantees. In this respect, the aim is to ensure that throughout the EU, all persons encounter equivalent fair trial standards in the course of criminal proceedings regardless of the Member State in which those proceedings occur.

A more general objective was to launch a debate on what constitutes a fair trial and what sort of standards could be considered common to EU Member States. This objective was achieved during the preparation of this proposal: indeed, the Commission's preparation, research and consultation in this area (by way of a Consultation Paper, Green Paper, experts meeting and other debates in various fora) and the publicity these measures were given have encouraged Member States to reflect on their own criminal justice systems. This consideration may help the Commission to clarify the priorities for the future action.

The five specific objectives targeted by this initiative are:

- The right to legal assistance and representation,
- The right to interpretation and translation,
- The protection of certain potentially vulnerable groups,
- The possibility for detained persons to communicate their whereabouts to the outside world and for foreign defendants to receive consular assistance
- The right to written notification of rights to ensure that each suspect/defendant is aware of his rights (the "Letter of Rights").

Evaluation and monitoring of the situation in the Member States is an essential component in order to achieve common minimum standards and to promote trust.

12.2 Assessment criteria and definition of alternatives

The alternatives are defined according to the legal competences of the EU i.e. taking into account the subsidiarity and proportionality principles. The alternatives identified are:

- No policy change: to do nothing and carry on with the existing, purely nationally based safeguards and the safety net of the ECHR and European Court of Human Rights;
- A wide-ranging proposal which consists in creating a wide-ranging instruments that covers all the different aspects identified in a consultation implemented before the impact assessment;
- An instrument limited to the basic safeguards

The assessment criteria mentioned in the impact description of the alternatives are:

-
- the rights protection
 - the trust between MS
 - the justice perception of citizens
 - the impact on mobility between MS and on the Single Market functioning
 - the level of judicial errors
 - overloading of national and European justice systems
 - transparency of the decision-making process
 - cost and rational of the implementation

The 3rd alternative has been chosen according to these impacts descriptions and has been further assessed regarding to the following impact categories:

- EU economy and society:
 - EU citizens' improved perceptions of the degree of protection of individual rights across different MS
 - mobility and free movement across MS and associated economic benefits
 - efficiency of the judicial systems
- Suspects and defendants
 - protection of individual rights (particularly the right to legal advice)
- professional working in the criminal justice system
 - The impacts are classified according to the categories of actors (translator, interpreter, police, lawyer, judge and social workers) and to the impacts categories (remuneration, mobility, workload and status)
- Victimes
 - costs impacts (through shorter proceedings)
 - information on the legal system

12.3 Assessment methods

12.3.1 Impact identification method

The impacts have been identified through a series of consultations with stakeholders and brainstorming meetings. They are detailed in a table and classified according to the target actor (EU economy and society, suspects and defendants, suspects' and defendants' families,

professional workers, victims and related pressure groups). A subdivision into environmental, social and economic is made into each category.

12.3.2 Method to predict and assess the impacts

The impacts on EU economy and society, suspects and defendant and victims are predicted by “educated guess” and are not really assessed. The impacts on professional working is assessed using a table listing the different actors categories and the different impacts (as described above). A score is given for each couple actor-impact. This score is + (increase), 0 (neutral) and – (decrease).

13 Proposal for a Directive of the European Parliament and of the Council establishing an infrastructure for spatial information in the Community (INSPIRE)

13.1 Objectives

The overall objective of the INSPIRE legislation will be to make harmonised and high quality spatial (geographic) information readily available across public sector bodies in the European Union at local, regional, national and European level in order to support policies with a strong territorial dimension.

13.2 Assessment criteria and definition of alternatives

When developing the INSPIRE proposal, the following six policy options were considered:

- Do nothing.
- Voluntary cooperation among Member States.
- A broad framework backed by a EU framework Directive based on the subsidiarity principle of management devolved to Member State level. Obstacles addressed within a broad framework in a progressive manner.
- A focused framework backed by an EU framework Directive based on the subsidiarity principle of management devolved to Member State level, to constitute a first step focusing on priority data for environmental policies in a context of progressive implementation of a multi-sectoral spatial data infrastructure.
- A comprehensive framework backed by an EU framework Directive addressing all obstacles in a comprehensive manner.
- EU Regulation stipulating how Member States should implement INSPIRE specifications and infrastructure.

The 2nd alternative was discarded at an early stage in view of the previous European experience. This alternative was proved to be incapable of overcoming the obstacles to be addressed.

Options 5 and 6 have progressively been narrowed to options 3 and 4 during the policy formulation process. The main reason for which these options have not been assessed is the high costs or high cost/benefits.

The criteria used are:

- investment cost
- availability of harmonized data's;

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- environmental criteria :
 - support of activities related to environmental policy implementation (reporting, impact assessment, management plans for specific sites, etc.)
 - easier participation by NGOs and public in public debates and decision making;
 - easier ex-ante evaluation of environmental policy;
 - monitoring and evaluation of environmental policies and their effectiveness;
 - support for more integrated policy approaches and policy coordination;
 - implementation of the Policy of Trans European Networks
 - integration of environmental protection objectives into other policies
 - Social criteria:
 - management and provision of information on property ownership, tenure and mortgage;
 - monitoring and management of agriculture;
 - management of public utilities (water, gas and electricity networks);
 - operation of emergency services;
 - spatial planning.
 - economic criteria (impacts on private sector):
 - analysis of different European markets by commercial data users (greater competition);
 - creation of new products and services by commercial value added information providers.

13.3 Assessment methods

13.3.1 Impact identification method

The impacts are identified by expert groups and by a consultative process.

13.3.2 Method to predict and assess the impacts

The first alternative is defined as the baseline against which the other alternatives are assessed. The impact of option 3 was fully assessed by a working group. This analysis and a consultation process result in the formulation of option 4 and the revision of option 3.

Two classes of impacts are identified: quantitative and qualitative impacts. The first ones are translated in monetary terms and the second ones are only evaluated qualitatively.

More information is available on quantitative costs than on quantitative benefits but the estimates for costs are said generous and the estimates for benefits are said conservative.

14 eEurope 2005 Action Plan: Update

14.1 Objectives

The central goal of the current Action Plan, *eEurope 2005*, is to stimulate the creation and use of on-line services. The aim is that, by the end of 2005, Europe should have modern online public services (e-government, e-learning, e-health) and a dynamic e-business environment, based on widespread availability of broadband access at competitive prices and a secure information infrastructure.

When *eEurope 2005* was launched the Commission committed to a mid-term review in the context of the enlargement. The mid-term review was published in February 2004. The assessment concerns the main options for the mid-term revision of *eEurope* and not the overall program.

14.2 Assessment criteria and definition of alternatives

The revision of the plan was driven by different factors such as EU enlargement, new development in ICT and implementation already achieved across all Members States. Taking into account these points, three broad options were identified:

- the BAU option : no change in the action plan;
- minor modifications to improve the action plan in line with the results of the stakeholders enquiry;
- a full revision of the action plan.

The three options are described allowing 7 domains that could be addressed by the action: broadband, services, e-Business, benchmarking, security, e-inclusion and review and reflection on mid-term of Lisbon. A guide for identifying and selecting options has been defined and is based on 5 main guidelines relating to the efficiency of the policy: consolidation and reinforcement of the plan rather than new directions, performance of the tools in meeting the goals of the plan, clear focus (restrict emphasis to the main lines of action), relevance regarding to the Lisbon Strategy, respecting subsidiarity.

14.3 Assessment methods

14.3.1 Impact identification method

A consultation process has been launched during the revision of the plan. 7 domains have been identified during this process (see above). The impact identification method consists in discussing the implication of each option regarding to each area.

14.3.2 Method to predict and assess the impacts

There is no real assessment of the impact except the comparison of the guessed impacts of each alternative.

15 Proposal for a Directive of the European Parliament and of the Council on reinsurance and amending Council Directives 73/239/EEC, 92/49/EEC and Directives 98/78/EC and 2002/83/EC

15.1 Objectives

The reinsurance sector provides wholesale cover for the risks assumed by insurance companies on behalf of their clients. There are currently no harmonised reinsurance supervision rules in the EU. This situation leads to five major problems classified as followed:

- uncertainty for direct insurance undertakings
- barriers to trade
- administrative burden;
- International trade negotiation.

The main objectives of the project are the following:

- establishment of a sound and prudent regime in the interest of policyholders. Strong and well-supervised reinsurers contribute to a stronger internal market and international financial stability;
- building of essential coordination of Member States' legislation and mutual recognition of the supervision in the Member State where the reinsurance undertaking is licensed. Once licensed a company should automatically be allowed to conduct reinsurance business all over the European Community under the freedom of establishment and the freedom to provide services. No additional supervision of or checks on the reinsurance undertaking should be performed by supervisors in host Member States;
- abolition of systems with pledging of assets to cover outstanding claims provisions;

15.2 Assessment criteria and definition of alternatives

The identification of the alternatives is made by, first, identifying the major issues (5) and, secondly, identifying the alternatives belonging to each major issue.

The alternatives are the following:

- Issue 1: Overall approach
 1. Status Quo
 2. Market/mechanism solution/ voluntary disclosure of reinsurance
 3. Supervisory solution
- Issue 2: Fast-track solution or comprehensive, long term project
 1. Fast-track solution for reinsurance supervision framework

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2. Long-term comprehensive project for a reinsurance supervision framework
- Issue 3: Voluntary passport or mandatory licensing system?
 1. A voluntary passport system for companies wanting to adhere to the system
 2. Mandatory licensing system giving Community reinsurers a passport for cross-border business in the EU
 - Issue 4: Quantitative solvency requirements for non-life reinsurance
 1. The solvency requirements for reinsurance are close to those of direct non-life insurance
 2. The solvency requirements for reinsurance are higher than those of direct non-life insurance
 - Issue 5: Quantitative solvency requirements for life reinsurance
 1. In principle use direct life rules for life reinsurance
 2. Approximate through use of direct non-life rules also for life reinsurance

The criteria are not defined in advance. The impacts are classified according to the social, economic and environmental domains but the environmental effects are considered as inexistent.

15.3 Assessment methods

15.3.1 Impact identification method

For each issue, the alternatives are considered regarding to the different major stakeholders concerned by the project that are the reinsurance undertakings, the insurance undertakings, the policyholders and the insurance supervisors.

15.3.2 Method to predict and assess the impacts

The method to assess the impacts differ according to the issues addressed:

- for the first issue, a grid stakeholders/alternative is drawn and the impacts are predicted by “educated guess”. No real assessment is provided;
- for the second issue, no grid is established and some impacts are predicted fore some stakeholders without assessment;
- for the third issue, a table with the pros and cons with the stakeholders concerned of each alternative is provided.
- for the fourth issue, simulation exercises have been performed in order to assess the economic impacts on the different stakeholders;
- for the fifth issue, no real assessment and prediction is done due to the lack of available data’s.

16 Proposal for a Directive of the European Parliament and of the Council relating to the taking up and pursuit of the business of credit institutions (recast) and Proposal for a Directive of the European Parliament and of the Council on the capital adequacy of investment firms and credit institutions (recast)

16.1 Objectives

The assessment document mentioned a need for the modernisation of the harmonised rules on the regulation of credit institutions and investment firms: the present directives fail to capture the full extent or nature of the risks that some institutions are undertaking; new risk management techniques are not actively encouraged or recognized and the framework may even lead to a misallocation of resources or significant capital arbitrage.

There are three main objectives:

- Provide the EU with a state-of-the-art prudential standards framework to increase the soundness and the stability of the EU financial system
- Provide a proportionate capital treatment: the new capital requirements framework should be proportionate and recognize the variations in risks arising from the context in which exposures to different types of borrowers are incurred;
- Provide an appropriate treatment for investment firms and investment services: the new capital requirements regime must apply in the EU to both credit institutions and investment firms.

16.2 Assessment criteria and definition of alternatives

There are three main alternatives identified:

- The “Basel only” option: The Basel Committee consists of the authority responsible for prudential supervision of banks for each country. It has emerged as the standard-setting body in which prudential standards are agreed by supervisors. In this option, no action is taken at the EU level to revise the existing prudential standards framework and banks apply voluntarily the new Basel II accord;
- The “EU only” option: action is taken at the EU level without a close link with the work done by the Basel Committee.
- The “Basel and EU” option: action is taken at the EU level in parallel with the Basel process. Discussions are held in the same time in Basel and in the EU.

The third option has been retained as the only possible working method and before the implementation of the extended impact assessment. Afterward, this option has been considered against the different objectives and sub-objectives defined above. This process led to the identification of three potential approaches:

- The revised Standardised Approach (SA): modelled on the existing credit risk framework;

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- The Foundation Internal Rating Based (FIRB) approach: this allows institutions to make use of their own estimates of probability of default, while using regulatory prescribed values for other risk components;
 - The Advanced Internal Rating Based (AIRB): a single one IRB modality.

The criteria used are:

- the average change in minimum capital requirements
- the contribution to overall likely change in minimum capital requirements

16.3 Assessment methods

16.3.1 Impact identification method

None.

16.3.2 Method to predict and assess the impacts

The change in minimum capital requirements are assessed by a calibration process and according to calculation rules specific to the Basel Committee or the EU Commission services. They are assessed for 4 categories of actors:

- the larger internationally active banks
- smaller banks (not international)
- All EU institutions
- All Eu institution likely to adopt the approach in question

17 Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions on interoperability of digital interactive television services

17.1 Objectives

In December 2003, around 25 million of the 32 million digital receivers in the EU15 included API functionality. The five different API systems are not interoperable at terminal level – meaning that no API can process data formatted for another API. The majority of the receivers use proprietary APIs.

The main objective of the Commission Communication is to address the lack of interoperability in interactive television that could adversely affect the free flow of information, media pluralism and cultural diversity by limiting freedom of choice for users.

The question is whether one or more standards should be mandated – or other measures adopted - in order to improve interoperability for interactive television services in the EU.

17.2 Assessment criteria and definition of alternatives

There are three main alternatives. For each alternative, different options can be distinguished:

- alternative 1: The Commission imposes mandatory implementation of one or more open standards, at European level
 - Option a: The Commission imposes mandatory implementation of one API standard, at European level
 - Option b: The Commission requires implementation of one of a range of APIs that had been standardised by a European standards body
- Alternative 2: Commission Recommendation proposing that Member States could make implementation of one or more APIs standards mandatory
 - Option a: Member States are recommended to require all market players to use one API chosen from the list of standards published in the OJ
 - Option b: Member States are recommended to require market players to use “any API that has been standardised by a European standards body”
- Alternative 3: Member States continue to encourage open standards, including migration from proprietary standards, but do not mandate them

The criteria used are the following:

- economic criteria:
 - legal certainty concerning technological decisions for market actors

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- Availability of equipment and services
 - demand stimulation
 - costs for consumers of interactive digital receiving equipment
 - perverse incentive for market players
 - economic cost due to the necessary replacement of existing equipment
 - progression of I-TV in terms of networks, equipment sales and services
 - choice of I-TV products for consumers (different level of price and performance)
 - costs associated with multiple authoring
 - social criteria
 - access to services
 - media pluralism and cultural diversity
 - simplicity/confusion for consumers
 - consumer choices
 - environmental criteria
 - mainly the environmental effect of the replacement of the existing equipment (waste disposal)

17.3 Assessment methods

17.3.1 Impact identification method

There is no real impact identification method. Each alternative is described regarding to the economic, social and environmental aspect.

17.3.2 Method to predict and assess the impacts

The method to predict the impact is the educated guess. There is no assessment of the impacts that are only described.

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Overview of economic assessment models available at the Belgian Federal Policy level and at the EU commission¹

Draft²

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1 Introduction

The objective of this paper is to describe several models used in Belgium for policy assessment. The main idea is to provide information about the domain in which each tool can be useful or not. In this purpose, our description grid will include the following elements for each model:

- The type of model: econometric or general (partial) equilibrium model, simulation or optimisation model, geographical coverage and temporal horizon, etc.
- A structural and technological description: how are sectors, sub-sectors and technologies represented?
- The information provided: what are the purposes of the model and the specific questions addressed?
- The utilisations already made in Belgium or Europe: for which kind of assessment was the model previously used ?
- The teams currently in charge of model implementation in Belgium.
- The references that helped us to build our description or that could be useful for a further deepening of the analysis.

The 8 models described here are MARKAL, GEM-E3, HERMES, PRIMES, NEMESIS, TREMOVE, QUEST and NIME.

The first section of this paper will give some general information on the main characteristics of models useful to understand their domain of application. The second part provides a general brief overview of the models analysed and summarises the third section, which offers a broader description of the different models.

¹ This working paper has been written in the framework of the research project financed by the Belgian scientific policy "Methodology and feasibility of sustainability impact assessment. Case: Belgian federal policy process". This research project is coordinate by the *Centrum voor Duurzame Ontwikkeling (Universiteit Gent)* and is implemented in collaboration *le Centre d'Etude du Développement Durable (Université Libre de Bruxelles)* and *l'Association Universitaire de Recherche sur l'Action Publique (AURAP – Université Catholique de Louvain)*.

² Please do not quote.

2 Description summary

The models described below can be classified according to different characteristics as shown in Table 1. These characteristics refer to their main methodological or technical nature (macro-econometric or computable general equilibrium, simulation or optimisation model), their economic scope (partial or general equilibrium), their time horizon and geographical scale³.

Among the models analysed here, three describe the functioning of one particular sector: energy (Primes and Markal) or transport (Tremove). In these models, the rest of the economy is exogenous and represented through macro-economic exogenous variables (they are not affected by changes in the sector analysed). The general equilibrium models aims at representing the whole economy of the regions covered and the interaction between its different sectors.

Name	Sector coverage	Type	Time horizon	Geogr. Coverage	Main features
GEM-E3	Economy	Decentralized optimization CGE		World, EU, Belgium	Policies analysis (environmental, fiscal, etc.) Use for scenario definition on the LT
QUEST	Economy	Decentralized optimization CGE	50 y.	World	Analysis of EU MS economies and interactions with USA and Japan Highly aggregated
Hermes	Economy	Simulation Macro-econometric	12 y.	Belgium	Provides a detailed description of the Belgian economy Use for forecast (10y.)
Nemesis	Economy	Simulation Macro-econometric	15 y.	EU	Technological progress is endogenous
NIME	Economy	Simulation Macro-econometric	10 y.	World	Analysis of transmission effects between Belgium and other EU MS and rest of the World To coupled with a model representing the Belgian economy
Markal	Energy	Centralized Optimization Partial equilibrium	40 y.	National	Use for analysis of technology choices implications in the energy sector
Primes	Energy	Decentralized optimization Partial equilibrium	40 y.	EU, national	Very detailed representation of energy sectors Analysis of climate policies
Tremove	Transport	Simulation Partial equilibrium	25 y.	EU extended	Calculates fuel consumption and emissions Includes LCA and welfare assessment

Table 1: Main characteristics of the models

³ For a more complete characterisation of the different types of models see: Boulanger P.-M and Bréchet Th. (2003), “Une analyse comparative des classes de modèles”, Institut pour un Développement Durable, report for the federal scientific policy, URL : <http://www.iddweb.be>.

Macro-econometric models have been intensively used for about twenty-five years for simulating national economies to forecast short- or medium-term profiles and to assess economic policies. A macro-econometric model is a simulation system of simultaneous equations (generally with a neo-Keynesian flavor) validated by statistical procedures on time-series or cross-sectoral data. They have been extended to incorporate environmental dimensions, especially via energy consumption and production.

Computable general equilibrium (CGE) models are based on neo-classical economic theory. National economies are pictured as systems of interrelated markets in equilibrium, prices ensuring the clearing of demand and supply in each of them. As with macro-econometric models, the interrelationships between productive sectors are expressed by way of an input-output matrix but, unlike macro-econometric models, CGE models are calibrated rather than empirically validated. CGE models are long-term oriented and their main purpose is policy analysis, not forecasting.

Centralized optimization models are mainly dedicated to decision-making on the choice of technology: given an objective function (generally the minimization of operational and fixed costs) and some constraints on technological availability, prices, etc., the model identifies which technologies should be chosen to get as close as possible to the objective. Thus, optimization models are intrinsically normative, not descriptive like simulation models. A representative example is MARKAL-TIMES⁴ for energy policy.

Centralised optimisation differs from decentralised optimisation in that sense that in the latter different agents are looking at optimising their own utility function while in the former one single utility function is used (for instance, the system total cost). Decentralised optimisation is usually used by computable general equilibrium (CGE) models such as GEM-E3 or QUEST in which the different agents are supposed to maximise their profits or their utility function.

Simulation models (such as the macro-econometric ones) aim at representing the behaviour of economic agents in a more realistic way, dispensing with strong assumptions of perfect rationality, perfect market mechanisms, etc.

2.1 Markal

2.1.1 Type of model

MARKAL is a long-term multi-period energy technology optimisation model. It represents energy imports, production, transformation and deliveries to the different consumers. The basic components in MARKAL are energy and environmental control technologies and demand for energy services. It includes the main energy transformation and energy use processes in the Belgian energy system and the main energy related emissions (GHG and local pollutants).

Main hypothesis

The model assumes perfect foresight of the economic agents over the entire horizon and maximise the net total welfare of the energy users and producers under some predefined constraints (CO₂ emission limitation for instance).

All economic agents are assigned the same objective function, which consists in minimising all costs (with imputed shadow costs for the active environmental constraints). The all have access to full

⁴ URL: <http://www.etsap.org/markal/main.html>

information at no cost. There is therefore perfect balance between demand and supply. There is no explicit uncertainty.

The model allows to trade off investment in electricity production efficiency with improvements in electricity end use efficiency and also allows for increased end uses of electricity in substitution for other carbon energy intensive energy uses.

Temporal horizon

Markal is a long-term model, covering the period 1990-2030 through successive 5 years periods

Geographical coverage

Geographical coverage is national, without interactions between national economies. It is being implemented in both developed and developing countries.

Sector and technology description

Markal is a partial equilibrium model focused on the energy sector. The energy demand is price sensitive and distinguished according to 3 main sectors:

- Industrial sector: disaggregated in several sub-sectors according to the level at which sector specific installations or technologies can be identified. Generally industry is disaggregated in iron and steel sector, chemical sector and the building material one.
- Residential sector: disaggregated in residential, small commercial, large commercial and service sector. For each sector five subcategories of demand are specified: space heating, water heating, food preparation and electricity use;
- Transport sector.

The technologies included are:

- conversion technologies (plants generating electricity or district heat)
- process technologies (energy transformation activities)
- environmental control technologies
- demand technologies (devices consuming energy)

They are represented by technical, capacity, costs, availability and environmental parameters. These characteristics allow the representation of technologies not yet implemented but likely to be available in the future.

2.1.2 Information provided/type of policies analysed

Markal is designed as to represent the energy sector in terms of technologies, demand, production and emissions. It is worth noting that costs are exogenous. It is therefore adapted to:

- The evaluation of R&D programs in the energy sector
- Identification of the energy sector responses to environmental constraints (tax or emission cap)

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- Prospect future energy demand and technology utilisation.

However, the underlying assumptions of the model (rational behaviour, perfect information, perfect market clearing) are such that the model is more suitable to compare scenarios than to build projections.

2.1.3 Recent use in Belgium or Europe

The Markal model has been used for assessing the Belgian policy regarding climate change and the choice of technologies in the electricity sector. In particular, it had been used in order to:

- Assess the implications of the Kyoto's protocol target in terms of emission reduction costs and repartition of emission reduction across sectors;
- Assess the implications in Belgium of an EU harmonization of excise taxes;
- Identify the CO₂ emission reduction potential of different technological or financial measures;
- Evaluate technologies' choices in the electricity sector for the period 2005/2010, under different constraints, such as the Kyoto target and the nuclear phasing-out (study for the AMPERE commission)

2.1.4 Teams

Markal has been developed in the International Energy Agency framework and is implemented for Belgium, jointly by ETE-CES K.U.Leuven and the VITO.

2.1.5 References

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- ETE CES-K.U.Leuven (2005), "Markal model", <http://www.econ.kuleuven.be/ete/research/markal.htm>.
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- Proost S. and Van Regemorter D. (2000), “How to achieve the Kyoto Target in Belgium, modelling methodology and some results”, ETE Working Paper 2000-9 (CES-K.U.Leuven, Leuven).
 - Proost S. and Van Regemorter D. (2000), “What do the Ampere Results imply for Future Electricity Production in Belgium - an analysis with MARKAL model”, report for the AMPERE Commission.

2.2 GEM-E3

2.2.1 *Type of tool*

GEM_E3 (Computable General Equilibrium) is a macro-economic, sectoral model that represents the behaviour of 4 classes of economic agents: business, households, the government and external agents.

Main hypothesis

As any CGE models, GEM-E3 calculates equilibrium prices assuming perfect efficiency in resources allocation. Parameters and coefficients are calibrated with mathematical not econometric methods and data. The major assumption, according to the Walrasian representation of the economy, is the perfect market competition. However, two exceptions are allowed: the labour market in which a negotiation module between employers and employees is introduced and some monopolistic situation

Geographical coverage

The GEM-E3 World includes 21 world regions. GEME3 Europe includes 14 European countries and 3 accessing countries.

2.2.2 *Sector and technology description*

GEM-E3 models the behaviour of 4 types of economics agents:

- The producers: distinguished by sectors. They all maximise their short run benefits under short-term capacity constraints. They are also consumers of goods, services, capital and labour. The producers are split into 18 sectors:
 - Agriculture;
 - 4 energy sectors: solid fuels, liquid fuels, natural gas, electricity;
 - Energy intensive sectors: (non-) ferrous ore and metals, chemistry and others;
 - 3 intermediate commodities supplier sectors for industries: electrical goods, transport equipment, others;
 - 2 sectors providing for households final consumption: consumer goods industries, building and construction;
 - 5 service sectors: telecommunication, transport (split in freight and private transport which is split in car and public transport), credit and insurance, other market services, non-market services.
- The households are demanders of goods and services and maximise their inter-temporal utility under inter-temporal budget constraints. They also supply labour force to the business sectors and the government. Households revenues are made of wages (from producing sectors and government) interest payments, dividends, social benefits and transfers from abroad. They allocate their (full) income between consumption, saving and leisure (trade off with labour). A distinction is made between consumption of durable goods (electric appliances, heating systems and cars) and non-durable goods (food, clothing, housing, housing furniture and operation, communication, medical care, etc.)

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- Government behaviour is mainly exogenous. It concerns public expenditures, public investment, taxation, subsidies and social policy.
 - The foreign sector. In GEM-E3 Europe, European countries are interlinked and exchange with the “rest of the World” block.

The model includes an environmental module that aims at analysing the effects of European environmental policies on environment variables. The topics covered by the module are:

- Global warming (GHG emission from energy use)
- Deposition of acidifying emissions (NO_x, SO₂, ...)
- Ambient air quality and ozone concentration.

The module first simulates the behaviour of the economic agents influenced by the policy instruments (taxes, pollution permits or emission constraints) taking into account their abatement costs. Based on the new pollution abatements and the new economic and energy activities, the model calculates the emissions. It computes also pollutant concentrations (through a pollutant transport function), damages and the other external costs (through a monetary valuation function).

2.2.3 Information provided/type of policies analysed

The model provides information on macro-economic variables and their interaction with the environment and energy system. The model has been designed to analyse several issues such as:

- The implementation of market instruments for energy related environmental policy (taxes, subsidies, regulations, pollution permits, etc.)
- EU programmes;
- Assessment of distributional effects of programmes (on employment, incomes...)
- Perspective of an unified EU market;
- Public finance (implication on overall growth and behaviour of economic agents);
- Production of scenarios (for economic, environment and energy policy)

2.2.4 Recent use in Belgium or Europe

The GEM-E3 model has been used

- To assess the impacts of European fiscal policies and of CO₂ emission mitigation measures.
- To analyse the proposition of harmonisation of the excise rates on energy in the EU (also with Hermes)
- To analyse the impact of the Kyoto Protocol for the EU, including the use of the flexibility mechanisms

2.2.5 Teams

GEM-E3 has been developed by a research team consortium including the National Technical University of Athens, the Centre for Economic Studies (KUL), the Centre for European Economic Research (UCL), the Stockholm School of Economics and Erasme (Paris University I). This project has been partially financed by the DG XII.

2.2.6 References

- Capros et al. (1998), “The GEM-E3 model: reference manual”, National Technical University of Athens
- Federal Science Policy (2003), “Modèle de simulation en appui à la politique climatique belge”, Background document – draft.

2.3 HERMES model for Belgium

2.3.1 *Type of tool*

Hermes (Harmonized European Research for Macro-sectoral and Energy Systems) is a macro-econometric model for economic analysis of the economies of the Member States of the European Community.

The model covers three main domains:

- Macro-economic: national income accounting, prices, public finances
- Sectors: employment, investment, external trade for 9 sectors
- Energy: 8 energy products modelled as final goods and production factors.

Main hypothesis

HERMES is an optimisation model that uses econometric calculation in order to assess the behaviour functions. It is “demand-oriented” (based on the neo-Keynesian theory) in that it computes the marginal profitability of the production capacities from internal and external demand. The marginal profitability is calculated by determining the optimal allocation of the branches’ resources between 4 production factors: capital, labour, energy and other intermediary inputs.

Temporal horizon

The model is a mid term evaluation tool. The temporal horizon is up to 10 years with annual steps

Geographical coverage

The HERMES model was designed and implemented in six Member States. The individual HERMES models permit a detailed macroeconomic and sectoral analysis of a Member State’s economy. In addition, the standardization of the model structure allows each individual model to be linked up with other HERMES models in the European economy, thereby enabling the analysis of cross-multiplier effects between the countries.

2.3.2 *Sector and technology description*

The model is disaggregated in 16 branches (production), 5 sectors (demand), 24 consumption categories (products) and 8 energy products (see Table 2).

<i>Branches</i>	<i>Consumption categories</i>	<i>Energy products</i>
Agriculture	Food drinks and tobacco	Coal
Energy	Clothing and footwear	Coke
Intermediary goods	Gross rent	Crude oil
Equipment goods	Fuel for heating (coal, petroleum products, gas)	Petroleum products
Consumption goods	Power	Natural gas and derived gasses
Construction	Domestic services	Electricity
Railroad transport	Furniture and household equipment	Renewables
Urban and road transport	Personal transport equipment	GHG emissions (6 gases)
Water and air transport	Operation of personal transport equipment (petrol, diesel, other)	Sectors
Auxiliary transport activities and communication	Transport services (passenger transport by train, tram, underground, road, other)	Households
Trade, lodging and catering services	Communication services	Non-profit institution serving households
Credit and insurance	Medical care and health service	Corporate enterprises
Health care	Recreation, education, culture	Governments (federal, regional, communities, local and social security funds)
Other market services to households and firms	Other goods and services	Rest of the World
General government services	Tourism abroad	
Other non-market services		

Table 2: Branches, sectors, energy products and consumption categories in the HERMES model

2.3.3 Information provided/type of policies analysed

HERMES allows the analysis of:

- environmental taxation (on energy, CO₂, sulphur, nitrogen or electricity)
- employment policies: diminution of the labour cost, direct job creation, redistribution of working time
- other public policies (public expenditures, fiscal policies...)

This model is adapted to the analysis of fiscal tools but is less useful for non-economic tools.

Some simulations have been done in order to exhibit the properties of the model. They concern (Bossier and Vanhorebeek, 2000):

- Increases in public investment
- Increase in social transfers to households
- Increase in the public consumption of goods and services
- Reduction of the VAT on private consumption and for some labour intensive services
- Reduction of the employers' and employee's social security contributions

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- Reduction of personal income taxes
 - Increase of excise tax on gas and diesel
 - Increase in world trade
 - Increase in oil prices
 - Appreciation of the US \$

Thanks to its representation of the whole economy, HERMES can provide information on commodities demand and supply, prices (value added, employment, productive investment, investment costs, imports and exports prices), households' behaviours (savings, consumption, investment) and public finances (including internal and external indebtedness).

It also computes the financial capacities of the different public authorities (federal government, regions, communities, local authorities and social security). Furthermore, an environmental module helps in estimating GHG emissions from energy consumption. This module allows a sectoral decomposition of CO₂ emissions.

2.3.4 Recent use in Belgium or Europe

The Hermes model is put in use by the Federal Planning Bureau to assess:

- Alternative way of financing social contributions
- Impacts of an oil price shock on the Belgian economy and public finances
- Economic consequences of the Sabena bankruptcy
- Impacts on economy and CO₂ emissions of energy and carbon taxation in Belgium
- Wage costs' reduction in the Belgian labour market

2.3.5 Teams

In Belgium, HERMES is currently maintained at the Federal Planning Bureau.

2.3.6 References

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- Bossier F., Bracke I., Stockman P., Vanhorebeek F. (2000), « A description of the Hermes II model for Belgium », Federal Planning Bureau, Working paper 5-00.
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2.4 PRIMES

2.4.1 *Type of tool*

PRIMES is a macro-energetic and technico-economic equilibrium model. It simulates the equilibrium in energy market at the EU level and at the national level. The international energy prices and the macro-economic variables are exogenous so that changes in the energy sector do not affect the macro-economic variables.

Main hypothesis

The model pictures several energy demand and supply sectors. Total demand and total supply are linked for each fuel category in a way that guarantees that demand quantities are produced or imported. The shares of domestic and imported fuels are computed so as to minimise the total system costs.

A price module guarantees the equilibrium between demand and supply and calculates the required revenues of the supply sectors. The burden is supported by the consumers and the selling prices are then determined by adding distribution and transportation costs and taxes to the suppliers costs.

The equilibrium supply - demand is obtained through an iterative process: a first estimation of the demand is done from an estimation of the energy prices. The required capacity production is derived from this first estimation of the demand. Technology choices for the energy production are determined in an endogenous way assuming a minimisation of production cost. Production cost plus the taxes provide the consumption energy prices that allow an estimation of the new demand.

Temporal horizon

1990-2030 running by period of 5 years

Geographical coverage

PRIMES is focused on EU energy markets but can be used for single EU member state analysis.

2.4.2 *Sector and technology description*

Three supply sectors are included in the model: electricity production, refineries and natural gas (regional supply detail). These sectors are themselves split in several sub-sectors in order to reflect the differences in behaviours and/or technologies used.

The demand sectors represented are:

- The residential sector with 5 categories of dwellings defined according to the main technology used for space heating
- Commercial and agriculture sector with 4 sub-sectors.
- Industry with 9 branches: iron and steel, non ferrous, chemicals, building materials, paper and pulp, food drink tobacco, engineering, textiles and others. 30 sub-sectors are distinguished within them. At each sub-sector level, several different energy uses are represented (about 200 types of energy use technologies).

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- Transports: passenger transport and goods transport are distinguished. They are subdivided in sub-sectors according to transportation modes (road, air, rail...). At the level of the sub-sectors, several technologies are defined.
 - Transport modes:
 - for urban passengers car, public transport, motorcycle,
 - non urban passengers: car, bus, rail, air, maritime; for freight :road, rail air,
 - river, sea.
 - 6 to 10 alternative technologies for each mode (car, bus, truck);
 - limited number of alternatives for rail, air and navigation

The supply sectors integrated in PRIMES are

- Electricity production: very detailed technologies defined per country
- Refineries:
- Natural gas: Regional supply sources (Europe, Russia, Middle Africa, North Sea etc.); Transportation, distribution network

2.4.3 Information provided/type of policies analysed

The model gives information on energy balance per country and per year, demand, costs and prices, power generation park characteristics (load curves and factors, investment, marginal costs), characteristics of refining units, natural gas transport and distribution, endogenous treatment of energy savings and new technologies, atmospheric emission, abatement equipment and standards.

Primes allows the analysis of different policies such as:

- Regulation by sectors (emissions caps) or by country (global constraint)
- Environmental taxes (exogenously or endogenously determined);
- Pollution permits (in the form of a separate market)
- Subsidies on abatement for electricity and steam.

Other policy instruments such as voluntary agreements, demand side management or integrated resource planning for example are not modelled as such and have to be represented by using the integrated instruments, by combining some of them or by changing the simulation parameters.

2.4.4 Recent uses in Belgium or Europe

- Long term emissions projections for Belgium.
- Assessment of a set of policies and measures considered by the EC in preparation of the Kyoto conference;
- Preparation of the EU Energy and Emissions Outlook (DGWVII).

2.4.5 Teams

Primes has been developed through research projects partially funded by the European Commission-DG Research. The teams involved in this development are:

- The National Technical University of Athens
- The French Petroleum Institute
- The CES-KULeuven
- The CORE-UCL
- The IER

2.4.6 References

- Capros P. (2000), “The PRIMES Energy System Model. Summary Description”, National Technical University of Athens, European Commission Joule-III Programme.
- Capros P. et al. (2000), “The PRIMES Energy System Model. Reference manual”, National Technical University of Athens, European Commission Joule-III Programme.
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- Antoniou Y. and Capros P. (1999), “Decision support system framework of the PRIMES energy model of the European Commission”, *International Journal of Global Energy Issues*, Vol. 12 (1-6), pp. 92-119.

2.5 NEMESIS

2.5.1 Type of tool

NEMESIS (New Econometric Model for Environment and Strategies Implementation for Sustainable Development) is a macro-sectoral econometric model. The main feature of this 3E model (Energy, Environment and Economy) is the representation of endogenous technological progress. In the case of an increase of energy prices for instance, firms will not only react by substituting materials but also by adaptations in R&D.

Main hypothesis

NEMESIS has a neo-keynesian structure. Short-run equilibrium (mainly at the Philip's curve level) is driven by demand assuming the existence of adjustment cost for quantities to their optimal level and short-term price rigidity.

Temporal horizon

10 to 15 years.

Geographical coverage

Whole Europe including Norway (each country separately). The rest of the World is exogenous and is composed of 10 different geographical areas.

2.5.2 Sector and technology description

The model includes 4 institutional sectors (firms, households, public administrations and rest of the world), 30 production sectors and 27 consumption posts.

Branches of production			Consumption sectors		
Agriculture	Foods, Beverages and Tobacco	Coal and coke Clothing and Footwear	Food	Domestic services	Beverages
Oil and Gas Distribution	Paper and Printing products	Gas distribution	Medical care and health expenses	Tobacco	Personal transport equipment
Rubber Plastic	Refined oil	Other Manufactured Goods	Clothing and footwear	Operation of personal transport equipment	Gross rent and water charges
Electricity Distribution	Construction Ferrous and Non Metals	Water supply Lodging and Catering	Rail transport Gas	Power Air transport	Inland transports Petroleum products
Non Metal Mineral Products	Inland Transports	Chemicals	Other transport	Other petroleum products	Communication
Sea and Air Transports	Metal Products	Others Transports	Furniture	Equipment and repair	Textiles
Agri. And industrial Machines	Communication	Offices Machines	Recreation	Major appliances	Expenditures in restaurants, cafés and hotels
Bank, Finance & Insurance	Electrical Goods	Other Market Services	Household utensils	Miscellaneous	Household operations

An environmental module has recently been added and allows the calculation of energy prices, volumes and pollutant emissions (CO₂, SO₂, NO_x, CH₄, N₂O, CF₆, HFC, PFC).

2.5.3 Information provided/type of policies analysed

The model gives information on sectoral dynamics with interdependencies among activities. It has been used for example to assess the effects of EU Research and Development policy on competitiveness (inside and outside the EU), employment and innovation. The environmental module applies a detailed description of energy demand and supply from the EU15 and allows the study of different types of EU environmental policies (taxes, permit emission, allowances).

The policies that can be analysis through NEMESIS simulation deal with:

- short and long term interest rates
- exchange rates
- tax system (direct and indirect tax system, government expenditures divided into defence, health, education and others)

2.5.4 Recent use in Belgium or Europe

Nemesis has been used to assess:

- The consequences of the EU objective of devoting 3% of the GDP to R&D in Europe. The analysis concerned the impacts in terms of competitiveness, employment, growth and public administration budgets. It also explored the sectoral distribution of the effects.
- Some strategies of greenhouse gas emission control and implication of the Kyoto protocol.

2.5.5 Teams

NEMESIS has been developed by a European consortium co-financed by the European Commission including: ERASME's research centre (F), the Federal Planning Bureau (B), the CCIP (F), the ICCS/NTUA (EL).

2.5.6 References

- ERASME (2002), "NEMESIS: Draft detailed technical final report", Research Project N° EVG1-CT-1999-00014.
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2.6 TREMOVE

2.6.1 *Type of tool*

TREMOVE is a simulation model of consumer choices of transportation modes and vehicles types. The main goal of TREMOVE is to assess the effects of different transport and environment policies on the emissions of the transport sector.

Main hypothesis

TREMOVE is a transport sectoral model. It is based on a baseline scenario describing the past, current and future situations in the transport sector based on SCENES (another transport model) results. TREMOVE models transport activities in a given area without explicit origin-destination disaggregation.

Travellers' modal choices are based on income level, modes' prices and consumers preferences. Nested utility functions are used to capture the choice between transportation and other consumptions and between different transportation modes.

Temporal horizon

1995-2020

Geographical coverage

EU-15 plus Switzerland, Norway, Czech republic, Hungary, Poland and Slovenia.

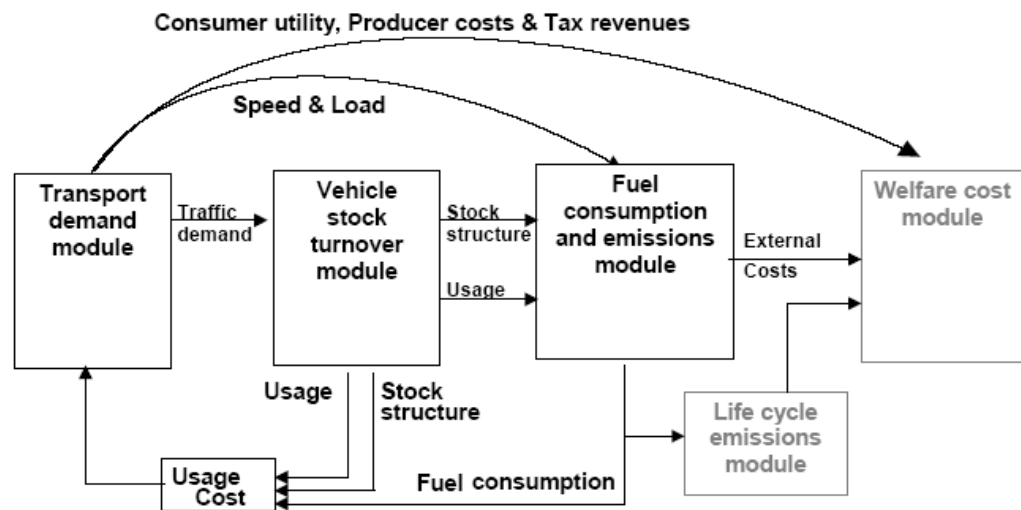
2.6.2 *Sector and technology description*

The model consists of 21 country models which describe transport flows and emissions in four regions per country: large metropolitan city, all other cities, motorways in all non-urban regions and all other roads/waterways/railways in all non-urban regions.

Each country model is decomposed into 5 sub-modules:

- transport demand sub-module: describes transport flows and the users' decision making process (modal choice); The transport users choose their amount of transportation and preferred mode according to relative costs (in money and in time). For non-work and commuting passenger trips, transport demand is determined by generalised prices and observed consumer preferences. For freight transport and business trips, demand level and modal choice are determined by generalised prices, desired production quantities and substitution possibilities with other production factors.
- vehicle turnover sub-module: describes how changes in demand for transport across modes or changes in price structure influence the number and types of vehicles in stock;
- emission/consumption sub-module: calculates fuel consumption and emissions, based on the structure of the vehicle stock and the number of kilometres driven by each vehicle type;
- welfare cost sub-module: estimates the cost for society of emission reduction scenarios in urban and non-urban areas;

- lifecycle emissions costs sub-module: calculates emissions during the whole cycle of production and consumption of fuels and electricity



The model compares a BAU scenario with other scenarios of variations in:

- infrastructure;
- policies directly influencing relative costs of the different modes (road pricing, public transport pricing, etc.)
- availability, properties, costs and prices of different vehicles and fuels.

2.6.3 Information provided/type of policies analysed

The model calculates:

- the fuel consumption and the emissions of the transport sector: CO₂, CO, VOC, NO_x, PM, SO₂, Pb, N₂O, CH₄, NMVOC, NH₃, H₂S, NO₂, HM, particulates, wear of tires and brakes, etc.
- the emissions during production of fuels and electricity (life cycle analysis);
- welfare costs of emission reduction scenarios in European urban and non-urban areas. The welfare effect of a policy change is calculated as the discounted sum of changes in consumer surplus, producers surplus and benefits of tax recycling (welfare cost module)

2.6.4 Recent use in Belgium or Europe

- Assessment of the introduction of new engines on air quality and vehicle market;
- Analysis of the DG ENV policy "CO₂ emissions from light commercial vehicles" (2002)

2.6.5 Teams

TREMOVE was developed by the KULeuven and the Auto-Oil II Cost-Effectiveness Study. A new version of the TREMOVE model has recently been released (March 2005) by KULeuven and Transport & Mobility Leuven.

2.6.6 References

- De Ceuster G., Van Herbruggen B., Logghe S., Proost S. (2004), “TREMOVE 2.0 Model Description”, Report for the European Commission DG ENV.

2.7 QUEST

2.7.1 *Type of tool*

QUEST was designed to analyse European Union member states economies and their interactions with the rest of the world, especially with the United States and Japan. The focus of the model is on the transmission of the effects of economic policy both on the domestic and the international economy.

Main hypothesis

QUEST is built on a Neoclassical-Keynesian approach. The behavioural equations in the model are based on inter-temporal optimisation by households and firms. The supply side of the economy is modelled explicitly via a neo-classical production function.

Temporal horizon

50 years

Geographical coverage

World but focused on the (15) EU member states and their interactions with USA and Japan.

2.7.2 *Sector and technology description*

The model contains 3 main sectors:

- **The households** who choose between consumption (income from labour) and leisure (labour supply). The consumption function depend of the probability of death, the rate of time preference and the share of liquidity constrained consumption
- **The firms** that operate in a monopolistically competitive environment. The production function of firms depends on the elasticity of labour, an embodiment parameter, the capital energy substitution, technical progress and the adjustment costs for capital.
- **The governments** that follow an exogenously given spending pattern. Current expenditure is divided into:
 - Interest payments on government debt
 - Purchases of goods and services
 - Government employment
 - Net government transfers to households
 - Net unemployment benefits
 - Other transfers

4 markets and prices are modelled:

-
- **Pricing behaviour of firms in commodities market** (domestic prices and export prices);
 - **Labour market:** the basic incentive for firms and labour are the profit opportunities in present value terms associated with a successful job match for both parties;
 - **International trade:** trade relationships for each country included in the model are modelled. It is assumed that each country or region produces a product that is an imperfect substitute for the product of other regions. The model needs the determination of price elasticities of imports and exports for each country modelled.
 - **Financial market and exchange rates**

2.7.3 Information provided/type of policies analysed

Quest has been designed in order to analyse the effects on the economy of

- **Monetary shocks:** for example, EU or US monetary expansion (permanent increase of money target of 1%)
- **Fiscal shocks:** increase in government purchase of goods and services, in labour income tax, in corporate tax or in VAT for example.
- **Technology shocks:** improvements in productivity.

QUEST provides information on:

- GDP
- Private consumption and investment
- Public expenditures
- Exports and imports
- Employment
- Wage rate
- Price level
- Exchange rate
- Short and long term interest rates
- Inflation
- Unemployment rate
- Debt, deficit and trade balance (% of GDP)

These results are expressed in percentage of variation against a baseline scenario and can be calculated for the EU or a any specific member state.

2.7.4 Recent use in Belgium or Europe

The model has been used to analyse:

- The impact of the Maastricht criteria on growth and employment and the long run effects of fiscal consolidation and structural reforms in Europe.
- The impact of monetary policy on the success of government expenditure cuts, and the macroeconomic effects of various tax reforms and VAT harmonisation.
- The employment and growth effects of the Trans European Transport Networks

2.7.5 Teams

QUEST II has been developed by the European Commission – Economic and Financial Affairs.

2.7.6 References

- Roeger W. and in't Veld J. (1997), "QUEST II: a multi Country Business Cycle and Growth Model".
- Bayar A.,W. Roeger and J. in 't Veld (1997), "Macroeconomic Effects of Future VAT Harmonisations", mimeo
- Roeger,W. and in 't Veld J. (1997), "Expansionary Fiscal Consolidations and Monetary Policy", mimeo.
- Roeger,W. and in 't Veld J. (1997), "Simulating Permanent Shocks with QUEST II: Sensitivity of Results to Terminal conditions", Paper presented at TROLL 1997 Conference, Brussels.

2.8 NIME

2.8.1 *Type of tool*

The NIME model is a macro-econometric world model that studies the effects transmission of economic policies and exogenous shocks on the Belgian and European economies.

Main hypothesis

The NIME model is composed of several blocks representing the world economy. The European Union, USA and Japan blocks have a similar set of behavioural equations (parameter values are obtained through econometric techniques). The “rest of the world” block is modelled in rougher way and another existing model is used to represent the Belgian economy (models developed independently from the NIME project). Belgium is therefore not included in NIME but NIME allows the analysis of transmission effects between Belgian and the different regions of the world.

Temporal horizon

There are 3 temporal horizons:

- Short run during which the sectors are implementing plans which not fully achieved. Prices adjust to demand;
- Medium run during which the plans are finished but some variables are not adjusted yet;
- Long run: expectations are fully realised.

Geographical coverage

NIME divides the world into six separate blocks: the EU (monetary union) minus Belgium, the EU (non-monetary union), the United States (US), Japan (JP), and the rest of the world (RW). The sixth block describes the Belgian economy and consists of a macroeconomic model used at the federal plan bureau (Hermes or MODTRIM). These six country blocks are linked to each other through trade and financial flows.

2.8.2 *Sector and technology description*

In each regional block, the following elements are modeled:

- **The household sector** as a whole (ie: one single representative agent per block). The income for this sector come from assets and wages from the public sector and firms. Households spend their money purchasing goods and services (from enterprises), paying taxes and for housing. They maximise an utility function under budget constraints taking into account a liquidity effect and using costs of residential buildings (these effects are among other, function of the interest rate).
- **The enterprise sector** is also represented by one single representative agent by block. The natural rate of unemployment and the productivity growth of the production factor (by block) are exogenous. The model simulates a negotiation between households and enterprises on wages and labour in order to maximise both sectors' utility.

-
- **The monetary sector** is a channel that links the different blocks (the other channel is the international trade). In each block, monetary authorities set a short run interest rate. This short run interest rate deviates from a steady state interest rate because of policy variables such as unemployment, inflation and exchange rate.
 - **The public sector** has an explicit target for the public debt to GDP ratio. The direct labour income tax rate is set in function of this target. The growth of the public sector expenditures follows the GDP growth.

2.8.3 Information provided/type of policies analysed

NIME allows analysis of variations in tax rates, public expenditures, factors' productivity, short term interest rate and analyses their implication in terms of economic growth, employment rate, inflation, etc.

2.8.4 Recent use in Belgium or Europe

NIME has been used in order to assess:

- Macroeconomic effects of an oil price shock on the World economy;
- Macroeconomic effects of labour market reforms in the European Union;
- Monetary policy in the euro area;
- Automatic fiscal stabilizers in the euro area

2.8.5 Teams

NIME has been developed by the Federal Plan Bureau

2.8.6 References

- Meyermans E., Van Brusselen P. (2001), "The NIME Model: A Macroeconometric World Model", Federal Planning Bureau.
- Meyermans E., Van Brusselen P. (2005), "The Macroeconomic Effects of an Oil Price Shock on the World Economy : A Simulation with the NIME Model", Federal Planning Bureau, Working paper 06-05.
- Meyermans E., Van Brusselen P. (2005), "The NIME Economic Outlook for the World Economy 2005 - 2011", Federal Planning Bureau, Working paper 02-05.
- Meyermans E. (2004), "The macro-economic effects of labour market reforms in the European Union - Some selected simulations with the NIME model.", Federal Planning Bureau, Working paper 16-04.

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- Meyermans E., Van Brusselen P. (2003), “An assessment of the risks to the medium-term outlook of the Belgian international economic environment”, Federal Planning Bureau, Working paper 12-03.
 - Meyermans E. (2003), “The international transmission of shocks - Some selected simulations with the NIME mo”, Federal Planning Bureau, Working paper 09-03.
 - Meyermans E. (2002), “Monetary policy in the euro area - Simulations with the NIME model”, Federal Planning Bureau, Working paper 11-02.
 - Meyermans E. (2002), “Automatic fiscal stabilisers in the euro area - Simulations with the NIME Model”, Federal Planning Bureau, Working paper 05-02.



Etat des lieux de la pratique des évaluations d'impacts au niveau fédéral

Préambule.

Telle que nous la définissons dans le cadre de notre projet de recherche, une **évaluation d'impacts ou une évaluation d'incidences (EI)** est un processus qui vise à évaluer, de manière systématique, les répercussions de différentes actions publiques (par exemple une politique publique, un plan, un programme, un projet) sur diverses composantes du milieu naturel ou de la société (par exemple l'économie, l'environnement, le social, la démographie, etc.).

Cette évaluation d'impacts (EI) peut prendre **différentes formes**. Au titre des évaluations d'impact, on recense notamment l'évaluation des incidences sur la société, l'évaluation des incidences économiques et fiscales, l'évaluation des incidences démographiques, l'évaluation des incidences sur la pauvreté, l'évaluation des incidences technologiques, l'évaluation des incidences sur la mobilité et sur les municipalités, l'évaluation environnementale (EE), l'évaluation des incidences sur l'environnement (EIE), l'évaluation environnementale stratégique (EES), l'évaluation des incidences sur le développement durable (EIDDD), le « Regulatory Impacts Assessment » (RIA), etc.

Par « **EI réalisée(s) pour votre Service** », expression utilisée dans le questionnaire qui suit, nous entendons toute EI réalisée par votre service ou réalisée par un tiers pour le compte de votre service.

Thème 1 : Pratique et effets de l'EI

1. D'où proviennent vos connaissances (celles de votre Service) en matière d'EI ou de démarches apparentées?

1. Informations fournies par un collègue qui a déjà été confronté à une situation identique
2. Lecture de manuels, articles etc. sur l'EI
3. Formation continue
4. Autre (spécifier) :

2. Au cours de ces cinq dernières années (1999-2004), avez-vous réalisé ou fait réaliser des EI ou des démarches apparentées?

1. Systématiquement 2. Souvent 3. Occasionnellement 4. Jamais (passer à la question 10)

3. Veuillez indiquer pour chaque EI menée pour votre Service, la date de sa réalisation (année), son titre, la dénomination du commanditaire ainsi que celle de l'expert qui a réalisé l'EI.

<i>Date (et durée)</i>	<i>Titre</i>	<i>Commanditaire</i>	<i>Expert</i>	<i>Coûts</i>

4. De manière générale, quels types d'EI avez-vous réalisés au cours de ces cinq dernières années? (une seule réponse par ligne si possible, en fonction de votre pratique dominante des EI)

a. Les EI sont réalisées	de votre propre initiative 1	sur obligation réglementaire / légale 2	par imposition du pouvoir politique 3
b. Les EI portent sur	une mesure isolée 1	un programme d'action 2	une politique publique dans son entièreté 3
c. Les EI concernent	la mise en œuvre d'une politique 1	les effets/impacts de la politique 2	les deux aspects 3
d. Les EI sont réalisées	ex ante (avant la décision) 1	de manière concomitante (parallèlement à la mise en œuvre) 2	ex post (après la mise en œuvre) 3
e. Les impacts évalués par les EI portent sur	L'environnement 1	L'économique et/ou le social 2	L'environnement, l'économique et le social 3
f. Les EI sont réalisées par	un expert externe (académique, consultant) 1	un expert externe à votre service mais dans le secteur public 2	un expert interne à votre service 3
g. Les méthodes appliquées se basent sur	des études qualitatives 1	des analyses quantitatives 2	un mélange des deux 3
h. Les résultats des EI sont publiés	Jamais 1	parfois 2	Toujours 3

5. Dans les EI réalisées pour votre Service

1. Vous vous êtes basé sur des données existantes
2. Vous avez procédé au recueil de données nouvelles
3. Les deux

6. Quelles sont les méthodologies qui ont été utilisées ? (une réponse par ligne)

	Systématiquement	Souvent	Occasionnellement	Jamais
a. Enquête par questionnaire	1	2	3	4
b. Entretiens individuels approfondis	1	2	3	4
c. Modèles quantitatifs	1	2	3	4
d. Analyse de bases statistiques	1	2	3	4
e. Méthode des scénarii	1	2	3	4
f. Analyse comparative	1	2	3	4
g. Autres techniques utilisées :	1	2	3	4

7. L'administration a-t-elle l'occasion de participer aux EI réalisées pour votre Service ?

1. Systématiquement 2. Souvent 3. Occasionnellement 4. Jamais

8. Les parties prenantes (usagers ou destinataires) de la politique évaluée ont-elles l'occasion de participer aux EI réalisées pour votre Service ?

1. Systématiquement 2. Souvent 3. Occasionnellement 4. Jamais

9. Comment la diffusion des résultats des EI réalisées pour votre Service a t-elle été réalisée? (une réponse par ligne)

	Systématiquement	Souvent	Occasionnellement	Jamais
a. Le rapport est confidentiel	1	2	3	4
b. Transmis auprès du personnel de l'administration	1	2	3	4
c. Transmis auprès du Cabinet	1	2	3	4
d. Transmis aux parties prenantes	1	2	3	4
e. Placé sur un site Internet	1	2	3	4
f. Transmis via une conférence de presse	1	2	3	4
g. Soumis au débat public	1	2	3	4
h. Autre diffusion :	1	2	3	4

10. Si vous avez répondu « jamais » à la question 2, pour quelles raisons n'avez-vous jamais réalisé d'EI? (une seule réponse par colonne et ensuite passer à la question 16)

	Première raison	Deuxième raison	Troisième raison
1. Nous ne connaissons pas les méthodes des EI	1	1	1
2. Nous trouvons les EI inutiles	2	2	2
3. Nous ne disposons pas du budget nécessaire pour financer un expert externe	3	3	3
4. Nous n'avons pas les compétences (légales, réglementaires) pour réaliser ou faire réaliser une EI	4	4	4
5. Nous manquons de ressources humaines dans le Service pour conduire des EI	5	5	5
6. Nous n'avons pas de support/soutien politique	6	6	6
7. Autre raison, laquelle :	7	7	7

11. Pour chacune des propositions suivantes, indiquez si elles ont été un facteur de succès, un facteur neutre ou une source de problèmes lors des EI réalisées pour votre Service? (une réponse par ligne).

	Facteur de succès	Neutre	Source de problèmes
1. La clarté du mandat et des questions de l'EI	1	2	3
2. Choix des techniques d'EI utilisées	1	2	3
3. La compétence méthodologique de l'expert	1	2	3
4. L'attitude des responsables politiques	1	2	3
5. L'attitude de la hiérarchie administrative	1	2	3
6. La participation de l'administration	1	2	3
7. La participation des parties prenantes de la politique évaluée	1	2	3
8. Le coût des EI et les délais	1	2	3
9. Autre facteur, lequel :	1	2	3
.....			
.....			

12. Quels effets découlent des EI que votre Service a réalisées ? (une seule réponse par ligne).

a. Sur la politique	Aucun effet 1	Adaptation mineure 2	Changement important 3
b. Sur l'organisation en charge de mettre en œuvre la politique	Aucun effet 1	Réaménagement de procédure 2	Modification de structure 3
d. Autre effet, lequel :			
.....			

13. Si les EI n'ont pas porté d'effets, quelle en est la principale raison ?

14. Si de nouvelles EI doivent être réalisées pour votre Service, planifiez-vous des modifications d'approche par rapport à vos pratiques antérieures ?

1. Oui 2. Non

Si oui, lesquelles ?

15. Dans votre Service, une (ou plusieurs) EI sont-elles planifiées dans le courant 2005?

1. Oui 2. Non

Thème 2 : Futur de l'EIDDD au niveau fédéral

Telle que nous la définissons dans le cadre de notre projet de recherche, une **étude d'impact des décisions sur le développement durable (EIDDD)** est

“a systematic and iterative process for the ex-ante assessment of the likely economic, social and environmental impacts of policies, plans, programmes and strategic projects, which is undertaken during the preparation of them and where the stakeholders concerned participate pro-actively. The main aim is to improve the performance of the strategies...” (Arbter, 2003).

Une EIDDD est donc une évaluation qui est conjointement

- ex ante (avant la prise de décision formelle),
- intégrée (trois piliers du développement durable : environnement, économie et social) et
- participative (implications des parties prenantes de la politique évaluée).

Par « EIDDD réalisée(s) pour votre Service », expression utilisée dans la suite du questionnaire, nous entendons toute EIDDD réalisée par votre service ou réalisée par un tiers pour le compte de votre service.

16. Pensez-vous que dans les prochaines années, au niveau fédéral, la pratique des EIDDD va :

1. Se développer
2. Ne pas se développer

17. Faut-il développer cette pratique des EIDDD au niveau fédéral?

1. Oui
2. Non (passer à la question 23)

18. Par rapport aux évaluations d'impacts que votre Service a réalisées jusqu'à présent, considérez-vous que les efforts (supplémentaires) à fournir pour réaliser des EIDDD telles que définie ci-dessus comme:

1. Importants
2. Moyens
3. Faibles

19. Comme appréciez-vous les trois ambitions d'une EIDDD telle que nous la définissons ici ? (une seule réponse par ligne).

	Impossible à réaliser	Difficile à réaliser	Facile à réaliser
1. évaluation ex ante (avant la prise de décision formelle)	1	1	1
2. évaluation intégrée (environnement, économie et social)	2	2	2
3. évaluation participative (implications des parties prenantes de la politique évaluée)	3	3	3

20. Qui devrait pratiquer ces EIDDD au niveau fédéral ? (une réponse par ligne)

	Oui	Non
a. Des observatoires et instituts spécialisés	1	2
b. Les cellules de développement durable au sein des SPF	1	2
c. Des experts du secteur privé	1	2
d. La Cour des comptes	1	2
e. Des experts du secteur académique	1	2
f. Le SPP Développement durable	1	2
g. Le Conseil fédéral du développement durable		
h. La Commission interdépartementale du développement durable		
i. la Task force développement durable du Bureau fédéral du plan		
j. Les Cabinets ministériels	1	2
k. Autre (préciser :.....)	1	2

21. Quelles sont vos attentes par rapport à une éventuelle cellule spécialisée en EIDDD qui pourrait soutenir vos efforts pour développer cette pratique ? (une réponse par ligne).

	Oui	Non
a. Fournir des informations sur les techniques et les méthodologies de l'EIDDD	1	2
b. Former des fonctionnaires à l'EIDDD	1	2
c. Favoriser un échange de bonnes pratiques	1	2
d. Accompagner le processus d'EIDDD	1	2
e. Commander des EIDDD sur demande	1	2
f. Réaliser des EIDDD	1	2
g. Diffuser des EIDDD	1	2
h. Assurer un contrôle de qualité des EIDDD réalisées		
i. Autre (préciser) :	1	2

22. Quels sont les autres acteurs ou institutions qui pourraient intervenir en matière d'EIDDD et à quel titre (formation, méthodologie, qualité...) ? (ensuite passer à la question 24)

23. Si vous avez répondu non à la question 17, pour quelles raisons pensez-vous qu'il ne faut pas renforcer l'EIDDD au niveau fédéral? (une seule réponse par colonne)?

	Première raison	Deuxième raison	Troisième raison
1. L'EIDDD ne sert à rien	1	1	1
2. L'EIDDD coûte trop cher	2	2	2
3. L'EIDDD n'est pas adaptée au système politique belge	3	3	3
4. L'EIDDD ajoute des contraintes et des procédures	4	4	4
5. L'EIDDD ne sert qu'à conforter le discours politique	5	5	5
6. La seule EIDDD valable, c'est la voix de l'électeur	6	6	6
7. Les résultats d'EIDDD antérieures n'ont jamais été pris en compte	7	7	7
8. Autre raison :	8	8	8

Thème 3 : Commentaires et/ou suggestions concernant les EIDDD au niveau fédéral

24. Avez-vous des commentaires et/ou suggestions concernant les EIDDD au niveau fédéral ?

Thème 4 : Informations organisationnelles.

25. Nom, prénom :

26. Téléphone :

27. E-mail (pour envoi des résultats de cette enquête) :

28. Organisation, Service, département :

.....

29. Quelle fonction occupez-vous ?

.....

30. Si vous le souhaitez, vous pouvez joindre à ce questionnaire un rapport d'évaluation d'impact ou d'EIDDD que votre Service a réalisée et/ou nous indiquer le site web sur lequel celui est éventuellement consultable?

.....

31. Etes-vous éventuellement disposé à participer à un test de la méthodologie des EIDDD que nous cherchons à développer dans le cadre de notre projet de recherche?

1. Oui 2. Non

Si oui, merci de nous indiquer quelle politique pourrait faire l'objet d'un tel test :

.....

Nous vous remercions très vivement d'avoir accepté de participer à cet état des lieux de la pratique des EI au niveau fédéral



Stand van zaken van impact evaluatie op federaal niveau

Voorwoord

In het kader van dit onderzoeksproject definiëren we **impact evaluatie of effect evaluatie** als een proces dat erop gericht is op een systematische manier de gevolgen te evalueren van overheidsmaatregelen (bijvoorbeeld overheidsbeleid, een plan, een programma, een project), en dat op verschillende onderdelen van de maatschappij of de omgeving (bijvoorbeeld de economie, het milieu, sociale omstandigheden, de demografie, enz.).

Impact evaluatie (IE) kan **verschillende vormen** aannemen. Onder de noemer impact evaluatie vallen bijvoorbeeld de evaluatie van maatschappelijke effecten, de evaluatie van economische en fiscale effecten, de evaluatie van demografische effecten, de evaluatie van technologische effecten, de evaluatie van mobiliteitseffecten, de evaluatie van effecten op gemeenten en steden, milieu-effectrapportage, strategische milieu-effectrapportage, duurzame ontwikkelingseffectbeoordeling, reguleringsimpactanalyse en –evaluatie, enzovoort.

Met “**impact evaluatie (IE) gerealiseerd door uw Dienst**”, de uitdrukking die in deze vragenlijst gebruikt wordt, bedoelen we elke vorm van impact evaluatie die door uw dienst of (gedeeltelijk) voor rekening van uw dienst werd uitgevoerd.

Thema 1: Praktijk en gevolgen van IE

1. Vanwaar komt uw kennis (of die van uw dienst) over IE of gelijkaardige methodes?

1. Informatie van een collega die al met soortgelijke methode gewerkt heeft
2. Lectuur van handleidingen, artikels enz. over IE
3. Permanente vorming
4. Andere (specificeren) :

2. Heeft u in de afgelopen vijf jaar IE of gelijkaardige methodes uitgevoerd of laten uitvoeren?

1. Systematisch 2. Dikwijls 3. Af en toe 4. Nooit (ga naar vraag 10)

3. Gelieve voor elke IE uitgevoerd door uw dienst, aan te geven wanneer de IE uitgevoerd is (jaar), zijn titel, de naam van de opdrachtgever, de expert die de IE uitgevoerd heeft en de kost voor de IE.

<i>Datum (en duur)</i>	<i>Titel</i>	<i>Opdrachtgever</i>	<i>Expert</i>	<i>Kosten</i>

4. Kunt u in grote lijnen aangeven welk soort van IE u uitgevoerd heeft in de loop van de afgelopen vijf jaar (één antwoord per rij) ?

a. De IE werden uitgevoerd	Op eigen initiatief 1	Omwille van reglementaire of wettelijke verplichting 2	Opgelegd door de politieke overheid 3
b. de IE hadden betrekking op	Een geïsoleerde maatregel 1	Een actieprogramma 2	Een bepaald beleid in het algemeen 3
c. De IE betreffen	De uitvoering van een bepaald beleid 1	De gevolgen/impact van dat beleid 2	De beide aspecten 3
d. De IE werden gerealiseerd	ex ante (vóór de beslissing) 1	In de loop van de uitvoering van het beleid 2	ex post (na de uitvoering) 3
e. De effecten geëvalueerd in de IE, hebben betrekking op	Het milieu 1	Het economische of het sociale 2	Het milieu, het economische en het sociale 3
f. De IE werden uitgevoerd door	Een externe expert (universitair, consultant) 1	een expert van buiten uw dienst, maar deel van de overheidssector 2	een expert van uw dienst 3
g. De gebruikte methodes zijn gebaseerd op	Kwalitatieve studies 1	Kwantitatieve analyses 2	Beide 3
h. De resultaten van de IE worden gepubliceerd	Nooit 1	Soms 2	Altijd 3

5. In de IE die door uw dienst werden uitgevoerd

1. hebt u zich gebaseerd op bestaande gegevens
2. hebt u gewerkt met nieuwe gegevens
3. Beide

6. Van welke methodologieën werd gebruik gemaakt ? (één antwoord per rij)

	Systematisch	Dikwijls	Af en toe	Nooit
a. Bevraging met vragenlijst	1	2	3	4
b. individuele diepte-interviews	1	2	3	4
c. kwantitatieve modellen	1	2	3	4
d. analyse van statistische gegevens	1	2	3	4
e. scenariomethodes	1	2	3	4
f. vergelijkende analyses	1	2	3	4
g. Andere gebruikte technieken :	1	2	3	4

7. Heeft de administratie de mogelijkheid om te participeren aan de IE die worden uitgevoerd door uw dienst ?

1. Systematisch 2. Dikwijls 3. Af en toe 4. Nooit

8. Hebben de gebruikers of doelgroepen van het geëvalueerde beleid de mogelijkheid om te participeren aan de EI die worden uitgevoerd door uw dienst ?

1. Systematisch 2. Dikwijls 3. Af en toe 4. Nooit

9. Op welke manier wordt de bekendmaking geregeld van de IE die door uw dienst worden gerealiseerd ? (één antwoord per rij)

	Systematisch	Dikwijls	Af en toe	Nooit
a. Het rapport is vertrouwelijk	1	2	3	4
b. Verspreid onder het personeel van de administratie	1	2	3	4
c. Overgedragen aan het kabinet	1	2	3	4
d. Verspreid onder de gebruikers	1	2	3	4
e. Op een internet website geplaatst	1	2	3	4
f. Verspreid via een persconferentie	1	2	3	4
g. Voorgelegd in een publiek debat	1	2	3	4
h. Andere verspreiding :	1	2	3	4

10. Indien u “nooit” geantwoord heeft op vraag 2, kunt u dan aangeven waarom u nooit een IE uitgevoerd heeft (één antwoord per kolom; vervolgens doorgaan naar vraag 16).

	Eerste reden	Tweede reden	Derde reden
1. We zijn niet op de hoogte van methodes voor IE	1	1	1
2. We vinden IE niet nuttig	2	2	2
3. We beschikken niet over het nodige budget om een externe expert te financieren	3	3	3
4. We hebben niet de bevoegdheden (reglementair, wettelijk) om IE uit te voeren of te laten uitvoeren	4	4	4
5. We beschikken niet over de nodige mensen in onze dienst om IE uit te voeren	5	5	5
6. Er is geen politieke draagvlak voor IE	6	6	6
7. Andere reden :	7	7	7

11. Geef voor elk van de volgende stellingen aan of ze een succesfactor, een neutrale factor of een probleem zijn geweest bij de uitvoering van IE in uw dienst (één antwoord per rij).

	succesfactor	Neutrale factor	Probleem
1. de duidelijkheid van het mandaat en de vragen in IE	1	2	3
2. de keuze van technieken die in IE gebruikt werden	1	2	3
3. de methodologische deskundigheid van de expert	1	2	3
4. de houding van de politiek verantwoordelijken	1	2	3
5. de houding van de leidinggevende ambtenaren	1	2	3
6. de participatie van de ambtenaren	1	2	3
7. de participatie van gebruikers van het geëvalueerde beleid	1	2	3
8. De kosten en de baten van IE	1	2	3
9. Andere factor:	1	2	3

12. Wat zijn de gevolgen van de IE die door uw dienst werden uitgevoerd (één antwoord per rij)?

a. Op het beleid	Geen effect 1	Beperkte bijsturing 2	Belangrijke verandering 3
b. op de organisatie die de leiding heeft over de uitvoering van het beleid	Geen effect 1	Herziening van de procedures 2	Aanpassing van de structuur 3
d. Ander gevolg :			

13. Indien de IE geen effect hadden, wat is daarvan dan de belangrijkste reden?

14. Voorziet u aanpassingen aan uw benadering van IE indien er in de toekomst nieuwe IE gerealiseerd moeten worden door uw dienst ?

1. Ja 2. Neen

Indien ja, welke?

15. Plant u in uw dienst één (of meerder) IE in de loop van 2005?

1. Ja 2. Neen

Thema 2 : De toekomst van DOEB op federaal niveau

In het kader van dit onderzoeksproject definiëren we **Duurzame OntwikkelingEffectBeoordeling (DOEB)** op de volgende manier:

“a systematic and iterative process for the ex-ante assessment of the likely economic, social and environmental impacts of policies, plans, programmes and strategic projects, which is undertaken during the preparation of them and where the stakeholders concerned participate pro-actively. The main aim is to improve the performance of the strategies...” (Arbter, 2003).

Een DOEB is dus een vorm van evaluatie die tegelijkertijd

- ex ante is (vóór het nemen van de formele beslissing),
- geïntegreerd is (de drie pijlers van duurzame ontwikkeling komen aan bod : milieu, economisch, sociaal) en
- participatief is (met deelname van degenen die betrokkenen zijn in het geëvalueerde beleid).

Met “DOEB uitgevoerd door uw dienst”, die uitdrukking die verderop in deze vragenlijst wordt gebruikt, bedoelen we elke DOEB die door uw dienst of voor rekening van uw dienst uitgevoerd werd.

16. Denkt u dat de praktijk van DOEB zich in loop van de volgende jaren op federaal niveau:

1. zal ontwikkelen
2. niet zal ontwikkelen

17. Moet er op federaal niveau een praktijk van DOEB ontwikkeld worden?

1. Ja
2. Neen (ga verder naar vraag 23)

18. Wanneer u rekening houdt met de impactevaluaties die uw dienst tot nu toe heeft uitgevoerd, denkt u dan dat de (bijkomende) inspanningen die nodig zijn om DOEB te realiseren zoals boven gedefinieerd:

1. belangrijk zullen zijn
2. gemiddeld zullen zijn
3. beperkt zullen zijn

19. Hoe beoordeelt u de drie ambities van een DOEB zoals ze boven gedefinieerd zijn? (één antwoord per rij)

	Onmogelijk te realiseren	Moeilijk te realiseren	Makkelijk te realiseren
1. ex ante evaluatie (vóór het nemen van de formele beslissing)	1	1	1
2. geïntegreerde evaluatie (milieu, economie en sociaal)	2	2	2
3. participatieve evaluatie (met deelname van degenen die betrokkenen zijn in het geëvalueerde beleid)	3	3	3

20. Wie zou DOEB moeten uitvoeren op federaal niveau ? (één antwoord per rij))

	Ja	Neen
a. gespecialiseerde onderzoeksbureaus en instituten	1	2
b. De cellen duurzame ontwikkeling in de schoot van de FODs	1	2
c. experten uit de privésector	1	2
d. Het Rekenhof	1	2
e. experten uit de academische sector	1	2
f. De POD Duurzame Ontwikkeling	1	2
g. De Federale Raad voor Duurzame Ontwikkeling		
h. De Interdepartementale Commissie Duurzame Ontwikkeling		
i. de Task force duurzame ontwikkeling van het Planbureau		
j. De ministeriële kabinetten	1	2
k. Andere (gelieve te preciseren:)	1	2

21. Wat zijn uw verwachtingen ten opzichte van een eventuele gespecialiseerde DOEB-cel die uw inspanningen om DOEB te ontwikkelen zou kunnen ondersteunen? (één antwoord per rij).

	Ja	Neen
a. Informatie aandragen over technieken en methodologieën voor DOEB	1	2
b. Ambtenaren vorming geven rond DOEB	1	2
c. Uitwisseling van goede praktijken bevorderen	1	2
d. Het proces van DOEB begeleiden	1	2
e. Op vraag DOEB opstarten	1	2
f. DOEB uitvoeren	1	2
g. Zorgen voor de verspeiding van DOEB	1	2
h. Toezicht houden op de kwaliteit van uitgevoerde DOEB		
i. Andere (gelieve te preciseren) :	1	2

22. Welke zijn de andere actoren of instellingen die een bijdrage zouden kunnen hebben op vlak van DOEB en onder welke vorm (vorming, methodologie, kwaliteitscontrole...) (daarna verder gaan naar vraag 24)?

23. Indien u ‘neen’ heeft geantwoord op vraag 17, kunt u dan aangeven om welke redenen u denkt dat DOEB niet versterkt moet worden op federaal vlak? (één antwoord per kolom)

	Eerste reden	Tweede reden	Derde reden
1. DOEB heeft geen nut	1	1	1
2. DOEB is te duur	2	2	2
3. DOEB is niet aangepast aan het Belgisch politiek systeem	3	3	3
4. DOEB zal nieuwe beperkingen en procedures opleggen	4	4	4
5. DOEB zal enkel het politiek discours bevestigen	5	5	5
6. De enige DOEB die waarde heeft, is de stem van de kiezer	6	6	6
7. Er is nooit rekening gehouden met de resultaten van eerdere vormen van DOEB	7	7	7
8. Andere reden :	8	8	8

Thema 3 : Bemerkingen of suggesties met betrekking tot DOEB op federaal niveau

24. Heeft u bemerkingen en/of suggesties over DOEB op federaal niveau?

Thema 4 : Inlichtingen over de organisatie.

25. Naam, voornaam :

26. Telefoon :

27. E-mail (om u de resultaten van deze enquête toe te sturen) :.....

28. Organisatie, dienst, afdeling :

.....

29. Welke functie heeft u ?

.....

30. Indien u wenst, kunt u bij deze vragenlijst een rapport voegen over impact evaluatie of over DOEB die werd(en) uitgevoerd door uw dienst en/of ons aangeven op welke website er eventueel rapporten te consulteren zijn.

.....

31. Bent u eventueel bereid deel te nemen aan een test voor een DOEB-methodologie die in het kader van dit onderzoeksproject uitgewerkt zal worden?

1. Ja 2. Neen

Indien ja, kunt u aangeven welk beleid onderwerp kan zijn voor zo'n test?

.....

Wij danken u hartelijk voor uw bereidheid mee te werken aan dit onderzoek naar de stand van zaken van impactevaluatie op federaal vlak.

PODO-II PROJECT SUSTAINABILITY IMPACT ASSESSMENT (SIA)

List of interviewed persons

1. Political authorities

Bernard Mazijn (Policy cell, Secretary of State for Sustainable Development) interview on 14 December 2004

Lieven Monserez (Policy cell, Secretary of State Administrative Simplification) interview on 28 June 2005

Gert Van Der Biesen (Cell Evaluation of Law, Senate)
Interview on 25 November 2004

Muriel Gerken (Member of Parliament)
interview on 2 December 2004

2. Federal Public Services (FPS) and Programmatory Public Services (PPS)

Jacques Baveye (FPS Finance)
Interview on 17 December 2004

Renata Vandeputte, in replacement of Christian Vanden Bilcke (FPS Foreign Affairs, Foreign trade and Development Cooperation)
Interview on 13 December 2004

Anne-France Woestyn (FPS Public Health, Food security, Environment)
Interview on 6 December 2004

Steven Janssen (FPS Public Health, Food Security and Environment)
Interview on 24 June 2005

Marc Roman (FPS Mobility and Transport)
Interview on 29 November 2004

Hadelin de Laer de Beer (PPS Sustainable Development)
Interview on 1 December 2004

Nicole Dery (FPS Employment, Labour and Social Dialogue)
Interview on 15 June 2005

Urbain Bruggeman (FPS Personnel & Organisation)
Interview on 16 June 2005

3. PUBLIC ORGANISMS FOR CONSULTATION, CONTROL and/or EVALUATION

Peter Vanhumbeeck (Kenniscel Wetsmatiging Vlaanderen)
Interview on 9 December 2004

Pierre Reynders (Financial Inspection)
Interview on 29 June 2005

J. Verschooten (Interdepartmental Commission for Sustainable Development)
Interview on 14 December 2004

Pieter Dresselaers (Task-Force Sustainable Development, Federal Planning Bureau)
Interview 16 June 2005

Françoise Onclincx (BIM/IBGE), replacement for Jean-Paul Hannequart
Interview on 26 January 2004

4. ACADEMIC AND PRIVATE EXPERTS

Koen Van Aeken (Department of Sociology, Antwerp University)
Interview on 7 December 2004

Dimitri Devuyst (Environmental coordinator, VUB)
Interview on 12 January 2005

Michaël Van Cutsem (Deloitte Touche Tomhatsu Belgium).
Interview on 16 December 2004

5. EXPERTS FROM CIVIL SOCIETY (members of the Federal Council for Sustainable Development)

Koen Moerman (secretariat Federal Council for Sustainable Development)
Interview on 30 November 2004

Environmental NGO's

Jan Turf and Erik Grietens (BBL)
Interview on 30 November 2004

Denis Van Eeckhout (IEW)
Interview on 15 December 2004

Development NGO's

Leida Rijnhout (VODO)
Interview on 7 December 2004

Consumer NGO's

Cathérine Rousseau (OIVO/CRIOC)

Interview on 25 November 2004

Representatives of employees

Fré Maes (ABVV)

Interview on 29 November 2004

Jehan Decrop (CSC)

Interview on 14 December 2004

Representatives of employers

Brigitte Hudlot (Business & Society), replacement for Olivier Van Der Malen (VBO/FEB)

Interview on 5 January 2005

Isabelle Chaput (Fedichem)

Interview on 21 January 2005

WORKING PAPER

**TOWARDS A SCREENING MECHANISM FOR SIA:
PROCESS AND CONTENT ISSUES RELATED TO THE FEDERAL BELGIAN
CASE.**

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ULB – IGEAT
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Final version
January 2006



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The present working paper has been elaborated in the context of a research project financed by the Federal Belgian Science Policy. The research project was coordinated by Erik Paredis, CDO (Gent University), and was conducted by An Heyerick, Ruddy Doom (CDO, UGent), Tom Bauler, Edwin Zaccai, Marco Waktare, Alessandro Bonifazi (IGEAT, ULB), Paul-Marie Boulanger, Benoît Lussis (IDD), Frédéric Varone (AURAP, UCL), Luc Lavrysen, Pieter Thomaes (Centrum voor Milieurecht, UGent), Nathalie Risse (SMG-ULB).

For an insight into the issues and outcomes of the research project, see summary below. For extended insight into the project and the different working papers developed during it, please refer to one of the main partner institutes' websites, for instance: www.ulb.ac.be/igeat/cedd.

**“Methodology and Feasibility of Sustainability Impact Assessment.
Case: Federal policy-making Processes”**

SUMMARY OF THE FINAL REPORT

May 2006

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The research project “*Methodology and Feasibility of Sustainability Impact Assessment. Case: Federal policy-making Processes*” aimed at contributing scientific insights to be taken into account when elaborating a methodological and institutional framework for the implementation of SIA in the Belgian federal context. The project duration was July 2004 till February 2006 and the research was done by a team of researchers from different institutions and with different backgrounds: Centrum voor Duurzame Ontwikkeling (CDO, UGent), Centre d’Etudes du Développement Durable (CEDD, ULB), Institut pour un Développement Durable (IDD), Association Universitaire de Recherche sur l’Action Publique (AURAP, UCL), Centrum voor Milieurecht (UGent), Service de Mathématiques de Gestion (SMG, ULB).

1. The value added of SIA

Sustainable development policies have the ambition of integrating economic, environmental and social concerns. To get an early indication of whether policy proposals meet sustainable development criteria, governments and scientists are developing forms of Sustainability Impact Assessment (SIA). SIA has developed out of sectoral or project-level assessments such as Environmental Impact Assessment (EIA), Strategic Environmental Assessment (SEA) and policy assessments such as Regulatory Impact Assessment (RIA). SIA is still in an

early, developing phase and a commonly accepted definition of SIA does not exist, but the main characteristics which are usually attributed to SIA include:

- An *ex ante* assessment: SIA is undertaken during the early stages of policy formulation, before a final decision on the policy concerned has been taken
- An integrated assessment: the traditional sectoral analysis is expanded by considering the broad social, environmental and economic impact of policies and weighing them against each other
- A participative assessment: input into policy-making is broadened from politicians and civil servants to stakeholders and civil society

The common ground between SIA and other forms of impact assessment is their objective or function: they aim at the evaluation of a policy proposal or project at a more or less early stage in the decision-making process, by considering different policy options (or alternatives) in order to strengthen the positive outcomes of the proposed policy, diminish the negative (side-)impacts of the policy and determine the necessary mitigation or compensation mechanisms that will allow rendering a positive overall impact of the policy. A distinctive characteristic of SIA is that it does not take a policy goal as given, but assesses whether the policy contributes to sustainable development. This characteristic distinguishes SIA from e.g. RIA, where the policy goal as such is not discussed. The main

objectives of SIA can then be described as follows:

- SIA assesses whether a proposed policy contributes to sustainable development...: SIA does not just evaluate a proposed policy against its own goals but assesses whether it contributes to sustainable development.
- ...by informing about impacts and policy options...: SIA moves beyond simple identification of potential negative consequences of particular policies and instead promotes the articulation and development of policy alternatives and supportive accompanying measures, which seek to emphasize and promote policy benefits while mitigating potential negative impacts.
- ... in a systemic and reflexive way: SIA follows well-defined methodologies and institutional procedures in order to make the process transparent and create a learning environment.

SIA is part of a learning process during which information is fed back into the political decision-making system in a procedurally anchored way. The value added of SIA for decision-making is often caught under terms such as: coordination of policies towards sustainable development, better governance, evidence-based decision-making, enhancement of the quality of the decision-making process, creation of public support for sustainable development policies. However, while SIA is theoretically desirable, operationalising SIA demands seeking answers to numerous problems. A typical problem with which SIA is confronted, is how to assess whether a policy proposal contributes to sustainable development. Other problems which have to be solved include the methodological framework chosen for SIA and the institutional structure within which SIA has to function.

Thus, the way SIA is shaped and implemented, will depend on the overall characteristics of the policymaking process in which it has to take place. Basically, one can distinguish two competing conceptions of policy-making:

- Policymaking as rational problem solving: policy-making is seen as a kind of problem-solving where clearly defined and agreed upon objectives can be optimized with respect to budgetary and informational constraints. In this

perspective SIA is a new kind of *tool*, a package of concepts, methods and techniques that help in dealing with long-term and global impacts, uncertainties, multi-disciplinarity, etc. What makes this tool specific is its emphasis on integration: integration of concepts, methods and models.

- Policymaking as discursive practices: policy-making is seen as a struggle between social discourses and practices and as the construction, through deliberation, of a common discourse on values, ends and means. In the discursive perspective, SIA is a framework for a collective deliberative *process* in which all actors learn to integrate sustainable development in the way they consider and frame problems, solutions, decisions and actions.

In other words whilst SIA in a rational decision-making perspective is above all outcome oriented (what matters is the outcome for the improvement of the policy proposal), in a discursive perspective, it is the process itself that matters (the emphasis is on policy-learning and long term capacity-building). Of course, the choice is not between an idealistic pushed-too-far deliberative SIA and an idealistic pushed-too-far scientific-rational one. It is between a realistic well-balanced deliberative model and a well-balanced scientific-rational one.

2. Methodological considerations

Although a universal form of SIA does not exist, SIAs follow a general procedural structure adapted from existing assessments such as RIA, EIA and SEA, following the mechanics of institutional and political policy-making cycles.

The first step is a *screening* exercise that helps to decide whether a policy proposal should undergo SIA. Second is the *scoping* phase, which is meant to decide how the assessment will be done. Third, the policy proposals which are selected, undergo an *assessment*, comprising several stages:

- A description of the *problem* the policy wants to address, the causes of the problem, the people or policy domains affected (which will rely heavily on the screening stage).

- An explicit qualitative and quantitative formulation of the *objectives* of the policy.
- A formulation of *policy options* which would allow to reach the defined objectives (this stage is of crucial importance since it is these different policy options that will be assessed and weighted against each other).
- An *analysis* of the impacts of the identified policy options: this step is at the heart of SIA. It usually follows a structure in which the important environmental, economic and social impacts of the different policy options are identified or predicted, and then qualitatively and/or quantitatively assessed. Who is affected and in what way is also described.
- A *comparison* of the different policy options on the basis of the impact analysis: positive and negative impacts of the options are listed and compared, and in rare cases can be ranked.

Fourth, after the assessment, an *evaluation report* explains the results of the different steps as well as the processes followed (e.g. the way in which information was gathered, stakeholders participated etc.) and enters the decision-making process, where the *follow-up* to the assessment is decided. In most settings of Impact Assessment, the evaluation reports are accessible to the wider public.

Except for scoping and reporting, each stage of the process calls for decisions about the methods and techniques that will be used. As for screening, for example, except if it is done on a purely prescriptive basis, one will have to choose between simple checklist or more precise but more demanding methods such as cross-impact matrices, with or without weighting, etc. The options are even more numerous for impact prediction, ranging from “quick- and-dirty” qualitative methods to “several-hundred-equations” models. The situation is a bit simpler with evaluation methods, where one has to choose between aggregative and non-aggregative (Multi-criteria or deliberative) models and – in case aggregative methods are chosen – between monetary (Cost-Benefit Analysis) and non-monetary ones (Analytical Hierarchy Process, Multi-Attribute Value Theory, outranking multi-criteria methods).

Normally, a process-oriented vision of SIA will put more emphasis on values than on facts. Therefore, more will have to be invested in participative mechanisms and/or on methods

focusing mainly on non-monetary aggregated values such as the AHP. Conversely, a more outcome-oriented conception of SIA will probably focus more on facts and therefore on quantitative modelling.

	SIA	
	<i>Process-oriented</i>	<i>Outcome oriented</i>
FACTS	Soft, qualitative methods	Quantitative modelling
VALUES	Non-monetary multi-criteria methods, deliberative democracy	Cost-Benefit Analysis

Table 1. Methodologies for different conceptions of SIA

3. The institutional and participatory context of SIA

The utility and effectiveness of SIA will be enhanced or weakened by the policy context within which SIA has to function. SIA will get more chances in a context where e.g. policies are framed within a sustainable development discourse, where experience exists with integration of policies over policy domains, where policy evaluation is an institutionalized practice, where involvement of stakeholders in policy preparation is an established practice etcetera.

3.1. The institutional context at federal level

An analysis of the Belgian federal policy level at this point presents a mixed picture. On the one hand, Belgium has institutionalized a structure for sustainable development policies which compares favourable to other countries. Since 1997 already, it has a federal law on the coordination of federal sustainable development policy. Through this law and other legislation, it has introduced amongst others a four year Federal Plan and a two year Federal Report on sustainable development, a Programmatic Public Service on sustainable development, an Interdepartmental Commission, Cells for Sustainable Development within each federal administration, a Task Force with experts in

the Federal Planning Bureau, and an Advisory Council composed of the most important stakeholders. These institutions can serve as point of departure for the newly to be developed SIA.

Besides, the idea of introducing SIA in the federal policy context has been on the political agenda for some years, rendering Belgium also a forerunner in this debate. SIA was explicitly mentioned for the first time in the Federal Coalition Agreement of 1999. The development of a SIA methodology has also been extensively referred to in the first Federal Plan on Sustainable Development (2000 – 2004), including an action plan with strategic objectives for introducing SIA and the measures needed for its implementation. The second Federal Plan on Sustainable Development has rephrased this issue and the need for a SIA-practice has been repeated in the Federal Coalition Agreement of July 2003. The Royal Decree of 22 September 2004 creating Cells for Sustainable Development in all federal administrations, is the most concrete document showing the political willingness to introduce some form of Sustainability Impact Assessment, since one of the tasks of the Cells is the execution and/or coordination of SIAs.

However, while these building blocks exist for SIA, it is equally true that the *general* policy context at federal level is not in all aspects favourable for SIA. Notwithstanding the existence of an elaborated institutional framework for sustainable development policy in which vertical and horizontal integration is aimed at, it remains far from mainstream to take sustainability issues into account in other federal policy fields. Sustainable development policy represents in fact a minor 'branch' within the general policy context, largely unconnected to other policy fields. Besides, what is true for most modern states is also true for the Belgian federal level: policy-making structures are developed along the lines of policy domains and function largely independent from each other. Horizontal integration of policies is the exception rather than the rule. Also vertical integration with other levels of competence (local, regional, federal, European, international) is often lacking. An additional problem is the fact that systematic and recurrent evaluations of policies and in particular *ex ante* evaluation practices such as SIA, are lacking in the current policy-making procedures. The limited

experience which exists does not follow a strict methodological framework, nor can it rely on a formal evaluation process.

In general, the federal policy preparation process is characterised by complexity and lack of clarity, notwithstanding the intentions of the Copernicus Reforms. It is impossible to draw up a clear flow chart of policy making, since policy preparation is mainly managed by pragmatism. This clearly hinders the need for openness and the willingness to formulate, compare and weigh policy alternatives during policy preparation, which are essential in an SIA process. While stakeholder involvement, in particular for the traditional social partners (employers, trade unions), is not unusual at federal level, involvement of other actors during policy preparation, as well as generating the necessary transparency about the results of consultations, is not the rule.

To summarise, it seems as if in many ways SIA implies a rupture with the customary way of policy formulation at federal level. However, moving towards sustainability is often interpreted as a learning-process. Taking account of the different institutions that have been created for the development and coordination of federal sustainable development policies, SIA can thus also be interpreted as a next complementary step in this process. Albeit a step that is not unproblematic and that will demand a lot of new capacity building, sufficient resources, suited institutions and a clear will to orient policies towards integration and sustainable development.

The research project identified and extensively discussed several of the main questions which need to find an answer before SIA can become operational at Belgian federal level. The most important questions are:

- How to select policy proposals to be subjected to SIA and who should be commissioned to do so? Points to be solved include the use of a screening instrument, the degree of transparency of the selection procedure, and the role of the Cells and the Council of Ministers.
- Who does what in executing SIA? Points to be solved include whether execution will be kept internal to the administration or whether it will be outsourced, which expertise building is necessary and which form of coordination.

- How to interpret the public nature of SIA? Points to be solved include how participation will be organized at the meta-level (determination of institutional conditions and procedures for SIA) and at the process level (the execution of SIA in its different stages).
- How will the quality of SIA be ensured? Points to be solved include the resources needed for capacity building, quality control of evaluations performed and the openness and controllability of results.
- Which relation between SIA and other evaluation initiatives? Points to be solved include the role of SIA versus other methodologies, and the role of SIA at federal level versus other policy levels.
- How will SIA be phased in? Points to be solved include which general direction SIA should take (see also paragraph 4) and whether a trial period shall be introduced.

3.2. *The problem of participation*

Contrary to the theoretical importance attached to participation in SIA processes (and in sustainable development in general), most existing frameworks for integrated impact assessments lack a clearly defined framework for involving stakeholders or the public. General guidelines and options for participation methods are often mentioned, but the decisions on the actual implementation of participation and the modalities of the participation procedure are left to the initiators of the assessment process. Existing practices show that participation is often restricted to informing and controlled consultation. A further elaborated participation process can have significant benefits, but also involves costs from the side of the initiator as well as from the side of participants. Therefore, a further elaborated participation process should only be initiated when taken seriously, with the decision-maker being prepared to involve the stakeholders in the decision-making process and take their remarks into account. This requires the engagement of sufficient resources and institutional capital.

When analysing the SIA process from a participatory perspective, a distinction can be made between the meta level and the process level of SIA. The meta-level includes deciding on a scenario for SIA (see also paragraph 4), formulating procedures, determining capacity

and supporting material needed and once SIA is established, evaluating the SIA process and results at regular intervals. Stakeholder participation at this level is important, because the what, how and why of a federal SIA-process are crucial for its credibility, and stakeholder agreement over – or at least knowledge of – these fundamentals will further the assimilation of SIA.

At the process level, participation issues will have to be considered for each step of SIA (screening, scoping, impact analysis, impact evaluation, reporting). The form and the extent of participation will partly be determined by the kind SIA scenario which is preferred (see 4), partly it will have to be determined on a case by case basis.

The final report discusses several proposals for participation during the meta level and process stage.

4. **Introducing SIA at Belgian federal level**

While an important part of the research was dedicated to analysing the different building blocks which make up SIA (methodology, institutional aspects, participation ...), part of the research effort also went into developing and discussing scenarios and procedures for introducing SIA at federal level.

4.1. *Scenarios for SIA at Belgian federal level*

In line with the observation that choosing an SIA scheme is a matter of interpreting which objectives SIA should pursue – from a more process-oriented to a more substantive form of SIA – it becomes possible to construct a range of different schemes for SIA. The research team defined five potential forms of SIA in terms of their *principal maximisation objective*, i.e. in terms of the most important objective to achieve with the specific form of SIA.

The first scenario is a *Maximisation of Transparency* scenario. Here, SIA is interpreted as an open-ended process, implying the consultation of multiple stakeholders (and citizens) on the policy orientations to pursue. It is the most discursive form of SIA, based on the principles of deliberative democracy and calling for a full-scale participation to the different phases of the decision-making

process, including the policy formulation process. Tools to be deployed include citizens' juries, participative cognitive mappings etcetera.

A second scenario is called *Maximisation of Institutional Integration*. This SIA scheme puts emphasis on the integrative (horizontal and vertical) character of SD, by largely favouring inter-departmental and inter-institutional collaborations. The aim is to achieve in the mid-term an integration of SD-perspectives into everyday policy-making processes, much the same as is currently pursued in many countries with 'environmental policy integration'. Mostly internal to administration and stressing interaction with and between different institutions (e.g. Parliament, Federal SD Council, ICSD...), the SIA-scheme will be kept sufficiently transparent as to allow a soft form of control of the administrations by stakeholders. Mechanisms to be installed include network facilitation, informal collaborations, ...

The third scenario is a *Maximisation of Adaptability* scenario. Under this scenario, SIA is an entirely flexible mechanism, where each evaluation exercise is adapted by a central controlling process (or unit) according to the challenges, threads, opportunities raised by each specific policy proposal. It meanders on a case-by-case basis between, for instance, a stakeholder-participation process or a closed expert-driven cost-benefit study. Representing a perfectly procedural SIA, it limits itself to a series of meta-procedures on issues such as: who and how to decide on the individual form which SIA takes in front of a specific policy decision.

The fourth scenario is labelled *Maximisation of Impact Objectivation*. Here, SIA is a tool which allows to compare in an objectified manner a series of policy alternatives, predict their positive and negative impacts, foresee their indirect and multi-dimensional impacts, test a series of mitigation measures. The limited openness of the evaluation process is used to gather non-technical knowledge and source-knowledge from different stakeholders, and to inform the interpretation of evaluation results. Tools rely mostly on modelling and expert-knowledge becomes of crucial importance.

The fifth scenario is a *Maximisation of Regulatory Performance* scenario, where SIA is largely an administrative and internal

exercise. The aim is to enhance the performance of regulation by insuring the best possible 'return' on public decisions, as well as the highest possible degree of coherence between policies and policy levels, while minimizing negative, unwanted impacts. In the age of scarce public budgets, keywords include efficiency, effectiveness and productivity. Tools to be used are enhanced cost-benefit and cost-effectiveness analyses.

While all 5 SIA-scenarios presented are desirable in terms of SIA-principles, not all of them are plausible given the constraints and configuration of policy-making at the federal level. In effect, two of the presented scenarios ("Transparency" and "Regulatory Performance") would hurt either given conventions, or would pose serious challenge to public authorities' traditions in decision-making, or would not correspond to the authorities current interpretation of SIA. Given the need to stick primarily to plausible scenarios, neither of these two scenarios has been further developed. All the same, but for a slightly different reason, was the "Adaptability" scenario excluded from an in-depth analysis. Maximizing "Adaptability" of each SIA-process to the policy proposal's specificities would necessitate for public authorities to have already a serious experience with SIA, notably in order to be able to decide on a case-by-case basis which form of SIA is best.

Consequently, two scenarios were developed in detail, i.e. the Institutional Integration Scenario and the Impact Objectivation Scenario. They were also scored regarding their "performance" in terms of credibility (perception of the actors – civil servants, stakeholders, civil society, politicians – of the overall potential of the SIA-scheme to achieve a sufficient level of technical and scientific quality), salience (the degree of relevance the different actors attach to the SIA), legitimacy (the perceived potential of fairness of the evaluation process) and efficiency (the potential of the SIA-scheme to render useable evaluation results within a given resource framework). The scores are summarized in table 2 and 3 below.

4.2. Proposing an institutional approach for SIA at Belgian federal level

While the scenarios above could be labelled “end scenarios” in the sense that they define what SIA should finally look like, the research team also developed several (simplified) procedures or flow charts of how SIA can be introduced and executed. These are included in the final report, but are tentative in the sense that they depend on several institutional decisions which still have to be taken (see also 3.1.).

Again, a distinction is made between the meta-level and the process level. The meta-level concerns the introduction of SIA as a new procedure in the federal decision-making process. Meta-level decisions include the overall orientation of SIA, determining its different components and the responsibilities of different actors and institutions, formulating procedures and criteria for evaluation. A possible procedure here is the elaboration of a draft proposal (e.g. by an interdepartmental working group or at cabinet level), which then follows a process of political approval and preferably also approval in a participatory process with consultation of stakeholders.

The process level concerns the execution of concrete SIA. A first procedure which has to be developed is the screening procedure, an essential step to identify policy proposals that have to be subjected to SIA. Policy proposals developed at the level of Ministerial Cabinets and at administrative level can be screened using a prescriptive filter and an impact matrix. Different actors might be involved, such as the departmental Cells for Sustainable Development, members of the ministerial cabinet in charge of the proposal, civil servants charged with the proposal, a central support unit. It will have to be decided how interested stakeholders and public can follow the procedure (e.g. through an SIA website that gives an overview of initial policy proposals and selected ones).

A second procedure at process level is needed to clarify what happens once a policy proposal is selected for undergoing SIA. The research team developed tentative proposals for the scoping and impact assessment phase of SIA for the Institutional Integration Scenario and the Impact Objectivation Scenario (see also 4.1.). While in the Institutional Scenario, the concrete SIAs are initiated at departmental level, in the Objectivation Scenario, these are initiated by a centrally created expert group. Involvement of departments, experts and

stakeholders differ across scenarios, but in both cases, the development of an SIA website is deemed a suitable vehicle for transparency.

4.3. Proposing an integrative methodological framework for SIA at Belgian federal level

The research into methodologies for SIA during the project taught that numerous methodologies exist for impact prediction and impact evaluation (see also paragraph 2 above). As a general model for analysing federal policy proposals and describing their impacts, the research team introduced an Actions-Consequences-Objectives framework.

In first instance, the ACO model is meant as a description of the policy, as objective and neutral as possible. As such, it still goes further than most policy formulations insofar that it makes explicit the underlying logic of action, the assumptions concerning the causal links between the planned actions and measures, the expected changes in the state of the targets systems (i.e. consequences) and the subsequent achievement of its objectives.

Secondly, the ACO model can be used to assess the policy proposal not only on its own merits, but also in terms of sustainable development objectives. Consequences can for example be classified as economic, environmental or social. Furthermore, the objectives of the policy proposal can be tested on their consistency with commitments already taken, e.g. in the first and second Federal Plan for Sustainable Development.

Through these characteristics, the ACO framework can be used as a guiding tool when executing the first SIAs at federal level. The framework integrates in the same visual frame social, environmental and economic consequences (effects and impacts) of policies; checks for consistency of these consequences with higher-levels objectives or commitments on sustainable development; makes apparent the uncertainties surrounding some relations between actions and consequences, and consequences and objectives; helps in identifying unwanted impacts and possible mitigating actions in order to control them; and compares alternative policies with respect to a common set of overarching objectives.

5. Future research and study questions

This 18-month research project was meant as an exploratory research project, touching upon many research issues raised within the field of “Science for Sustainable Development”. Projects working on the operationalisation of sustainable development evaluation mechanisms, and in a wider sense of decision-aiding tools, inherit a considerable amount of research questions from the upstream research fields, ranging from the handling of multi-scale uncertainties to the efficiency of reflexive governance as a general blueprint for public management. Research questions which merit further exploration include the conception of sustainable development and sustainable development criteria underlying SIA processes, the methodologies and tools useful for policy support through SIA, the realisation of participation in SIA processes, the links between *ex ante* and *ex post* evaluations, the link between *ex ante* evaluation and the use of indicators as tools for decision-making.

For (immediate) implementation of SIA at Belgian federal level, more concrete and operational questions are still open. These include the question of conducting a series of “real-time” case studies, with active support and a mandate from policy-makers, in order to shed more light on procedural, methodological and institutional questions. These also include organisational matters needed to support the development of SIA, e.g. development of handbooks, training courses, internal and external websites. More essentially, choices have to be made as to the fundamental orientation public authorities want to attribute to SIA at federal level (see the scenarios under 4.). These choices (partially) determine choices in screening and scoping, participation and transparency, inter-institutional and intra-institutional organisation, and methodological requirements such as centralisation of data processes, development of frameworks to assess consistency of policies and the operationalisation of impact evaluation instruments (e.g. the ACO framework). The extent and nature of these kind of questions (methodological, procedural, organisational) is such that they call for the implementation of a study programme (i.e. a pool of financial means to be invested in the development of the needed expertise). The implementation of such an accompanying research programmes has been identified in other contexts as being

crucial during the initial implementation of SIA (e.g. at EU-level).

Scenario 1 : Maximization of Institutional Integration		
<i>Credibility</i> (perceived technical, scientific quality)	-/+	Low in the beginning (considering the state of existing SD-evaluation culture), but steadily raising with gained experience.
<i>Saliency</i> (perceived relevance of the assessment)	+	Potentially high, but restricted to internal integration and promotion of SD into policy-making
<i>Legitimacy</i> (perceived fairness of the evaluation)	-	Potentially low, as SIA will be perceived essentially as an internal mechanism. Stakeholders might accuse SIA to pursue mainly a goal of <i>ad hoc</i> legitimization of already appointed policy choices. Hence, strong pressure to develop active communication and transparency, as well as participation on the level of screening and/or scoping.
<i>Efficiency</i>	++	Potentially very high. Costly and time-consuming external participation is restricted to the minimum. In the beginning however, the needed external expertise might use considerable financial and coordination resources.

Table 2. Scores of the Institutional Integration Scenario on different criteria

Scenario 2 : Maximization of “Impact Objectivation”		
<i>Credibility</i> (perceived technical, scientific quality)	++	Potentially very high. Careful consideration should be given to the inherent difficulties, which are raised if SD is used as the evaluative referent. Credibility might suffer a lot if the impact objectivation is pushed beyond the limits of what is deemed acceptable with SD-evaluations (e.g. monetizing non-marketable goods and services).
<i>Saliency</i> (perceived relevance of the assessment)	?	Potential polarization. Depending on the perspective of the observer. For some stakeholders and actors, SD calls also for a revolution of evaluation methodologies, not only for the improvement of existing ones.
<i>Legitimacy</i> (perceived fairness of the evaluation)	?	Potential polarization. Depending on the perspective of the observer. The strong technicality and complexity of the evaluation will not necessarily be accessible to many stakeholders.
<i>Efficiency</i>	--/+	In the beginning very low, notably because of the necessary resources to finance the improvement of impact prediction and -evaluation tools. However, in the mid-term, the fine-tuning of regulation and the mitigation of negative, unwanted effects of policy proposals will help to render regulation much more efficient, hence saving public investments, hence allowing a positive return on initial R&D investments.

Table 3. Scores of the Impact Objectivation Scenario on different criteria

**TOWARDS A SCREENING MECHANISM FOR SIA:
PROCESS AND CONTENT ISSUES RELATED TO THE FEDERAL BELGIAN CASE.**

1) Introduction

Screening, the first step in Sustainability Impact Assessments (SIA), aims at selecting those policy proposals that present characteristics, in terms of foreseeable impacts, which can be judged sufficiently critical as to trigger an extended assessment. Screening not only means to identify policies that might have strong adverse impacts, but also, as a consequence, helps to assure an optimal resource allocation between evaluation and implementation of policies. It is acknowledged that appreciatively 1% of public budgetary policy spending should be dedicated to evaluation exercises. Ex ante evaluations such as SIA, being a specific evaluation mode among many other useful and necessary evaluation exercises in public authorities, should evolve within this gross rule of budgetary allocation. Obviously, evaluating each and every policy proposal developed by the public authorities would indeed be a time-consuming and resource-intensive exercise. Simultaneously, the screening step is a critical one, because overlooking proposals that bear potential strong negative impacts on sustainable development (SD) could have undesirable consequences that could have been anticipated and avoided with a proper evaluation.

Scoping, the step following screening, allows setting an individual and specific SIA-framework for each policy proposal having been identified as critical during the screening process. Scoping processes structure the subsequent extended evaluation and identify those elements that the extended evaluation needs to focus on. Scoping is also permitting to define the data needs and to realize the methodology selection of the extended evaluation. In short, scoping allows determining the *Terms of Reference* of the extended evaluation. In the context of SIA, scoping determines also the extent of the integrative character of the evaluation exercise. At this stage, the policy proposals specificity could be downsized adequately to incorporate only the crucial aspects of the policy proposal. For instance, scoping could result in determining for a specific policy proposal the SIA in a way as to concentrate the evaluation efforts on environmental issues only, if these appear during the screening phase as being of particular importance.

This working paper is first going to present some introductory considerations related to screening and to scoping, which are derived from literature on evaluation in general and from SIA-related literature in particular. The next section will elaborate upon an analysis of screening approaches that are part of Impact Assessment processes that we judge relevant to SIA. More specifically, we explore screening mechanisms employed by the European Commission (i.e. the European Commission's *Impact Assessment* and DG Trade's *Sustainability Impact Assessment*), by the Swiss federal authorities (i.e. *Sustainability Impact Assessment*), by the Better Regulation Unit of the United Kingdom (i.e. *Regulatory Impact Assessment*) and by the regional authorities of Flanders (i.e. *Regulatory Impact Assessment*). Thirdly, we explore the existing context at the federal Belgian level, both by looking into screening approaches of ex ante evaluations existing at the federal level, and by interpreting the specific legislation defining the general mechanisms of SIA at the federal level. The building blocks for a robust screening process as we derived them from our analyses are further elaborated upon by putting them into this federal context. We discuss how the lessons learned during the analyses can apply to define the future SIA-screening at the federal context. Subsequently, we propose a screening matrix and a procedural setting for screening which we think of as a satisfying compromise between the many constraints that weight on SIA for the federal level.

Finally, the paper describes briefly the process and lessons learned during the testing of the screening matrix. Together with several groups of civil servants, we tested the screening matrix on "real" case-studies in order to check its feasibility and provisional usefulness in the current federal setting.

2) Setting the issues

In the following sections we present briefly the main characteristics of screening, scoping and evaluability assessments. It should be understood right from the start that even if each of these elements should be addressed in a thorough SIA, they couldn't be held independent from each other. As a matter of fact, not in all of the encountered SIA processes, screening, scoping and evaluability are identifiable as separate steps in an evaluation process. As will appear through the following, the questions to be addressed through the requirements of the 3 elements are very much interlinked. Also is it mostly a question of institutional opportunity and feasibility what will be the sequential setting of screening, scoping and evaluability.

2_1) Screening

The screening stage is generally the first phase in an Impact Assessment (IA). It acts as a selection process, where proposals are rapidly assessed for their potential impacts. It provides a systematic way of structuring information which should help deciding whether a more thorough and extended impact assessment could usefully be undertaken, highlighting the need for further investigation on the proposed policy (Blair-Stevens, 2002; DFDI, 2003).

Adequate screening procedures have to ensure that policy proposals with potentially detrimental effects are becoming subject to extended Impact Assessments and are not overlooked. Decreeing that every policy proposal should undergo a thorough Impact Assessment represents an obvious waste of time and resources in administrative environments where both are traditionally scarce. Determining the necessity of the extended evaluation process is thus one among the major issues which screening has to perform.

Screening procedures can be distinguished into two broad types of approaches (UNEP 2002):

- *Prescriptive (or standardized) approaches:* Evaluation processes which use prescriptive approaches to screening decree by means of law or regulation which policy proposals should be subject to extended Impact Assessments under which conditions. The identification of the policy proposals to be assessed can be realized by 2 mechanisms. Either by listing policy types, policy themes, policy instruments, policy impacts... which are necessarily triggering (e.g. inclusive lists) or aborting (e.g. exclusive lists) any further extended IA. Examples of exclusion criteria are for instance to stipulate that any policy proposal related to defense or national security issues is to be excluded from extended evaluation, as the necessary transparency of extended evaluations is felt to be counterproductive. Examples of inclusion criteria are to stipulate that any policy proposal of programmatic nature should undergo extended evaluation. As a second type of prescriptive mechanisms, some public authorities establish a range of minima or maxima thresholds, which trigger (or abort) extended evaluation. Examples are, for instance, thresholds related to budgetary spending implied by the policy proposal, or related to the number of households or enterprises touched by the policy.
- *Discretionary (or customized) approaches:* With discretionary approaches, the policy proposals that should undergo extended assessment, are not explicitly listed by type, issue, theme, size, budget... Instead, an evaluation mechanism is outlined methodologically and procedurally that has to be triggered for each policy proposal. This evaluation mechanism is obviously a very quick-

and-dirty version of the real extended assessment, and is only meant to perform the selection of policy proposals on an individual, case-by-case base using indicative guidance and a common methodology. If discretionary screening allows thus a much more fine-tuned selection of policy proposals to undergo extended assessment, it reveals some fundamental flaws such as a higher investment in time and money, the necessity to develop and apply a thorough methodological frame, and not the least introduces a certain amount of randomization of the selection, especially with policy proposals that present multiple uncertainties as to their impacts.

Besides these approaches to screening, other less systematic practices of screening can be used. These follow somewhat other logics than the aforementioned and reveal other types of advantages :

- The selection of ex ante evaluation cases can also be determined simply by applying a *random selection procedure* to policy proposals. Randomized mechanisms have a long tradition in evaluating compliance to rules. In some instances more or less precise and procedural rules, recommendations or norms exist for the development of policy proposals, such as for instance on the level of the CEC which developed a catalogue of rules for 'better regulation' or 'public participation' or 'the use of expertise'. In these conditions, a randomized approach to selecting SIA-evaluations might be of advantage if the evaluations have as primary goal to discuss the application of the overarching policy development rules. The aim is obviously directed towards controlling the use and application of the rules.
- Engaging a policy development process into an ex ante evaluation will demand a number of additional efforts from the civil servants in charge. As a matter of fact, and considering the necessity to ally the civil servants in an effective way to policy evaluations, the decisions to undergo SIA could be based on an entirely *voluntary process*, where political actors (e.g. ministers) or high-level civil servants would volunteer with their administration to submit their selection of policy proposals to SIA. In public authorities, the decision to develop evaluations for specific policy proposals is often taken in an internal process within each specific administration based on criteria such as the capacities of the administration, the political will, the sensitiveness of the policy proposal at hand, etc... It can thus be argued that the 'selection' of SIA processes should be mainly linked to the internal administrative and political support to such an evaluation.
- The selection of SIA processes can also be tightly linked to the political process of decision-making, hence furthering the mission of controlling executive power. Applying such a logic to SIA, would leave the power of the initiative to request an SIA for specific policy proposals for instance to parliament.
- Finally, the SIA-process could also be thought of primarily as a process of mediation between conflicting interests and be applied to situations and policy proposals only, which have become rich in conflicts and are contested by the different stakeholders at hand.

In the following, we leave aside these latter entries to screening mechanisms, and will develop only on discretionary and prescriptive policy proposal selections. In effect, if the aim of SIA is to diminish adverse impacts on SD of public policies, then the selection of policy proposals to undergo SIA should be directly linked to the provisionary impacts.

Hereafter we will further discuss the arguments of prescriptive and descriptive approaches.

Oversimplification of the prescriptive approaches

There are a series of pros and cons for each of the two screening approaches. As with the general set-up of IA, the configuration of the screening phase is necessarily a compromise between feasibility and

robustness of the results obtained. We argue here that the main advantage of prescriptive approaches, i.e. the simplicity and enhanced feasibility of the approach, is at the same time the main reason for their non-adequacy to Sustainability Impact Assessments.

The main advantage of prescriptive approaches is to provide a standardized and logically 'closed' framework for the screening of policy proposals. In principle, the approach is simple to apply as the identification of the policy proposals that are decreed to undergo an Impact Assessment is mostly very straightforward. Type (e.g. Royal decree, program..), origin (e.g. ministerial initiative, parliamentary initiative, transposition of European law), and theme (e.g. energy, transport, immigration..) of the policy proposal is obviously pre-determined and easily recognizable. As a consequence, the resources needed to realize a prescriptively oriented screening are few. However, and there lies the major flaw, there is rarely a clear-cut relationship between the formal layout of the policy proposal and the importance of its potential adverse impacts on SD-related issues. It cannot be excluded, for instance, that relatively 'small' policies have detrimental or interesting effects on issues which according to an SD-related set of evaluation criteria are critical issues. For instance, the policy initiatives introducing subsidies or fiscal advantages to wind energy producers are in most countries very 'small' in extent and scope (notably with regard to their budgetary implications), however such initiatives could be judged sufficiently interesting to SD (maybe only on the level of demonstration projects) to be worthwhile to undergo SIA.

In parallel, there is no ad hoc relationship between policies, which are targeted towards the implementation of SD and the extent of their positive or negative impacts. A typical example of this is the idea to restrict SIA at federal Belgian level to policies, which are developed to implement the SD-strategy (i.e. an inclusive approach to screening). A second example of prescriptive approaches providing erroneous conclusions, would be to follow practice in some RIA settings, which would induce to exclude from SIA any policy proposals that transpose European law.

The absence of a clear relationship between on the one hand the type, origin and theme of the policy proposal and on the other its potential detrimental, indirect effects, combined to the fact that SD introduces evaluation criteria which add a high degree of complexity and uncertainty to evaluations, means that screening based solely on ***prescriptive approaches (whether inclusive or exclusive) appears to oversimplify the identification of critical policy proposals.***

A refinement of the prescriptive approach by introducing a series of thresholds (for instance, threshold with regard to the involved budgetary spending) is reported to be one convenient solution in the case of fine-tuning prescriptive screening for Regulatory Impact Assessments (RIA). This seems adequate for evaluation exercises which are explicitly directed towards assessing the relationship between the policy proposal's effects and the regulatory burden it implies for administration, citizens and the private sector. For instance, thresholds contribute in these cases to respect a sound ratio between the budgetary impacts of the policy proposal and the costs of a likely extended assessment. However, in the case of SIA, introducing thresholds does not fundamentally change the characteristics of prescriptive approaches. For instance, a 'small' accessory policy proposal could not be sufficiently large to reach any of the predetermined thresholds of budgetary spending, but might well be impacting (in)directly on a small, but very vulnerable, issue (an example of this is provided in Canada with policies directed to regulate native Indian minorities, or in other countries with issues related to the protection of cultural or landscape heritage). Besides, thresholds might trigger strategic avoidance behavior by members of public authorities, as some policy proposals may be kept voluntarily below the critical level in order to avoid an extended evaluation.

It could be argued though that it would suffice to adapt the prescriptive approaches to an SD-agenda of evaluation criteria in a way that the predefinition of the thresholds or the policy issues, themes and origins

would be realized according to SD (for instance, by identifying critical issues, or determining vulnerable policy themes...). However, the SD-battery of thresholds would probably eliminate the main advantage of prescriptive approaches, namely their participation to the simplification of screening. As a matter of fact, in such a case the determination of the thresholds themselves will be facing irreducible uncertainties and multiple complexities, implying thus a potentially too complex scheme of thresholds in order to allow for a feasible and simple application of the prescriptive criteria.

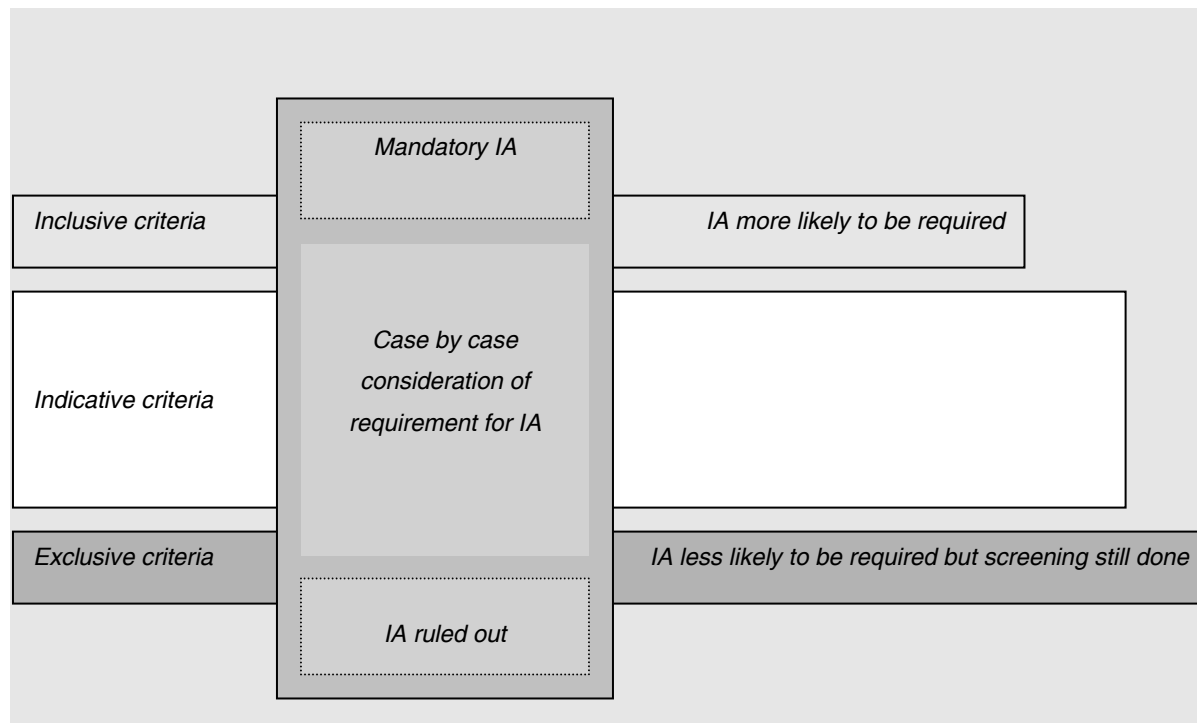
Introducing bargaining with discretionary approaches

By the negative, discretionary approaches seem thus to be more suitable for screening when the Impact Assessment is directed towards complex, horizontal and multi-dimensional issues such as SD.

However, discretionary approaches pose a series of problems too. Among the more relevant ones is notably the relative difficulty to develop a discretionary screening practice which will be applied in a sufficiently consistent and constant manner so that, for instance, identical recommendations would be reached if the pre-assessments were conducted by different authors (UNEP 2002). In other words, discretionary screening in the context of SIA will necessarily trigger a rather complex corset of procedural rules and mechanism in order to insure that a certain harmonization occurs between different administrations and units. Simultaneously, discretionary approaches being by nature less 'automatic', their inherent mechanics could reveal themselves to be less transparent too: as the selection is based on the application of a series of criteria (i.e. generally represented in a matrix) each answer given to each evaluation criteria is in principle based on a judgment by the author(s). Furthermore, as one generally refrains from quantitative assessments at this stage, the qualitative nature of the judgments, and their aggregation into a common verdict, are not necessary appealing to exterior eyes as anything else than value judgments. Such non-transparent screening processes have occurred in the past for some impact assessments. For example at the European Commission's level, the selection criteria for policy proposals which undergo or not the extended assessment appeared to be unclear (Wilkinson 2003), thus raising the suspicion (not entirely without reason) of being subject to political and lobby bargaining.

However, both approaches need not to be exclusive, and in most SIA processes we analyzed they are indeed not: the prescriptive and discretionary approaches can be combined into a comprehensive pre-assessment scheme. As an example, the European Union actually employs both. In its guidelines for the impact assessment (European Commission, 2002 and 2005), it clearly states which initiatives are subject to the preliminary impact assessments according to the type of initiative. At a second stage, based on the two-page note on the preliminary assessment, a case-by-case approach is used to select the initiatives subject to an extended impact assessment. As a matter of fact, virtually all of the Impact Assessments analyzed use a first phase of prescriptive exclusion in order to exclude right from the start a series of redundant routine policy decisions, e.g. policy plans of administrations' internal budgets or nominations of high-level civil servants. These initial prescriptive decision-trees are almost exclusively directed towards checking whether the nature of the policy proposal has any potential to develop unwanted direct or indirect impacts. As sketched in the graph below, there are a number of policy initiatives which could be excluded right away (i.e. exclusive criteria) on the basis of a check of the nature of the policy proposal, or the application field, or the type of regulatory tool they will use (e.g. in some cases, financial framework programs have been excluded). On the other side, it would be tempting to use prescriptive logic to develop a list of issues, for instance industrial sectors or policy fields, which are felt sufficiently vulnerable or unnecessarily powerful as to trigger an extended impact assessment in every case a policy proposal addresses the issues listed (i.e. inclusive criteria). Such decision trees, if they are necessary to establish

the basic rules and fields of application of Impact Assessments, appear to be only non-contradictory if



Screening confronted to different situations (adapted from the UNEP guide 2002)

The difficulty and controversies raised with the development of quantitative or qualitative thresholds for a prescriptive screening approach, can be found back on the following level. One of the critical issues in the selection of the initiatives that have to undergo an assessment, i.e. in screening processes, is the identification of what constitutes a **significant impact** which ought to be considered as sufficiently critical to trigger further and more extended evaluation. Most of the organisations do not provide unequivocal definitions of what constitutes a significant impact for them (Cloutier, 2001). This being of course linked to the obvious impossibility to determine thresholds of significance applicable to a wide range of different policy issues and types of policy proposals. Screening methodologies are thus, in the end, merely methods and processes which should force the structured integration of information.

An example of such a coherent ‘forcing’ of information is given by Kirkpatrick and George (2005) in the context of the CEC-DG Trade SIA, who propose to make use of a matrix (see below) to attract attention to potential significant impacts. They assess impacts qualitatively according to the following criteria:

- the probability of the occurring impact,
- its likely magnitude compared with the base situation,
- its geographical extent and numbers of people affected,
- its degree of stress,
- its degree of reversibility,
- the effectiveness of relevant policy and regulatory frameworks,
- the capacity to implement mitigation and enhancement measures.

Summary presentation of sustainability impacts¹ (Kirkpatrick and George, 2005)

Core indicator	Impacts (detailed indicators)	Direction and magnitude (-,-, ,+,++)	Degree of stress in existing conditions (L,M,H)	Extent (L,M,H)	Reversibility (yes, no)	Probability of occurrence (L,M,H)	Effectiveness and capacity of policy and regulation (L,M,H)	Impact significance (-,-, ,+,++)
<i>Economic</i>								
Real income								
Fixed capital formation								
Employment								
<i>Social</i>								
Poverty								
Health and education								
Equity								
<i>Environmental</i>								
Biodiversity								
Environmental quality								
Natural resource stocks								
<i>Institutional</i>								
Sustainable development principles								
Institutional capacities								

As mentioned above, screening solely based on pre-determined positive or negative lists (e.g. of critical sectors) might be insufficient for a satisfactory selection of the proposals which should be assessed further. A balance also needs to be elaborated between systematic screening based on pre-determined criteria or thresholds, and screening approaches which rely solely on expert judgment or civil servants' experience with the policy field.

¹ Legend:

- blank non-significant impact
- + positive lesser impact
- negative lesser impact
- ++ positive greater impact
- negative greater impact
- ± positive and negative impacts according to context – net effect is uncertain or varies according to context
- /+ negative impact over an initial period of time, but expected to become positive in the longer term – similar combinations of symbols are used for other short term/long term effects (using 0 for non-significant impact)

2_2) Scoping

Scoping is the step that allows framing the subsequent extended assessment to be undertaken. It sets its limits and identifies the aspects that need further attention. In many aspects, scoping can be equal to the definition of the 'terms of reference' of the extended assessment. A series of goals are attributed to the scoping phase:

- Scoping is employed to establish the main stakes and to identify the options and links with the actors. The impacts which are the focus of the rest of the assessment are identified in this stage (André et al. 1999).
- It is also necessary to determine the coverage and the level of detail of the extended assessment, for instance through the identification and exclusion of irrelevant information (Blair-Stevens, C., 2002). One decides here how to undertake the assessment in the given context. The decision on scoping the subsequent evaluation includes many aspects, ranging from the study's adequate spatial or temporal extent, the people to involve, the expertise to use, the methods to use, the budgets to foresee... In the case of SIA, and other integrated assessments, the scoping phase should also be used to determine what type of subsequent evaluation is most adequate to the problems posed by the policy. It can be argued effectively that the evaluation should remain sufficiently flexible as to be oriented resolutely towards one or the other dimension of SD.
- In a broader way, one of the main purposes of scoping is to systematise the determination of the terms of reference for the impact assessment of each measure that is going to be assessed (Kirkpatrick and Lee, 2002).

Scoping is thus meant to determine those elements that are to be included in the subsequent assessment. Through a comparison of several scoping processes (see appendix), we identified the following classes of elements (see table below) that need to be determined during scoping. A distinction is introduced between procedural, substantive and methodological issues, even if for most of the issues such a separation is rather artificial. At this stage, the separation of screening and scoping is all the same somewhat artificial, as both are generally conducted rather in parallel, or at least influence each other mutually: some of the elements cited below will be determined on the basis of the results of the screening stage, such as for instance the gathering of information relative to the context of the initiative, the actors involved (target groups), the policy options available, and the expected impacts.

Procedural, substantive and methodological questions seeking answer during the scoping phase

1) Procedural issues	
<i>People involved in the assessment</i>	<p><i>How will responsibility be divided up for different SIA tasks?</i></p> <p><i>How and by whom will the SIA process be overseen?</i></p> <p><i>Which decision-makers need to be engaged?</i></p> <p><i>Which specialists and practitioners could usefully be involved?</i></p>
<i>People that could participate</i>	<p><i>To what extent can those who may be affected by the proposal be involved?</i></p> <p><i>Are there other stakeholders to involve in the assessment?</i></p>
<i>Resources (human, financial, time)</i>	<p><i>What skills and human resources are required and available?</i></p> <p><i>What financial resources are required and available?</i></p> <p><i>When are the proposal's key decision points, and what time is available to undertake the</i></p>

<i>SIA?</i>	
2) Substantive issues	
<i>Context of the policy</i>	<i>What is the policy's context?</i> <i>What is the problem the policy wants to solve?</i> <i>What is the goal of the policy?</i>
<i>Actors involved</i>	<i>What are the target groups of this policy?</i> <i>Who is indirectly concerned?</i> <i>What are the wanted behavioural changes?</i>
<i>Policy options</i>	<i>What are the policy options, which instruments are considered?</i> <i>Which options have been discarded, and why?</i> <i>Do the options comply to the proportionality principle?</i>
<i>Impacts</i>	<i>Which potential impacts need further consideration with regard to which population and/or geographical area?</i> <i>Which criteria are going to be used, in order to assess the significance of the sustainability impacts?</i> <i>What are the cumulative impacts, likely to result from the implementation of the initiative?</i> <i>What could the unexpected secondary effects be?</i>
<i>Boundaries (depth, time horizon, spatial boundaries, target groups)</i>	<i>How deep is the analysis going to be?</i> <i>What are the boundaries for the appraisal in terms of time?</i> <i>What are the boundaries for the appraisal in terms of geographical area?</i> <i>What are the time horizons over which the impacts should be assessed?</i>
<i>Mitigation and enhancement measures</i>	<i>Which impacts need mitigation or enhancement measures?</i>
3) Methodological issues	
<i>Methods and data sources</i>	<i>What range of methods will be used, given the resources available, to gather the evidence base needed to undertake the SIA?</i> <i>Are the data sources and information available linked to the kind of method to employ?</i>
<i>Monitoring</i>	<i>How will the SIA process be monitored and evaluated?</i>

As mentioned above, scoping processes result in the drafting of the *Terms of Reference (ToR)* of the subsequent extended evaluation, an exercise which can be summarized with the following: “*who will do what for what purpose when and how and with what resources?*”. Obviously the structure of the ToR for a SIA is influenced heavily by the existing regulation and custom of administration. As a consequence, while some of the questions needing answers during scoping are generic, some others are determined by administrative context. For instance, for the Belgian federal level SIA, one question to be specifically (imposed by the context) addressed during scoping will be to determine the necessity to integrate regional administrations into the extended assessment, and to what extent (e.g. solely as observers, or as providers of data, or as stakeholders, or as part of the administration in charge).

Generally speaking, the importance of scoping should not be underestimated. Scoping allows primarily adjusting the subsequent extended assessment with the means and capacities of the administration in charge. Scoping is thus necessary to avoid engaging into ‘*overevaluation*’ or ‘*misevaluation*’, i.e. engage into unnecessary exercises, or exercises where the outcome is thoroughly unclear, or exercises with a low feasibility, or exercises which are configured way too complicated (or simple), exercises which are exceeding available resources...

At the current stage of development of SIA in Belgium, the successful scoping appears to be critical for the successful development of SIA. In Belgium, for instance, the recognition of the usefulness of SIA is still very fragile, and many stakeholders and actors remain skeptical whether SIA will at any stage be implemented at the federal level. A weak scoping phase could imply to engage into an SIA practice, which is not clearly framed, which in turn will probably further weaken SIA. In this context, successful scoping will be the main argument against those critics which see in SIA a waste of scarce resources and a counterproductive slowing down of the decision-making process.

Methodological issues

Scoping can rely on a number of tools and instruments to be structured and executed. Hereafter we sketch some of the most widely spread scoping elements. Whereas these cannot necessarily be labeled as being instruments, they should be comprised as more or less structured sub-elements of wider scoping exercises. The listed elements are complementary and should be used in parallel for a single scoping exercise. However, developing each of these steps extensively in a single scoping exercise remains very exceptional because resource intensive. Rather should the use of one or the other (or none) 'instrument' be relying on criteria of necessity. Not every scoping exercise needs in fact to use such an instrumental setting, and the choice of the aspects which need further focus is depending on which elements of the ToR need to be determined in more detail.

Checklists and argumentative forms

Some authors (e.g. Kirkpatrick and Lee, 2002) propose to use a checklist combined with a preconfigured form to be filled in by administration. Such forms integrate, following the model of a ToR-document, a series of elements such as those listed in the above table, including a descriptive argumentation of the objective of the policy proposal, the definition of the proposed initiatives, the scenarios and alternatives to be investigated, the sustainability indicators and significance criteria to be used, the stakeholders to be considered, the resources to be engaged, the timeline to be followed, the data to be collected and treated, the communication and participation moments to be respected, the results expected...

Causal chain analysis for identifying the potential impacts

At the beginning of the scoping stage, it is sometimes suggested to employ simplified forms of *causal chain analysis* (CCA). CCA helps in identifying the potentially important sections of each causal chain which link, in sequence, the initiative to its eventual, significant impacts. CCA allows thus to visualize peripheral from central impacts, and allows consequently to target the subsequent extended assessment towards those elements which appear central and crucial to the proposed policy initiative's mechanics. Ideally, these CCA need to be undertaken for all scenarios/alternatives applicable to each policy initiative. CCA is another way of forcing structured information to be constructed along the lines of the SIA, as with screening, where the use of matrices is suggested. CCA permits to deconstruct and reconstruct the policy initiative, and can be particularly interesting in situations where the policy initiatives under evaluation are complex, multi-faceted and presenting multi-dimensional, multi-level and indirect impacts, whose connections could otherwise be overlooked. As Kirkpatrick and Lee state (2002), CCA can be used at different levels of aggregation and detail, depending on the context and requirements of the situation. It can also be used at different stages in the SIA process, for example during the screening stage as it is done in the Swiss SIA, or during the scoping stage. The aim of CCA is to distinguish the *significant* cause-effect links in the chain. Significance criteria have to be

formulated and then used to eliminate non-significant sections and terminate further analysis beyond these sections. Both the causal chain analysis itself, and the causal chain analysis findings, may be presented in the form of a causal chain diagram, sometimes called a cause-effect diagram. This diagram shows each of the cause-effect sections which have been investigated (plus some sub-sections in the more detailed diagrams) in their logical order of causality, distinguishing those that are significant from those that are not. CCA should not be mistaken with more thorough methodologies allowing the identification of relationships and positive or negative feedback loops, such as for instance Cognitive Mapping. CCA as such can hardly be labeled a method on its own, but should be considered merely as an overarching principle (Bocher and Spaltenberger, 2003) that states the importance of sketching diagrammatically the relationships of the policy proposals under scrutiny.

An important step in scoping exercises is the determination of the assessment methodology most adapted to the evaluandum. As stated by Boulanger (2005), the core of SIA is about selecting among the many available integration approaches and assessment methodologies. While the selection of methodologies is simplified by existing efforts of categorisation and qualification (see for instance, Boulanger 2005, or the online inventory elaborated in the context of the Sustainability A-Test project under /ivm5.ivm.vu.nl/sat/), the methodological choice in itself can reveal some difficulties, not the least because of existing antagonistic criteria (feasibility vs. productivity). It might thus be considered useful to operate this choice via the application of a structured process, which is meant to reveal the main characteristics the methodology has to fulfil and respond to.

Kirkpatrick and Lee (2002) proposed, in the context of the CEC DG Trade SIA, a decision-tree for determining the methodology to use for the assessment. The authors stress the relevance of the first stages of the process because the information that is gathered there will be useful in identifying the main assessment tasks that follow, hence be of importance for the selection of the methodology. They suggest leaving the range of the different types of methods which might be used in undertaking the assessment task quite broad.

With some evaluation objects, a single evaluation methodology might not be sufficiently encompassing in order to fulfil the range of objectives targeted. Typically, for instance, with multi-annual policy programmes (e.g. agricultural subsidizing programmes) one aspect of the evaluation will be dedicated to quantifying, even monetizing, impacts and spill-overs, whereas other aspects will be directed towards assessing the potential of civil acceptance of new technologies. Such double-sided impact assessments will have to trigger a combination of methodologies, e.g. the running of macro-economic models combined with the conduct of on-site focus groups.

Issues of evaluability: technical feasibility and political acceptability

Screening and scoping stages of an SIA, need to comprise also some technical and 'political' questions. For any evaluation process, it is of crucial importance to refrain from evaluation exercises for which success appears to be jeopardized right from the start. These questions can be grouped under the heading '***evaluability assessments***' if they are directed towards checking the technical feasibility and the political/societal acceptability of the intended evaluation. As a matter of fact, some policy proposals can be so complicated, diffuse or innovative that they have little prospect of meeting the basic requirements linked to evaluability (Davies, 2003): uncertainties might be too high, stakes too ideological, data too scarce, timeframes too tight, administrations' support too light, political will too weak...

Evaluability typically comprise issues such as :

- Assessing that the stakes, and the target population, are clear and identifiable (i.e. societal acceptance),
- Assessing that the outcomes are clear, specific and measurable (i.e. usability of results),
- Assessing that an appropriate and robust evaluation design can be implemented (i.e. technical feasibility).

The guide to evaluating socio-economic development and associated resource materials elaborated for the European Commission defines this type of assessment as:

“A technical part of the pre-evaluation, which takes stock of available knowledge and assesses whether technical and institutional conditions are sufficient for reliable and credible answers to be given to the questions asked. Concretely, it consists of checking whether an evaluator using appropriate evaluation methods and techniques will be capable, in the time allowed and at a cost compatible with existing constraints, to answer evaluative questions with a strong probability of reaching useful conclusions. In some formulations it also includes an assessment of the likelihood of evaluation outputs being used. It is closely linked with examinations of programme theory and programme logic insofar as evaluability depends on the coherence of the programme's logic and the plausibility of its interventions and implementation chains.” (Stern E., Bozeat, N., Moore, J and Dente, B.; 2003).

In the context of SIA, a relatively innovative approach of integrated assessments, linked to a policy agenda (i.e. SD) which lacks strong political support, addressing evaluability questions at the level of the pre-assessment is of outmost importance. In effect, starting SIA-exercises on specific policies, without being able to insure a certain amount of impact, and thus the usefulness, of the evaluation reports, might be detrimental to the credibility of the entire mechanism.

3) Analysis of existing screening² approaches

As seen until now, both procedurally and from the approaches and methodologies chosen, the initial steps (screening and scoping) of an SIA can only be defined rather loosely through evaluation literature. The way and depth the principles of screening&scoping are operationalized can vary largely from one institutional setting to another. In the following, we found it thus useful to account for the main differences between approaches to screening&scoping. We sketch therefore a comparative analysis of a selection of existing SD-related Impact Assessment procedures with special attention to the screening&scoping phases:

- the European Communities Impact Assessment (CEC-IA), as one of the recent processes of ex ante policy-proposal evaluation which will probably become one of the most important references for national or subnational initiatives;
- the European Communities Sustainability Impact Assessment³ of DG Trade (CEC-SIA), as a very specific, but nevertheless important, context-driven ex ante evaluation exercise;
- the Swiss Sustainability Evaluation⁴ (Sw-SE), as the first (and only) sustainability-oriented ex ante evaluation process on national level;
- the United Kingdom's Regulatory Impact Assessment (UK-RIA), as representative of evaluation procedures which strive towards better regulation and consider SD as a secondary evaluation objective;
- and finally, the Flemish Regulatory Impact Assessment⁵ (FI-RIA), which is the first Impact Assessment procedure implemented in Belgium.

Other Impact Assessment procedures could have been integrated into our analysis too. However their specificities, whether procedural or substantive, were considered too important as to be relevant as reference procedures for the Belgian context. All the same, the 5 processes selected were felt to be sufficiently broad in scope, scale and objectives as to give us a satisfactory insight into the main constituents of screening&scoping issues.

However, conclusions drawn from this comparison can only be partially transformed into clear-cut recommendations for a Belgian federal screening&scoping mechanism. This limitation is primarily linked to the fact that the initial steps of a SIA are configured in a way as to be consistent with the entire process of the impact assessment in the first place, and generally with the policy-making process. For instance, very light and limited screening&scoping phases might have been judged acceptable by the authorities in order to allow the limited amount of available resources (i.e. time and personnel) to be concentrated on the subsequent steps of the Impact Assessment processes (e.g. consultation phase or quantification of

² Subsequently, we use the words "screening" and "scoping" in the sense they are defined and explicated above. When we want to address the entire process upstream of the Impact evaluation, e.g. from screening to scoping to evaluability assessment, we use invariably "preliminary assessment", "screening&scoping" or "pre-assessment".

³ In the subsequent analysis we did not consider fully DG Trade's scheme. Its specificity is such as to hardly allow any conclusions, notably because the constraints to which traditional RIA and SIA have to respond to are here not present.

⁴ Up to now no evaluation reports are publicly accessible via the website of ARE. We analyzed thus the Swiss SIA scheme only on the basis of the Handbook (Swiss Federal Office for Spatial Development, 2004) elaborated by the authorities, as well as on a collection of 3 pilot case studies (Swiss Federal Office for Spatial Development, annexes 2004) (which appear however to be not very instructive).

⁵ The Flemish region started implementing their RIA scheme in January 2005 after a couple of years of reflection on the topic. Up to now, October 2005, there are only 'good practice' RIA-reports publicly accessible via the website. Our analysis will thus base itself solely on the theoretical setting of the RIA as elaborated in the handbook (Ministerie van de Vlaamse Gemeenschap, 2005). It should be mentioned that the implementation of the Flemish RIA is sequenced over the next 10 years. The first years will see only the implementation of a light RA, which will correspond to the screening&scoping step in the finalized RIA-process. We will refer for our analysis only to the first version of RIA.

impacts). In parallel, the overall configurations of the analyzed Impact Assessments reveal different understandings of what is a proper Impact Assessment at all. The observed processes vary according to 2 basic stances:

- if the primary aim is to horizontally promote institutional evaluation, and ex ante evaluation of policy proposals in particular, then the pre-assessments are generally rather limited in scope and extent, as they favor to permit the widest range of policy proposals to enter the mechanism. As a consequence, the 'impact evaluation' – effort, comprised in the pre-assessment schemes, is shallower and thus less resource-consuming;
- if the primary aim is directed towards gaining knowledge of the potential impacts of policy proposals, especially so in the context of complex and interlinked policy agendas such as SD, then the pre-assessments are more demanding and tend to integrate a more thorough development on 'impact evaluation' and are configured along more complex methodologies which are able to stress inter-dependencies and trade-offs.

The set-up of the comparative analysis

The subsequent analysis of the Impact Assessments develops independently from the context of the institutional policy-making processes. We seek to determine the strengths and weaknesses of the evaluation processes in general, and neither whether or not the IA respond to their own performance objectives, neither whether or not the IA is adequate to the institutional context it is supposed to evolve in,... The comparison we operate hereafter addresses thus questions such as *“what is the (positive or negative) specificity of the evaluation process?”*.

In a second momentum, we developed on questions such as *“Is the IA calibrated in a satisfactory way with general SD-objectives or criteria?”*. While such generalizations might appear rather artificial at some moments, this gross simplification was necessary in order to be able to identify how far the different evaluations' procedural and substantive arrangements and elements could be used as blueprints to the construction of a Belgian SIA-screening process. Once we will have identified a series of strong building-blocks it should become possible to construct a limited series of IA scenarios adapted to the Belgian federal institutional context.

The analysis developed in the first place from the theoretical setting of the different IA processes, which we refined, as far as it was possible, with the outputs of the processes. In other words, we considered in a first step the specific handbooks published by the public authorities concerned and which mean to give civil servants sufficient guidance to realize the IA. In a second step, we took an insight into a sample of available evaluation reports, and if available, into reports resulting from preliminary assessments (and/or screening&scoping phases). In many regards, the visualization of the practice of the IA is an indispensable step in such an analysis as the handbooks seldom give a clear indication of what really was expected as an output of the processes, for instance in terms of depth of the impact evaluation. Handbooks can use nearly identical wording and describe tasks in comparable detail, but in the end the evaluation reports might vary from 6 pages-documents (e.g. UK-RIA) to 400 pages-documents (e.g. CEC-SIA): 'proportionality' is definitely interpreted differently in each institutional setting. For some of the processes we analyzed, it was however not possible to take an insight into the output of practice: some (e.g. Flemish and Swiss) are too recently implemented as to have already available evaluation reports (even if for both some pilot-reports are available); other processes are configured in a way as to make it impossible to identify the results of the screening phase (e.g. in the UK, where the initial IA report is transformed during the entire process to evolve into the final evaluation report).

Each of the 5 analyzed IA schemes is synthesized in the appendix with the help of a structured identification card. The reader should refer to these for further understanding the logical set-up of each evaluation mechanism. Each of the 5 analyzed IA schemes has been introduced further into a comparative table following the configuration of a SWOT-analysis. The SWOT-analysis was detailed into procedural and substantive issues. Such a distinction is in many cases pretty artificial, but was felt useful here in order to separate clearly issues related to more technical questions from issues having been defined by the institutional setting of each IA. This table stating the strengths, weaknesses, opportunities and threats of each IA can be found at the end of this section. It was with the SWOT-analysis and the identification cards, that the following building blocks for SIA and pre-assessment had been identified.

Analytical building blocks for the further configuration of an SIA-pre-assessment

The main conclusions, we could draw from this analysis, are described synthetically in the table below, split into substantive and procedural issues. In this section, we detail further the most important ones, some of which are specifically directed towards the configuration of pre-assessment, others are also applicable to the entire SIA process:

1° Pre-assessments should be ***unambiguously inserted into the calendar of policy- and decision-makers***. Some of the analyzed processes have developed a very clear timing to submit the pre-assessments to the decision-makers for their assessment of the opportunity to pursue (or not) the evaluation of the policy proposal. The timing is at best linked firmly to the policy-calendar of decision-makers, giving them at very precise moments in time (e.g. on the European level, the decision is taken in November each year) the opportunity to decide which policy proposals will be developed further into an extended assessment. Advantages are twofold:

First, the timing allows allocating more coherently the relatively small resources which are normally available for extended SIA during a given year: deciding which policy proposal needs an extended assessment and which one not, is always a matter of trade-offs between the proposals on the table. It is thus of importance to be able to compare opportunities and costs linked to the extended evaluations of each of the policy proposals at the same time and with the same conditions.

Second, a policy-making program which is defined in detail on a yearly basis, and which integrates clearly the relevant decision moments (e.g. such as the decision by government to pursue or not with an extended evaluation), enhances the transparency of public authorities' activities. Not the least, social actors and civil society can adjust their own agendas to the policy-making agenda and thus concentrate their actions with more efficiency on the most critical moments of the decision process.

2° The decision to pursue with an extended evaluation or not can not solely be taken on the ground of the recommendation of the author(s) of the pre-assessment, not the least because these recommendations are necessarily based on high level of uncertainties. At the end, the decision has to encompass many variables with regard to the trade-offs which should be balanced against each other. It is obvious that the decision to pursue or not with the evaluation of a policy proposal has a strong political character, especially as extended assessments can potentially be used and misused for strategic reasons (for instance, to slow down decision processes). It is thus of importance to ***configure the decision moment in a way as to render it as collegial as possible***. On the other hand, if political actors decide not to follow the recommendation of administration, then their decision should be accompanied explicitly by the invoked arguments which should be made publicly accessible.

3° Pre-assessments are also a matter of assembling different types and levels of information into a coherent corset. It is necessary thus to develop pre-assessments, or at least the information gathering part within the exercise, as a common effort of those who detain these information. Consequently, some of the analyzed pre-assessment processes rely on more or less diversified and institutionalized intra- or inter-departmental working groups. Such working groups, whether informal or formalized, whether permanent or created specifically for the focus of the policy proposal at hand, are also considered among the most important mechanisms to develop capacity-building towards a more integrated, inter-disciplinary and trans-sectoral policy-making. However, it should be borne in mind that the **tasks of each actor in the pre-assessment process should be defined clearly**. Responsibilities within the pre-assessment mechanisms of the initiator (e.g. a specific unit within a ministry) of the policy proposal are different from those of his fellow civil servants (e.g. from other units or other ministries), which again should be different from political actors (e.g. members of ministerial cabinets). Accordingly, there are good reasons (see also below) to assign the pre-assessment a clear identity rather than to try to encompass too many arguments and actors right at the beginning of the process. In this respect, including political actors to pre-assessment workgroups might not necessarily facilitate effective and efficient inter-departmental cooperation. All the same, SIA builds its strength also by favoring transparency and participation of stakeholders and/or civil society. If these appear indeed to be fundamental to SIA, the analyzed pre-assessment processes took often their strength from being understood as inter-institutional exercises only, leaving not much room for participation. However, there are positive lessons from including non-institutional actors to the scoping phase of subsequent extended evaluations (see below).

4° Institutional assessment mechanisms such as SIA can only develop slowly from scratch towards qualitative, operational and useful processes. The initial set-up of SIA, and this concerns pre-assessment mechanisms alike, should thus account for a rather slow building of quality in the evaluations. The **step-wise development of SIA-processes should thus have its own timetable**, allowing and foreseeing explicitly, for instance, to evolve over the years from a pilot-phase to a partial operationalization towards their full operation. Logically the initial set-up of the pre-assessment scheme should remain flexible to adaptations, both procedurally and methodologically. However, this does not speak to leave pre-assessment processes totally undefined, in order to leave them crystallize by their own into a commonly constructed and thus accepted practice. On the contrary, the processes' analyses showed that the entire SIA-process needs to be defined thoroughly even before the start of the pilot phase, not leaving a non-proportionally large room for interpretation of what are the final objective and expected outcome of SIA-processes, even if a qualitatively acceptable outcome is expected to be delivered only in the mid-term. In some of the analyzed IAs, the pre-assessment mechanism (see for instance Flanders) was set up in the beginning as the only existing part of an IA. The pre-assessment mechanism was thus initialized as a 'light' IA, implemented in order to build capacity step-wise within administration to tackle the more complex and resource intensive full-IA at a later stage.

5° In order to become truly useful, SIA processes can not be exclusively focused on the production of an evaluation report. A number of **accompanying measures and mechanisms are to be defined** which will help the assessments to fulfill their objectives. Such measures range from the definition of a quality control mechanism (including quality criteria), the creation of help desks or task forces assisting civil servants with methodological know-how, the nomination of steering committees, the development of consultation and publication tools (e.g. internet-based dedicated websites), the tutoring of civil servants to the practice of SIA-based evaluations... However, often enough the elaboration of SIA evaluations and reports are considered as processes which will generate further burden onto administration, necessitating otherwise scarce resources which could have been allocated more efficiently to the implementation of the policy

itself. In this context, it could become difficult to find the necessary resources for the proper implementation of accompanying measures and tools.

6° Pre-assessments, given the SIA-process is configured along the lines of a RIA (see also below), are realized on a comparatively large number of policy proposals per year by a wide range of civil servants with different capacities, know-how and (institutional) culture. It is obvious thus that pre-assessments should be defined unambiguously in a way as to be comprehensive to every civil servant whatever his background. One way to achieve a relatively harmonized understanding of pre-assessments is to **put particular attention to the proper phasing of the pre-assessments**, for instance by clearly separating tasks such as *'causal description of the policy proposal'* from the *'gross evaluation of its impacts'*. The checklists, matrices or forms to be used for pre-assessments should thus be very clearly divided into distinct phases.

7° Ex ante evaluations of policy proposals fulfill a number of differing objectives ranging from simplifying policy making, enhancing transparency, raising the efficiency and effectiveness of policies, towards more generic goals linked to horizontal policy agendas (such as SD or competitiveness). SIA processes can in this respect be felt to be ambiguous. On the one hand, they follow a procedural setting which is leaning on RIA processes, whereas content-wise SIA are linked to the SD-policy agenda. Ambiguity is further strengthened by the fact that a number of goals of RIA and SIA are shared, e.g. enhance transparency, include stakeholders... Obviously, the difference between RIA and SIA (and other types of ex ante evaluations) stems (to a certain extent) from a different prioritization of the objectives. In this respect, and not the least for pre-assessments, it is **imperative to develop a clear identity to the SIA exercise**. *In fine*, this means to integrate SD specific criteria and issues explicitly and right into the configuration of the pre-assessment to both the process and the methodology. Issues attaining to inter- and intra-generational equity, irreversibility, and respect of the finiteness of resources... should be integrated into SIA already on the level of pre-assessment. Traditionally SD is acknowledged as being a holistic and interdependency-oriented policy agenda, which raises serious challenges to any evaluation exercise with regard to uncertainty and complexity. Such an agenda of criteria is not the most handy to be taken as basis for the development of evaluation schemes, even less so in the case of the pre-assessment processes which have to be executed by non-specialized civil servants along tight time-schedules with rather limited resources and render into a simple, understandable and short report. SIA pre-assessments seem thus to be condemned to navigate between evaluation processes, which are unfeasible and impractical but would score high with regard to their SD-orientation, or on the contrary, to favor oversimplification in the face of the complexity of the subject and the necessary feasibility by non-experts.

8° Pre-assessments can contribute to fulfill many objectives of SIA processes. However, their primary usefulness is evidently dependant of their ability to **systemize the decision to pursue (or not) with an extended assessment**. In order to do so, different approaches exist which intend to solve the underlying challenge of what should be considered significant enough as an impact to trigger an extended assessment. On the one side, we could place approaches that do not develop a formal set of criteria or rules, but give a maximum of room to debate and negotiation between the actors involved, which will determine collegially which policy proposals are to undergo extended assessments. Generally, in these cases, civil servants articulate a non-binding recommendation to the decision makers limiting their role to the one of a classical provider of input to the decision moment. On the opposite, we find approaches which try to quantify or qualify what is supposed to be a significant and/or critical impact. The triggers for an extended assessment develop into a series of quantitative or qualitative thresholds which can, for instance, be linked to the amount of public spending involved, or the identification of vulnerable groups of citizens or sensitive economic sectors or regions. Such an approach confers a larger role to administration

that has to evaluate potential impacts often based on very little facts and evidence. In contrast to the complexity and fuzziness of SD, which tends rather to speak of pre-assessment as an open discussion space, it should in this context probably be preferred to use clearly identified thresholds and triggers, rather than allowing to trade-off during a single decision moment any of the impacts determined. However, the setting, determination and calibration of the thresholds and triggers are far from evident and straightforward, even more so in the case of SD-oriented assessments than RIA-oriented ones. From our analysis, we tend to recommend (see section 6) an approach, which mixes 2 types of triggers, namely a trigger elaborated to identify conflicts between domains and/or dimensions which is complemented with a series of discriminatory questions.

9° Finally, we detected a series of independent, and sometimes rather small, but sufficiently interesting elements of configuration of pre-assessments that we list hereafter with less detail:

- Some of the pre-assessments analyzed integrate a light impact evaluation of a **first set of policy options**.
- Some of the pre-assessments encountered integrate an evaluation of **indirect effects** and impacts of policy proposals.
- Criteria, which are developed into thresholds and triggers, appear to more thoroughly followed when they are recognized political objectives. In the case of SIA, thresholds and triggers should thus **clearly link to objectives such as those which can be derived from the public authorities' SD-strategies**, conferring a supplement of coherence to the implementation of SIA.
- Some of the pre-assessments encountered argument to **configure IA as a continuum** ranging from pre-assessment to final publication of the IA-report, thus not developing intermediary steps such as screening, or the elaboration and publication of pre-assessment reports. Advantages of such a setting are linked to the establishment of a highly adaptive and discussion-oriented process which aims to adapt and complete step-wise a common position, as opposed to a more sequenced and less flexible assessment.
- Some of the pre-assessments encountered impose on the civil servants to **use a limited amount of methodologies** to establish impacts. Often, those examples are RIA-processes, and the methodologies limit themselves to cost-benefit evaluations, which in the context of SIA risks to become counter-productive as cost-benefit tends to enhance the complexity of an evaluation exercise rather than to simplify it (as it is obviously the intention when prescribing methodologies).

Table of comparison

Strengths	Weaknesses	Opportunities for SIA-BE	Threats for SIA-BE
Procedural issues			
<i>United Kingdom – Regulatory Impact Assessment</i>			
<p>(no reporting of screening phase) Strong methodological support (implemented at the levels of central and departmental units) linked to relevant procedural steps should assure regular quality improvement. During the process, the IA is re-scoped iteratively and continuously in order to allow adjustments to emerging objectives or questions.</p>	<p>(no reporting of screening phase) The 3 types of RIA (initial, partial, final) are understood as a sequence of procedural steps, but do not materialize in specific outputs or reports. Apart from a negative list (which allows to exclude some policy proposals according to their nature), there exists no formal screening phase and thus no screening reporting.</p>	<p>(no reporting of screening phase) Strong procedural embeddedness into the policy-making process, combined with formal implication (at the end of the process) of political actors, emphasizes the political backing of the evaluation process and should help develop inter-departmental capacity-building.</p>	<p>(no reporting of screening phase) Continuous and cumulative process (from initial to final) gives potentially a lot of flexibility w/r to the depth of the IA, introducing bargaining and blurring the adequacy between the initial objectives and the results obtained. Heaviness of the structure and the obligation for all policy proposals to undergo IA, drives towards an oversimplification of the assessment of the impacts.</p>
<i>Commission of the European Communities – Impact Assessment</i>			
<p>Clear and unambiguously defined phasing and timing of the preliminary assessment (i.e. screening). Decision to evaluate policy proposals more extensively is taken collegially by political actors (i.e. commissioners) on the basis of administration's recommendation.</p>	<p>Administrations' recommendation stated in the preliminary assessment to develop IA into an extensive evaluation is not systematically taken into account in the final decision, and no transparent argumentation is given with regard to the decision to pursue with subsequent Extended Assessment. Decision appears thus highly political and may favor opportunistic and strategic behavior.</p>	<p>Strong rationalization and sequencing of the process, the strict timing coupled to an open-end 'political' decision (to pursue or not to pursue), as well as the relatively strict separation of tasks, prepares the ground for greater independence between policy-makers and decision-makers.</p>	<p>Apparent, but non-motivated, (political) bargaining whether to pursue with extended impact assessment or not risks to reduce civil servants' motivation to perform preliminary assessments seriously. The comparatively 'flat' and 'simple' European policy development process is based on a very rationalistic understanding, which does not appear to be a suitable 1:1 model applicable to the fuzziness of policy-making in Belgium.</p>
<i>Flemish Region – Regulatory Impact Assessment</i>			
(no RIA reports available yet)	(no RIA reports available yet)	(no RIA reports available yet)	(no RIA reports available yet)

<p>Well-formalized process (on paper) with the main components being well-articulated. The theoretical setting and sequencing of the process corresponds to a very ideal IA. The developed process is very complete right from the start, comprising a number of accompanying measures (e.g. central help desk), which should confound quality and impact of the RIA-reports.</p>	<p>The screening&scoping process appears to be complex, as it comprises 3 subsequent decision steps: a formal check with regard to the nature of the policy proposal, a thresholds' analysis, a political decision based on a checklist-report.</p>	<p>The deployment and implementation of the RIA-process is phased over 10 years. It is meant to grow from a merely intra-administration effort towards a larger encompassing evaluation effort, only once sufficient capacity has been developed in house. A relatively complete pre-assessment mechanism is used in the first phase of development as basis for a light RIA, which will be deployed further at later stages into a full-size RIA.</p>	<p>On paper, the RIA-process is probably too deterministic to be applicable in such a form to an evaluation directed towards SD. The articulation between difficulties linked to substantive issues (e.g. the thresholds' analysis) and procedural mechanisms, which should allow for flexibility when facing fundamental problems (e.g. linked to value judgments), is not clear at all. The process itself appears already 'closed' before any experience with the implementation of the RIA could have been collected. The ambitious setting of the RIA presupposes a strong political support in favor of developing and using the mechanism. SIA at federal Belgian level appears as too fragile and non-supported to strive towards imitating the Flemish model.</p>
<p><i>Swiss Sustainability Impact Assessment</i></p>			
<p>As the SIA is deliberately steered to be an administrative exercise, with some but few external consultation happening, the process is very clear and well-determined. Administrations seem to be rather free to execute and define the SIA according to their own understanding.</p>	<p>Appears to be limited as a technical exercise to be executed by technocracy without many openings towards non-represented actors of civil society.</p>	<p>The pre-assessment steps are clearly separated one from another, i.e. the description of the policy does not integrate the judgment on further analysis, or in other words, the description of the policy proposal's causality does not include a description of the impacts or their positive or negative direction (this being asked at a later stage). The clear phasing of the pre-assessment should induce for civil servants to 'step back' from the policy proposal and to allow for new perspectives of the proposal to fully develop.</p>	<p>There might be a risk that the separation between explicating the causalities and assigning them values might be difficult to understand for civil servants and thus to execute. This would speak for the necessity to organize capacity-building in a formal way and to organize pre-assessment as an inter-departmental exercise, which could exasperate organizational difficulties.</p>

<i>Commission of the European Communities – DG Trade - Sustainability Impact Assessment</i>			
(considerably different initial context) The atypical strength of the evaluation scheme is linked to the fact that the assessments are closer to scenario studies than to ex ante evaluations. The constraints of the exercise are thus different, allowing for: extensive input by consultants, extensive time-frame for the evaluation, consistent budgets and resources.	(considerably different initial context) High uncertainty in the outcome of Trade negotiations can not be mirrored in the evaluation, and thus the usefulness of these exercises does not clearly appear.	(considerably different initial context) The procedural setting being completely different, no direct conclusions for the Belgian federal level can be drawn.	(considerably different initial context) The procedural setting being completely different, no direct conclusions for the Belgian federal level can be drawn.

Substantive issues

<i>United Kingdom – Regulatory Impact Assessment</i>			
(no formal screening method) A limited number of impact evaluation methods can be used during the re-evaluation of the impacts and the methods to be used are listed. The evaluation reports are very synthetic (6-10 pages) and non-technical and thus easily accessible for non-experts.	(no formal screening method) It remains unclear how far the evaluation of the impacts is influenced, rescaled, re-scoped... during the process. The proportionality of the evaluation of the impacts with regard to the issue of the policy proposal is thus not verifiable by outsiders of the process. The evaluations themselves do not appear to be extendable towards encompassing SD-criteria.	(no formal screening method) The very limited scope of the evaluation process, combined with a limited amount of methods to be used, gives a very clear identity to the RIA (even if this identity is not adequate for an SIA evaluation). Simultaneously: allowing a strong generalization of the evaluation procedure permits to widen the range and number of policy proposals to be evaluated during one policy period.	(no formal screening method) The emphasis given to evaluate the policy proposals solely in terms of monetary costs and benefits represents a major limitation when it comes to evaluating complex non-economic impacts, especially if these are interlinked such as with SD. Furthermore, the extremely limited depth of the impact assessments does not match the objectives of an SIA-type evaluation.
<i>Commission of the European Communities – Impact Assessment</i>			
Quite clear and unambiguous mission given to the fonctionnaire to realize the preliminary report along the lines of a comprehensive form. Alternatives, objectives and communication strategies are sketched already at the phase of pre-	Impact evaluation methods remain inexistent on the level of the preliminary assessment, which permits the application of rules of thumb rather than favoring an effort to structure already available information. The emphasis	The transparency given to the decisional work program right in the beginning of the year, when publishing the preliminary impact assessments, can be considered a real value-added towards opening the policy-making process. All the more as the	On the level of the impacts, no formal rules are explicit which clarify the trigger for an extended assessment, e.g. it is not defined what is sufficiently important as an impact (or as an uncertainty) to trigger an extended assessment, or what can be

assessment.	appears to be less on the level of impact determination, than on policy explanation. The report is corresponding to a narrative, more than to a decomposition of impacts. The preliminary assessment report does not make a clear link with scoping the subsequent extended evaluation, which is normally not described in the preliminary reports.	preliminary assessment reports are rather understandable, even if a minimum knowledge of European policies is a prerequisite.	considered being sufficiently cross-cutting to need inter-departmental consultation. The part of the preliminary impact report destined to report on the impacts is rather insignificant. The preliminary report focuses more on allowing a structured description of the policy proposal, than to develop on impacts.
<i>Flemish Region – Regulatory Impact Assessment</i>			
(no RIA reports available yet) The light RIA establishes formal rules, i.e. quantitative and qualitative thresholds, which allow systemizing the trigger for subsequent evaluation. This setting of thresholds (the mechanism itself is copied from other countries' experiences, e.g. Canada) allows to address the redundant problem of deciding what is 'significant' and not as an impact. The thresholds used are both qualitative and quantitative, allowing thus for some flexibility in judging. The form used for the light RIA explicitly demands to construct different options to the policy proposal and to assess them with regard to their effects.	(no RIA reports available yet) The light RIA demands only to assess the policy options with regard to costs and benefits (plus their regulatory impact). Even if both can be determined also qualitatively, this methodological hegemony of cost-benefit analysis (consistent by the way with other RIA-type exercises) could be directing the RIA towards an economist vision of regulatory impacts. Indirect effects are not explicitly taken into consideration.	(no RIA reports available yet) Even if the thresholds of the Flemish RIA could not hold for a SIA, the mechanism in itself could be a starting point to formalize and systemize SIA, and to determine rules of thumb for what should be assessed as a 'significant' impact. It shows also that quantification mechanisms and basic algebra-like decision rules can become popular with policy makers too, and that their fear of such simplification might not be as developed as many would think.	(no RIA reports available yet) From the current hybrid form of the RIA, the step-wise transformation of the process into the final setting of a light RIA, which includes screening, is not clear. The cleavage between the detailed and determined setting of the operationalized RIA-form and the vagueness of the final scheme to be implemented in some years remains very important.
<i>Swiss Sustainability Impact Assessment</i>			
The screening method is separated into a criteria matrix which allows to expose interlinkages between the 3 dimensions of SD. The decision to pursue with an extended assessment is linked to a series of explicit rules, which are to detect	Paradoxically the strong link of the methodology to SD-issues and criteria might make the entire SIA process strongly dependent on the prominence SD has as a strategic policy agenda. A weakening importance of SD as a policy-	The criteria of the checklist are derived from the principles of the Swiss national strategy on SD, and are thus accepted as being politically relevant for decision-makers. The scoping matrix allows to give a rough impression of the impacts of the policy	The explicitness and pre-determination of the decision rules might initiate misuse and pervert their initial objective: as it is explicit on basis of which 'rules' the decision for or against extended assessments will be taken, policy-makers and civil servants

<p>whether the different impacts will show conflicts between the objectives and outcomes for 2 of the 3 SD-dimensions. A limited number of discriminatory questions are made explicit, which will trigger an extended SIA in any case. These control questions are derived from SD-principles mostly.</p>	<p>makers' referent, will discredit the SIA-exercise automatically.</p>	<p>proposal's options, hence allowing to determine which option needs special attention during the extended assessment.</p>	<p>might deliberately form their answer to the matrix in a way as to detour those rules. Instead of a open bargaining process, the transparency of the rules might induce behind the back manipulation of the matrix.</p>
<p><i>Commission of the European Communities – DG Trade - Sustainability Impact Assessment</i></p>			
<p>(considerably different initial context) <i>There is no clear and unique screening methodology. Each 'round' and each international negotiation will trigger its own screening&scoping. This is notably linked to the fact that each assessment is outsourced from the beginning to the end to consultants. The entire pre-assessment is thus a matter of scoping the evaluation process and not of deciding on subsequent evaluation.</i></p>	<p>(considerably different initial context) <i>There is no clear and unique screening methodology. Each 'round' and each international negotiation will trigger its own screening&scoping. This is notably linked to the fact that each assessment is outsourced from the beginning to the end to consultants. The entire pre-assessment is thus a matter of scoping the evaluation process and not of deciding on subsequent evaluation.</i></p>	<p>(considerably different initial context) The use of a matrix to determine the scope of the subsequent analysis presents an interesting way to systemize the difficult task to draw the ToR of the subsequent evaluation.</p>	<p>(considerably different initial context) <i>There is no clear and unique screening methodology. Each 'round' and each international negotiation will trigger its own screening&scoping. This is notably linked to the fact that each assessment is outsourced from the beginning to the end to consultants. The entire pre-assessment is thus a matter of scoping the evaluation process and not of deciding on subsequent evaluation.</i></p>

4) Analysis of the context at the federal Belgian level

After having developed above some of the theoretical and empirical building blocks of screening in ex ante evaluation schemes, the question arises to what degree these could be applicable for the Belgian federal level. It becomes thus necessary to qualify the federal level, which we will do in this section. Broadly 2 questions are addressed. First we take an insight into the screening mechanisms, which are currently institutionalized. Two ex ante evaluation schemes exist up till now at the federal institutions: an evaluation with regard to administrative burden of new regulation (i.e. the so called Kafka-test), and an evaluation with regard to budgetary implications of regulation (i.e. the classical financial inspection). Furthermore, we describe⁶ what is currently foreseen as screening 'options' in the context of SIA at federal Belgian level: as a matter of fact, the SIA-mechanisms (and thus screening) are only sketched imprecisely in the existing legislation, and we advance thus here solely some interpretations of what would be a screening mechanism in accordance with legislation.

4_1) Existing ex ante evaluation mechanisms at federal Belgian level and their approaches to screening

For a better understanding of the current section, and more information on the existing institutional and juridical context we invite the reader to consult in parallel Thomaes et al. (2005).

While existing evaluation culture in some federal administrations is not as bad as their reputation (Jacob et Varone 2003), experiences with ex ante evaluations remains scarce (see Paredis et al. 2005) and boil down to 2 institutionalized processes⁷.

The Kafka test: ex ante evaluation of administrative burden

The Kafka test has been implemented since 2004 in order to describe new regulations' impacts with regard to the generated administrative burden on citizens, enterprises and the non-mercantile sector. The evaluation mechanism of Kafka consists of a very simple (for more information, refer to the guidelines⁸) ex ante evaluation to be realized in principle for every policy proposal submitted to the federal Council of Ministers. Formally, the test consists of a 2-page form to be filled in by the respective civil servant, and condensed into a note which is attached as appendix to the policy proposal on its way through the institutional and political process. As such Kafka could hold as a potential procedural blueprint for a federal SIA-mechanism (this option has been analysed further for the current project by Thomaes et al, 2005).

With regard to the more specific question of interest here, namely of Kafka and screening, the mechanism is developing purely on a **negative prescriptive filter**. The Kafka-test is not mandatory for administration's auto-regulation, budgetary regulation, regulations related to the approval of international or European agreements and treaties as well as regulations without any real impact such as purely formal

⁶ For this insight into currently foreseen mechanisms on SIA, we build strongly on the juridical and institutional block of the current research project, and in particular on Thomaes P., Lavrysen L., Paredis E. (2005), Institutional and juridical integration of SIA in the Belgian federal government's structure. Working paper. UGent.

⁷ It should be mentioned that recently (24th June 2005) the federal Council of Ministers took the first steps towards the translation of the European SEA directives to the federal Belgian level. Soon there will thus exist a third ex ante reference mechanism at the federal level, but up to now the federal SEA remains theoretical and without any expertise or experience.

⁸ http://www.simplification.be/documents/fil_conducteur_Test_Kafka.pdf

regulations (e.g. errata, nominations...). For all other policy proposals, the test is obligatory and the policy proposal will be refused access to the agenda of the Council of Ministers if not accompanied by the Kafka-note.

Currently the federal administration for 'administrative simplification' is overtly reflecting to expand the scope of the evaluation questions Kafka is sitting on, notably towards integrating evaluation questions related to RIA-type mechanisms (e.g. improving regulation, competitiveness...).

The Kafka test appears at first sight an excellent opportunity to realize an institutionalization of SIA. Not only is Kafka elaborated on the intention of furthering and optimizing regulation, it is formally also using the same type of procedural mechanism SIA could follow: a mandatory note elaborated by administration which is to be attached to policy proposals as they follow their way from administration to politicians. It appears thus tempting to recommend hooking SIA to the Kafka-test, and eventually developing Kafka towards integrating for some specific policy proposals the much wider SD-evaluation questions.

However, a series of reasons can be enumerated which would argue the contrary.

First of all, the Kafka-test has its own complex agenda, namely the 'simplification of administration'. To a certain extent it could appear logical that the Kafka-test would expand towards enclosing the neighbouring agenda of 'improving regulation', as appears to be intended with the ambitions to slowly expand Kafka towards a more RIA-type evaluation mechanism. SD-evaluation has not only a very much different origin, but has developed since into a different agenda.

Second, the Kafka-test is an entirely internal process. Sub-objectives such as enhancing liability, improving transparency, integrating stakeholders, developing inter-departmental cooperation, which are of uttermost importance to SIA, are not at all present in the Kafka-setting.

Thirdly, while the Kafka-test is supported by a central unit and executed by individual civil servants, it appears clearly that the central evaluation unit does not have right now the capacities, experience and expertise to develop integrated assessment schemes and be ready to support their execution following a help-desk logic. The supporters (administratively speaking) of the Kafka-test are not belonging to the pool of people which might logically⁹ be mandated to steer SIA.

Fourthly, the Kafka-test is to be taken as being among the weakest examples of ex ante evaluations at all. The fact that the Kafka-test is a very light, hardly to be called evaluative, mechanism, with only embryonic elements of a classical evaluation (see for instance the absence of the need to develop on impact determination and evaluation) does leave the Kafka-test at some distance from SIA-mechanisms which want to develop methodologically robust impact evaluations. Of course, such lightness does have its coherence with the objectives of the Kafka-evaluation agenda.

Finally, even the argument to push SD-evaluation questions into the Kafka-mechanism for reasons of economies of scale, is not coherent. Doing so would call to develop the Kafka-mechanism in a way as to enclose a second internal screening mechanism, which would permit to select those policy proposals (among the many which undergo Kafka-test) that would undergo SIA.

Apart from the fact that the Kafka-test does not appear in general that perfect a blueprint for SIA, the screening mechanism of the Kafka-test does not suit better. As already mentioned above, for SIA-type evaluations the general preference should be given to discretionary approaches to screening. The screening within the Kafka-test is prescriptive only. Using the Kafka-test screening as a first basic prescriptive filter to be followed by a second discretionary SD-specific filter could theoretically be appealing. However, we argue to discard also this option, as some of the elements of the prescriptive filter of the Kafka-test are not adapted to the objectives of SIA. For instance, there exists no reason why SIA

⁹ We will see hereafter that the federal legislator appears to see it the same way, as he doesn't assign any role to the central Kafka-test unit in the currently sketched SIA-process.

should not be executed on the ratification or adoption of European regulation or international treaties, as these might well imply detrimental indirect impacts on some economic sectors or environmental dimensions in Belgium, which could be identified during SIA and hence successfully mitigated with the adequate accompanying measures.

To summarize, it could be acknowledged that hooking SIA to the Kafka-test's current form is not an option to be further exploited. If however, the Kafka-test would seriously evolve into RIA, then the opportunity should not be missed to install some economies of scale and eventually integrate SD-evaluation questions to the RIA-setting (or the other way round!). Simultaneously, what the Kafka-mechanism clearly shows is that *in fine* it is possible to install at federal Belgian level some form of ex ante evaluation mechanism, a situation which makes the institutionalisation of SIA finally appear a little less utopian. On the other hand, ironically enough, the institutionalisation of SIA might indirectly augment administrative burden (for instance, on some stakeholders which would be forced to readapt partially their lobbying activities and the enhanced participation to public consultation might well induce serious non-negligible costs to them), and the policy proposal to introduce SIA might thus score pretty bad on the Kafka-test.

The financial inspection: evaluation of budgetary compliance

A second ex ante evaluation scheme exists with the federal administration in Belgium, the financial inspection¹⁰. Financial inspectors form an independent 'corps' (i.e. Coprs interfédéral de l'Inspection des Finances) in Belgian administration. As for the organisation of the inspectors, *"(e)very FOD-POD/SPF-SPP has its own Financial Inspection(s), which mainly bears two functions. The inspectors advise their FOD-POD/SPF-SPP (Art. 10, 11 and 12) on the (mainly financial) efficiency and effectiveness of this FOD-POD/SPF-SPP and its proposals. In this, they are considered to be part of their accredited FOD-POD/SPF-SPP (they cooperate Art. 10-12). On the other hand, they control all proposals, which have budgetary repercussions or repercussions on the General Administration"* (Thomaes et al., 2005). Legally, these 'detached' financial inspectors stay entirely under the authority of the 'corps', and thus enjoy an important independence¹¹ from the evaluandum.

Financial inspection is triggered by ***positive prescriptive criteria***. Advice of the Financial Inspection is compulsory (Thomaes et al., 2005) for bills, government bills, circulars and decisions that are presented to the Council of Ministers, are presented to the Minister of Budget, are presented to the Minister of Public Functioning, lack credits, can (in)directly influence the revenues or expenses, contain issues concerning the formation of the personnel. In parallel, the financial inspection's visa is demanded for propositions that might create (in)direct financial repercussions, propositions that influence the administrative organisation of services, propositions concerning the guarantee by the state.

To the development of SIA, there are a number of foreground reasons why the Financial Inspection might appear as appealing on different levels.

First, as mentioned, the decentralized organisational setting of the financial inspectorate (i.e. detaching inspectors to every administration) reveals the particular attention given to guarantee the necessary independence of the inspectors with regard to their evaluative mission. Their capacities are furthermore backed by their network-like organisation, encompassing measures such as structural and recurrent capacity-building, mission rotation, centralized help-desk... With regard to SIA, such an organisation of the

¹⁰ Arrêté royal relatif au contrôle administratif et budgétaire, 16.11.1994

¹¹ For more information, please refer to the Arrêté royal du 28 avril 1998 (M.B. du 05.08.98) portant organisation du Corps interfédéral de l'Inspection des finances.

inspectorate appears to correspond to a certain extent to the practice of what we analyzed in other countries and contexts. However in the context of SIA, being considered by many necessarily as an internal evaluation mechanism permitting to increase the quality of policy-making, the evaluative mission is normally assigned to the civil servants themselves, and not to an 'exterior' evaluator as it would be the case if financial inspectors would extend their mission to SIA. The network-like structure and the structural development of capacity-building of the inspectorate could however be considered as a perfect blueprint for the organisation of a SIA-network.

Second, even if the inspectors are formally and organisationally independent from the administration they are evolving in, it appears in practice that financial inspectors are part of the development of policy proposals. As a matter of fact, the potential refusal by the financial inspector to visa a policy proposal's budgetary and financial implications is stimulating administration to cooperate with the inspectors as early as possible in the policy development process in order to insure themselves of the sanity of the financial setting of the proposal. This earliness of the integration of the inspectors' expertise in the policy proposal's development is probably what should be the most envied for the implementation of SIA.

Thirdly, as mentioned above, the mission statement of the financial inspection encloses issues of efficiency and effectiveness. Formally thus, one would not even need to readapt the mission statement of the inspectorate in order to leave SIA with the financial inspectors. In practice, however, financial inspection is not considering itself as an evaluator of efficiency and effectiveness, and they hardly have developed a solid expertise in these issues through the years.

Finally, the financial inspectorate, in contrary to the Kafka-mechanism, is without any doubt an evaluative corps, even if their practice of evaluation remains mostly one-dimensional, non-participative (towards exterior actors), sanctioning...

In terms of capacity-building, network organisation, independence, the financial inspection could definitely be a blueprint for a future SIA-structure. The question of its juridical implications is addressed in Thomaes et al (2005). On the contrary, among the many arguments which can be raised against the financial inspectors being charged with the execution of SIA, two appear as being very important:

Primarily, financial inspection does not have the 'corporate culture' to perform evaluations that are oriented towards evaluation questions as they would inevitably arise in the case of SIA. Even if the financial inspection's mission statement, as mentioned above, would allow them to integrate questions of efficiency and effectiveness, until now the corps never performed its mission in this perspective. Inspectors check only the financial robustness of the policy proposal. Introducing a wider, more evaluative, perspective into their organisation would probably involve major challenges to the structure of the corps. These challenges will grow insurmountable, if the evaluations needed to become integrated, participative and discursive. We reemphasize that SIA is not only a matter of impact evaluation: at least as important are issues of developing understanding and capacity for SD-policy agendas, and SD-like policy-processes.

Second, as mentioned above, the financial inspectorate's main characteristic is its independence from the administrations where the inspectors are evolving in, and thus their independence from political sector agendas. Conversely, in the case of SIA, this independence will hinder the awaited development of capacity-building and knowledge of SD inside of each administration. SIA will not be able to develop fully into being a 'bottom-up' mechanism and lever to promote SD as policy-making referent. This effect will be strengthened with the inspectorate being organized as a 'closed' corps within administrations: capacity-building might be induced within the corps, but won't be necessarily shared with other civil servants.

4_2) Foreseen elements of the SIA-process and different ways of interpreting the issue of screening

In 2004, the federal government has taken a series of decisions¹² which organize the implementation of the SD-agenda within federal administrations, and these have determined some elements with regard to the objectives, implementation and organisation of SIA. Consequently some of the elements of SIA are regulated indirectly via the mandatory implementation of 'SD-cells' on the level of each administration. Without going here into the detail of the SD-cells (for more information see Thomas et al. 2005), they are created for each administration and are composed of a qualified¹³ series of civil servants, mostly by adding to these civil servants' workload the mandate of being part of the cell. It should be noted that the composition of the SD-cells encloses also a representative of the Minister, hence conferring to the SD-cells a double link to policy- and decision-makers. The SD-cells are in effect an intra-departmental institutionalized network of people assisting and coordinating each administration's SD-agenda, and not an operational unit within the administration. The SD-cells of the different administrations have two contact points, namely the Inter-departmental Committee for SD (to coordinate the cells with the governmental SD-agenda) and the specific horizontal administration for SD (to assist the SD-cells in their missions). The link to SIA is established by the fact that the Royal decree initiating the SD-cells foresees to assign to the SD-cells a number of missions with regard to the execution of SIA. However, as we will see immediately after, these missions are far from clearly described and allow for quite a lot of interpretation.

First, each SD-cell is to elaborate yearly on an action plan for its administration. Among others, this action plan should include a *"list of all types of decisions which will be subject to SIA during that year"* (Thomaes et al., 2005). This entails two consequences. First, the SD-cell is responsible for the selection of those types of decisions which will supposedly be submitted to an extended SIA. The SD-cell is thus a central element in the currently foreseen screening mechanism (see below for a discussion of this role). Second, the fact that this list is to be elaborated yearly induces logically that the federal level wants to strive towards the development of a yearly policy agenda, as it exists on other levels (for instance, on the CEC-level). Such a policy agenda would simplify largely (for a more detailed argumentation in favour of such a yearly policy agenda, see also Thomaes et al., 2005) the establishment of a SIA-agenda, and consequently of the SIA-screening process. Thirdly, as it is phrased in the current decree, the decision of the SD-cell is on the level of the *type* of decision, which might be interpreted differently than if the SD-cell was mandated to directly select and name those policy proposals which should undergo SIA. As a matter of fact, the repercussions of this specification (i.e. *"type of decision"*) can be very important on the configuration of the screening process of SIA. As such the regulation provides no answer whether the yearly determination by the SD-cell of the type of decisions to undergo SIA, means in effect that each SD-cell will determine yearly a **positive prescriptive filter** (!), which will downsize the list of potential policy proposals for SIA. It can furthermore not be excluded from this wording that with the current setting, the screening mechanism was not intended to be harmonized (temporally and inter-departmentally) and centralized.

Second, the mission statement of the SD-cells calls for the SD-cells to *"execute or coordinate the execution of a SIA"* (Thomaes et al. 2005). This entails, with regard to screening&scoping, that the SD-cells will not only be central to screening, but that their further implication will at least entail an extended responsibility with the coordination of the SIA. Logically, the SD-cells will have a say in the configuration of the administration's SIAs, i.e. the SD-cells will be strongly involved in the scoping of the SIA which, as we saw, comes close to coordinating and organising the extended SIA. To a certain extent, the SD-cells will

¹² Arrêté royal portant création des cellules de développement durable au sein des services publics fédéraux, 22 septembre 2004.

¹³ The qualification of the SD-cell's members are specified by decree. A cell has to be composed at least by 5 members.

lean on their implication in the SIA-processes to legitimate their existence and importance in the entire federal SD-process.

More generally, on the basis of their mission statements, other actors within the federal administration appear to have some linkages with a future SIA screening mechanism.

On the one hand, the Inter-departmental Committee for SD (ICSD) is responsible among others to coordinate the individual administrations' SD-agenda with the general overarching SD-agenda of the government. It appears thus logical that the ICSD will coordinate or at least centralize the composition of the list of policy proposals to undergo an extended SIA.

On the other hand, the horizontal administration for SD has among its missions the general methodological assistance to the SD-cell of each administration. It could thus be taken for granted that the horizontal administration for SD will be evolving as a help-desk during the screening phases of SIA.

It should be noted that none of the currently existing federal decrees or mission statements of those actors which have a link to SIA-screening, stipulates anything with regard to the methodological aspects of screening and scoping. Up to now, no criteria are determined, no process-flow is sketched, no outcome defined.

5) Generic building blocks for a federal screening mechanism

After an insight in the pre-assessments of SIA-processes existing in other countries or institutional levels and after the analysis of the existing structure at the federal level, we develop in this section some elements which are felt to be crucial when deciding on the screening and scoping mechanism at federal level. These elements, or building blocks, consist of a series of generalist 'rules' which we think should steer the further development of a concrete screening mechanism. On the basis of these building blocks, we developed in the subsequent section (section 6) an interpretation and an example of how these rules can be translated into a screening mechanism. The process sketched in section 6 remains only an example and a best-case scenario, and should thus not be taken as the only possible solution to translate the building blocks into a screening and scoping process.

In the following we will outline some procedural and substantive elements of SIA-screening for the federal level in Belgium, which we consider as crucial to the configuration of a screening mechanism. Developing a screening mechanism is not a straightforward task, and to our understanding many valid options are possible which would participate to the creation of a performing and coherent screening process for the federal level in Belgium. We concentrate here only on issues directly related to screening. This focus might entail some recommendations which might need revision in a later version of the current paper, because of their missing link to the entire SIA-scheme.

Generally speaking, in front of the many possible solutions to organize screening, we favored those solutions which were both favoring the coherence with SD-evaluation questions and the coherence with the existing legal prescriptions to SIA (see above). This section of the paper develops on the different issues and building blocks of a screening mechanism for the federal level, and shows for each of these issues the 'best' solution considering the context. It is only the subsequent section that will consolidate these building blocks into an internally coherent mechanism.

Double filter: combining discretionary with prescriptive filters

It appears from our analysis that discretionary screening filters are way more appealing to SIA-screening than prescriptive ones. Simultaneously, some types of policy measures and decisions should be avoided to enter the SIA-screening on the basis of their generally very low impacts. We recommend thus the construction of a basic prescriptive filter, followed by a more thorough and central discretionary criteria-based screening process. The discretionary filter, based on an impact matrix, will be described more thoroughly hereafter.

Double assessment: combining impact assessment and 'societal' feasibility

It appears further that selecting policy proposals for extended SIA is a decision which should be backed by administrative and political criteria. The process to be constructed should thus encompass two distinct steps. A first ranking of policy proposals should be realized by civil servants on the basis of the foreseeable impacts of each of the policy proposals. In a subsequent step, the ranked policy proposals should be submitted to political decision-makers in order to allow them to integrate constraints of political opportunity. In order to enhance transparency and participation, an opening of the latter decision to stakeholders should be considered.

Network structure

SIA, and thus screening, is essentially a group exercise where the implicitly sought for long term improvement of policy-making passes through the development of internal evaluation capacity, itself

based on a process of mutual learning within administration and between administration and a wider set of partners. It has been shown that such capacity-building develops best if the entire exercise becomes structured as a network where civil servants can exchange experiences and are backed by a help-desk with a more in-depth methodological knowledge.

Precise timing

The timing of an extended SIA can be highly variable. It depends mainly on the extent and depth of the evaluation exercise to execute as well as on the time constraints weighing on the policy proposal itself. However, the time needed to perform the screening process can be defined quite precisely and should be standardized as far as possible. Precise timing is important on two levels.

First, the time to be invested by civil servants to realize the screening exercise should be determined quite precisely. For instance, with the screening procedure we recommend hereafter, it seems feasible to keep time investment of the policy developing civil servants within 1 or 2 working days (with the largest part being devoted to the group exercise of filling in the impact matrix). This time span should not be subject to large variations from one policy proposal to another, as the filling in of the Impact matrix does not become more or less difficult even not if confronted with complex proposals.

Second, it has been argued that the timing of the screening process should be closely linked to the policy calendar. For instance, some of the analyzed SIA-processes have a screening mechanism which is realized before government members approve the policy calendar of the year to come. Inserting screening in policy calendars makes it possible to integrate the execution of SIA (and the specific SIA-agendas) into the formal agenda of administrations, policy-makers, decision-makers and stakeholders alike. However, such a policy calendar does not yet exist formally on the federal Belgian level (even if it seems to be an intention to develop one for the near future). It is also argued repetitively to concentrate the selection of policy proposals to undergo SIA to clearly identified decision moments (for instance, once a year or once a month), instead of deciding whenever a proposal is making surface. In effect, the selection of those policy proposals, which should undergo extended SIA is inherently a political decision where the different policy proposals are traded-off against each other (for instance, to keep an equilibrium among the different administrations of SIAs to be realized). Such trade-offs between policy proposals logically calls for all the potential policy proposals to be on one table at a precise moment.

6) A proposal for screening scenario for the federal level

On the basis of the different elements related to screening presented above, we sketched a proposal of a scenario for screening on the federal level. It has been taken for granted that screening mechanisms have to account for the highly strategic constraints weighing on the decision to submit policy proposals to an extended SIA. There are of course a number of objective reasons why a policy proposal should undergo an extended SIA (e.g. because of the potential detrimental effects of a policy on non-targeted issues, sectors or dimensions). We propose to determine these in a first phase of the screening process with an Impact Matrix, which helps to objectify impacts and effects. However, at the end, the selection to submit a policy proposal to extended SIA remains a political choice.

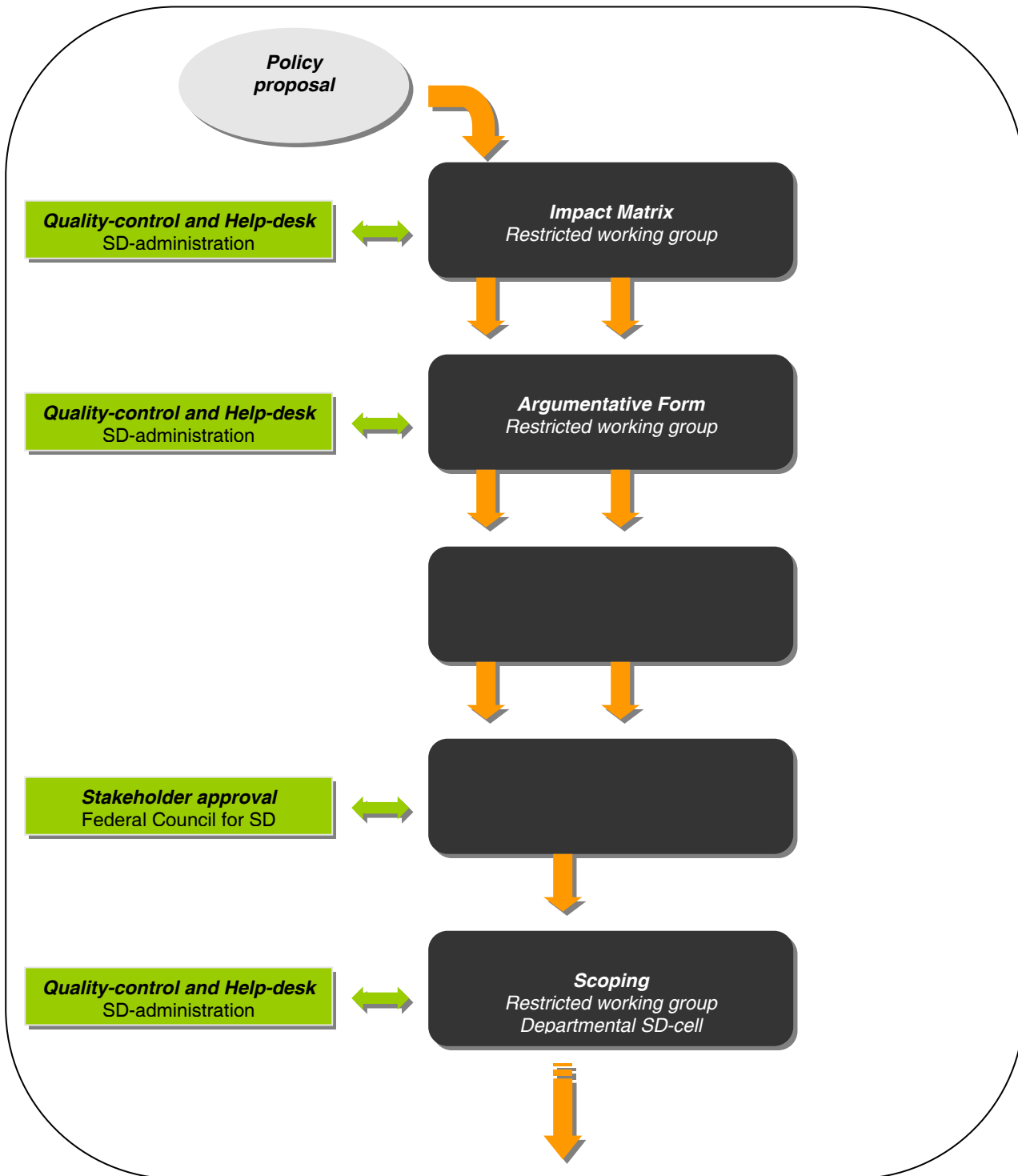
We tried to account in the following sketch of the screening mechanism to integrate as far as possible the roles of political and administrative actors. Of course the distribution of tasks and responsibilities proposed here, has been elaborated mainly on the basis of what would be desirable theoretically. The translation of SIA-principles in the current proposal should thus be understood as nothing more than a pure hypothetical proposal. It should further be kept in mind that we tried not to jeopardize entirely the current achievements in terms of existing SIA-process, and tried to stick as far as possible to the process sketched in the federal law on SD-cells.

Furthermore, the subsequent proposal contains only recommendations on a stand-alone screening and scoping mechanism. It remains autonomous from a sketch of a future integral SIA-mechanism, as it is foreseen to arise from the current project. The current proposal will need to be adapted when integrated into an SIA. Simultaneously the current proposal builds not necessarily on the recommendations and insights developed in the other working papers of the project. It was decided in effect to lead each reflection on the different issues of an SIA (e.g. participation, institutionalization, methodological developments...) relatively independently in the first time, and to integrate the developments at a later stage of the project. However, we recall that the working paper on institutional and juridical aspects should be read in parallel to the present one, especially as it will give the reader a complementary perspective on the issues.

The proposal of a screening and scoping process can be divided into the following steps (see also figure on the next page):

1° Prescriptive Filter. Before entering the screening process a formal check should be realized on the nature and type of the policy proposals. A series of these can be excluded right from the start from screening, as it is not supposed that these types of policies will develop in any case any impacts on SD. While the definitive list of policy types to be excluded can only be determined politically, it could encompass policies such as auto-regulation of administration, formal measures without real policy character (e.g. nominations, errata...),...

2° Impact Matrix. In order to allow a first rough determination of potential economic, social and environmental impacts of the policy proposals, an Impact matrix was developed (see hereafter and appendix 10_2) and tested. The Impact matrix 'forces' the policy officers in charge of the proposal to decompose the policy into its wanted effects and indirect impacts, considering both their temporal and spatial scale. The matrix sits on a mechanism which allows to identify potential contradictory effects between different dimensions or items, potential temporal or spatial effects outside of the policy-makers



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sphere of influence, potential effects on vulnerable issues... The filling in of the Impact matrix for a specific policy proposal is supposed to be realized as a group exercise by a restricted working group composed of the civil servant(s) in charge of the policy proposal, the member(s) of the ministerial cabinet in charge of the policy proposal, a representative of the SD-cell of the administration and (if judged necessary, and if the policy proposal is a cross-cutting issue) civil servants from other administrations or members of cabinets of other ministers. This step is accompanied by the horizontal SD-administration which acts as help-desk for methodological questions (e.g. develops a handbook to the Impact matrix) and assures periodically a review of the matrixes in order to control the performance of the tool and insure its quality.

3° Argumentative Form. With the information gathered with the Impact matrix, the restricted working group will develop an argumentation for or against an extended SIA for the policy proposal at hand on the basis of a structured, preconfigured form (see appendix 10_3 for a model of such a form). When an extended SIA is recommended, then the form will encompass a rudimentary sketch of the subsequent SIA, stating for instance the different policy options and alternatives which are recommended to undergo analysis, the issues which seem particularly impacted by the policy proposal, the stakeholders which are proposed to be integrated into the exercise, the extend of consultancy needed to construct the necessary quantitative or qualitative information on impacts... Again, the horizontal SD-administration can act here as a help-desk, and insure in the longer run a certain harmonization of the practice.

4° Collection and Ranking. The argumentative forms for the given policy proposals, together with their Impact matrix, will be collected on the level of each administration by the SD-cell. On this basis, the SD-cell could operate a first ranking of the policy proposals to identify those, which are acknowledged to need an extended SIA. Doing this in a first stage on the level of each SD-cell allows not only to account to a certain extent for the current legal context (i.e. the SD-cell should determine the list of types of policies to undergo SIA), but more importantly allows to integrate into the ranking the number of internal institutional, departmental and political (remember that the SD-cell has a member of the ministerial cabinet) constraints. A second consolidated ranking should then be operated on the central level of the Inter-departmental Commission for SD, notably to allow for cross-fertilization between different administrations and to permit individual administrations to declare themselves as privileged stakeholders of other administrations policy proposals' SIA.

5° Selection. From the inter-departmental ranking of policy proposals, the selection of those proposals, which will undergo extended SIA, should be operated on the level of the political actors. On the one hand, the selection remains a matter of trade-offs between opportunities, capacities and constraints weighing on the policy proposals. On the other hand, the selection should be considered also on the basis of objective reasons as they are presented with the Impact matrix and argumentative form for each policy proposal. It should be kept in mind also that SIA has among its primal objectives an opening of the decision-making process to stakeholders, at least by allowing for an increased transparency of decision moments. It would thus be logical to provide to stakeholders the opportunity to have an insight into the selection of policy proposals for extended SIA. In this regard, we strongly recommend submitting the final selection of policy proposals to the advice of the Federal Council for SD. By handing the Impact matrixes and argumentative forms together with their ranking and the operated selection of policy proposals, the Federal Council for SD could develop an advice which would comment the selection. Besides the evident reasons of enhancing transparency and allowing for external insights to be taken on board, some of the indirect effects of such an information will be very positive: stakeholders organisations could right from the start adjust their working agendas to the agenda of forthcoming extended SIA where they will have a major part to play with regard to their implication to the participative moments of the SIA. In effect, it occurs in the analysed SIA and RIA processes that it remains difficult for policy developers to ensure over the longer-term sufficient participation to the SIA/RIA.

As mentioned already, this working paper is work in progress on the screening mechanism. In effect, the procedural sketching of institutional mechanisms in the context of a research project, even if build on an analysis of best practice, remains somehow theoretical and conceptual and cannot be more than best case scenarios developed with the aim to provide additional input for decision-makers.

7) Testing the screening matrix

For the current project, we developed an Impact matrix (see appendix 10_2) on a model developed by Kirckpatrick et al. (2002) in the context of CEC DG Trade SIAs. A similar approach to the *objectivation* of impact determination during screening is used in Switzerland. Impact determination during screening in the cases of SD-evaluations is building in most analyzed cases on the use of matrixes. Among the main reasons for using impact matrixes instead of other tools, is linked to a secondary effect attributed to these matrixes, namely that they stimulate civil servants to decompose the policy proposal on the table into its mechanics and to standardize the exploration and reporting of policy effects. Furthermore matrixes seem particularly appropriate for SD-type impact determination (see for instance Abaza et al., 2002), as they allow to consider multiple dimensions and issues which need to be covered when taking SD as a starting point for evaluations. We won't describe in this section the internal mechanics of the Impact matrix which is introduced more thoroughly in the Users' guide developed specifically for the testing phase (see appendix 10_4).

Unlike the procedural setting of the screening, the project partners felt it useful and feasible to implement a testing phase of the Impact matrix. The feasibility and robustness of the Impact matrix was thus tested by simulating the filling in of the matrix by a series of 'working groups' for a selection of policy proposals. It should be kept in mind that all screening tests were executed on policies already operationalized (or very near from their first steps of implementation) and not on policy proposals (as it would be the case in reality). As with some of the other case study configurations (e.g. ethical purchasing), it wasn't possible to gather for this exercise a series of policy *proposals* that were still in the decision-making process.

During the testing exercises, the main attention was directed towards exploring how far, how fluid and in which conditions civil servants (and members of cabinets) could use such an Impact matrix on policies. As far as it was possible with the small number of screening case studies, we tried to address specific questions of interest for the later operationalization of the screening process. For instance, we explored how far civil servants and members of cabinet could collaborate on the screening phase, or in other terms, if it was of use to integrate 'political' agendas already during the initial steps (e.g. filling in the matrix) of the screening. Particular attention was also given to understand what type and depth of 'technical assistance' would be needed by the working groups to successfully complete the task of filling in the impact matrixes: some groups were given only factual information (e.g. by solely handing-out the technical description of the matrix via mail), while others were supported more actively on the basis of group meetings where the project members played the role of facilitators, animators and ensured some methodological support. The different configurations of the tests of the screening matrix are synthesized in the following table.

Of course, due to the rather small amount of test runs (4 policies were finally tested), it is difficult to extrapolate entirely robust conclusions on the feasibility and usability of the impact matrix or on the ideal composition of the working group to fill in the matrix. The timing of the research project didn't allow to engage into a larger number of test runs, especially as a quite serious amount of energy and time had to be invested initially into the case studies in order to "convince" administration and/or cabinets to volunteer their policy for the test.

Conversely, the fact that the impact matrixes were filled in on the basis of existing policies, and not on the basis of policy *proposals*, did not present a serious flaw during the case studies: the amount and depth of information about the impact mechanics and impact depths of the screened policies did not appear to be very high in most cases.

Policy proposal and initiator	Composition of working group	Test question and Test configuration
<p>Plan d'action "Valoriser la diversité" (Action plan to promote equal opportunities inside of federal administration)</p> <p><i>Federale Overheidsdienst Personeel & Organisatie (FOD P&O)</i></p>	<p>Lisa Coppin, civil servant (FOD P&O, Cellule "Diversité")</p> <p>Anne Schmidt, civil servant (FOD P&O, Cellule "Diversité")</p>	<p><i>Q: Is it feasible to leave the screening matrix with the operational level concerned with a policy proposal?</i></p> <p>Working group composed only of 2 civil servants responsible for the operationalization of the Action Plan.</p> <p>Matrix and matrix guide sent by mail.</p> <p>One short (2 hours) interactive meeting to fill in screening matrix with support by the project team.</p>
<p>Operationalization of Teleworking for federal civil servants</p> <p><i>Federale Overheidsdienst Personeel & Organisatie (FOD P&O)</i></p>	<p>Leni Pelgrims, civil servant (FOD P&O)</p>	<p><i>Q: Is it feasible to leave the screening matrix to a single civil servant with no direct support?</i></p> <p>Working group composed of 1 civil servant responsible for the operationalization and evaluation of the Teleworking Plan.</p> <p>Matrix and matrix guide sent by mail.</p> <p>One short meeting (1hour) to collect feedback on the difficulties encountered during the use of the matrix.</p>
<p>Bilateral aid program for social and economic infrastructure in Ecuador</p> <p><i>Directorate general Cooperation & Development (DGCD)</i></p>	<p>Arnold Jacques de Dixmude, civil servant (DGCD)</p> <p>Guido Schueremans, civil servant (DGCD)</p> <p>Thibaut Michot, cabinet member Minister De Decker (multilateral cooperation)</p>	<p><i>Q: How far can a multi-actor working group fulfill the task?</i></p> <p>Working group composed of 3 people with 3 different profiles: 2 civil servants (from which 1 is responsible for the operationalization, the 2nd is concerned with environmental aspects on a more general level) and 1 member of cabinet.</p> <p>Matrix and matrix guide sent by mail, 1 short meeting to explain the functioning of the matrix. Individual filling in of the matrix (deskwork). 1 extended meeting (2hours) with one civil servant to discuss the results.</p>
<p>Plan "logement" – Politique des Grandes Villes</p> <p><i>Federale Overheidsdienst Personeel & Organisatie (FOD P&O)</i></p>	<p>Noémie Feld, cabinet member Minister Dupont (cellule politique des grandes villes)</p> <p>Sophie Coekelberghs, civil servant (Cellule Politique des Grandes Villes)</p>	<p><i>Q: How far can a multi-actor working group fulfill the task?</i></p> <p>Working group composed of 2 people (temporarily a 3rd person, member of cabinet, joined the last meeting) with different profiles: 1 cabinet member, 1 operationalizing civil servant. A 1st meeting served to discuss the evaluability of the Plan "logement" in the SIA-context. 2nd meeting served to introduce the screening matrix. 3rd meeting was scheduled to collaboratively fill in the matrix.</p>

It should also be noted that the case studies on the level of the screening process focalized solely on the feasibility of the impact matrix. As the case studies were only simulations of screening processes, it wasn't feasible to simulate the entire screening and scoping procedure. We concentrated thus the case studies entirely on the exploration of the robustness of the impact matrix and did not try to test the procedural options proposed above.

In the following, we render two sets of lessons learned during the testing of the impact matrix. A first set of lessons is linked to procedural aspects highlighted during the filling in of the matrixes (which are not to be confused with institutional aspects related to the screening process). The second set of lessons presented below, focuses on the technical and methodological aspects of the matrix.

Obviously, the aim of the testing exercise was not to evaluate the policies with the impact matrix, but to assess the matrix itself as a tool to evaluate the policies. The results of the pre-evaluations, i.e. the content introduced with the different working groups into the matrixes, are thus of no particular interest here. Hence, in order to ensure best possible collaboration to the testing, we guaranteed the confidentiality of the pre-evaluations to the participants of the case studies.

Procedural lessons learned: is it feasible to use an impact matrix for screening?

As seen above, screening can be operationalized with a number of different tools. Using an impact matrix, as proposed here, is only one among a range of options, even if impact matrixes are very widely used in this context and appear to be best practice in many countries and administrations. One of the question we had to address was thus to identify the apparent necessary conditions to a successful impact determination exercise:

1) Even with a quite extensive "Users' Guide" and an introductory meeting, it appeared that the use of the impact matrix was not in all cases straightforward to the participants. Some occurring problems were necessarily inked to the prototype-character of the matrix, which had itself some technical flaws (see below for a more extensive list of such flaws). Others seem to be linked more directly to the character of the exercise, and revealed that not all participants were used to think of policies in terms of impacts. Especially so because the matrix demands to identify multi-dimensional impacts (including thus impacts outside of the policy field of the civil servant), and to make a difference between direct (i.e. wanted) and indirect (i.e. unwanted) impacts.

Extrapolating from the testing, most screening exercises will need to ***rely on considerable technical and methodological support***. This support should be able to provide 3 crucial aspects:

- First, participants needed support on the correct use of the impact matrix during the group meetings. Issues, which repetitively presented interrogations, were, for instance, linked to the time horizon to consider, or to the differences between direct and indirect impacts, to the geographical sphere to be considered... Support actors should thus have in depth knowledge of the mechanics of the impact matrix and of the interpretations given to the different items, especially as the screening process needs to rely on a homogenised filling in of the impact matrixes.
- Second, the filling of the matrix was considerably facilitated in those policy domains where the members of the research team had personal knowledge. Support should thus be provided by actors which have knowledge at the level of the policy domains. This speaks directly for the implementation of support units at the level of each administration or even in some cases at the level of the different DGs.

- Third, group meetings occurred to be largely operating as group discussions where participants explored together the potential impacts of policies. The research team acted in this setting as animators and facilitators of the discussions. Members of support units should thus have the necessary capacities (and authority) to act as animators, notably to influence the direction of the meetings.

2) Especially in the case of the more complex and long-term policies, indirect (political) intentions and unspoken (hidden) agendas were not necessarily clear to all civil servants involved in the operationalization of the policies. It was thus in some cases, difficult to specify the wanted or unwanted character of impacts. Furthermore was it in some cases difficult for civil servants to have the necessary overview of other existing policies (for which they were not directly responsible), which might influence extent and direction of the impacts of the policy under scrutiny. It appeared thus during the case studies that it would be particularly **important to include into the exercise of impact determination the initiators of the policy**, who are aware of the entire range of intentions and the complementarities with other policies. In the current policy-making process at federal level, this means to include high-level ministerial cabinet members into the exercise.

Technical and methodological lessons learned: does the impact matrix work?

Despite the occurrence of some procedural difficulties, the case studies showed that the use of an impact matrix is a necessary and useful step in a screening and scoping process. However, technically and methodologically, the matrix as it was developed for the case studies revealed some weaknesses, some of which can be corrected by adjusting the matrix, others are inherent to the use of a generic tool which can not be tailored to the requirements of each policy's characteristics. The most obvious weaknesses detected were addressing that :

1) The **depth and extent of the items of the impact matrix** was not adequate for every policy analysed. For some minor policies, the impact matrix appeared to be too extended and included too many items. This entailed at some moments that participants were stimulated to think of extremely indirect effects. Conversely, for some policies, the impact matrix was not specific and detailed enough. Especially, in the case of very sectoral and mono-dimensional policies, direct and indirect impacts are concentrated on a very limited number of items of the matrix. Thus giving no clear and differentiated picture of the potentially encountered impacts. While the first issue can be managed (notably, with competent group animators), the second aspect could call to leave some room for participants to adjust the matrix and its items during the course of the exercise.

2) Some **misinterpretations of the mechanics of the matrix** did occur repetitively and although clearly explained in the Users' Guide needed further explanation during the group meetings. Especially, the necessary distinction between an increase/decrease of impacts and the valuation of the evolution (positive or negative impact?) were not in every case easy to put in practice. Furthermore, the important number of items to be discussed on the basis of the impact matrix in conjunction with limited time investments by some civil servants (typically, not more than 2 hours), entailed in some cases that not all aspects of the policies' impacts were discussed. Especially, the aspects of temporal and geographical distribution of the impacts were repetitively filled in with quite little attention. Furthermore, participants were uneasy to identify those items which should be considered as being under some form of original stress. Two explanations were given: first, the fact that a policy is introduced to influence a specific item, intrinsically means that public authorities and politicians feel the item to be under stress. Second, most

civil servants did not feel comfortable enough (by principle or with regard to their knowledge) to judge the degree of stress of their colleagues' policy domains.

8) Conclusions

Screening exercises inherently present a strong contradiction: identifying impact-rich policy proposals without bringing the impact identification and -assessment to a level of detail, which would allow to nuance sufficiently depth, direction and desirability of the policy's impacts. Nevertheless, screening remains a crucial phase in SIA, not the least because successful screening has important levers on the success of the entire SIA-scheme: a bad selection of policy proposals can ruin in the midterm the credibility and robustness of the SIA-process itself, and can kill the initial motivation of the involved actors.

Not entirely objectivable, because of the above-mentioned contradiction, screening will inevitably rely at least partially on subjective value judgments. Furthermore, the act of inserting policy proposals into an extended SIA or not, will ultimately remain a matter of political judgment too, including bargaining and trading-off between opportunities, feasibility and capacities. This inevitable, but very strong link to subjectivity during screening can become a constant thread for the credibility of screening methods. It was shown that one solution to manage these threads and limitations of screening lies in careful procedural design introducing a considerable amount of transparency and participation to the screening exercises.

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10. Appendixes

10_1) Screening and scoping fact sheets

Country	Flemish Region - Belgium
Name of the evaluation process	Regulerings Impact Analyse – Regulatory Impact Analysis

Phases of the evaluation process
<p>IMPORTANT :</p> <p>The RIA system in Flanders is based on a dual-evaluation momentum (light and heavy RIA). In the final layout of the system, the light-RIA can be understood as a form of screening&scoping. However as the procedure is still very new, and the authorities decided to proceed step-wise towards a fully-fledged system: currently only the light-RIA is methodologically defined and implemented. The second phase of the RIA-process should not be defined and implemented before 5 years. Therefore the information given here with regard to the heavy RIA is stemming from the initial scientific research report. As a matter of fact, the implementation scheme of the light RIA appears to follow quite thoroughly this research report. One can thus assume that its influence on the final heavy RIA will be considerable.</p> <p>The heavy RIA is disconnected from the light RIA: its initiation is dependent upon a yearly screening of the policy-agenda, and the council decides once a year which future proposals should undergo a heavy RIA (i.e. the IA-CEC model). Heavy RIAs are typically between 3-5 per year, eventually going towards 10 per year in the future.</p>
Procedural issues
<p><i>Who is responsible and/or executing the evaluation?</i></p> <ul style="list-style-type: none"> - responsible : Minister of the relevant administration - executing : Administration at the basis of the policy proposal, in some cases, the department which initiated the policy proposal. Handbook wants RIA to be realized as teamwork. - Provisionally around 200 light RIAs per year, each one taking approximately 2 working days, which totals to 3200 working hours in total per year (i.e. 2 Man-years).
<p><i>Who is involved? Institutionally, Stakeholder-wise, Knowledge gathering</i></p> <ul style="list-style-type: none"> - the policy project team, i.e. the people at the basis of the policy proposal - each administration has a designated "RIA-coordinator" who is acting as methodological aid. In the back, exists the horizontal "Kenniscell Wetsmatiging", responsible for quality insurance and centralization of the RIA's. - consultation is meant to be only very brief, and what's more at this stage, consultation is meant to be inter-departmental in the first place (i.e. make the RIAs internally consultable via a website); - no external knowledge gathering (e.g. studies) are foreseen. The light-RIA is only to be realized on the basis of existing knowledge of the administration.

What is the timing of the screening&scoping phase?

- timing is determined loosely: the RIA has to be finalized at the moment the proposal goes to the council of ministers (actually, the secretariat makes a formal check, if no RIA, or motivation why a RIA is not necessary, is attached the secretariat can not put the proposal on the agenda of the council's meeting). The beginning of RIA is not determined, but acknowledged to be starting "as early as possible" and "at the moment, the proposal is existing on paper".

How does the screening and/or scoping phases link (if they exist separately)?

- no specific scoping exists, however: the threshold analysis is supposed to be realized before any other phase (see below), which makes it a sort of a scoping activity before the screening phase (?). this appears rather peculiar as process, and it is not clear how the threshold analysis can be realized without a light RIA. Intuitively, one would inverse the threshold analysis with the light RIA: light RIA permitting a decision based on principles (whatever the impact), and the threshold analysis being a scoping mechanism.

How does they link to the rest of the process?

- in principle RIA is not substituting itself to other tools, which exist. However, some of the minor tools (as a impact analysis on children) should be integrated into RIA and could become a separate chapter of the RIA document. More important ex ante evaluation processes, such as SEA, can however not be integrated into RIA. They are too specific, according to the handbook. In order to keep the same burden on policy-making, one pre-existing ex ante evaluation processes was integrated into RIA, namely the assessment of impacts on businesses (following the rule "to add one evaluation process, you have to substitute it with one which exists") .
- the light RIA (which will be the screening tool, to a certain extent) does link to the heavy-RIA through a threshold checklist. If one of the thresholds is not met by the proposal, then a heavy RIA will have to be implemented. The thresholds list is a mixture of quantitative and qualitative effects of the proposal:
 - o quantitative
 - monetary threshold proposed: 8 million Euro present cost value
 - population threshold proposed: 125.000 inhabitants of Flanders
 - client threshold: 25% of the addressees of the proposal
 - o qualitative:
 - competition
 - inconsistencies with existing regulation (other policy domain)
 - distributive impacts
 - o other (here the civil servant has to possibility to invoke other arguments to initiate a full RIA)

Substantive issues

How does the screening&scoping tool look like (e.g. checklist, form...)?

- In principal, all policy proposals which are to be submitted to the Flemish government for approval and which have a regulative effect on citizens, non-profit organizations or business undergo RIA, except if they are :
 - o Auto-regulating the authorities themselves
 - o Of a budgetary nature, or concerned with basic fiscal policy (not to be confused with policies which use fiscal instruments)
 - o Concerned with transposing international law
 - o Without content or solely formal (errata...)

- o Concerned with spatial planning
- o Ministerial decisions.
- The handbook of the light-RIA describes light-RIA as a 3-5 pages document encompassing the following sections :
 - o Title of proposal
 - o Objectives
 - o Policy options
 - o Effects
 - o Consultation
 - o Implementation and monitoring
 - o Synthesis
 - o Contact-information

What are the methods and methodologies used during screening and scoping?

- formal check of compliance of policy proposal w/r to the nature of the policy
- the effects identification is not prescribed to be realized with specific tools

What are the issues addressed or the questions asked during screening and scoping?

Strengths and weaknesses of the evaluation process

Recognized by the organizers

Identifiable

- strength: proposing a solution to the problem of the “significant” impact. A series of thresholds are put forward. Once one of these thresholds trespassed, then the proposal has to undergo a heavy RIA.
- Weakness: the positioning of the threshold analysis at the beginning of the process does not allow for a decision of pursuit of RIA based on principles. Probably too pragmatic, especially as the threshold analysis is not methodologically determined but is rather an ad hoc best guess.
- see below.

Originalities of the evaluation process

- the main originality is the very adaptive implementation of RIA, from a light version to a heavier version. The light version is very loosely defined, in the sense that it recognizes the learning curve which is necessary in administration. Maybe the acknowledgement of the learning curve is a bit too deep: no quality control at this stage except for occasional check by the central RIA-team, no sanctions...

Country	United Kingdom
Name of the evaluation process	Regulatory Impact Assessment (RIA)

Phases of the evaluation process
<p>There are three RIAs, initial, partial and full RIAs, RIAs follow these steps:</p> <ul style="list-style-type: none"> - Title of proposal - Purpose and intended effect - Consultation - Options - Costs and benefits <ul style="list-style-type: none"> - Sectors and groups affected - Analysis of costs and benefits - Summary of costs and benefits - Costs and benefits checklist - Small Firms Impact Test - Competition assessment - Enforcement, sanctions and monitoring - Implementation and delivery plan - Post-implementation review - Summary and recommendation - Declaration and publication
Procedural issues
<p><i>Who is responsible and/or executing the evaluation?</i></p> <p>The evaluation is executed by the policy-makers that propose the new policies.</p>
<p><i>Who is involved? Institutionally, Stakeholder-wise, Knowledge gathering</i></p> <p><i>Institutionally</i></p> <p>In addition to the unit in charge of the RIA,</p> <ul style="list-style-type: none"> - the Better Regulation Task Force (an independent body that advises Government on action to ensure that regulation and its enforcement accord with the Principles of Good Regulation) and - the National Audit Office both check the quality of RIAs. - The Scrutiny Team reinforces and supports work within departments to ensure that new regulation is justified, meets the principles of better regulation and imposes the minimum burden on business, charities and the voluntary sector. - The Departmental Regulatory Impact Unit (DRIU) must be the first port of call when the unit starts an RIA. Each government department has a DRIU. DRIUs see many RIAs and will be able to help with queries the unit may have about the RIA process. - Once the policy decision has been made, the responsible minister must sign a final RIA to state that 'I have read the Regulatory Impact Assessment and I am satisfied that the benefits justify the costs'.

<p><i>Stakeholder-wise</i></p> <p>The unit must comply with the Cabinet Office Code of Practice on Consultation and must also follow the full Cabinet Office guidance on consultation. It states that “relevant interested parties and those whom the policy will be likely to affect” need to be consulted. This can for example be small businesses, consumers and those from minority communities, trade associations, and organisations... In the unit in charge of the RIA, there is a consultation co-ordinator.</p> <p><i>Knowledge-gathering</i></p> <p>Advice has to be sought from specialists such as economists, statisticians and scientists as early as possible in the RIA process</p>
<p><i>What is the timing of the screening&scoping phase?</i></p> <p>RIA should be carried as early as possible so that it is an integral part of the policy making process. The RIA process is a continuous one and will develop with the policy. It consists of three phases:</p> <p>Initial RIA – to prepare as soon as a policy idea is generated. For policies which will only impact on public services an Initial Public Sector RIA should be carried out.</p> <p>Partial RIA – This builds on the partial RIA It is produced prior to the consultation exercise and must accompany the consultation document.</p> <p>Full/final RIA – This builds on the information and analysis in the partial RIA and incorporates consultation responses and how they have influenced policy. A full RIA has to be prepared for the post-consultation collective agreement and, if it is a legislative proposal, for the Parliamentary process.</p>
<p><i>How does the screening and/or scoping phases link (if they exist separately)?</i></p> <p>The proposals subject to RIA are clearly stated. There are three RIA types whose depth of analysis will increase as the RIA moves from initial to full.</p>
<p><i>How do they link to the rest of the process?</i></p> <p>The final RIA builds upon the partial RIA itself built upon the initial RIA. The points developed in the initial RIA are improved in the partial RIA. To become a final RIA, the partial RIA is updated in the light of consultation and further information and analysis. It also includes a detailed implementation and delivery plan as well as plans for post-implementation review for the recommended option. It is finally signed by the responsible minister.</p>

<p>Substantive issues</p>
<p><i>How does the screening&scoping tool look like (e.g. checklist, form...)?</i></p> <p>There is a RIA checklist, including the different RIA parts, in the annex</p>
<p><i>What are the methods and methodologies used during screening and scoping?</i></p> <p>As stated in the regulatory impact unit (http://www.cabinetoffice.gov.uk/regulation/):</p> <p>“RIAs must be completed for all policy changes, whether European or domestic, which could affect the public or private sectors, charities, the voluntary sector or small businesses. This includes all changes made using</p>

alternatives to legislation, both primary and secondary. For proposals that impact only on the public services, the unit should carry out an Initial Public Sector RIA. As well as providing a useful analysis, it also determines whether a full RIA should be carried out."

RIA are not needed for:

- proposals that impose no costs or no savings, or negligible costs or savings on the public, private or charities and voluntary sector
- increases in statutory fees by a predetermined formula such as the rate of inflation
- road closure orders.

What are the issues addressed or the questions asked during screening and scoping?

The initiatives subject to RIAs are clearly stated (cfr supra).

The scoping phase takes the proportionality principle into account. The impact analysis (focus on a cost-benefit analysis) is done thanks to a checklist which assesses the economic, social and environmental impacts. There is also a small firms impact test and a competition assessment.

Strengths and weaknesses of the evaluation process

Recognized by the organizers

The RIA is seen as a tool to deliver better regulation and to help departments deliver successful policy. The RIA helps government policy proposals to meet the five Principles of Good Regulation:

- proportionate to the risk
- accountable to ministers and Parliament, to users and the public
- consistent, predictable, so that people know where they stand
- transparent, open, simple and user-friendly
- targeted, focused on the problem, with minimal side effects

Identifiable

- RIA have evolved through time to take non-economic impacts into account, that now also deal with social and environmental impacts.
- There seems to be a strong supportive structure for the policymakers in charge of the RIAs.
- The guidelines are not always clear, but there is a structure to help policy-makers answer their questions and improve the quality of their RIAs.
- Final RIA reports are very shallow documents (typically 5 to 6 pages) where the impacts are stated quite superficially.

Originalities of the evaluation process

- The involvement of the minister at the moment of the signature is original and gives RIAs more status.
- The scoping phase is actually included in the degree of advancement of the RIA (initial, partial or final and the RIA report evolves iteratively while passing through the different procedural steps from initial to full.

- The elements to analyse and the tools employed are stated (different from the EC), although the consultation phase relies on general guidelines. However the Impacts' assessments do not appear in a detailed manner and benefits are not put in contrast to costs, neither in a quantitative nor qualitative way.

Country	European Union
Name of the evaluation process	Impact Assessment

Phases of the evaluation process
<ul style="list-style-type: none"> - Preliminary assessment - Extended impact assessment: <ul style="list-style-type: none"> - Problem identification - Identification of the objectives of the proposal - Identification of the policy options and alternative instruments - Analysis of the impacts (identification and assessment) - Implementation, Monitoring and ex-post evaluation
Procedural issues
<p><i>Who is responsible and/or executing the evaluation?</i></p> <p>The unit in the DG that proposed the initiative is in charge of the evaluation, if the initiative cuts across several dimensions, ad-hoc inter-departmental steering groups are created, headed by the lead Directorate General.</p>
<p><i>Who is involved? Institutionally, Stakeholder-wise, Knowledge gathering</i></p> <p><i>Institutionally</i></p> <p>Units from other DGs are involved; the Secretariat General is responsible for the supervision.</p> <p><i>Stakeholder-wise</i></p> <p>Stakeholders consulted can be national, local and regional authorities, industry or sector associations, trade associations, NGOs and consumer and retail organisations, companies, academic institutions. The timing of the consultation depends, some IA stressed prior consultations already before the IA, others happen before or during the impact analysis stage.</p> <p><i>Knowledge gathering</i></p> <p>Knowledge can be gathered from all the stakeholders and from experts or consultants appointed for the IA, these can be private companies, academics, research institutes, industry experts.</p>
<p><i>What is the timing of the screening&scoping phase?</i></p> <p>The screening and scoping phases that lead to the preliminary IA have to be completed and submitted with the DG's Annual Policy Strategy circular each January. The Secretariat General then reviews all the preliminary IA and are available to the other DGs for comments in the context of the preparation of the APS in February.</p>
<p><i>How does the screening and/or scoping phases link (if they exist separately)?</i></p> <p>The proposals should have specific characteristics to be included in the assessment process (screening), the two-page long note gives the frame of the analysis. The unit in charge should state the target groups that are going to be consulted, the purpose and mode of consultation and the work involved. The last section of the note gives the opinion whether the proposal needs to undergo an extended IA and why.</p>

How do they link to the rest of the process?

After the preliminary IA, there is a decision on whether to continue with the core of the impact assessment (extended impact assessment). This IA replaces all previous sectoral IA that existed at EU level.

Substantive issues

How does the screening&scoping tool look like (e.g. checklist, form...)?

The preliminary impact assessment is translated into a one or two-page long note including:

- the problem identification
- the objective of the proposal
- the policy options
- the positive and negative impacts
- further analysis needed
- The follow-up or recommendation for an extended IA or not.

In the core of the impact assessment phase, there is a list of impacts used in screening to help identify the likely impacts (annex 2 sec(2004)1377. The EC, indeed mentions two 'screening and scoping' phases (one representing the preliminary IA and one in the extended IA).

Decisions on whether to continue to the extended impact assessment are based on the judgment relying on the preliminary IA.

What are the methods and methodologies used during screening and scoping?

The lead DG defines how the principle of proportionate analysis applies to the initiative at hand. The policy unit in charge of the proposal will assess whether an IA is needed and how broad and the deep the analysis should be.

The screening and scoping is reflected in the preliminary assessment of the key problems to be addressed by the proposal. The policy unit responsible for the IA fills in a form with the key problems to be addressed, the objectives, the regulatory and non regulatory options and their possible social, environmental and economic impacts. The statement allows for the identification of knowledge gaps and helps decide whether and extended analysis is needed.

The assessments of impacts will concentrate on those that are likely to be the most significant and/or will lead to important distributive effects.

The scope of the analysis will be consistent with the nature of the proposal (principle of proportionate analysis).

What are the issues addressed or the questions asked during screening and scoping?

Three questions are asked with regards to the submitted proposals. Are the proposals:

- Regulatory proposals such as Decisions, Directives and Regulations? OR

- Non-regulatory proposals that have an economic, social or environmental impact?
- AND
- Does the proposal form part of the list of key initiatives and or concrete proposals presented as a priority in the context of the planning process of the Commission?

As mentioned before, the principle of proportionate analysis is taken into account in the scoping phase.

Strengths and weaknesses of the evaluation process

Recognized by the organizers

EC finds that the IA is positively contributing to a new culture of transparency in regulatory design and management practices.

It replaces all the previous assessments and covers in a balanced manner the three pillars.

However, the Commission is aware of the following facts:

- A more systematic application of the current methodology across Commission services: IA should be implemented more effectively in the EC.
- The IA tools need improvement.
- Transparency has been enhanced but can still be improved.
- The quality of the IA is very variable and has to be enhanced.
- Guidelines need to be improved and simplified and skills have to be improved.
- The process has to be simplified
-

It is seen as an aid for decision making, not a substitute for it.

It is also regarded as an exercise that fosters communication and exchange among the different stakeholders.

Identifiable (from sec(2004)1377, Wilkinson, Wäktare)

Some comments expressed by the different stakeholders reflect the purpose they see in the IA:

- The spring European Council and other councils urged the Commission to reflect in greater detail on how competitiveness and issues related to administrative burden may be considered in the Impact Assessment method.
- Some NGOs fear that the IA will decrease the attention given to the environmental or social matters.
- Some IA seem to develop around a pre-defined option.

Furthermore some problems are linked to the guidelines:

- IEEP (Wilkinson report) believes that the treatment of sustainable development issues in the guidelines is brief and insufficiently detailed to be of practical use in an extended IA.
- The guidelines are regarded as unclear and are not fully followed in the IA.
- The range of impacts analysed is limited and falls below the number proposed in the guidelines.
- Guidelines clarifying the ex-post monitoring phase are not fully respected; the IA therefore gives the impression that it is a one-off event.

Concerning impacts:

- International impacts are rarely assessed affectively.
- The economic impacts are given more attention than the environmental or social ones.
- The impacts are mainly discussed in qualitative terms,

Concerning scoping and screening phases:

- The categories 'Preliminary' and 'Extended' Impact Assessment, together with the Commission's criteria for selecting proposals for extended assessment, should be revised. All Commission initiatives should be subject to impact assessment, the first stage of which should be a scoping exercise, on the basis of a checklist, to establish the proportionality of the assessment required, and to identify those elements of the Commission Guidelines (particularly in relation to impacts) that are most relevant.
- The selection the extended IA is not clear.
- The preliminary IA implies that the number of options and other elements are already known at that stage (cfr the form to fill in).

Concerning the participatory process:

- Stakeholder selection is not always clear
- Some stakeholders lack the resources and time to join the process
- Consultation happens more often than real participation
- Many stakeholders feel that they are consulted too late in the process.

Originalities of the evaluation process

- The EC gave a strong sign by adopting the IA and by replacing all previous assessments.
- They have the goal of taking economic, social and environmental impacts into account in one analysis.

Country	Switzerland
Name of the evaluation process	Evaluation de la durabilité – Sustainability evaluation (EDD)

Phases of the evaluation process
<ul style="list-style-type: none"> - EDD is mostly qualitative as an instrument - EDD is linked to weak sustainability (compensation between 3 pillars possible, if minimum standards respected in a number of fields (such as human rights...)). - Decision is to undergo EDD if conflicts arise between at least 2 dimensions of SD - 3 phases of EDD : analysis of pertinence; analysis of effects; evaluation and optimization. <ul style="list-style-type: none"> o Pertinence: present object of evaluation, check pertinence from SD perspective. Duration foreseen for this phase : +/- 1 day o Effects: define process, execute analysis o Evaluation and optimization: evaluation, optimization, presentation of results.
Procedural issues
<p><i>Who is responsible and/or executing the evaluation?</i></p> <ul style="list-style-type: none"> - responsible: federal office responsible for decision under scrutiny - execution: idem - decision on pursuit of EDD: idem
<p><i>Who is involved? Institutionally, Stakeholder-wise, Knowledge gathering</i></p> <ul style="list-style-type: none"> - process led by the responsible office, who takes action to integrate concerned actors (with an emphasis on inter-service participation, and not necessarily with stakeholders) - Office federal du développement territorial – ARE, and other federal offices: can be involved on a consultative (and as competence and quality/homogeneity center) basis in following steps: <ul style="list-style-type: none"> o Pertinence analysis: possibility for consultative advice o Effects analysis: contribute with partial analysis - Office federal du développement territorial – ARE, and other federal offices: are consulted on the draft of final report of EDD. - Stakeholders, local and regional authorities: <ul style="list-style-type: none"> o Effects analysis: contribute with partial analysis o Consultation forum on draft of final report (not mandatory) -
<p><i>What is the timing of the screening&scoping phase?</i></p> <ul style="list-style-type: none"> - timing is decided by administration in charge of initial project
<p><i>How does the screening and/or scoping phases link (if they exist separately)?</i></p> <ul style="list-style-type: none"> - screening and scoping are realized in the first 3 phases of EDD: present object, check pertinence, define process. -
<p><i>How does they link to the rest of the process?</i></p> <ul style="list-style-type: none"> - EDD can not be a substitute to other mandatory evaluation processes as long as the decision under scrutiny is on project level. EDD is then complementary. However, EDD can integrate other control mechanisms on the level of programmatic decisions. This substitution mechanisms is not yet firmly explored, and needs

further research in CH.

Substantive issues

How does the screening&scoping tool look like (e.g. checklist, form...)?

(see next point)

What are the methods and methodologies used during screening and scoping?

- EDD is not mechanistic, but relies on qualitative methods being combined at best with discursive and consultative processes.
- **Screening** : A criteria checklist, combined with control questions, is used in the first of the 3 relevant phases, in order to determine the pertinence to pursue with an EDD. No thresholds are determined, but pursuit of EDD is pruned when at least 'average' conflicts appear between 2 of the 3 dimensions of criteria and if 'strong' conflicts appear between at least 2 dimensions; pursuit is reinforced if affirmative answer to at least one of the control questions.
 - o Checklist related to the 3 dimensions each one covering a range of criteria is used to determine causal links to issues raised by SD (handbook proposes to attribute points of magnitude to each criteria, from 0 to 3, but no positive/negative signs which could determine the sense of influence) :
 - Environment: natural space and biodiversity; renewables; non-renewables; air, water, soil, climate; ecological catastrophies, reduction of risks.
 - Economical: revenue and employment; production capital accumulation; competitiveness and innovation capacity; market mechanisms and correct prices; public management.
 - Society: health and security; individual identity, learning; culture, societal values; equal rights, juridical security, gender; solidarity.
 - o Control questions :
 - Existence of important conflicts between objectives of the decision?
 - Strong potential that situation worsens in domains which are already weak?
 - Any impact on future generations, or irreversible damage?
 - Strong potential for risks and uncertainties?
 - Is there room for optimisation of the project, in order to minimize impacts? If yes, is their considerable space for adjustments or is it rather restrictive?
 - Can the project have spatial impacts which go beyond the targeted impact perimeter?
- **Scoping**: is part of the next step of process (effects analysis), and encompasses procedural definition of EDD.

What are the issues addressed or the questions asked during screening and scoping?

- EDD is on the level of "projects", meaning here : "*activités et projets d'ordre stratégique, programmatique et conceptuel*", i.e. programmes de legislature et des projets de loi (niveau stratégique), les conceptions, les programmes et les plans. The level of implementation is the federal swiss level (i.e. confederation).
- EDD is not specifically linked to a limited number of sectors.

Strengths and weaknesses of the evaluation process

Recognized by the organizers

None so far. Process is only on the level of experimentation.

Identifiable

Very low-quality process. Some elements (like the checklist for screening doubled with some control questions) are sound, but hardly original. Main weakness: no added-value can be identified from the case-study SIA's. very simpleminded shallow analysis. Even if the process in itself is not badly qualified. Incremental view of SIA: better do a lot with not that much of work involved, than...

Originalities of the evaluation process

Control questions on each level. Might be interesting, even if very normative.

Country	European Union, DG Trade
Name of the evaluation process	Sustainability Impact Assessment

Phases of the evaluation process

The SIA methodology uses a core group of **sustainability indicators** to measure the impact that further liberalisation and changes in rule-making might have on sustainability. These indicators are balanced between economic, environmental and social: average real income; employment; net fixed capital formation; equity and poverty; health and education; gender inequality; environmental quality of air, water and land; biological diversity and other natural resource stock.

- The first stage of the assessment methodology is a **screening exercise** to determine which measures require SIA because they are likely to have significant impacts.
- The next stage is **scoping** to establish the appropriate coverage of each SIA, taking each of the measures identified in the screening exercise and identifying which components of those measures are likely to give rise to an impact.
- From this, there follows a **preliminary SIA** to identify potential significant effects, positive and negative, on sustainable development.
- Finally, the methodology includes **mitigation and enhancement** analysis to suggest possible improvements which may enhance the overall impact on sustainable development of the proposed liberalisation.

Procedural issues

Who is responsible and/or executing the evaluation?

A team of independent experts is contracted by DG Trade, they were used because of resource and knowledge constraints. Independent experts were also used as a way to ensure political independence and credibility.

Who is involved? Institutionally, Stakeholder-wise, Knowledge gathering

Institutionally
These SIA concern DG Trade only.

Stakeholder-wise
Stakeholders consulted can be national, local and regional authorities, the 'civil society', regional representatives, official representatives, business representative etc.

Knowledge gathering
Knowledge can be gathered from all the stakeholders and from experts or consultants appointed for the IA.

What is the timing of the screening&scoping phase?

It is difficult to know precisely the timing and duration of the screening and scoping activities. However, for

example, in total, the preliminary phase of the SIA on the EU-ACP negotiations was planned to last for 222 man-days spread among 5 partners.

How does the screening and/or scoping phases link (if they exist separately)?

The screening and scoping phases are separated and they follow each other.

Screening **determines the measures that may be excluded** from appraisal because they are unlikely to give rise to significant impacts.

On the other hand, scoping is employed to **determine the terms of reference (TOR)** for the appraisal of the selected measures from the screening phase. This step **examines the components of each measure** to identify those which may lead to significant impacts and excludes those which are unlikely to do so.

How do they link to the rest of the process?

The screening stage is the first step in the SIA. After the scoping stage, there is a preliminary impact assessment that is intended to resolve any remaining uncertainties from the scoping stage, concerning which impacts are to be recorded as potentially significant and non-significant; and to differentiate between impacts of lesser and greater significance. It is a logical extension to scoping and is intended to provide limited, further appraisal information relevant to the pre-negotiation phase. As in the case of scoping, the preliminary

is

Impact on	Significant Impacts								
	Scenario 1			Scenario 2			Scenario 3		
	A	B	C	A	B	C	A	B	C
EU Countries	0 (-1)	0	0 (-1)	±1	±1	±1	-1/+1	-1/+1	-1
Developing Countries	0	0	0	±1	±1	±1	-1/+1	-2/+1	-1
Least Developed Countries	0	0	0	±1	±1	±1	-1/+1	-2/+1	-1
Global	0	0	0	±1	±1	±1	-1/+1	-1/+1	-1

or

or

Notes:

A = economic impacts (changes in level of average real income; net fixed capital formation; employment)

B = social impacts (changes in level of equity and poverty, health and education; gender inequality)

C = environmental impacts (changes in air, water and land quality; biological and diversity; air resource stocks)

ew

: to

0 = non-significant impact compared with the base condition

1 = lesser significant impact

2 = greater significant impact

icy

+ = positive impact

- = negative impact

get

± = positive and negative impacts: net effect uncertain and/or varying according to context

() = impact in the base situation compared with the existing situation

-/+ = range indicating variation over time

The methodology distinguishes four country groups and three scenarios (base scenario, intermediate scenario and trade liberalisation scenario)

What are the methods and methodologies used during screening and scoping?

For the screening there is a kind of checklist

For the scoping there is a scoping matrix.

What are the issues addressed or the questions asked during screening and scoping?

The screening stage is employed for the selection of the measures that need further assessment while the scoping sets the frame and identifies the impacts that need further assessment.

Strengths and weaknesses of the evaluation process

Recognized by the organizers

- There is no uniform methodology for the SIA and there were some methodological problems in the beginning, in terms of modeling, and lack of data among others.
- SIA concern trade negotiations and are therefore very broad and complex, it is not an easy task to assess them.
- Consultation problems have happened, there is a data collection problem and the stakeholders have troubles in providing the necessary resources.
- At a broader level, some parties do not understand the EC's initiative and are suspicious.

Identifiable

- Some NGOs (Epawatch) wonder why there are no scenarios that propose the no-liberalisation option.
- They also wonder why there are negative mitigation measures.
- SIA are formulated after the negotiation mandate and the analysis is limited to a few pre-determined scenarios.
- SIA are also sometimes criticised for the lack of participation or consultation from some stakeholders.

Originalities of the evaluation process

The scoping matrix can be a valuable input for the project at hand.

10_2) Proposal for a federal Impact Matrix

			POLICY EFFECT	INDIRECT IMPACT	SPATIAL DISTRIBUTION	TEMPORAL DISTRIBUTION	EXISTING STRESS ?	INDICATOR	
			(--, -, +, ++)	(--, -, +, ++, ?)	(LOC, RE, BE, EU, DEV, UNDEV)	(short, medium, long)	y/n		
	Economic								
ECONOMIC (1)	Macro-economic	Factor prices (increase or decrease)...							
		Wages							
		Energy							
		Materials							
		Taxes							
		Credit (the price of getting finances)							
		Transport							
		Others							
			Consumer prices						
			Commercial balance						
ECONOMIC (2)	Sectors' activity (by influencing costs, competitiveness, demand...)	Sectors (increase or decrease the economic activity in)							
		Agriculture (production)							
		Fishing							
		Food industry (including) beverages							
		Iron, steel							
		Chemical, pharmaceutical							
		Mechanical industries and aeronautics							
	Energy (utilities)								

		<i>Paper</i>						
		<i>Cement</i>						
		<i>Transport</i>						
		<i>Textile</i>						
		<i>Construction</i>						
		<i>Banking, insurance</i>						
		<i>Telecommunication and IT</i>						
		<i>Retail</i>						
		<i>Hotels, restaurats, bars</i>						
		<i>Public sector</i>						
		<i>other (please specify)</i>						
		<i>ALL</i>						
		<i>Government</i>						
		<i>increases or decreases revenues?</i>						
		<i>increases or decreases expenses?</i>						
		<i>increases or decreases the gap for reaching budgetary equilibrium? (balance)</i>						
ECONOMIC (3)		<i>Economic structure</i>						
		<i>increases or decreases diversity?</i>						
		<i>increases or decreases entrepreneurship?</i>						
		<i>increases or decreases innovation (creation, diffusion)?</i>						
		<i>increases or decreases economic independence ?</i>						
		<i>Human capital</i>						
		<i>increases or decreases investment in human capital?</i>						
	<i>increases or decreases labour participation rate?</i>							

		<i>increases or decreases productivity?</i>						
	Physical Capital							
		<i>increases or decreases private local investment?</i>						
		<i>increases or decreases private foreign investment?</i>						
		<i>increases or decreases public investment (in infrastructures...)?</i>						
	Economic cohesion							
		<i>increases or decreases the geographic distribution of economic activity?</i>						
		<i>increases or decreases the geographic distribution of infrastructure?</i>						
		<i>increases or decreases economic integration?</i>						
		<i>increases or decreases the economic dynamism of rural and slow growth areas?</i>						
		<i>increases or decreases the black economy?</i>						
	Environment							
ENVIRONMENT (1)	Air quality							
		<i>increases or decreases the amount of emissions of acidifying, eutrophying, photochemical or of harmful air pollutants?</i>						
	Water Quality/Quantity							
		<i>increases or decreases the quality of surface and groundwater?</i>						

		<i>increases or decreases the quantity of surface and groundwater?</i>						
		<i>increases or decreases the quality of waters in coastal and marine areas ?</i>						
		<i>increases or decreases the quality of drinking water resources?</i>						
		Soil Protection						
		<i>increases or decreases the rates of acidification, soil erosion, contamination or salinity of soil?</i>						
		<i>increases or decreases the quantity of available soil?</i>						
		Climate Change						
		<i>increases or decreases the quantity of emissions of ozone-depleting substances (CFCs, HCFCs)?</i>						
		<i>increases or decreases the quantity of emissions of greenhouse gases ?</i>						
		Resource Use						
		<i>increases or decreases the stock of renewable resources ?</i>						
		<i>increases or decreases the pressure on the stock of non-renewable resources?</i>						
ENVIRONMENT (2)		Biodiversity						
		<i>increases or decreases the number and density of species in any area ?</i>						
		<i>increases or decreases pressure on protected or endangered species or on their habitats ?</i>						

		<i>increases or decreases the quantity and quality of migration routes, ecological corridors, or buffer zones?</i>						
	Land use							
		<i>increases or decreases the land use rate?</i>						
		<i>increases or decreases the amount of protected/sensitive land for ecological reasons?</i>						
		<i>increases or decreases the attractiveness of cultural landscapes or heritage such as protected areas, buildings, sites, monuments or features?</i>						
	Waste							
		<i>increases or decreases waste production (solid, urban, agricultural, industrial, mining) ?</i>						
		<i>increases or decreases dangerous/toxic/radioactive waste?</i>						
		<i>increases or decreases household waste?</i>						
		<i>increases or decreases waste treatment?</i>						
ENVIRONMENT (3)	Energy and Transport							
		<i>increases or decreases energy consumption ?</i>						
		<i>increases or decreases renewable energy consumption?</i>						
		<i>increases or decreases the demand for transport ?</i>						

		<i>increases or decreases the demand for collective/green transport ?</i>						
	Environmental risks							
		<i>increases or decreases the likelihood of environmental risks?</i>						
		<i>increases or decreases the risk of dissemination of environmentally alien or GM organisms?</i>						
	Animal and plant health, food and feed safety							
		<i>increases or decreases the morbidity and mortality rates of animals and plants?</i>						
		<i>increases or decreases animal welfare?</i>						
	Social							
SOCIAL (1)								
	Poverty							
		<i>increases or decreases the poverty rate?</i>						
		<i>increases or decreases the income level of low income groups?</i>						
		<i>increases or decreases the level of indebtedness of households?</i>						
		<i>increases or decreases the minimum provision of basic needs (water, electricity, food, shelter, etc...)?</i>						
	Employment							
		<i>increases or decreases the</i>						

		<i>unemployment rate?</i>						
		<i>increases or decreases employment quality (employment security, stress on the job, wellbeing, learning possibilities, private life / work balance, health and safety at work, etc)?</i>						
		<i>increases or decreases employment creation?</i>						
		Public health						
		<i>increases or decreases the mortality and morbidity rate of the population and individuals?</i>						
		<i>increases or decreases the consumption of tobacco, alcohol, ...?</i>						
		<i>increases or decreases the safety of food and feed?</i>						
		<i>increases or decreases the likelihood of health problems due to substances harmful to the environment?</i>						
		<i>increases or decreases the amount of noise and/or health damage caused by noise?</i>						
SOCIAL (2)		Social security						
		<i>increases or decreases the levels and accessibility of social security (pensions, unemployment benefits, health insurance etc.)?</i>						
		<i>increases or decreases the demand for social services?</i>						
		<i>increases or decreases the stability of the social security system?</i>						

SOCIAL (3)	<i>Education and culture</i>							
		<i>increases or decreases the quality of education?</i>						
		<i>increases or decreases participation in education?</i>						
		<i>increases or decreases the provision of cultural activities?</i>						
		<i>increases or decreases active and/or passive participation in culture?</i>						
		<i>increases or decreases the protection of cultural heritage?</i>						
	<i>Housing</i>							
		<i>increases or decreases access to property?</i>						
		<i>increases or decreases the housing standards?</i>						
		<i>increases or decreases the housing market prices (prices of the properties for sale and for rent, etc.)?</i>						
	<i>Liveable communities</i>							
		<i>increases or decreases well-being through the living environment (increase or decrease of public green space, of public services, stores, schools, playgrounds, public transport, etc.)?</i>						
	<i>increases or decreases objective and subjective safety in the community (crime, feeling of security, degeneration)?</i>							

<i>equality of opportunity and entitlement</i>							
	<i>increases or decreases the general inequality level?</i>						
	<i>increases or decreases the quality of life of certain vulnerable groups (based on age, gender, social groups, origin, religion, etc)?</i>						
	<i>increases or decreases discrimination based on religion, language, genetic characteristics, opinions, birth, handicap, sexual preference, etc.)?</i>						
	<i>increases or decreases the promotion of civic behaviour, active citizenry and volunteering?</i>						
<i>governance and democracy</i>							
	<i>increases or decreases the access to justice for all?</i>						
	<i>increases or decreases the provision of fundamental rights?</i>						
	<i>increases or decreases civil dialogue and stakeholder participation?</i>						
	<i>increases or decreases transparency and accountability of decision making?</i>						

10_3) Model of an Argumentative form

Substantive issues	
Context of the initiative (problem and goal)	<p>What is the initiative's context? (former laws, important events, new EC directives...)</p> <p>What is the problem the initiative wants to solve?</p> <p>What are the social, environmental and economic aspects of the problem?</p> <p>What are the cause-effect relationships?</p> <p>What are the objectives of the initiative (general, specific and operational)?</p> <p>Are the objectives measurable, precise, accepted and realistic?</p>
Actors involved	<p>What are the target groups of this initiative?</p> <p>Who are the other actors indirectly concerned?</p> <p>What are the desired behavioural changes?</p>
Policy options	<p>What is the business as usual option?</p> <p>What are the policy options?</p> <p>What regulatory or non-regulatory instruments could be considered?</p> <p>Which options have been discarded, and why?</p> <p>Do the options comply with the proportionality principle?</p>
Impacts	<p>Which potential impacts need further consideration with regard to which population and/or geographical area?</p> <p>Which criteria are going to be used, in order to assess the significance of the sustainability impacts?</p> <p>What are the expected outcomes of the initiative?</p> <p>What are the indirect impacts of the initiative?</p> <p>What are the cumulative impacts, likely to result from the implementation of the initiative?</p> <p>What could the unexpected secondary effects be?</p> <p>Which impacts need further analysis and could be subject to mitigation or enhancement measures?</p>
Verdict about the continuation of the SIA	State the arguments for avoiding or conducting an SIA, based on the above-mentioned elements and on the results of the screening matrix
<i>If an SIA is recommended, start setting the boundaries of the analysis in order to prepare scoping</i>	
Boundaries (depth, time horizon, spatial boundaries, target groups)	<p>How deep is the analysis going to be?</p> <p>What are the boundaries for the appraisal in terms of time?</p> <p>What are the boundaries for the appraisal in terms of geographical area?</p> <p>What are the time horizons over which the impacts should be assessed?</p>

Sustainability Impact Assessment - BE
GUIDE D'UTILISATION DE LA MATRICE DE SCREENING

1. Objectifs

L'objectif de la matrice est d'identifier les impacts possibles des politiques envisagées en termes économiques, environnementaux et sociaux.

Pour ce faire, un certain nombre de thèmes ou de problématiques ont été identifiées. L'objet de l'exercice est :

1° De formaliser la politique étudiée en termes d'effets recherchés et attendus (première colonne), ceci afin de fournir une base à la recherche d'alternatives (politiques ou mesures alternatives en vue d'un but identique) et à leur comparaison ;

2° D'identifier d'éventuels effets non recherchés (positifs ou négatifs), ou de signaler les incertitudes quant à l'existence de ces effets secondaires et indirects éventuels :

- à moyen ou long terme
- à des niveaux institutionnels inférieurs ou supérieurs à celui où la politique évaluée est définie
- pour des populations différentes de celles visées à l'origine.

La matrice est à remplir en fonction de la proposition de politique sous étude. Cette proposition de politique n'est cependant à considérer que comme une alternative de politique parmi d'autres alternatives possibles (i.e. d'autres mécanismes qui répondraient aux mêmes objectifs). Idéalement, la matrice serait à remplir pour toutes les alternatives de proposition de politique sérieusement envisagées et réalistes. Par ailleurs, chaque alternative (en ce compris la proposition de politique sur la table) sera évaluée par rapport à une situation de référence que l'on définira soit comme la continuation des politiques actuellement menées soit comme la poursuite des tendances spontanées à l'œuvre.

2. Description des colonnes de la matrice

2.1. Policy effects

On indiquera en colonne « Policy effects », les effets recherchés (et/ou déjà identifiés) de la politique considérée. Un effet recherché correspond à tout effet, sur un des items de la matrice, escompté explicitement par l'auteur de la politique. Pour simplifier l'identification des effets recherchés, on dira qu'ils correspondent aux effets repris explicitement dans l'argumentaire et dans l'explication de la proposition de politique. Une proposition de politique vise généralement quelques objectifs et items bien spécifiques (cibler la politique). Il est donc normal qu'au niveau de la matrice, relativement peu d'items soient remplis pour cette colonne. Les cellules correspondants aux items auxquels la politique ne veut pas toucher en priorité sont laissées vides.

Les signes – et + sont à interpréter conformément au libellé des questions. Nous avons cherché à éviter toute forme de jugement de valeur dans la formulation des questions. Un signe + correspond donc bien à une augmentation, souvent à considérer de façon quantitative, de cet item. Cette augmentation n'est pas à confondre avec une amélioration, tout comme une diminution (marquée par le signe -) n'est pas à confondre avec une détérioration. En effet, si certaines diminutions sont universellement considérées comme favorables (par exemple, la réduction des émissions de gaz à effet de serre), ce n'est certes pas le cas pour tous.

L'énoncé relatif à l'item est donc à prendre mot pour mot, afin de ne pas répondre en fonction de sa propre valuation du problème mais en fonction de l'appréciation 'quantitative' que l'on a par rapport au problème énoncé.

Les signes + représentent une augmentation et les signes - une diminution des items considérés dans les questions. Pour signaler que l'effet de la politique est très important, il est possible d'employer deux signes identiques (++) ou (--). Si l'effet d'une politique est prévu de changer d'orientation en cours de l'exécution de la mesure, il est possible de combiner les deux signes + et -. Par exemple, dans le cas d'effets rebonds, comme ils peuvent se manifester pour des politiques d'amélioration de l'efficacité technologique de certains biens qui visent une diminution de consommation de matière première ou de consommables, il a été observé que les effets directs à plus long terme sont contraproductifs, car l'amélioration de l'efficacité a amené une plus forte consommation. Dans ces cas, il serait possible de marquer ces effets rebonds par +/- (une augmentation dans un premier temps, suivie d'une diminution), ou -/+.

Dans tous les cas, la dernière colonne permet à émettre des commentaires, et nous incitons à utiliser cette colonne aussi souvent que possible pour expliquer l'impact et l'effet de la proposition de politique sur l'item en question.

2.2. Indirect impacts

Les impacts indirects d'une proposition de politique sont à considérer également. Il s'agit, en contraste avec les effets de la politique, d'impacts qui ne sont pas considérés dans les objectifs de la proposition de politique. Il ne s'agit donc pas que d'impacts non-voulus par les auteurs de la politique. Ce sont plutôt les impacts probables que le mécanisme de la politique va induire, ou que le changement de comportement du public visé par la politique risque d'induire, ou encore les comportements de compensation ou de substitution qui risquent de se réaliser. Il sera important de marquer même les items qui ne sont touchés que très légèrement, ou à long terme ou très indirectement, par la proposition de la politique.

Interprété correctement, il ne sera que rarement le cas que pour un item, il fera du sens de remplir aussi bien la colonne des 'effets de la politique' et la colonne des 'impacts indirects'. Dans ces cas, il sera nécessaire d'expliquer dans la colonne 'commentaires' la raison d'être de cette situation, et ce d'autant plus si les sens des conséquences de la politique sont contraires.

Le remplissage des cellules suit la même logique que pour la colonne précédente, sauf qu'il est possible de remplir la cellule avec un « ? » dans le cas où l'on s'attend à des effets indirects mais dont l'orientation est difficile à évaluer (p.ex. parce que celle-ci dépendra des mesures d'accompagnement à décider ultérieurement).

2.3. Spatial distribution

La colonne suivante a pour but de permettre de renseigner sur la distribution spatiale des effets de la politique et/ou des impacts indirects de la politique en question. Pour des propositions de politiques émanant du niveau fédéral, le niveau spatial 'par défaut' sera bien évidemment le niveau belge. Plusieurs niveaux spatiaux alternatifs sont proposés : Local, communal ou provincial (LOC), Régional (RE, Pays développés (DEV), Pays en voie de développement (PVD).

Il est possible de remplir la cellule avec plusieurs niveaux, dans le cas où les impacts esquissés se situent à différentes échelles spatiales. Si les impacts se différencient par leur sens en fonction des échelles spatiales, p.ex. une proposition de politique qui aurait des impacts positifs sur les pays développés mais au détriment des pays en voie de développement, il est important de ce signaler dans la colonne relatives aux remarques et commentaires.

2.4. Temporal distribution

Le colonne relative à la distribution temporelle des impacts permet d'indiquer si la proposition de politique analysée comporte des effets directs ou/et des impacts indirects à court, moyen ou long terme. L'échelle temporelle ainsi proposée dans la matrice est à interpréter selon l'enjeu de l'évaluation, à savoir le développement durable. Le court terme se situe donc dans un intervalle de 1 à 2 ans, le moyen terme considérera les effets jusqu'à 20 ans, tandis que le long terme considérera les effets au-delà d'une génération. Une attention particulière est à donner aux effets potentiellement irréversibles (par exemple sur certains systèmes biologiques), qui sont à considérer comme relevant du long terme et devront se voir accompagner d'un commentaire spécifique à cet égard.

2.5. Existing stress

Cette colonne permet d'indiquer si l'item en question présente une forte vulnérabilité, et que donc la situation actuelle est déjà critique en ce qui concerne l'item. Afin de distinguer le stress structurel (p.ex. les changements climatiques) de simples pressions conjoncturelles (p.ex. un secteur industriel soumis à une plus forte concurrence internationale depuis peu), il est important de ne pas abuser de cette colonne. En effet, beaucoup de politiques tentent logiquement d'influencer positivement un item (p.ex. un secteur économique, une tranche de la population) qui est actuellement considéré comme évoluant en un sens non-désirable, notamment suite à des pressions extérieures. Ceci ne veut cependant pas nécessairement dire que ce secteur ou cette tranche de la population soit exposé à du stress de manière structurelle.

Si un item présente déjà du stress actuellement, il sera d'autant plus sensible à réagir à toute pression supplémentaire, et nécessitera donc, le cas échéant, une analyse plus approfondie. Tout item, influencé par la proposition de politique en question, présentant donc du stress, sera un argument potentiel en faveur d'une SIA étendue.

2.6. Indicator

Cette colonne n'est pas à remplir pendant l'exercice. Il s'agit d'une colonne dont le remplissage dépendra des renseignements apportés dans les autres rubriques, et qui sera remplie en appliquant les algorithmes et règles de décision relatives à la matrice entière.

Dans un premier temps, l'indicateur par item sera affecté de manière manuelle (par le groupe de recherche), avec l'intention d'automatiser l'attribution de l'indicateur dans un futur proche. L'indicateur visualisera si oui ou non l'item en question infléchit positivement ou négativement la sélection par rapport à une évaluation approfondie. L'indicateur est un code couleur qui peut prendre 4 positions : vert (i.e. item est affecté par la proposition de politique, mais ne présente pas d'argument qui demanderait une SIA approfondie), orange (i.e. item à surveiller car présentant certains arguments critiques en faveur d'une SIA approfondie), rouge (i.e. item est influencé de manière à demander une SIA approfondie), blanc (i.e. item n'est pas influencé par la proposition de politique).

2.7. Comments

Cette colonne permet aux utilisateurs de la matrice de formuler des commentaires et d'apporter des précisions, par exemple quant à la nature des effets de la politique ou des impacts indirects, spécialement lorsque ces derniers sont incertains.

3. Description des lignes de la matrice (items)

La matrice est divisée en trois sections d'items, distinguant ainsi les matières économiques, environnementales et sociales. Les aspects environnementaux et sociaux se sont notamment inspirés des documents relatifs à l'analyse d'impact de la Commission Européenne (European Commission, SEC(2005)591, Impact Assessment guidelines, 15 June 2005).

Les matières économiques quant à elles ont été formulées différemment, avec une première partie faisant une distinction par secteurs économiques, pour un emploi plus aisé de la matrice. Les effets directs et impacts indirects sur l'activité économique des différents secteurs de l'économie sont pris en considération individuellement et ensuite collectivement (par l'item « ALL »). Une diminution de l'activité économique se traduit par un -, un accroissement par un +. Dans le cas où la politique concerne des secteurs particuliers non repris dans la liste fournie, on emploiera l'item « other » et les précisions seront données dans la colonne « comments ».

4. Un exemple de l'emploi de la matrice

Afin de clarifier plus en détail la technique d'emploi de la matrice, nous fournissons ici des explications relatives à quelques items pour un exemple fictif, à savoir les impacts relatifs à une proposition de politique favorisant l'introduction de véhicules plus efficaces en terme de consommation d'énergie dans les flottes de l'administration fédérale.

		POLICY EFFECT	INDIRECT IMPACT	SPATIAL DISTRIBUTION	TEMPORAL DISTRIBUTION	EXISTING STRESS ?	INDICATOR	Comments
		(-,+,++)	(-,+,++,?)	(LOC, RE, BE, EU, DEV, PVD)	(short, medium, long)	y/n		
Government								
	<i>increases or decreases expenses?</i>	+/-		BE	Short, Medium	Yes, Belgium		The acquisition of the vehicles may prove expensive in the beginning but cost-efficient in the longer term as they consume less.
								Cost-benefit ratio and the break-even point of the investment should be particularly examined in the case of an extended SIA, notably because of the existing stress on the federal budget.
Energy and Transport								
	<i>increases or decreases energy consumption ?</i>	-	?	BE	Short	Yes, global, long-term		The vehicles are more energy efficient. However, there might be a rebound effect if the drivers are tempted to use them more.
								Even if for official vehicles the danger is small, the analysis of the rebound effect should be integrated into the extended SIA. Even more so as the general idea behind the policy proposal is to promote the use of energy efficient vehicles for households.
	<i>increases or decreases renewable energy consumption?</i>	++		BE	Short, Medium	Yes, global, long-term		The additional increase of renewable energy consumption will depend on the success of implementing a sequence of complementary policy measures, such as the promotion of electric vehicles and the complementary promotion of renewable energy production schemes.
Housing								
	<i>increases or decreases access to property?</i>							No effects or impacts on this item results into leaving the line blank
Economic structure								
	<i>Increases or decreases diversity?</i>		+	BE	Short, medium	No		The automotive industry will be influenced in the direction of a new market.
	<i>Increases or decreases entrepreneurship?</i>		+	BE	Short, medium	No		A new branch of automotive subcontractors should be favoured.

Report on the institutional/juridical integration of SIA in the Belgian federal Governmental structures

August 2005

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The goal of this paper is to explore the legal and institutional framework, which implements the Sustainable Impact Assessment (SIA) and assures a stable, efficient and effective work climate without neglecting the short-term need for flexibility. By giving some institutional and juridical background, comparing with foreign assessment methods and raising certain questions, we will try to create several possible scenarios for the implementation of the SIA.

This report will start by giving a survey of the basic documents on SIA. Next, the institutional issues will be treated. What kind of proposals will have to be assessed, how we will fit the SIA into the federal policy making process, which institutions/organs will be involved, etc? The third Part contains different possible scenarios for the institutional implementation of SIA. The legal implementation will be touched upon in Part four.

The need for a strongly institutional & juridical embedded SIA is expressed in a recent Report of the Belgian Court of Audit on “The Coordination of the Federal Policy on Sustainable Development” addressed to the Federal Parliament (June 2005).¹ In the introduction, the major obstacles are expressed for attaining the Belgian federal objectives which have been made concerning Sustainable Development. A lack of financial resources, enforcement mechanisms, structured cooperation between the actors concerned, etc. One sentence is very important regarding the SIA: “The actors and the procedures can be situated in the margin of the Federal policy making and decision process.” A well functioning SIA might be a step in resolving this lacuna.

¹ http://www.courdescomptes.be/docs/Reports/2005/2005_14_Duurzame_Ontwikkeling.pdf

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Important terms and abbreviations :

Bills	<i>Wetsvoorstel / Proposition de Loi</i>
Cell on SD	<i>Cel DO / Cellules DD</i>
Chancery of the Prime Minister	<i>Kanselarij van de Eerste Minister / Chancellerie du Premier Ministre</i>
Circular	<i>Omzendbrief / Circulaire</i>
Coalition Agreement	<i>Regeerakkoord / Accord Gouvernementale</i>
Council of Ministers	<i>Ministerraad / Conseil des Ministres</i>
Council of State	<i>Raad van State / Conseil d'Etat</i>
Court of Audit	<i>Rekenhof / Cour des comptes</i>
DAS (Division of Administrative Simplification)	<i>Dienst Administratieve Vereenvoudiging / l'Agence pour la Simplification Administrative</i>
EIA (Environmental Impact Assessment)	<i>Milieueffectrapportage / Rapport d'Incidence Environnementale</i>
EU (European Union)	<i>European Union / Europese Unie</i>
Explanatory Memorandum	<i>Memorie van Toelichting / l'Exposé des Motifs</i>
Financial Inspection	<i>Financiële Inspectie / l'Inspection des Finances</i>
FPB (Federal planning Bureau)	<i>Federaal Planbureau / Bureau fédéral du Plan</i>
FPS (Federal Public Service)	<i>Federale Overheidsdienst / Service Public Fédérale</i>
Government Bills	<i>Wetsontwep / Projet de loi</i>
Plan of Action	<i>Actieplan / Plan d'Action</i>
PPS (Programmatory Public Service)	<i>Programatorische Overheidsdienst (POD) / Service Publics de Programmation (SPP)</i>
PPS-SD	<i>POD-DO / SPP-DD</i>
FPSD (Federal Plan on SD)	<i>Federaal Plan DO / Plan Fédéral du DD</i>
FRSD (Federal Report on Sustainable Development)	<i>Federaal Rapport DO / Rapport Fédérale sur le DD</i>
ICSD (Interdepartmental Commission on SD)	<i>Interdepartementale Commissie DO / Commission Interdépartementale du DD</i>
Ministerial Decree	<i>Ministerieel Besluit / Arrêté Ministériel</i>
Policy Notes	<i>Beleidsbrieven / ??????????????</i>
Regulation Agenda	<i>Reguleringsagenda / ??????????????</i>
Report to the King	<i>Verslag aan de Koning / Rapport au Roi</i>
RIA	<i>Regulatory Impact Assessment</i>
Royal Decree	<i>Koninklijk Besluit / Arrêté Royale</i>
Sustainable Development (SD)	<i>Duurzame Ontwikkeling / Développement Durable</i>
SIA (Sustainable Impact Assessment)	<i>Duurzame Ontwikkelingseffectenbeoordeling (DOEB) / Etudes d'Impact sur le Développement Durable (EIDDD)</i>
Strategic Plan	<i>Strategisch Plan / Plan Stratégique</i>
TFSD	<i>Taskforce DO / DD</i>

Part 1. The current legal framework for SIA

The possible implementation of a form of Impact Assessment at the Belgian federal Government level will not be a “primeur” at all. Regulatory assessments have already been used in the United States since the seventies of last century and during the next decades they were exported to several other nations like Canada, the United Kingdom and The Netherlands.

At the moment, several states have introduced different kinds of policy-making evaluation methods, which range from purely legal to broader social assessments. In this context, we will refer to several assessment methods at different levels in order to gather more comprehension on the different existing assessment procedures. The European Commission’s Impact Assessment, The British RIA, the Dutch Impact Assessment, the Flemish RIA, the Belgian Kafka-test, etc.

A big and important difference though between most of those assessment methods and the SIA, lies in the “S” of sustainability. The assessment methods mentioned above are mostly based upon technical/financial needs for better regulation. The SIA aims to create better regulation from a social, ecological and economical perspective. Where does this kind of assessments find its origin? Very briefly:

At a **global level**, the United Nations Conference on Environment and Development (UNCED, 1992) made all states promise to improve the evaluation of their national policies by taking economical, social and environmental considerations into account in the decision-making process (precaution principle). Chapter 8 of Agenda 21 is all about “Integrating environment and development in decision-making”.

At the **European level**, the European Councils of Lisbon (March 2000), Gothenburg (June 2001) and Laeken (December 2001), the Mandelkern Report on Better Regulation (2001) and the conclusions of the meetings of the European Ministers responsible for Public Administration in La Rioja (May 2002), expressed the European Union’s will to introduce a system of sustainable impact assessment in the decision making process based on Art. 2 EC, which stresses “*the importance of a sustainable development in social, economical and environmental matters*”. The EU decided to set a good example for its Member States by introducing an Impact Assessment procedure in the policy preparation of the European Commission, which is a well-functioning system at the moment. She expects the Member States to execute an impact assessment on all national legal initiatives with a European impact (policy proposals towards the EU, transposing European directives,...).

At the **Belgian federal level**, initiative to execute these intentions have been taken through the federal coalition agreements of 1999 and 2003, which express a will to implement a system of impact assessment in the federal decision-making process.

In the Belgian federal context, several legislative and/or governmental documents have been approved over the last years concerning Sustainable Development and will consequently be the starting point:

- *Act of 5 May 1997 regarding the coordination of the federal policy in Sustainable Development.*²

This act basically installs the different organs and tools that will coordinate the whole policy of sustainable development regarding the federal governance; the Federal Plan on SD and Report on SD, the Federal Council on SD and the Interdepartmental Commission on SD.

- *Federal Plan on Sustainable Development (2000-2004 / 2004-2008)*

These plans find their legal roots in the above mentioned Act of May 5 1997 on the Coordination of the Federal Policy on Sustainable Development. Every four years, a new Federal Plan on SD is drafted by the Interdepartmental Commission on SD (ICDO / CIDD) and consequently approved by the Federal Government. Although the Federal Plan on SD is established through a Royal Decree, it is not binding for the Government and does not create any enforceable rights towards the citizens. It has no regulatory power; instead it shows the lines of policy the Government wishes to follow on Sustainable Development.

- *Royal Decree of 25 February 2002 regarding the foundation of a POD/SPP on Sustainable Development.*

This KB/AR (Royal Decree) gives this PPS the mission to prepare and coordinate the policy on SD and to provide expertise in this matter.

- *Federal Coalition Agreement of July 2003*³

This agreement with policy intentions for the present federal term clearly stipulates in Chapter V on the Environment, Mobility and Sustainable Development that “*in the diverse Federal Public services, Cells for Sustainable Development will be created, which will assess all important Governmental decisions on their effects concerning Sustainable Development. Nevertheless, this should not create extra delays in the policymaking process*”.

- *Royal Decree of 22 September 2004 regarding the creation of Cells on Sustainable Development in the Federal Public Services, the Programmatory Public Services and the Ministry of Defence.*

This crucial Royal Decree will be discussed in a more detailed way further on. It is clearly a consequence of the implementation of the coalition agreement.

² http://www.juridat.be/cgi_loi/wetgeving.pl

³ http://www.premier.fgov.be/nl/politics/accord_gov.html

Part 2. The institutional implementation of SIA

2.1. The federal policy making process: current state of affairs

The elaboration of a policy proposal is a very complicated issue in the Belgian federal policy making process as hardly any formal rules exist. Formal rules do not appear until a policy proposal has been poured into a draft Royal Decree, draft Ministerial Decree, Government Bill, etc.

The phase before a policy proposal is being presented to the Council of Ministers in a certain form (draft Royal Decree, ...), follows an informal procedure. We will try to describe it briefly.

A problem in our society occurs and needs to be addressed by the proper Government. Let us say when a social, economical ... problem has a national scope or has to be dealt with on a federal level (based on the repartition of competences), the proper federal service will have to address this issue. A survey of planned policy initiatives is made public through:

- the federal coalition agreement, which is drafted at the start of every legislature and gives an (abstract) outline of the planned policy initiatives
- through an annual policy declaration (a.k.a. State of the Union or September declaration), which does the same on an annual basis
- through the Strategic Plans, which are annual Ministerial policy declarations presented to the Parliament

Of course, not all proposals can or will be planned ahead. For example, an unexpected crisis can trigger the need for new and urgent policy initiatives. The mentioned plans and declarations should consequently not be considered as complete surveys.

If one follows the official Copernicus-procedures, the concrete policy proposal will consequently be further developed in the Policy Cells of their respective FPS/PPS, which will have to do the concrete preparation of this idea (new proposal) or task (e.g. implementing Treaties, EU Directives,...). Further on, it will become clear that momentarily this theoretical approach is not exactly followed in practice.

During this preparation phase several “players” and “procedures” are to be involved. The main player is of course the administration itself, which is composed of people that have the know-how on certain issues. In their policy making process, they also tend to use know-how and experience through outsourcing of certain issues. For example universities and other think tanks are asked to make studies or write reports on certain issues. The preparation phase will be the crucial moment when the SIA will have to take place, when the proposals are being drafted and the know-how is being applied.

During this preparation phase, certain tests and inspections already need to be executed. We give a brief overview of the different procedures:

- **Financial Inspection:**

Royal Decree 16 November 1994 on the administrative and budgetary control.

To every FPS, one or more Financial Inspectors have been accredited from the Inter-Federal Corps of the Financial Inspection, who mainly bear two functions.

- He/she advises his FPS (Art. 10, 11 and 12) on the (mainly financial) efficiency and effectiveness of this FPS and its proposals. In this, they are considered to be part of their accredited FPS (they cooperate, art. 10-12).
- On the other hand, they control all proposals, which have budgetary repercussions or repercussions on the General Administration. If the Minister concerned does not agree with the conclusions of the Financial Inspector, he cannot put it aside. He has to transfer the dossier to the Minister of Budget or General Administration. If those Ministers cannot agree themselves on the stalemate concerned, the Council of Ministers has the last word. In this procedure, the Financial Inspectors stay loyal to their Minister of Budget/General Administration (they control, art. 5 and 7).

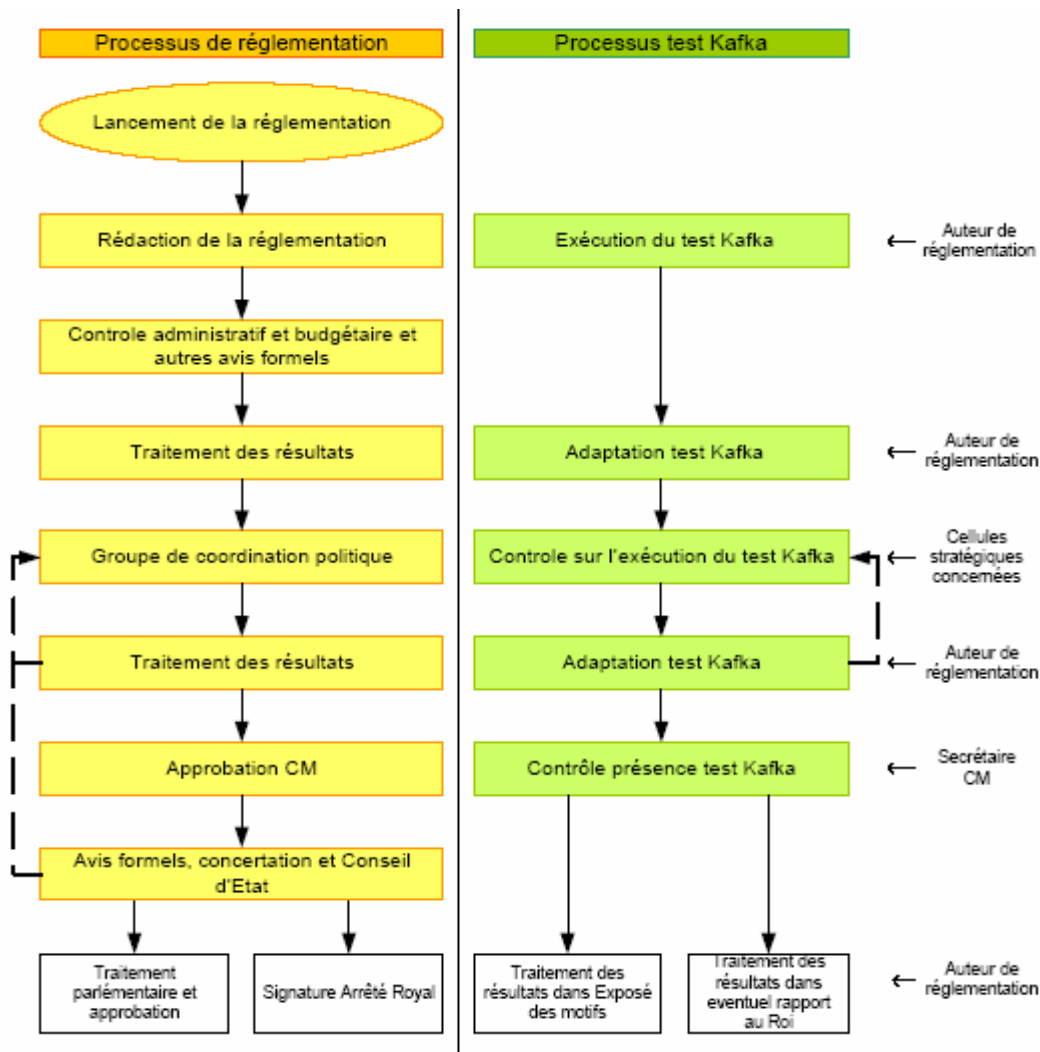
Advice of the Financial Inspection is compulsory for:

- Bills, Government Bills, Royal Decrees, Circulars or of decisions that:
 - Are presented to the Council of Ministers
 - Are presented to the Minister of Budget
 - Lack credits
 - Can (in)directly influence the revenues or expenses
 - Are presented to the Minister of Public Functioning
 - Contain issues concerning the formation of the personnel
- Propositions that might create (in)direct financial repercussions
- Propositions that influence the administrative organisation of services
- Propositions concerning the guarantee by the state

An interesting element on their functioning can be found in the Report to the King, which stipulates that: “the control of the Financial Inspectors comprehends besides their legality, the availability of credits and the conformity with former decisions, **the opportunity of the proposal, its effectiveness / efficiency, the alternatives**, the correctness of the investments that will be needed on the short and long term”. At present, the possibility to control the opportunity, effectiveness, etc. of certain proposals is hardly being used depending on the Inspector, the department, the time available, etc.

- The **Kafka-test**, which is being implemented (since 1 October 2004) to avoid new administrative burdens. It is a simple checklist that needs to instigate the policy-makers in the policy-cells or administrations to think about the administrative burdens they might cause through the adoption of new regulation and to think about alternatives that cause fewer burdens. This system has just been put into practice, the implementation is eligible to give inspiration, and the system itself will have to be evaluated later on.

A flow chart of the “Kafka process”:



Source: Fil conducteur pour le TEST KAFKA (2004)⁴

The only rules that have been stipulated are:⁵

- The Kafka-test should be started with as early as possible in the policy making process. It should be finished the latest when the first workgroup Policy-Coordination gathers on this proposal.
- It is recommended to execute the Kafka-test before the advisory organs or the Council of State are to be involved. If these procedures create any kind of changes to the proposals and if they might have an impact on the administrative burdens, it should be reviewed before it is reconsidered at the workgroup Policy-Coordination.
- The Kafka test has to be inserted with the note (formal form of the proposal), which is presented to the Council of Ministers. If not, the Secretary of the Council of Ministers cannot place the note on the agenda of the Council of Ministers.

⁴ http://www.simplification.fgov.be/documents/fil_conducteur_Test_Kafka.pdf

⁵ http://www.simplification.fgov.be/documents/fil_conducteur_Test_Kafka.pdf

- The results of the Kafka test can be inserted in the Explanatory Memorandum or Report to the King.
- The Division for Administrative Simplification (DAS) will assess the tests randomly on quality and content.

These prescriptions tend to be very easy-going and little formalised. The only compulsory prescription is the fact that it has to accompany the proposal when this is presented to the Council of Ministers.

- The **Court of Audit of Belgium** plays an important role in the budgetary control of the Government's policy initiatives. Art. 5 of its Organic Law of 29 October 1846 stipulates that: *The Court of auditors performs ex-post reviews of the sound administration of public resources; it ensures they were used in compliance with the principles of economy, effectiveness and efficiency.* Its main function is to check if the budget that is allocated to the different Belgian Governments is being spent effective, efficient and economically sound. The Court of Audit gives out visa that need to accompany certain proposals, which demand a certain budget to get executed.

In the margin of these Government's financial accounts controls and the ex post compliance audits, the Court of Audit has been drafting more and more efficiency-studies, in which they take account of the policy-preparation process. It sees several reasons for these elaborate studies. As they are eligible to check upon the effectiveness and efficiency of a policy proposal, the analysis of the quality of the preparation is considered indispensable. On the other hand, it developed a list of criteria whose application is indispensable for a decent policy preparation process. Last but not least, an ex-ante evaluation facilitates the ex-post assessments.

- The **Division of Legal Evaluation / Legal Service** which is part of every FPS and gives all kinds of legal support / advice concerning among others certain policy proposals.
- If a certain proposal has an influence on issues that influence other FPS, it will need to be discussed with those institutions through "inter-kabinetten" werkgroepen / des groupes de travail "**intercabinets**". The Directors of the FPS can be involved or the "**kernkabinet**" if stalemates might occur.
- The compartmentalization⁶ along socio-political lines in Belgium was of one of the main reasons to adopt an organisation concerning socio-economical relations. This has been put into practice by (among others) installing a system of **consultations/negotiations** with trade unions and employer's federations. In this regard, consultative bodies have been installed like the Central Economic Council⁷ or the National Council on Labour⁸ and other more specific councils like the Federal Council on Sustainable Development. These councils are involved in the preparation process through advices, etc.

⁶ verzuiling / pilarisation

⁷ Conseil Central de l'Economie / Centrale Raad voor het Bedrijfsleven

⁸ Conseil National du Travail / Nationale Arbeidsraad

After all these advices, discussions and mediation, the Government Bills and Royal Decrees / Ministerial Decrees that demand discussion at the Council of Ministers, go to the Council of Ministers. If they agree, it will be send over to the Council of State. Royal Decrees / Ministerial Decrees, which do not need to go through the deliberation of the Council of Ministers, go straight away if they have a regulatory content anyway.

- The **Council of State**

The Council of State gives a compulsory or optional “well considered” advice on the drafts of Bills and regulatory orders (all orders with a normative content), or to amendments of those drafts (art. 2 § 1). This advice takes place at the end of their drafting, after all the informal political debate and influence of other advisory organs. This advice is purely legal and juridical; the opportunity is not to be checked upon. If the Council of State does not pronounce a negative advice, the proposal can go on. If the Council of State does object, the Government has to reconsider but is not bound by this advice.

After the advice of the Council of State, the Government Bills will be send over to the Parliament. This concrete document contains the draft, the Bill (the text of the Government, which is presented to the Parliament after consultation of the different advisory organs), the advice of the Council of State, the advices of the advisory organs and the Explanatory Memorandum. Royal Decrees are being published right away after their approval by the Council of Ministers.

2.2. Institutionalising SIA: the Royal Decree of 22 September 2004 as a possible building block

The Royal Decree of 22 September 2004 is the crucial document regarding the implementation of the SIA. We will consequently use the content of this Royal Decree as a framework for its institutional future. This does not mean that this Decree is taken for granted though; alternative scenarios will be proposed if they might contribute towards a better institutional / juridical structure.

In order to improve the understanding of this report, let us start by giving the basic elements of the Royal Decree:

The creation of a SIA:

The PPS-SD is held responsible to make the methodology of the SIA operational and to ensure this is put at the disposal of the FPS involved. (Art 8 §1)

The coordination of the SIA:

The PPS on Sustainable Development is held responsible for the quality monitoring of the implementation of a SIA in every FPS involved. (Art 8 §2)

The execution of the SIA:

- Every FPS will install a Cell on SD under the supervision of its director.
- The Cells on SD have to (SIA-relevant paragraphs of art 3):
 - Create a Plan of Action
 - Execute a SIA or coordinate the execution of a SIA on decisions in line with the Plan of Action
- In which a “Plan of Action” entails (art. 4):
 - A list of measures stipulated by the Federal Plan on SD, which have to be implemented throughout that year, with the manor how they will be implemented
 - A list of other measures regarding SD that will be executed by the FPS consistent with the policy of the Minister in charge of this public service.
 - A list with types of decisions, which will undergo a SIA

Briefly stated,

I) The PPS-SD is responsible for **creating** the SIA methodology and **inserting** it into the FPS.

II) The Cells on SD are responsible for coordinating the **execution** of the SIA based on their annual Plan of Action.

III) The PPS-SD is responsible for the **quality monitoring** of the implementation of the SIA.

Before starting the analysis of different aspects of the institutional framework, it is important to note that there are some developments within the DAS, which may become important for or have impact on the development of SIA. The DAS already started to prepare some kind of assessment method, which would extend the current Kafka test towards a ‘light RIA’. This is meant to be some kind of questionnaire that would accompany a broad spectrum of policy proposals, comparable with the Flemish ‘light RIA’, and would have a broader scope than just the avoidance of new administrative burdens.

SIA and RIA differ in their foundation. The Kafka test was set up from an economical perspective in order to decrease the administrative burdens for the civilians and more important the Small and Medium Enterprises (SME). The SIA was born out of a sustainable development perspective. But in practice, both resemble each other; in particular when ‘light RIA’ is extended towards a form of ‘heavy RIA’. In the personal opinion of some of the people working with the

Kafka test⁹, the two tests “under construction” (SIA and Kafka/RIA) might over time get more entangled and be managed under one umbrella. In the different FPS, broader Cells on Policy Evaluation might be created to coordinate these assessment methods.

From here on, this report will focus on the different institutional aspects. It will analyse the legal framework, compare it with foreign assessment methods and look for alternatives in order to enable the reader to comprehend the different issues at stake and to formulate his own preferences or possible alternatives.

2.3. The nature of the proposals to be assessed

2.3.1. Products of the Legislative Power and / or Executive Power

This is of course one of the most crucial questions. In the formulation of the intentions towards SIA, the will has been expressed to assess all “strategic decisions” at the federal policy making level. Consequently we will have to think about the scope of the application of the SIA.

The federal policy making process is conducted through two different “powers”. The Executive and the Legislative Powers:

- The Legislative Power is being performed by the Parliament (Chamber & Senate) and the Government. The Parliament enacts Acts based upon the initiative of the Parliament itself (private Member’s Bills, maximum 5 % of all Acts) or through the Governments initiative (Government Bills, minimum 95 % of all Acts).
- The Executive Power has its own kind of “legal products”, namely the implementing orders (which appear through Royal Decrees, Ministerial Decrees, Circulars, etc).

The Senate, as well as the Chamber, both have some sort of ex-ante evaluation, but both organised in a different manor. The Senate has installed a “Service for Legal Evaluation” (by an Order of 21 January 1999), which mainly executes an ex-ante juridical assessment of Private Members Bills, which they receive from Senate Commissions or the Bureau of the Senate. The Chamber didn’t install an independent body but a certain assessment is being executed by the juridical service of the Chamber.

Informal impact assessments do exist in the Parliament through hearings, colloquia, societal debates or external visits but these are not institutionalised and consequently lack continuity and complete coverage of all the bills.

The main problem of these assessment procedures is that they focus on the legal / juridical / linguistic elements of the propositions and do not assess the socio-scientific consequences / elements (although the Order of January 1999 allows this latter assessment but the Service of the

⁹ Conversation with Lieven Monserez, expert at the Staatssecretariaat voor Administratieve Vereenvoudiging, Thursday 12 May 2005.

Senate didn't receive any request yet in this context). Another problem is the fact that the assessment is being done when the Bill has already been drafted and consequently loses all its impact on the coming about of the Bill. Another problem is the fact that the assessment is not dilatory and that all terms continue, which means that if the Service is too late with assessing, all is lost. Last but not least, the assessment is often being influenced by the political context. Pressure groups or a certain political context can have a major impact on the possible execution of an assessment. The formal assessment procedures are subordinate to the legislative process and do not reach the objectives of our Sustainable Impact Assessment.

This research will consequently only focus on the policy making process, which is conducted through the Government as a branch of both the Executive and Legislative Power.

Again, we are supported by the Federal Coalition Agreement (2003), which clearly stipulates that *“in the diverse Federal Public Services, Cells for Sustainable Development will be created, which will assess all important **Governmental** decisions on their effects concerning Sustainable Development.”*

2.3.2. Will some policy initiatives be excluded ex-ante?

This chapter will focus on which decisions are to be excluded in advance to execute a SIA. These are mainly decisions that are believed to be indispensable and will not undergo an intensive assessment which in the end will not be taken into consideration anyway.

A comparative look at the exceptions that are stipulated in other assessment procedures can be instructive.

- **RIA Flanders:**

A RIA has to be made for “all regulation that has a regulating effect on the citizens, business or non-profit organizations”; legislation as well as implementing orders are eligible to be assessed. Except propositions or orders in relation with:

- Auto-regulation by the Government (internal decisions)
- Regulation concerning the budget and tax law, except policy-levies and –taxes.
- Regulation approving international and interregional treaties and agreements. A RIA is necessary though when implementing international agreements or European Directives.
- Decrees and other orders without any impact regarding the content or with only a formal nature.
- Regulation incorporated in spatial planning
- Decisions of the Flemish Government or a single Minister that doesn't involve any regulation (e.g. covenants,...)
- Ministerial Decrees

- **Impact Assessment of the European Commission:**

Certain types of proposal will normally be exempt from the impact assessment procedure. This would include proposals like Green Papers where the policy formulation is still in process, periodic Commission decisions and reports, proposals following international obligations and executive decisions for example, implementing decisions, statutory decisions and technical updates, including adaptations to technical progress. Commission measures deriving from its powers of controlling the correct implementation of Community Law are equally exempted. The Commission may, though, in some instances decide to carry out an impact assessment.

More important is that particularly urgent proposals, in response to cases of emergency or force majeure, may be exempted from the normal impact assessment procedures. Exemption will be the exception to the rule and will be assessed on a case by case basis between the lead DG, the other services concerned and the SG, and, if necessary, between the relevant cabinets.

- **Kafka Test:**

The Kafka Test is obligatory for all Government bills or drafts of Royal Decrees, which will be presented to the Council of Ministers, except for:

- Auto-regulation by the Government (internal decisions)
- Regulation concerning the budget
- Regulation confirming Treaties and Agreements
- Regulation without any impact as regards the content or with a strictly formal impact

- **British RIA:**

You do not need to do an RIA for:

- proposals that impose no costs or no savings, or negligible costs or savings on the public, private or charities and voluntary sector
- increases in statutory fees by a predetermined formula such as the rate of inflation
- road closure orders

- **European Environmental Impact Assessment:**

The following plans and programmes are not subject to this Directive:

- Plans and programmes the sole purpose of which is to serve national defence or civil emergency
- Financial or budget plans and programmes
- The use of small areas at local level and minor modifications to plans and programmes if a Member State decides so

Important for the current research project is that a decision will need to be made if we will foresee in a series of exceptions (which would be highly recommendable). If so, consequently a list of exceptions needs to be drafted.

2.4. The institution which decides on the selection of SIA's

Of course, not all decisions can or should get assessed (as these are very complicated and time consuming activities) and it will be indispensable that those responsible can make an ex-ante planning of which policy initiatives they would wish to have assessed.

The main option is that the choice of the proposals to be assessed is being done at the political level itself. The Council of Ministers or the individual FPS has to decide which policy proposals they would like to see assessed. Another option will be to involve an external institution.

Of course, FPS or Cabinets cannot assess all policy proposals through a SIA and the organs that will need to decide which proposals should get assessed, will need an instrument to decide which proposals will undergo a SIA. This screening-instrument is currently still being developed and will be discussed more elaborately under chapter b.

2.4.1. The Cells on Sustainable Development

The Royal Decree of 22 September 2004 uses the tool of the “**Plan of Action**”. Every year the Cells on SD of the different FPS have to draft a proposal for a “Plan of Action” (art.4 °1). Based upon this proposal, the directory committee of the FPS concerned (if no directory committee installed, the leading public servant) drafts a final “Plan of Action” for the coming year (art.6 § 1). In this Plan of Action, different issues need to be addressed (art. 2 d):

- A list of measures of the current Federal Plan on SD, which were appointed to this FPS to be executed and the way how this will be done
- A list of other measures concerning SD that will be executed through this FPS
- **A list of all types of decisions, which will undergo a SIA**

Consequently, the different Ministries will decide themselves which policy-initiatives they would like to have assessed.

Note that the methodology to draft a Plan of Action will be created by the PPS-SD and that they will assist the FPS in drafting those Plans of Action (Art. 9 Royal Decree 22 September 2004).

2.4.2. The Council of Ministers

A second important player in the assignment of the assessment of policy proposals is the Council of Ministers. The combination of the Cells on SD and this institution will be unique in Governmental impact assessments, but indispensable taking into account the Belgian federal policy making system.



In the Belgian federal context, a huge mental gap still exists between the political temporary cabinets and the more permanent appointed FPS. This means that in political practice, new policy proposals are being developed at two different levels. The important and more urgent dossiers will be drafted at the Ministerial Cabinets; the more technical and less urgent proposals will be drafted at the FPS. The Cells on SD can subject these latter proposals to a SIA, the former ones cannot be touched upon by the Cells on SD as those cells are part of the FPS. This is the reason why one could plead to have the Council of Ministers involved in this decision on the SIA in order to avoid that a series of policy proposals would not even be eligible to get assessed. How would this take place?

The Council of Ministers could decide to “order” a SIA in two ways.

- The Council of Ministers could order SIA’s based upon the federal coalition agreement or the annual policy declaration and the Notes (Strategic Plans) of the Ministers.
- Sometimes the Council of Ministers has to deal with “exploratory notes”, which are general policy proposals that will be assigned by the Council of Ministers to a certain Minister(s) in order to get developed / drafted.

This way, the Council of Ministers has the opportunity to avoid the development of policy proposals at the Cabinet-level without “suffering” a SIA.

This twofold selection-policy of the Council of Ministers and the Cells on SD, although cumbersome on first sight, seems indispensable because of the federal political context, in order to maintain a more or less complete coverage of policy proposals.

The fact that the Council of Ministers is not such a strange organism to have the proposals selected can be seen in other assessment procedures:

- In Flanders, the list of policy proposals that need a “heavy RIA” is drafted every year by the Flemish Government based upon the policy-notes, which are prepared by the different Ministers at the start of their legislature or the annual policy-letters, which update these policy-notes. This decision is again a political one although advice is being provided by the “Kenniscel Wetsmatiging” and strategic advice organs.
- At the European level, the Directorate-General that leads the work on a certain policy proposal is responsible for deciding if a “Roadmap”, the initial screening of a policy proposal, will take place. These Roadmaps need to be taken into account in the Annual Policy Strategy where new, additional proposals, or more details, are identified for the Commission’s Work Programme. In 2005, the decision has been taken to make all major legislative and policy-defining proposals contained in the Commission Legislative and Work Programme subject to an impact assessment. The exception to this, in line with the 2002 Communication, is for Green Papers and Social Dialogue items.

2.4.3. A (more) independent official institution

In the Netherlands, they installed the “Meldpunt Voorgenomen Regelgeving” in 2002, which coordinates the screening of all policy-proposals (Quick Scan) done by the individual Ministries themselves, and consequently advises which proposals need to be further assessed. The Meldpunt

Voorgenomen Regelgeving is part of the Ministry of Economic Affairs but has two aspects that differ from both former institutions:

- The decision is taken by public servants who are not politically chosen (~ Cells on SD, except for the representative in the ICSD).
- The decision is taken outside of the Ministerial Structure of the department, which has to assess (~ Council of Ministers).

The same basic structure can be found in the organization of the Flemish “heavy” RIA. The Kenniscel Wetsmatiging is conducted by public servants and is part of the ministry of Administrative Matters (Minister G. Bourgeois). It advises the Council of Ministries on which policy proposals should undergo a “heavy” RIA. A difference in this regard with the Dutch system is that the decision on the RIA is taken by the Flemish Council of Ministers and not the individual Ministries.

One might consequently consider installing an “institution” that could advise thoroughly and well considered on which proposals should get assessed. Empowering such institution to take a decision completely independent would be overdone. The Council of Ministers or the individual Ministries would always demand to be involved in the selection.

In this regard, not taking account of the institution which chooses the policy proposals, one could plead to have the chosen policy proposals to be published or gathered in a document, which should enable the Secretariat of the Council of Ministers to control if a SIA has been executed on the formalized policy proposal which is presented to the Council of Ministers. This would be some kind of SIA-agenda. (This will be discussed further on)

2.5. The subject of the policy proposals to be assessed

After clearing out which organ(s) needs to decide on possible assessments, it is time to focus on the content of those proposals; when do they decide if a certain proposal will have to be further assessed?

2.5.1. Flanders and the EU

Flanders:

- The “light RIA” (3-5 pages document) is being made for *all regulation* that has a “regulating” effect on the citizens, business and non-profit sector (exceptions not included, see further on). It is drafted by those who prepare the regulation; the Minister that presents the proposal to the Council of Ministers holds the final responsibility.
- The “heavy” RIA is more elaborate, bears more stringent demands regarding the content and methodology and foresees a deeper quality assessment. It will only be executed on regulation that has a substantial impact on the formerly named actors and will be decided upon by the Flemish Government (using the advice of several organs) based on its “regulation-agenda”.

10 RIA's should finally be the annual amount.). It is drafted by those who prepare the regulation; the Minister that presents the proposal to the Council of Ministers holds the final responsibility. Several different internal and external players should assist the drafters.

- In May 2005, both assessments should have been active but reality bites. At the end of 2005, the "light RIA" will be evaluated; the "heavy RIA" will not be active until 2006-2007.

The European Commission:

The impact assessment process has two stages:

- firstly a filtering exercise based on a short preliminary assessment (from 2005 "roadmap") of all proposals presented in the context of the Annual Policy Strategy or the Work Programme of the Commission. This is a first short statement (one or two pages) of the key problems to be addressed by the proposal, its objectives, the regulatory and non-regulatory options and their possible social, environmental and economic impacts. The need for action at EU level should also be justified, according to the principles of subsidiarity and proportionality. Detailed analysis is not required at this stage: it is a first basic assessment of the proposal to identify the knowledge gaps that need to be filled and to help decide whether an extended assessment is required.
- secondly on the basis of the roadmap statements, the Commission will decide in its Annual Policy Strategy decision and/or Work Programme which proposals will require an impact assessment

Contrary to the Flemish RIA, the European impact assessment procedure only uses one sort of assessment. The roadmap should be considered as mean to help the European Commission in deciding which policy proposals need a more elaborate impact assessment. The decision on a possible "impact assessment" is integrated into the Commission's Strategic Programming and Planning cycle. The same system is being used in The Netherlands using a "quick scan" at first and an "impact assessment" if needed in a second phase.

2.5.2. The Belgian federal level

At the Belgian federal level, a SIA will have to be executed on certain policy proposals. The first important question will consequently be which "proposals" will need to be assessed.

The first option would be to stick to the Federal Plan on SD. This would mean that only policy proposals, which content has a direct linkage with the priorities mentioned in the Federal Plan on SD, would be able to undergo a SIA.

But when we analyse relevant documents, we reach a different conclusion:

- The Federal Coalition Agreement (2003) stipulates that "*in the diverse Federal Public Services, Cells for Sustainable Development will be created, which will assess **all***

important Governmental decisions on their effects concerning Sustainable Development. Nevertheless, this should not create extra delays in the policymaking process.”

- The Royal Decree of 22 September 2004 defines SIA as “*the method(s) for the public services to study the possible social, economic and environmental effects of a proposed policy before a decision is taken*” (Art. 2, c).
- In Art. 2, d of this same Royal Decree is stipulated that The Plan of Action will entail “*a list of types of decisions*” that will undergo a SIA.

When those three documents touch upon the SIA, they do not mention the Federal Plan on SD in any way, moreover, the Federal Coalition Agreement clearly stipulates “all important Governmental decisions”.

A second important issue raised here, is consequently how to decide on which decisions are “important Governmental decisions”.

A first important option is to introduce a screening instrument to assist in the selection of these “important Governmental decisions”. One of the tasks of the current research project is to develop such a screening instrument. This instrument will enable the organ(s), which have to decide upon which proposals should get assessed, to select them. This screening-test will probably be some kind of questionnaire which reflects the possible social, economical and environmental impacts of the proposal concerned. This should enable the deciding organ(s), to ensure that the most precious proposals will get assessed. The screening should take place in the very first stage of the policy making process; even before the Strategic Plan or a Regulatory Agenda (see Part 4) is being drafted in order to enable the Cells on SD, the Council of Ministers or the independent commission to select the proposals which should get assessed. How this screening test should be organised, in which stage, by whom, etc needs to be further developed.

A second option would simply be to let the Government (in this case the Council of Ministers) decide upon the scope of “*all important Governmental decisions*”. In this case, no formal screening instrument or procedure is used, but the decision is based a purely political one, based on the perceived political importance of issues at a certain moment.

A third option is to look for a combination of the previous two.

2.6 The concrete execution of the SIA

This chapter is only a minor exploration of the subject concerned, as it will mainly depend on the concrete outcome of the methodology of the SIA.

The issue here is who will be executing the SIA on the selected policy proposals. Will it be executed in the Public Services themselves or will it be outsourced? Keeping the execution of SIA within the Public Services clearly has the advantage of internal capacity building. But at the start, of for specific issues, more expertise might be indispensable.

Several questions consequently occur:

- If SIA is kept within the Public Services, will it be handled by the FPS themselves or through ‘external’ Public Services such as the Federal Planning Bureau (FPB) or the Financial Inspection?
- If (part of) SIA is outsourced, then to which kind of institutions (Universities, private audit,...)? How will outsourcing be organized (selection, financing, quality-monitoring,...)?

2.7 The steering of SIA

Which organs will have to be installed/involved in and between the different FPS to execute the SIA? Even though this chapter is interlarded with foreign examples, it is important to keep in mind that these foreign examples are not as such transposable, as different operational methods exist, which operate in different assessment methodologies in different structures. They are intended to show different possible solutions.

2.7.1 Steering at the departmental level

Foreign methods:

- In Canada, the assessment is being done at the departmental level. They have certain divisions in those different departments, which are responsible for the policy making and the execution of the assessments.
- In the UK, the Central Regulatory Impact Unit places “satellite RIU’s” in every department.
- In the European Commission, the different Directorate-Generals execute the assessments.
- In The Netherlands, the ministries assess the proposals themselves through a “quick-scan”, in dialogue with the “Meldpunt Voorgenomen Regelgeving”.
- In Flanders, the departments themselves execute the RIA, guided by “RIA-coordinators”.¹⁰

In the Belgian federal context, the Royal Decree of 22 September 2004 has foreseen in the creation of **Cells on SD**, which will have to be installed in the different FPS.

Their mission will be (Art. 4)

- To create a draft of a Plan of Action for a calendar year, which entails (Art. 2 d):
 - A list of measures of the current Federal Plan on SD, the execution of which has been entrusted to a certain FPS and the way this FPS plans to execute these during the upcoming calendar year
 - A list of other measures regarding SD that will be executed by the FPS concerned, based on the policy-notes of its Minister

¹⁰ <http://www.wetsmatiging.be/MFiles/RIA%20systemen%20in%20andere%20landen.pdf>

- **A list of types of decisions, which will undergo a SIA**
- To **execute or coordinate the execution of a SIA** on decisions according to the Plan of Action
- To sensitise the FPS on SD
- To execute the internal coordination of measures on SD, which were entrusted to this FPS
- To assist the representatives of the Federal Government in drafting their annual report of the ICDO / CIDD
- To represent her FPS in the ICDO / CIDD
- To assist the Task Force SD of the FBP in drafting the Federal Report on SD
- To spread the Federal Report on SD in her FPS
- To produce ideas to improve the methodological guides and the ecological/ethical prescriptions on the website of the PPS-SD. Concerning environmental management, they are responsible for the statistic follow-up of the implementation of this Circular and consequently they will be informed on all the purchase-orders done by their FPS.¹¹

This Cell on SD is composed of at least (art. 5):

- The representative(s) of the Government in the ICDO / CIDD responsible for the FPS concerned
- The representative of the FPS in the ICDO / CIDD (+ the coordination of the Cell on SD)
- The advisor for internal environmental management of every FPS
- A responsible for the FPS budget
- A responsible for the FPS purchasing policy
- If needed, other staff members might be added (~ RIA-coordinators)

In a note on the Cells on SD by the Secretariat of the Minister of Sustainable Development, approved by the Council of Ministers, it is clearly indicated that the members of the Cell on SD should have enough power and standing in order to have influence and to be able to report on the implementation of sustainable development in the policy-process of a certain FPS.¹² The note also considers that it would be “opportune” to have the Cell on SD be supported by a secretariat, which is part of the Secretariat of the FPS Director. This Secretariat seems indeed indispensable to coordinate the administration of the working of the Cell on SD: organizing meetings, preparing the documents, reporting to the coordinating mechanisms, etc.

How do we see the concrete role of these Cells on SD in the preparation of a SIA during the decision making process? How will all this be financed; especially when some kind of coordinators will need to be engaged and trained?

¹¹ Omzendbrief 27 januari 2005 betreffende de Implementatie van het duurzame ontwikkelingsbeleid bij de overheidsopdrachten van leveringen gelanceerd door aanbestedende overheden van de federale overheid die behoren tot de klassieke sectoren, *B.S.*, 4 februari 2005. Circulaire 27 janvier 2005 concernant la Mise en oeuvre de la politique de développement durable lors des marchés publics de fournitures lancés par des pouvoirs adjudicateurs de l'autorité fédérale qui appartiennent aux secteurs classiques, *M.B.*, 4 février 2005.

¹² *Secretariaat van de Minister van Leefmilieu, Consumentenzaken en Duurzame ontwikkeling*, Synthesenota Cellen Duurzame Ontwikkeling, goedgekeurd door de Ministerraad op 20 maart 2004.

Although several aspects of its content and the actors concerned have been indicated in the Royal Decree of 22 September 2004, the drafting of the Plans of Action and execution of the SIA's might create problems if one would forget to install and organize more detailed functions and mechanisms.

A crucial element will be to install "know how" on SIA in the FPS and in the Cells. The people, who have been installed in the Cells on SD through the Royal Decree, currently have no knowledge on SIA and its implementation. It will consequently be crucial to insert/educate civil servants and to have people who can take on a coordinating role towards SIA, e.g.

- Assisting the members of the Cells on SD in drafting the Plans of Actions
- Assisting in the screening of the proposals
- Assisting the civil servants in making the SIA's by transferring the relevant know-how
- Doing the follow up on the drafting of the SIA's and ensuring that the proper consequences are given to their outcome

This person(s) will also be the direct link between the civil servants who draft a certain proposal and the interdepartmental organ (see 2.7.2). They will need to be trained and informed on how to execute a SIA and might be compared with the Flemish RIA-coordinators.

Beside this internal function, the Cell on SD of a certain FPS will be the contact point for other FPS if a certain policy proposal needs to be created/drafted with the cooperation of different FPS.

2.7.2 Steering between departments

Again, let us have a brief look first at the different systems:

- In Canada, the RAOICS¹³ gives advice and support to the departments, develops guidance materials and controls all the RIA's ex-ante. The RAOICS is part of the Privy Council.¹⁴
- In the UK, the Regulatory Impact Unit gives support to the departments through her satellites; she assesses the RIA's and develops guidance materials.
- In the European Commission, the Secretariat-General coordinates the basic support through the Annual Work Programme and provides guidance materials for the Directorate-Generals.
- In The Netherlands, the Meldpunt Voorgenomen Regelgeving guides the departments through the Quick Scan, the Ministry of Justice through the Impact Assessment. They both perform an ex-ante control on the assessments but no ex-post evaluation has been installed.
- In Flanders, the Kenniscel Wetsmatiging develops guidance materials and educates the RIA-coördinatoren.¹⁵

¹³ The Regulatory Affairs and Orders in Council Secretariat.

¹⁴ The primary responsibility of the Privy Council Office is to provide public service support to the Prime Minister, to Ministers within the Prime Minister's portfolio, and to the Cabinet in order to facilitate the smooth and effective operation of the Government of Canada.

¹⁵ <http://www.wetsmatiging.be/MFiles/RIA%20systemen%20in%20andere%20landen.pdf>

The Cells on SD have their guiding role at the departmental policy level. Coordination between the different FPS will be indispensable though for several reasons:

- To avoid discrepancies and promote cooperation between the different FPS in choosing the policy proposals and consequently assessing them (e.g. by exchanging experiences).
- To have a coordinating institution that foresees in guidance materials, a helpdesk, training etc.
- To have an institution where the functioning of the SIA in general can be discussed and evaluated, which can be reported to higher political organs in order to adjust SIA.

Question is now how to organise this at the Belgian federal policy making level. Many different aspects will have to be taken into account:

- Will we install this “institution” separate from the Governmental departments (interdepartmental) or as a part of one of them?
- Which department would it be part of? Most probable are the PPS-SD or the Chancery of the Prime Minister (like the DAV / SSA)?

The current legal framework proposes the PPS-SD as the institution that coordinates the development of the SIA in general and lead the cooperation between the different departments. The Royal Decree of September 2004 clearly stipulates that:

- The PPS-SD is entrusted to **put the SIA into practice** and to insert this technique in the different FPS (Art. 8 §1)
- The PPS-SD is charged to **execute the quality monitoring** of the implementation of the SIA (Art. 8 §2)¹⁶

Art. 2 of the Royal Decree of 25 February 2002 on the creation of the PPS-SD stipulates that: The PPS-SD is instructed to:

- Prepare the policy on Sustainable Development
- **Coordinate the execution** of the policy on Sustainable Development
- Put at disposal all expertise in the framework of this policy

Legally, the coordination task lies with PPS-SD. It also seems ideally positioned as a horizontal Public Service and is willing to accept the task, but know-how will need to be further developed.

In this regard, an important issue should be mentioned, namely the fact that a Programmatic Public Service (like the PPS-SD) bears two essential aspects:

- It is thematic
- It is temporary (= dependant on political terms)

This means that at the start of every new political term, the existence of a certain POD/SPP needs to be reconfirmed. One should consequently question¹⁷ if it would not be conflicting to install the

¹⁶ In which “implementation” is not restricted to the phase of introducing the SIA methodology in the FPS, but covers the permanent SIA-process.

¹⁷ One should primarily question why of all social issues, Sustainable Development, is only given temporary housing in a Programmatic Public Service. This does not fall within the scope of this research though.

PPS-SD as the coordinating mechanism of the SIA, if its existence is depending on the political interests, which are expressed during a political term?

The PPS-SD was created under the auspices of the FPS Economy, SME's, Self-employed and Energy. The current Government replaced the PPS-SD under the auspices of the FPS Public Health, Safety of the Food Chain and Environment. If, for some reason, the Government decides to end the existence of the PPS-SD, this does not mean that the activities that have been permanently assigned to the PPS-SD (like this coordinating activity) would simply disappear. These activities, together with all resources of the PPS-SD, would consequently be taken over by the FPS on Public Health, Safety of the Food Chain and Environment. The PPS-SD would transform in a DG of this former FPS. The problem in this regard is that the PPS-SD would lose its 'horizontal nature'.

Are there any alternatives to the coordination role of the PPS-SD? Outsourcing (parts of) the *execution* of SIA might be indispensable in order to gather more know-how, but outsourcing the *coordination* does not sound very plausible.

Possible alternatives might be:

- The Taskforce Sustainable Development (TFSD)
- Interdepartmental Commission on Sustainable Development

The possible role of both institutions under different scenarios will be further discussed in part three.

2.8 The phasing in of SIA

This is also a very tricky issue but utterly important as it forms an important prerequisite in order to create a successful assessment method.

In this, we probably do not really have a choice. All other assessment procedures have been through a phased implementation. I do not propose this because it seems bon ton compared to the foreign assessment methods but because it is indispensable to create a well-functioning SIA.

- The European Commission has installed its Impact Assessment in 2002¹⁸, started the first assessments in 2003, evaluated them in 2004 and formulated some minor institutional and methodological changes that will be active from 2005 onwards¹⁹.
- The Flemish Government decided to start with the "light RIA's" first and evaluate them by the end of 2005. The "heavy RIA's" will take off from 2006-2007 and the authorities are aware that these assessments need to grow and that the most useful experience to change the system is to be found in executing them.

It is best to provide in an institutional and methodological framework, which is to be implemented through certain concrete SIA's in certain FPS/PPS. These first SIA's should be evaluated. Do they meet the assumed expectations, did they contribute to a well-balanced

¹⁸ http://europa.eu.int/comm/secretariat_general/impact/docs/COM_2002_0276_F_EN.pdf

¹⁹ http://europa.eu.int/comm/secretariat_general/impact/docs/progress_report_council_sec_1377.pdf

decision-making process, which problems did occur, etc. The results of these evaluations can be used to change the SIA-system and to make sure it fits in well with the federal policy making structure.

Again, we are supported by the Federal Plans on SD. The Federal Plan on SD 2000-2004 stipulates explicit²⁰ that “the method has to go through a testing-phase, in which one or two FPS shall fulfil the role of testing-department. After a testing-phase of approximately one year, the SIA can be evaluated and adapted”.²¹

2.9 The public nature of SIA

Whether the SIA will be public or not, has been a critical issue in many foreign systems. The Federal Plan on SD 2000-2004 clearly stipulates that “*the SIA will always be public*” (§ 662).

The public nature of other assessment procedures?

- In Canada, RIA is part of the regulative dossier, which is made public through pre-publication in the Canada Gazette. This prepublication is part of the drafting process and should enable the public to get involved in the policy making process. Besides this, the drafters have to consult spontaneous certain groups of people that get affected by a new form of regulation.
- In the UK, the RIA’s are published on departmental websites. One copy of the final RIA is being put at the library of the Parliament.
- In the USA, the RIA’s are public as well and published, together with the policy proposal, in order to get consulted by the public.
- In the EU, all Impact Assessments are being published on the coordinating website together with the concrete and ultimate proposal. This system increases public participation and should be considered in order to create maximum participation.²²
- In the Netherlands, the SIA will only be part of the dossier that is used by the Government and the Parliament as a kind of input in their policy making process. No publication whatsoever is foreseen.

How can this be put into practice in the federal policy making process? This will also be discussed under the chapter ‘scenarios’. Besides, the problem of participation in general will be further developed in another task of the current research project.

²⁰ § 664.

²¹ In the Federal Plan 2004-2008, § 4508.

²² http://europa.eu.int/comm/secretariat_general/impact/practice.htm

2.10 Evaluation of SIA²³

A last but indispensable element will be the discussion if we should install a certain kind of evaluation mechanism in order to check upon the executed SIA's and how this would look like.

An evaluation of the executed SIA's might take place in three different forms.

First of all, a formal examination will have to take place in the Council of Ministers. The Secretariat of the Council of Ministers always examines all dossiers, which are being presented to them to have them put on the agenda of the Council of Ministers.²⁴ They examine if the dossier is complete, if all advisory organs have been consulted, etc. This way, the Secretariat can examine if a SIA has been made and is inserted in a certain dossier. If the SIA is missing, this dossier will not be put on the agenda and the Minister will be held responsible for assuring a SIA is being executed. An SIA agenda would be very useful in this regard.

Secondly, the SIA will be part of the regulative dossier, which is being send over to the Council of Ministers, Council of State, Parliament, etc. They will evaluate the SIA too in assessing the proposed regulation. This should not be considered as a control pure sang but as some kind of political evaluation. If the SIA's would be constantly inferior, indirect evaluation will undoubtedly transform into political control and interference.

Last but not least, a more elaborate evaluation could take place on the content of the SIA.

Foreign examples on evaluation mechanisms:

- In Canada, no RIA evaluation is foreseen.
- In the UK, the National Audit Office and the Department of Treasury evaluate the RIA's on a regular basis.
- In the USA, no RIA evaluation is foreseen.
- In the Netherlands, no evaluation of the different systems is foreseen.
- In the EU, they didn't install a special controlling institution but choose to install a system of checks and balances to ensure quality. These include the setting up of an inter-service steering group for each IA, which allows other interested services to input and offer guidance to ensure that a wide range of potential impacts are considered, etc. Each IA should also include consultation with external stakeholders, in line with the Commission's minimum standards for consultation, which again helps to improve quality. The Secretariat-General of the Commission is also involved with the DG at the earliest stage of the impact assessment, most notably at the time of preparing Roadmaps, and continues to offer input throughout the course of the process. The Secretariat-General is also invited to comment on the final IA as part of the formal process of inter-service consultation for any subsequent proposal. At this stage it is possible for the

²³ The usage of the term "Ex post control" should be avoided as this is already often used to refer to evaluation of existing legislation. We are evaluating the SIA, not the legislation it is based upon.

²⁴ http://www.premier.fgov.be/fr/working/council_min.html

Secretariat-General (or other Commission services) to give an unfavourable opinion on a proposal on the basis of an incomplete or inadequate impact assessment.²⁵

Questions to be answered:

- Who will be in charge?
- Will there be some kind of sanction? Will non-compliance be enforced?

Another important issue is what kind of evaluation mechanism we would like to organise.

Again we will briefly take a look at some other assessment procedures:

- In Flanders, no enforceable examination with respect to the content has been foreseen. The Kenniscel Wetsmatiging will do periodic and sample surveys and report on these publicly in their annual report. Sanctioning is not part of the deal; they tend to improve the quality of the RIA's by giving constructive critics.
- The European Impact Assessment foresees the same kind of informal, non-enforceable evaluation mechanisms. They aim too to have the quality of their IA's improved with internal critics. The lead DG will do the first quality examination, other DG's might get involved through inter-service consultations, the Secretariat General does a final internal quality examination and last but not least many stakeholders (including but not exclusively Council and Parliament) will use and consequently comment on the IA. The consultation of all these different organs should give constructive critics to the DG's that need to draft the proposals and perform the IA.

Both examples show that in the initial phase of the “impact-assessment business”, nobody is really eager to install a very strict sanctioning system towards the executing civil servants or responsible Directors/Ministers. Everybody is more concerned with creating goodwill, know-how and experience first among those involved then threatening them with sanctioning mechanisms, which might neutralise all goodwill. When Impact Assessment gets more natural, they might consider making the constructive methods slightly more repressive.

²⁵ <http://www.wetsmatiging.be/MFiles/RIA%20systemen%20in%20andere%20landen.pdf>

Part 3: Possible scenarios to implement SIA

In this Chapter, different possible scenarios will be developed on how to institutionalize SIA in the Belgian federal context. Those scenarios will not be completely sound drafted flow charts. They aim to create different possible directions, which will have to be perfected in a later stage.

3.1 Introduction

In this introduction, certain issues are touched upon, which are crucial elements that should be communicated and considered. Crucial for the research team to be able to draft realistic scenarios, crucial for the users of this report to enable them to comprehend the different scenarios.

3.1.1 Copernicus reforms: between theory and practice

A first important aspect is the complex character of the policy preparation process. In this regard, the Copernicus reforms, which are a real struggle to understand, let alone to get implemented, play an important role. This reform serves several different goals. Among others, changing the career-structure of Public Servants, implementing a new management culture using temporary mandates and more in our interest, implementing new structures in the Federal Public Services (formerly known as Ministries).

One of the goals of these institutional reforms was to get rid of the paralyzing distinction between politically chosen Ministerial cabinets and cumbersome administrations, which seemed to work more and more independent. The cabinets became the core institution in the policy making process and the relation with the administrations became rigid. Copernicus tried to decrease the size of the cabinets and to increase the cooperation with the administrations in creating intertwining organs like the Strategic Cells.

The Ministerial Cabinets have had a tumultuous history over the last couple of years. The intention was to abandon them but in practice, they never disappeared. The Cells on Policy Preparation were initially part of the FPS but at present²⁶, the Minister has the right to fill them up with experts, which are selected simply based upon a description of its function and a profile of competence. On the other hand, the Minister installs his personal Secretariat. In practice, you could consider those two organs as the present “cabinets”.

In most FPS, policy proposals are being treated both by the Cells on Policy Preparation (= in se Cabinets) and the administrations as the former ones create the basic ideas and structures and the latter ones execute the translation of the policy proposals into a more precise juridical document (Royal Decree, Government Bills, etc). But this theoretical approach should be nuanced. It is impossible to create a sound flowchart of policy making in our federal context. Policy preparation

²⁶ Since the inauguration of the government Verhofstadt II.

is mainly managed by pragmatism. Certain dossiers are prepared at the FPS, some by both the Cells on Policy Preparation (Cabinets) and the FPS but some are solely prepared at the Cabinets. If time is insufficient or the know-how is missing in the FPS, Cabinets might act independently. This research has to take account of those premises.

This is an important issue because of two reasons:

- a) The SIA is meant to be implemented in the FPS. The Cells on SD, SIA coordinators, etc are all inspired to act in the FPS. If this research does not take account of the work that is being processed in the Cabinets, this research might be considered quite naive.
- b) The federal coalition agreement clearly stipulates “all **important** governmental decisions”. If these are mainly taken in the Cabinets, the initial goal might be lost.

A SIA is no blessing for certain politicians at first sight, as some prefer to launch several proposals without too much scientific research, detailed motivation and public participation. It is consequently very important, though quite difficult, to provide in a waterproof mechanism to make sure all policy proposals are eligible to get assessed. Whatever selection mechanism would be implemented, it has to make sure that political opportunism does not hinder the selection and execution of assessments.

This initial resistance is, as already mentioned, unfounded as a well-functioning SIA should lead to a more balanced and rational way of decision-making.

3.1.2 The future of ex-ante legal evaluation

As has already been mentioned in Chapter 2.2, different initiatives are being taken at the federal policy making level concerning ex-ante evaluation. In this regard, it is crucial to notice the importance of implementing a uniform or at least parallel, evaluation mechanism. Over the last decades, in the EU and its Member States, an abundance of assessments has been created and consequently had to be bundled in one general impact assessment system.²⁷ At present in the Belgian federal context, only two impact assessments exist, the Kafka test and the newborn Environmental Impact Assessment for plans and programs. It would be a tremendous mistake not to choose straight away for an integrated approach.

If the Kafka test would stay an economically inspired instrument to prevent new administrative burdens, SIA and Kafka should be closely linked and executed/presented parallel to each other. Complete coordination would not be indispensable in their current state as they both serve different goals.

If the Kafka test would evolve towards a “light” RIA²⁸ and would get a broader scope then just avoiding administrative burdens, the new Kafka and SIA should work in a uniform way.

²⁷ E.g. the EU that didn't have a unified assessment until 2002.

²⁸ “The SERV has contacted all FPS to create pilot projects concerning ex ante evaluation. In this, questionnaires will be used that resemble to those used in the Flemish (light) RIA procedures. The pilot projects will start from October 1 2004 on and will run for a year. Afterwards, an evaluation will be made and possible adaptations will be considered. After this evaluation, the Council of Ministers could consider to implement this ex-ante evaluation.” In MONSEREZ, L., “Federale initiatieven inzake wetsevaluatie”, *Tijdschrift voor Wetgeving*, 2004, afl. 8, 242. Although at present (June 2005), the research project for the creation of a light SIA at the DAS has been temporarily stopped because of a lack of time.

Developing and institutionalizing both systems separately would create a ridiculous system that could never function as efficient/effective as it would if being combined. The functioning of the different FPS as well as the Belgian federal commitments on Sustainable Development is not being served with a badly drawn or considered implementation of SIA. There is no single reason to create an ex ante evaluation methodology that is shattered between different tests. Consequently, those in charge of this matter should seriously consider cooperation between Kafka and SIA. Moreover, June 24 2005, the Council of Ministers decided to implement a system “to assess the impact of certain plans and programs on the environment”. This is an execution of the European Directive and is to be compared with the Flemish EIA. A lot of new policy assessments are emerging so coordination/cooperation will be indispensable in order to create successful impact assessments and not to hinder the policy making process too much.

In this regard, an important issue will be to create an institution that coordinates the complete system of ex ante impact assessments on the federal governmental level. This will be elaborated further on, although this “integrated institution” will already be mentioned several times throughout the report.

3.1.3 Political party & Communal sensitivities

The implementation of SIA will need to undergo the “eternal struggle”, which is typical for the Belgian federal policy making process. The influence of a coalition government with left and right wing parties and the often paralyzing effect of the communal cooperation. Until now, the legal implementation of SIA has not provoked too many political problems as most documents remain very vague on the subject concerned. One should take into account that as soon as the SIA will have to be legally embedded, political and communal problems and possibly even stalemates, might occur.

A frequently expressed remark among interviewees, is the concern of the liberal parties. It is no secret at all that SIA is a more left wing orientated initiative, which is opposed to the Kafka test as a right wing initiative to decrease administrative burdens. In liberal circles, the fear is often expressed that SIA would put too much emphasis on the ecological and social impacts while neglecting the economic importance of certain measures.²⁹ Implementing SIA will consequently need to consider these worries and make sure right wing parties are convinced of the economical value of this form of Impact Assessment.

Another problem that might appear will be the communal distinction. In the French-speaking part, the fear has been expressed that the SIA will involve loss of power and time and might reshuffle the administrative burdens to the FPS. It will consequently be important to convince those politicians that these fears are not well founded.

²⁹ Some years ago, the liberals formulated their own idea on impact assessment with an “administrative impact counter”.

3.1.4 Regional/International cooperation

Another stalemate is the cooperation with different governmental levels when federal policy proposals would have effects on the competences of regional or international governments. If the FPS on Mobility would start creating a Master-plan for Brussels National Airport for example, a SIA might point out some drastic environmental effects, which might be a Flemish competence.

Possible solutions in this regard would be, depending on the particular situation, as follows:

- Consultation of other levels as a part of the SIA procedure. When it appears that Governmental levels have a legal duty to cooperate or when certain effects might pop up, cooperation will be part of executing a SIA. If no consultation has been done during the execution of a SIA, the SIA has not been executed properly.
- Consultation of other levels in connection with the outcome of a SIA. If a SIA concludes that consultation is indispensable, the proper Government should start consultation and consider these conclusions in its regulation.
- Executing a joint Impact Assessment. The different coordinating institutions should cooperate and coordinate a joint execution. This would produce the most complete outcome but the practical organisation might be slightly too complicated.

3.1.5 Financial resources

A major issue in the success of SIA, and apparently in the whole federal policy on SD, will be the availability of enough financial resources. The recent report of the Court of Audit on “the coordination of the federal policy on SD” clearly shows that a lack of financial means is one of the main reasons for a failing federal policy on SD. “The Federal Plan on SD was not translated in departmental plans, the budgetary aspects have been neglected and the capacity to execute the federal policy on SD, was increased only with delay and in driblets” and “the Court of Audit recognises that the government has in general committed itself to strengthen the means of the actors active in the coordination of the federal policy on SD, but has not expressed itself on the means to execute this policy”.³⁰

Successfully executing SIA’s will demand serious short term financial investments in human resources, training and capacity building but on the other hand, the **terugverdieneffect** of well-considered legislation should compensate these investments on the long term.

3.1.6 Transparency of SIA

Transparency of the SIA will be at stake at three specific stages:

- When certain proposals have been selected to get assessed
- When the SIA is executed
- When the SIA is finished

³⁰ http://www.courdescomptes.be/docs/Reports/2005/2005_14_Duurzame_Ontwikkeling.pdf ,p.48.

The SIA will have to be communicated in different ways as different persons/organs are involved in those different phases. When the selection takes place, the Secretariat of the Council of Ministers needs to be informed to be able to check the later proposals on the presence of a SIA. If SIA's are being executed, certain stakeholders would like to be involved and when the SIA is finished, certain organs will want to check upon the content of the assessment. This way, transparency in the SIA-process needs a very heterogeneous kind of organization, which will depend on the particular phase and players concerned.

3.2 SIA in the present legal/political context

Bellow you will find an overview of the various institutional issues, which will have to be addressed and possible solutions. In the last chapter 3.4, the different possibilities will be transferred into several flow charts.

The first three chapters are concerned with the selection process of policy proposals to get assessed. Very simply stated: if 60 ideas are launched annually and only 2 or 3 can undergo a SIA at every ministerial department, a well-balanced selection process will need to be developed.

3.2.1 Compiling a list of policy proposals

A first important element is to install a system, which allows compiling all policy proposals (which are launched at a certain ministerial cabinet or FPS) in order to enable a selection of the most important proposals. It needs to be said that in order to put a SIA in place, a much more open and transparent policy making process is needed. One can opt to introduce the notion of Sustainable Development in the federal policy making process through a noncommittal change of mentality, or one can opt to introduce a compulsory SIA test. A compulsory evaluation of certain policy proposals demands more openness in the communication of policy proposals.

If the Cells on SD will be the central organ in selecting the policy proposals to be assessed, one should hope both the representatives of the cabinet and the administrations (who should be represented in the Cell on SD) can offer a complete survey of policy proposals. If not, or if another organ would do or be part of the selection procedure, alternatives will be indispensable.

When a certain organ will select certain policy proposals, it needs an exhaustive list of proposals that are about to get drafted during a certain period in time. Creating such a list would be a revolution in the Belgian federal context. Major problem at the moment in the federal context is that the existing tools, such as the Coalition Agreements, the annual Policy Notes and even the Strategic Plans are often too vague, which makes it impossible to deduct a list of detailed policy proposals. The importance of a detailed survey of proposals is clear, but a perfect waterproof list is never possible, as unexpected events could create the need for an urgent and additional policy proposal.

How do other assessment systems deal with this selection issue?

Flemish RIA:

The selection of policy proposals for the Flemish “heavy” RIA will be based upon annual Ministerial “policy letters”. Their composition is based upon Ministerial policy notes, which are being drafted by every Minister at the beginning of a certain legislature and which are actualized through policy letters. They have to be placed at the agenda of the Council of Ministers and in several Commissions of the Flemish Parliament. These policy letters should not be equated with the “Regulation Agenda”, which is a more specific list of planned regulation. Policy letters have a broader scope (e.g. sensibilizing-campaigns).

EU’s SIA:

In the European Union’s policy making process, the Roadmaps must be established early in the policy formulation process as a condition for inclusion of a legislative or policy proposal in the Annual Policy Strategy prepared in February for the following year and, at the very latest, be finalized in November before inclusion into the Work Programme. If a policy proposal is not accompanied with a Roadmap, it cannot be included in the European Commission’s Work Programme. Consequently, DG’s will have to make a Roadmap in order to have their proposals followed up.

Kafka:

The Kafka test is compulsory for all Government Bills or drafts of Royal Decrees (exceptions excluded). If these are presented to the Secretariat of Council of Ministers and are not accompanied with a Kafka Test, they will not reach the Councils table. Consequently, a Kafka test will have to be drafted in order not to hypothecate the future of the proposal concerned.

In the Belgian federal policy making context, several different tools could be used:

- a) Working with a “*screening mechanism*” (see 3.2.2). Within this mechanism, the Secretariat of the Council of Ministers checks if a certain policy proposal has been “screened”. If not, except for ex-ante exclusions and urgent proposals, the proposal cannot be put on the agenda of the Council of Ministers. So with this screening mechanism, all relevant proposals will have to be screened (if necessary) and possibly assessed (with a SIA). This kind of control by the Secretariat of the Council of Ministers should assure that all relevant policy proposals would at least get screened. If they are to be developed in the administrations or in the cabinets, a screening needs to take place and consequently they would be considered in the final selection of a SIA. The same strategy is currently being used within the Kafka test.

- b) Working with “*Strategic Plans*” or a “*Regulation-Agenda*”³¹, periodic surveys of proposed policy plans. The choice between these two depends on the fact if only planned regulation or if a broader scope of policy proposals should be assessed (investment programmes, sensibilizing campaigns, etc). If all Ministers would consequently bundle their proposals in their Strategic Plans or in a Regulation Agenda, this could be a good starting point as all proposals (except urgent ones) would be gathered and the organ, which selects the proposals has a sound list of proposals.³² The Strategic Plans have been officially introduced in practice, however, they are not consequently being implemented.
- c) In this regard, one should mention the Federal Plan on SD 2004-2008, which stipulates in § 4508 that “in order to better monitor the activities of the departments, the annual “*budgetary policy documents*” should help to reveal issues and to better distinguish proposed policy answers. The latter are more comprehensible to citizens if they clarify the targets aimed at by the measures announced.”³³ The most important element in running a FPS in the annual budget. No funding, no policy. These annual budgetary policy documents are often translated as “Policy Notes” and are effectively used by the different FPS. They are a presentation of the forthcoming policy preparation process meant to be presented to the Parliament but are in fact mainly used by the FPS itself. Again, no formal prescriptions exist (only on the financial part) and a lot depends again on the motivation of the Cabinet concerned. Certain Ministers do not want to be judged upon these predictive documents.

Consequently, using either a screening-mechanism, a Strategic Plan, a Regulation Agenda or the budgetary policy documents (Policy Notes), should assure that a broad scope of policy proposals would be considered in (pre)-selecting subjects for a SIA.

3.2.2 Selection of policy proposals

This Chapter is concerned with filtering the 60 ideas in order to make a list with proposals, which are eligible to be further assessed.

³¹ A Regulatory Agenda collects and spreads information on the newly planned (adaptation of) regulation. Such regulatory agenda existed in 2000 in more than 80 % of OECD Member States, a majority of which made this agenda publicly. This list, often called “unified regulatory agenda”, contains the intended regulation for the coming year, and is often actualized twice every year.³¹ This list has several functions:

- This stocktaking and registration of proposed regulation can be an ideal starting point for a real programming and coordination of this regulation in progress in order to improve harmony and cooperation of streamlined regulation and to avoid a bottleneck when proposed regulation is drafted, advised upon and decided.
- This list will be made available to other ministries and the public, who will be eligible to comment and make suggestions to improve.
- Through actualisations, the Government could communicate whether a proposed regulation should have to undergo a SIA. (cooperation with the SIA agenda)

³² In this regard, the Chancery of the Prime Minister has a data base (“Regedoc”) that contains a complete list of governmental documents. This databank is only accessible for a limited amount of users within the Federal Public Services. This databank might consequently serve as another possible source.

³³ <http://www.ciddd.fgov.be/pub/PL200401/PL200401en.pdf>

A first issue is to decide whether to stick to proposals that touch upon elements of the **Federal Plan on SD** or if no restrictions will exist concerning the link between the proposal and the Federal Plan on SD's view on Sustainable Development. In chapter 2.5.2, it is clearly indicated that the existing regulation is opposed to such a restricted view. Moreover, following the Federal Plan on SD, new proposals might not contain any references to subjects of SD or initiatives will be taken out from a certain proposal in order to avoid a possible SIA. On the other hand, such a restricted view ignores the flexibility/activeness of Sustainable Development as a collection of ideas. Certain new initiatives might concern "sustainability" but not be included in the Federal Plan on SD; a stalemate to avoid!

A second and apparently crucial issue will be the creation of a **screening-mechanism**. If a FPS would have 50 proposals in its "pipeline", the organ which decides on the selection of the final SIA (the Cell SD, the Council of Ministers, the ICSD,) needs a certain pre-emptive test to analyze the importance of those different proposals. This screening test is being developed through our research project. This test will be a short questionnaire, which should enable the deciding organ to have a basic impression of the possible economical, social and environmental impacts of a certain policy proposal.

Who could complete this screening?

The public servant(s) who do(es) the concrete preparation of this policy proposal (in the FPS or at the cabinet), possibly with the aid of the Cells on SD.

ICSD

The PPS-SD

The integrated institution

Outsourcing to external institution

All these different organs could execute the screening-test. As will be more thoroughly discussed in Chapter 3.2.5, the option of **outsourcing** should be avoided as this would avoid capacity building in the Federal policy making process and will create an endless financial burden.

Executing the screening in the FPS itself by the **public servants** (possibly assisted by the SIA-coordinator) would increase capacity building in the FPS but might decrease the homogenous character of the screening results, which will have a substantial impact on the final selection.

The **ICSD**, the **PPS-SD** or an **integrated institution** would be good alternatives as the screening of the proposals would be centred at one place and continuity and a homogenous execution of the screening would be assured. This screening will have a major impact on the selection of the proposals to be assessed and should consequently not be dependent on the whims of a certain public servant, even though he might be trained. The positioning of the institution is not of major importance as they do not perform any kind of selection or policy choice. In this regard the PPS-SD, might be a good candidate.

A possible disadvantage of these organs might be that they don't seem to bear too much authority towards other FPS but this screening should not be considered as a selection in se, but as a kind of objective removal of unsuitable proposals (to undergo a SIA).

3.2.3 Emergencies and ex-ante exceptions

Two kinds of policy proposals could get excluded from being selected for SIA:

- The first exception could be **urgent proposals**. Sometimes, political institutions have to react very quickly to unknown situations or challenges. When for example the dioxin crises broke out, the federal government had to take rapid decisions on how to cope with this crisis and to create new regulation and institutions to avoid a new outbreak. Executing a SIA, which would postpone urgent and indispensable decisions, would not serve the public needs. A decent ex-post evaluation should be a good alternative in this regard. This “urgent proposal” category would also be very convenient in absorbing the decisions, which are taken in the Kern-cabinet. Certain decisions have such a delicacy and urgency that they cannot be sent through the whole merry-go-round of the policy making process. This category of urgent proposals is consequently convenient to regularize those decisions in regard with the SIA and to adapt to reality.
- The second exception could be to exclude **certain types of policy proposals** of being assessed. When for example a European Directive is to be implemented and the policy freedom of the federal government is consequently restricted, executing a time and money consuming SIA is not sustainable on itself (especially when the European Commission executes Impact Assessments herself). In this regard, certain proposals might have to be excluded ex ante. Two possibilities exist in this regard:
 - The first one would be to create an explicit **list of exceptions** as has been showed in Part 2.3.2., which gives a survey on lists of exceptions in several assessment procedures. This is being used in almost all other assessment procedures.
 - Another possibility would be to work with **criteria** instead. In the context of SIA, this would mainly be economical, social and environmental criteria and be executed through the screening-test. Main disadvantage is the fact that almost all proposals will have to be taken into account but on the other hand, the selection will be more logical and systematic. Most exception-lists exclude for example sheer internal proposals but even they might generate certain impacts. Working with criteria increases the complexity but also the effectiveness in selecting policy proposals.

A **combination of both** systems would probably be the most plausible. Certain proposals are excluded ex ante (although the usage of a screening-test decreases the amount of exceptions) and consequently the rest of the proposals need to be screened to enable the selection of a certain amount of proposals to get assessed. The existence of the screening test should consequently decrease the amount of ex ante exclusions.

3.2.4 Selecting proposals to undergo a SIA

A critical issue in the selection of policy proposals will be to appoint which organ will decide which policy proposals should get assessed. Which possibilities exist in this regard?

Cells on Sustainable Development and Directory Committee (of every FPS):

This scenario has been foreseen in the Royal Decree of 22 September 2004 and seems to be the most likely. The Cell on Sustainable Development will be an organ which meets several times a year and drafts an annual proposal of a Plan of Action, which will contain “a list of types of decisions on which a SIA will be executed”. Based upon this document the FPS’ Directory Committee will create the final Plan of Action, which should contain the concrete proposals to be assessed.

The most important element in selecting “the types of decisions” will be to have a decent survey on the proposals (see 3.2.1/2). The combination of persons linked to the Minister and the administrations should assure a decent survey of policy proposals, if needed helped with the outcome of the screening, the Policy Letters/Regulation Agenda or a combination of both. Political influence in the selection of proposals is feasible though through the relation with a representative of the Minister.

Council of Ministers:

An alternative would be to have the Council of Ministers decide on the selection of proposals, which should undergo a SIA.

Because of the evolution of our institutions, the Council of Ministers has developed to become one of the most important epicentres of Belgian politics. It is the task of the Council of Ministers to consult and decide on general policy and the Council of Ministers is also the forum where the political cohesion of the government coalition is assessed on a weekly basis.

On penalty of becoming null and void, the Council of Ministers must consult on:

- all drafts of royal decrees which must be subject to prior consultation in the Council of Ministers according to the constitution or by law;
- the "drafts for consultation documents" which are aimed either at authorising that approved credits are exceeded, or at asking for a provisional stamp from the Auditor's Office, or imposing the stamp on the Auditor's Office;

- submitting an appeal for a community or regional decree or ordinance to be overturned by the Court of Arbitration.

The advice or agreement of the Council of Ministers must also be requested for all matters which concern the government as a whole:

- bills;
- the drafts of cooperation agreements to which the Federal State is a party, as well as the bills for the approval of such agreements;
- the drafts of royal or Ministerial decisions which could have an important political or budgetary effect because of their scope and subject matter;
- the drafts of circulars with a budgetary effect;
- any matter which could jeopardise the solidarity of the government.

Because of the limited amount of SIA's that will be executed on a yearly basis, the Council of Ministers could also decide annually which policy proposals they would like to see further assessed. Advantage of the Council of Ministers is the fact that SIA's would get selected at the source of the decision making process. The Council of Ministers is the organ where many new policy proposals are raised and assigned to a certain Minister to get further developed. The know-how is there, the capacity is there, the impact of the assessment on the final decision will be very high. On the other hand, the Council of Ministers is a purely politically inspired institution and consequently faces to be victim of political/strategic decisions on SIA. Ordering a SIA might be very convenient in postponing a certain decision, which might be convenient for a certain party but might at the same time create resentment with coalition partners or not be in the general interest.

In fact, the Council of Ministers should not even be part of the selection as political influence should already be executed in two different ways:

- The Cell on SD contains a "representative(s) of the Government in the ICDO / CIDD responsible for the FPS concerned", political support or resentment should be communicated through this person.
- The Plans of Action have to be approved by the Directory Committee of every FPS and should be integrated in the Strategic Plan of the FPS, both through which political influence can be executed.

The Council of Ministers is consequently a possibility but should not be regarded as too feasible/desirable.

Both

This would mean that the selection of the Cells on SD / Directory Committee would be combined with the selection of the Council of Ministers. This assures that the selection would be very complete. The most feasible option would be that the Council of Ministers would be able to add / skip SIA's to the selection of the Plans of Action.

Besides these more obvious and politically inspired institutions, the same organs which have been proposed to do the screening-test should consequently be proposed to decide on the final selection in order to maintain continuity:

The ICSD

The ICSD could be a very serious candidate to assist in the selection of the policy proposals. In chapter 2.3.3 on the pre-selection of policy proposals, the ICSD is already mentioned as a possible organ to execute the screening-test. This task could be extended to the selection of the SIA's.

The ICSD was created by order of the Act of May 5 1997, which assigned the ICSD as the responsible institution for the preparation and the review of the implementation of the Federal Plan on SD. The ICSD bears the final responsibility for the drafting of a proposal of the Federal Plan on SD, which is intensively discussed, and if needed amended, through a broad consultation process before it is being presented to the Council of Ministers, which takes the final decision. Through the coordination of the annual reports of its members on their policy concerning Sustainable Development and the execution of the Federal Plan on SD in the FPS, the ICSD assures the observation of the execution of the Federal Plan on SD. Last but not least, the ICSD makes an annual report on her activities of the past year.

To be able to perform these different tasks, the ICSD has created a structural cooperation between the FPS and other Public Institutions. A similar cooperation is being pursued with the Communities and Regions (taking into account each others competences) via their ICSD-representatives.

The ICSD is composed of:

- The State Secretary for Sustainable Development and Social Economy
- A representative of the FBP
- A representative of every member of the Federal Government
- An expert of the every FPS
- Representatives of different Communities / Regions
- The coordinator of the Taskforce Sustainable Development (FBP)
- Secretary of the ICSD

If the ICSD would get more financial resources in order to get involved in performing the screening, selecting the SIA's or both, this would be a very interesting alternative. The ICSD gathers representatives of the political institutions, the FPS and the FBP (which evaluates biannually the federal policy on SD). If a well-equipped/staffed Secretariat can meticulously prepare those different dossiers, the ICSD might be the perfect solution to select policy proposals.

The PPS-SD:

The PPS on Sustainable Development could select the proposals but this would probably not be easily accepted by the other FPS. The PPS-SD might have certain (accepted) responsibilities towards the implementation and the coordination of the SIA, but they do not bear an easily acceptable status to intervene in the precious & delicate selection of policy proposals to get assessed.

3.2.5 The Public nature of the selection of SIA

Public communication of the selection of SIA is apparently not of major importance, in the Flemish procedures on RIA. In the EU on the other hand, the “Guidelines on Impact Assessment” clearly stipulate that “the Roadmaps (Part I) are published in parallel with the WP, so external stakeholders can anticipate the timing of the policy preparatory work and be ready to provide input”³⁴

The selection of SIA is an internal public decision and a choice will have to be made how far the public nature of the SIA will go. The outcome of the SIA is of course utterly important and should be open to civilians and other stakeholders to be informed and/or participate in future decisions.

Different options do exist.

Firstly, the creation of a **SIA agenda**. The coordinating institution could make an annual list of decisions that have been selected to be assessed. This is mainly of interest for the Council of Ministers, but could also be used to inform all stakeholders, depending on the amount of publicity and participation is desired.

Secondly, the publication of the SIA (a resume preferably) in the **annual reports of the members of the ICSD**. These reports give an interesting survey on the measures taken or to be taken by the different FPS. The policy proposals which are being assessed or are to be assessed, could be perfectly included in this report. Moreover, these reports have to give a survey of the progress of a FPS on the elements of the Federal Plan on SD, in which the Plan of Action is a crucial document. As SIA is an essential part of the Plan of Action, publication of selected SIA’s should be considered something logical.

Thirdly, the **annual report of the FPS**. These annual reports are still in their implementation phase and are based on the annual tradition of companies to report to their shareholders on the activities of their institution (see further on). As they are mainly instruments to report on the policy that has been carried out in the last year, they are more suitable to be used for reporting on executed SIA’s (see further on).

Last but not least, should those decisions on the selection be motivated according to the Act of July 29 1991 concerning the explicit **motivation of administrative decisions**? Art. 1 of this Act defines an administrative decision to be explicitly motivated as “one-sided legal acts with an individual scope, which originate from a public service and aims to create legal consequences for one or more served persons or for another public service.” The selection on SIA is not a one sided legal act with an individual scope. The SIA serves the public interest, so does the selection.

³⁴ http://europa.eu.int/comm/secretariat_general/impact/docs/SEC2005_791_IA%20guidelines-main.pdf

3.2.6 Executing a SIA

In order to avoid all misconceptions, SIA is to be executed at the level of the FPS and not at the Cabinet. Executing the SIA at Cabinet level would be a cry in the desert as those staff members have a temporary working status and as the main goal of SIA is to create a continuous mentality change in the policy preparation process. This will not be obvious though regarding the fact that the Belgian Ministerial administrations are mainly executive institutions and have in general too little know-how on the aspect of policy preparation. Thorough education of all actors concerned will be indispensable and should be treated as a priority.

Before discussing the different aspects and possibilities of executing a SIA, it might be useful to draft a list of elements which are indispensable in the creation of a SIA and which will have to be addressed through different organs and procedures. Indispensable elements are:

Know-how:

- On the execution of SIA
- On the concepts of Sustainable Development (social/economical/environmental)

Independence

Capacity

Financial means

Of course, the complicated execution of a SIA should not be left to public servants alone. It is impossible to give all of them a thorough education on SIA and to assure continuity and an acceptable level in the execution.

Public servants + Single SIA Coordinators

If the SIA would be executed internally, a first proposition would be a combined effort of the **public servants in the FPS** and the **pecially trained SIA-coordinators**. It will be indispensable to train a certain amount of people in the administrations on the concept of Sustainable Development and the different aspects of executing a SIA. This might be conducted for example through the coordinating SIA institution (PPS-SD or Integrated Institution) or at the Educational Institute of the Federal Government,³⁵ who could provide in the education of professionals on the different aspects of SIA.³⁶ They will have three particular functions concerning the SIA:

³⁵ L'Institut de Formation de l'Administration Fédérale (IFA) / Opleidingsinstituut van de Federale Overheid (OFO). <http://campus.foifa.be>

³⁶ An interesting ongoing initiative in this regard is the Public Management Programme (PUMP), which is organized by the Educational Institute for the Government (together with KUL and ULB). The goal of this educational project is to enable public servants (level 1), with executive powers or experts, to participate in a more modern, performing and high-quality administration. This PUMP-project aims too provide those public servants the knowledge, skills and attitudes, which are needed to support this modernization process, with among others a project on ex-ante evaluation.

Firstly, they will be part of the Cell on SD.³⁷ They will assure that the recommendations and decisions of the Cell on SD are well-considered, taking into account the principles of Sustainable Development. Briefly, advising the other members of the Cell on SD.

Secondly, they will assist the public servants in drafting policy proposals and consequently executing the SIA. They will transfer the basic knowledge of SD and assist in completing the methodological part of the SIA.

Finally, they can make a first evaluation of the SIA. They can control if the Assessment has been done thoroughly and correct and if the outcome of the assessment has been considered through the final proposal.

Public Servants + Inspectors on Sustainable Development:

Another option would be to install **Inspectors on Sustainable Development**, based on the concept used by the current Financial Inspectors, who will assist the public servants. The Financial Inspection is currently being executed by a homogenous group of specially assigned Inspectors, who work with their own internal procedures. The institutional organization of these inspectors and the content of their function might be a guiding line to create Inspectors on SD. They would be considered personnel of the PPS-SD but mainly work under the auspices of the FPS they have been detached to. They would get an intensive training at the coordinating SIA institution or the Educational Institute of the Federal Government (like the SIA coordinators). They would mainly have the same functions of the SIA coordinators:

Firstly, they will be part of the Cell on SD.³⁸ They will assure that the recommendations and decisions of the Cell on SD are well-considered, taking into account the principles of Sustainable Development. Briefly, advising the other members of the Cell on SD on its tasks.

Secondly, they will assist the public servants in drafting policy proposals and consequently executing the SIA. They will transfer the basic knowledge of SD and assist in completing the methodological part of the SIA.

Finally, they can make an evaluation of the SIA. They can control if the Assessment has been done thoroughly and correct and if the outcome of the assessment has been considered through the final proposal. In this, they would be part of the PPS-SD again.

The advantage of SD Inspectors would be the fact that they can perform their controlling task more independently than the SIA coordinators and could consequently avoid the installation of an extra ex-post evaluation mechanism. A disadvantage is the fact that at least ten new persons need to be recruited and/or trained at the coordinating institution.

The installation of Inspectors (on Sustainable Development or Integrated) is all about the importance that is given to the evaluation of SIA. Critical note: it has never been possible to install a corps of inspectors like the Financial Inspection, installing one for SD seems very doubtful.

Outsourcing:

³⁷ Art. 5 § 2 of the Royal Decree of 22 September 2004 stipulates that “in function of the necessities of the Service, staff members might be added as members to the Cell on SD”.

³⁸ Art. 5 § 2 of the Royal Decree of 22 September 2004 stipulates that “in function of the necessities of the Service, staff members might be added as members to the Cell on SD”.

An important element to be discussed in the execution of the SIA is the possible “outsourcing” of SIA. Outsourcing would mean that certain external institutions will execute the SIA. Universities, independent think-tanks, audit firms, etc.

The advantages would be:

- the assessment is being done independently from the decision makers and any political influence
- if the right institutions are to be addressed, the assessments will probably be of a very high level.

Certain important disadvantages appear too:

- the selection of institutions will be very time consuming, especially when different institutions compete or have to be selected
- outsourcing assessments will be very expensive
- they might create delays in the policy making process
- last but not least, the lack of capacity building in the FPS

This last aspect needs more explanation. Consequently outsourcing assessments would assure high quality results but it would avoid capacity building on SIA within the FPS. Instead of ordering external SIA’s from universities, etc, it would be more interesting to assure a gradual implementation of know how on the concept of Sustainable Development and certain economical, social and environmental issues. An opportunity created through SIA, which should be welcomed with open arms. This will take some time and financial efforts but at the long term, the main goal of Sustainability Impact Assessment will be reached: a change of mentality in the heads and practices of decision makers. For once, the process is more important than the outcome.

The continued outsourcing of assessments is a financial drain on the long term and is incompatible with our main goal.

Possible role of the Federal Planning Bureau:

The FBP is a public utility institution, which makes studies and projections on economic, socio-economic and environmental policy issues. For that purpose, the FBP collects and analyses data, explores plausible evolutions, identifies alternatives, evaluates the impact of policy measures and formulates proposals. Government, parliament, social partners and national and international institutions appeal to the FBP’s scientific expertise. The FBP provides a large diffusion of its activities. It also describes the expected evolution at unchanged policy or according to various relevant scenarios of the policies pursued.³⁹

The public is informed of the results of its research activities, which contributes to the democratic debate.⁴⁰

³⁹ <http://www.plan.be/en/instit/desc.php?TypeDesc=ORG>

⁴⁰ <http://www.plan.be/en/instit/desc.php>

The FBP is responsible for drawing up the Federal Report on Sustainable Development and for preparing the Federal Plan on SD. The Task Force Sustainable Development (TFSD) is a group of staff members, which, since January 1998, implements this mission under the direction and responsibility of the FBP. In the Federal Report the TFSD analyses and evaluates the current situation and the sustainable development policy pursued.

The FBP could be involved in executing the SIA in making studies on the economic, environmental and/or social consequences of a certain proposal. Art. 127 § 1 of the Act of 21 December 1994 on social and diverse issues stipulates that “the FBP is made responsible for analysing and foreseeing the socio-economic evolution and the factors responsible for this evolution, and to assess the choices in economic and social policy in order to improve its rationality. The FBP conducts a structured analysis for the medium long and long period, mainly on the economic and social stage but as well on the environment.”⁴¹

In practice, the FBP has the following tasks:

- Make medium-term forecasts and projections on the Belgian and international economic situation;
- Make short-term projections, which are used by the federal government for drawing up its budget and conduct a permanent follow-up of business cycles;
- Assess the impact of economic and social policy measures, such as measures concerning taxes and social contributions;
- Develop econometric methods and tools, which are used for drawing up projections;
- Follow up federal policy on sustainable development;
- Do research on specific subjects, such as the economic impact of information and communication technologies, the economic effects of the Sabena bankruptcy, the reduction of the administrative burden etc.;
- Make long-term projections on the demographic evolution of our society and examine the financial consequences of ageing, especially within the framework of the Study Committee on Ageing;
- Evaluate the planning of energy production;
- Describe statistically the Belgian economy by means of input-output tables and satellite accounts of the national accounts (environmental accounts, transportation accounts).

Those activities are defined by law or are elaborated at the government's request, on one's own initiative or at the demand of third parties within the framework of research contracts. Government, parliament, social partners and national and international institutions may appeal to the FBP's scientific expertise.⁴²

If one considers this survey of the FBP's competences, one should conclude that the FBP could theoretically be an interesting partner in executing certain SIA's or at least parts of them. The FBP is capable of doing impact assessments, its part of its formal and practical core business and its partial dependence of the Chancery of the Prime Minister should assure a certain degree of

⁴¹ http://www.plan.be/en/instit/law19941221_nl.pdf

⁴² <http://www.plan.be/en/instit/desc.php#LAW>

independence and esteem. Its partial dependence of the FPS “Economy, SME’s, Self-employed and Energy” on the other hand, may be slightly more problematic.

On the other hand, according to the opinion of an interviewee, the FBP as a whole should despite the former arguments not be considered as a very feasible option in executing SIA’s. Besides a possible evaluation function of the TFSD, the FBP should not be involved in SIA. The FBP researchers (outside the TFSD) are mostly economically trained, not trained in aspects of SD and not used in doing multi- or trans-disciplinary research. Moreover, the motivation in this economically inspired institution to work on aspects seems to be quite low and could jeopardize the creation of useful SIA’s.

Possible role of the Financial Inspection:

In this regard, **the Financial Inspection** itself could be involved too. As already has been stated in Part 2 (2.1), an interesting element on their functioning could be found in the Report to the King of the Royal Decree of November 16, 1994 concerning the administrative and budgetary control, which stipulates that: “the controlling function of the Financial Inspectors comprehends besides their legality, the availability of credits and the conformity with former decisions, **the opportunity of the proposal, its effectiveness / efficiency, the alternatives**, the correctness of the investments that will be needed on the short and long term”. At present, the possibility to control the opportunity, effectiveness, etc. of certain proposals is hardly being used, although this depends of the Inspector, the department, the time available, etc.

In this regard, the controlling function of the Financial Inspectors might generate a new task, in case the inspection of the SIA’s on the execution of the SIA’s during the policy making process. This might be very interesting as the Financial Inspectors act really close to the execution of the SIA in the policy making process. Their current budgetary control of policy proposals is at present being executed even before the proposal is considered at the Council of Ministers. This would be a logical extension of their current tasks if one considers the Report to the King.

In practice, the SIA could be included in the dossier, which is being presented to the Financial Inspection. Besides their financial and budgetary control, they could test if the proposals correspond with existing formal regulation and consequently comment on this. It is very important though to keep in mind that the competences that have been attributed to the Financial Inspection (even though they include “opportunism, effectiveness, etc.”), should always be considered in its financial/budgetary context. So the Financial Inspection could for example, control a certain policy proposal on its accordance with the Federal Plan on SD and express certain recommendations.⁴³ In several cases, the Financial Inspection has already commented on the outcome of the Kafka-test, so inclusion of SIA in their dossier can only contribute to a better and wider ex-ante evaluation of policy proposals.

This is of course only an option if no Inspectors on SD or Integrated Officers have been installed to avoid an overload of “Inspectors”.

3.2.7 The Public nature of executing a SIA

Exploration Phase 5 (EX 5) is involved with stakeholder Participation.

⁴³ This option is hindered again by the non-binding character of the Federal Plan on SD.

3.2.8 Steering of SIA

The PPS-SD:

Art. 8 § 2 of the Royal Decree of 22 September 2004 stipulates that “the PPS-SD is responsible for the quality monitoring of the implementation of the SIA in the FPS”.⁴⁴ The PPS-SD is consequently one of the main candidates to fulfill this function although it is utterly important to point out certain weaknesses of this organ. Although the Royal Decree of 25 February 2002 clearly stipulates that “the PPS-SD has to coordinate the execution of the policy on Sustainable Development”, their role should be considered thoroughly as some weaknesses appear:

The existence of the PPS-SD is depending on political decisions (because of its temporary nature) and the chance might exist that they would get entangled in self-censorship.

Theoretically, the PPS-SD is a “transversal and independent public service”, which is part of the FPS Health, Food Chain Safety and the Environment. The dependence on this latter FPS is restricted to HRM, ICT and certain financial issues. This “independence” should be tempered though as they do not bear the same amount of independence as e.g. the DAS, which works under the auspices of the Chancery of the Prime Minister. Independence needed to be able to pursue a certain authority towards other FPS concerning their execution of the SIA.

The PPS-SD has been legally installed to coordinate the quality monitoring of the implementation of SIA, it will be important though to well consider if the PPS-SD is capable and well placed to bear this responsibility. The report of the Court of Audit on “The Coordination of the Federal Policy on SD” is quite clear on the current effectiveness of the PPS-SD. “The newly established PPS-SD has been installed to increase the amount of staff, which can contribute to the planning and execution of the policy on SD. It does not have enough budgetary credits at its disposal to pay its personnel” and “in an institutional framework which has been laid down in detail in legislation, no serious consideration took place on the positioning of the PPS-SD and the regulatory conditions on the execution of the federal plan have not been adapted.”⁴⁵ The PPS-SD could be an interesting organ to execute the steering in the experimental phase of the SIA, but should not be considered ideal in its current state.

The ICSD

§ 770 of the Federal Plan on SD stipulates that “the interdepartmental coordination of the Cells on SD is conducted by the ICSD”.

This formalized responsibility of the ICSD has been wiped away with the Royal Decree of September 22 2004 that explicitly states that “the PPS-SD is responsible for the quality monitoring of the implementation of the SIA in the FPS”.

⁴⁴ In which “implementation of the SIA” means the complete SIA process, not just putting the SIA in process.

⁴⁵ http://www.courdescomptes.be/docs/Reports/2005/2005_14_Duurzame_Ontwikkeling.pdf , p. 50.

Could the ICSD coordinate SIA? This could be a possibility although the ICSD is mainly an institution which brings together representatives of different organs. The coordinating function would consequently be mainly executed through its (elaborated) secretariat. Question is consequently what the added value would be of the main strength of the ICSD, namely the presence of representatives in coordinating the SIA.

3.2.9 The Inter-Service Steering

The proposals, which are to be assessed, are not always drawn between the competences of a certain FPS. Different FPS might be involved (e.g.: the present “end-of-career” debate) and are to be kept informed on the progress of a certain proposal. This usually happens through “Inter-Service-Steering-Groups”.⁴⁶ Consequently it could be organized that the FPS, which is selected to take the lead in drafting a certain proposal and executing a SIA, would communicate the progress and difficulties, which are being met through the execution of the SIA.

In practice, transferring this data to other departments would be an exquisite task for the SIA coordinators.

3.2.10 The public nature of a completed SIA

The public nature of SIA is one of the major issues to be addressed. A lot will depend upon political choices in this regard. Several different options exist in making the SIA publicly available.

Insertion in the Regulative Dossier

The completed SIA will be part of the Regulative Dossier, which is then sent over to the Council of Ministers, Council of State, Parliament, etc.⁴⁷ These different institutions will mainly use the SIA as a means to judge whether a certain proposal is well-considered and opportune. On the other hand, in using these SIA’s, they will perform a certain evaluation on the executed SIA’s. This should not be considered as a control “pure sang” but as a political evaluation. If the SIA’s would suffer a continuous lack of quality, indirect evaluation will undoubtedly transform into political (Members of Parliament or Ministers) or judicial interference (Council of State) in the execution of SIA’s.

⁴⁶ Interkabinettenwerkgroep / Groupes Intercabinets

⁴⁷ If a Royal Decree is concerned, it will accompany “the Report to the King”. If a Government Bill is concerned, it will accompany the “Explanatory Memorandum”.

The SIA is an essential part of the Regulative Dossier and its inclusion is indispensable to enable current and future generations to understand the reasoning of the policy makers. Solely publishing them in annual reports and on (temporary) websites would drastically decrease its importance and weight. The Kafka test is included in the Report to the King or Explanatory Memorandum as well.

Publication in the FPS' Annual Report

The Annual Reports are a product of the Act of April 11 1994 on the publicity of the public service. There is no legal obligation though to draft them. In these Reports, the FPS can communicate in a clear and open manner to their target groups on the activities and the use of the means that have been entrusted to them.

FPS are free in publishing the SIA's as no legal prescriptions exist. Research by the FPS on Personnel & Organization has shown that from 2005 on, all FPS will create an Annual Report.⁴⁸ The content of this Annual Report is the sole responsibility of the SPF concerned and depends on their individual goals. But as these Reports are meant to create more transparent Public Services, the inclusion of SIA Agenda or at least a list of SIA's (completed SIA's might make this Report too elaborate, the report could refer to the Regulative Dossier) might be logical consequence. As long as these Annual Reports are not legally embedded though, only the informal guiding lines of the COMMnetKern⁴⁹ could be used to communicate these aspirations.

Annual ICSD Reports

The annual ICSD Reports might be an interesting instrument as has already been explained in Chapter 3.2.5. Through these Reports, the different representatives of the federal government have to communicate on their individual execution of the Federal Plan on SD and including a list of executed SIA's seems consequently an indispensable pre-condition. The complete SIA is again a heavy burden on the compactness of these Reports and referring to the Regulative Dossier might again be an interesting alternative.

The annual ICDS reports are no waterproof documents though. The recent report of the Court Audit on "the coordination of the federal policy on SD" clearly shows a lack of:

- execution (3 FPS did not publish in 2003)
- an overall picture of the amount of realizations of the actions of the Federal Plan on SD
- a view on the transversal actions of the FPS
- tuning of the structure of the individual reports

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http://www.belgium.be/eportal/ShowDoc/personnel/imported_content/pdf/COMMCollection5JaarverslagNL.pdf?contentHome=entapp.BEA_personalization.eGovWebCacheDocumentManager.nl

⁴⁹ The COMMnetKern is composed of communication-specialists of the different FPS, presided by the FPS P&O and the Chancery of the Prime Minister.

Website PPS-SD

If the SPP-SD would coordinate the execution of the SIA, she could publish the SIA's on a specially designated website. The European Commission already uses this system. Roadmaps (= screening) and executed Impact Assessments are published on the website.⁵⁰

3.2.11 Evaluating SIA

Two sorts of evaluation exist. Evaluation on the working of SIA in general and evaluation on the execution of SIA in practice.

The first kind of evaluation is focused on the adequacy of the system of SIA. Is the institutional context appropriate, does the methodological system meets the needs, etc? This will be extremely important for SIA as it will most likely be introduced in a phased way and consequently need periodic methodological and institutional adjustments. Evaluating the general integration of SIA is a more political kind of evaluation and will not be treated in this report.

Evaluating the concrete SIA's themselves is of main importance in order to improve the impact assessment of a broad scope of elements during the policy preparation process. In order to better understand the importance of this paragraph, the comment of the Court of Audit should be considered, namely that "the Act of 1997 did not appoint an institution to neither control whether Sustainable Development has been implemented in the government's policy, nor to coordinate the execution of the Federal Plan on SD. The execution is part of the responsibility of every Minister and FPS, without any stimuli and moreover, the FPS does not give an effective explanation on its actions. They are not encouraged to realise the Federal Plan on SD and do not incur any sanction, even though it is clear that the goals have not been accomplished."

In fact, this comment of the Court of Audit is ambiguous. It does not only mean that the SIA should be completed in a meticulous way (what is generally understood under "ex-post evaluation"), but also demands that those holding political responsibility, would effectively take account of the results of the SIA. Evaluating the political usage of SIA is a very far-reaching competence and could only be executed through organs of the legislative power. Of course, the Parliament has the final say on voting Government Bills into Acts, but the present assessment-freedom of Members of Parliament concerning governmental (and political party) decisions is not that far-reaching.

In this regard, different sorts of evaluation could be proposed:

⁵⁰ http://europa.eu.int/comm/secretariat_general/impact/practice.htm

1) Secretariat of the Council of Ministers:

A formal examination on the completion of a screening-test as well as SIA can take place in the Council of Ministers. The Secretariat of the Council of Ministers always examines all dossiers, which are presented to them in order to put them on the agenda of the Council of Ministers.⁵¹ They examine if the dossier is complete, if all advisory organs have been consulted, etc. This way, the Secretariat can examine if a SIA has been made and is inserted in a certain dossier. If the SIA is missing, this dossier will not be put on the agenda and the Minister will be held responsible for assuring a SIA is being executed. A SIA agenda would be very useful in this regard.

The coordinating institution should make an annual survey of all the SIA's, which are being executed throughout all the different FPS. This list would be very useful for several different parties concerned:

- The different FPS would have an overview of all the SIA's which are being executed or planned to be. This should increase the coherence between the FPS.
- The different stakeholders involved get a better view on the policy making process as a democratic right and as a mean to increase public participation in the policy making process.
- The Secretariat of the Council of Minister

2) Inclusion in the regulative dossier:

Again, the completed SIA will be part of the Regulative Dossier, which is being send over to the Council of Ministers, Council of State, Parliament, etc.⁵² These different institutions will mainly use the SIA as a means to judge whether a certain proposal is well-considered and opportune. On the other hand, in using these SIA's, they will perform a certain evaluation on the executed SIA's. This should not be considered as a control pure sang but as a political evaluation. If the SIA's would suffer a continuous lack of quality, indirect evaluation will undoubtedly transform into political (Members of Parliament or Ministers) or juridical interference (Council of State) in the execution of SIA's.

3) At random on the content:

Particularly during the first years, an examination on the content of SIA will be very important in order to assure that the execution of this assessment will not merely be considered a formality. An institution will then have to perform at random controls on the content of the SIA.

Different possibilities exist:

⁵¹ http://www.premier.fgov.be/fr/working/council_min.html

⁵² If a Royal Decree is concerned, it will accompany "the Report to the King". If a Government Bill is concerned, it will accompany the "Explanatory Memorandum".

Taskforce Sustainable Development

The TFSD could be a candidate to evaluate the SIA and several aspects plead in its favour:

- The TFSD has elaborate knowledge on the concepts and goals of Sustainable Development
- The TFSD has wide experience with impact assessments (ex-ante and ex-post)
- The TFSD has elaborate knowledge on a wide range of social, economical and environmental themes.
- The TFSD can be considered as a relatively independent institution.

This task might suit the TFSD better than executing the SIA's itself, also due to the lack of financial means and sufficient staff. Particularly, when considering the main task of the TFSD, which is drafting the Federal Report on SD, which analyses and evaluates the actual condition and the conducted policies on SD. Evaluation of the SIA's would consequently fit well in this responsibility.

Federal Council on Sustainable Development

An option could be to work with this mainly advisory organ in order to involve the public in an indirect way. In using the Federal Council on SD, different stakeholders would be directly involved in expressing their opinion on the SIA's, which could have an indirect effect on the execution of the SIA's as they could report to the coordinating mechanism.

Inspectors on Sustainable Development / Financial Inspectors

During the policy preparation process, the Inspectors on Sustainable Development or the Financial Inspectors could evaluate the SIA's and even adjust them. The biggest advantage would be that this evaluation takes place before the SIA is effectively being used by the political institutions concerned and does consequently have a larger impact. Disadvantage would be that these Inspectors do not bear the same amount of objectivity and independence concerning the execution of the SIA as the other candidates.

Court of Audit

Another option might be to involve the Court of Audit. This institution is part of the legislative power, which would consequently be involved and could examine the executive power. This would match with the controlling duties of the legislative power towards the executive power. As

explained earlier on, the Court of Audit is already involved in evaluating the federal policy making process through the allocation of visas and efficiency studies.

Since 1998, the Court is entrusted with monitoring the sound use of public resources through ex-post “performance audits” of economy, efficiency and effectiveness. Economy concerns the amount of financial, human and material resources used, efficiency audit the ratio of output to resources, and effectiveness the extent to which policy has attained the stated goals and objectives. As such, the policy-preparation process and the implementation can also be part of these audits. The results of these three kinds of audit lead to information statements that are regularly submitted to the legislative assemblies.

These performance audits are profound thematic researches, which are in principle one-off research (unless a succeeding research is ordered). They are selected annually depending on the importance of a theme (on all possible policy competences and on all possible governmental levels) and the employable means (a.o. personnel, expertise, etc.). Taking into consideration the broad range of competence of the Court of Audit, the chances are rather small that the Court of Audit executes a systematic research to a certain policy aspect, which hardly bears any financial implications (for the government or the tax-payer). Nevertheless, besides this financial emphasis, other selection-criteria do exist, like the public interest or the interest of the Parliament (being the employer of the Court of Audit).⁵³

In the broad range of competences of the Court of Audit, the SIA’s should be considered a policy aspect as any other and could therefore be subject to a “performance audit”. However, the systematic and regular ex-post evaluation of SIA’s does not seem to fit in the current mission of the Court of Audit.

The Court of Audit is in fact the only real evaluating-mechanism, which could do a periodic survey of the political usage of SIA (as was explained in the beginning of this Chapter). As an institution employed by the Parliament (legislative power), the Court of Audit could execute “performance audits” on this subject and report this to the Parliament.

PPS-SD

Taking regard of art. 8 § 2 of the Royal Decree of 22 September 2004, which stipulates that “the PPS-SD is responsible for the quality monitoring of the implementation of the SIA in the FPS”; again the PPS-SD could be nominated as a possible actor.

The selection of the PPS-SD will depend on its previously mentioned capacities and of course on its other competences. Selecting, steering and evaluating SIA might jeopardize its objectivity and credibility.

Concerning, the evaluation of SIA’s, another important question is what should happen if a SIA has not been executed in a proper way. As has been touched upon in Chapter 2, creating a strict sanctioning mechanism might jeopardize the initial goodwill which is indispensable to install

⁵³ This is being illustrated by the recent report on “the Coordination of the Federal Policy on Sustainable Development”.

SIA. Moreover, Sustainable Development is so poorly integrated that a too repressive system would not be very reasonable. When looking at foreign assessment methods, the conclusion could be that even when some evaluation mechanism do exist, it does not bear the capabilities of any kind of enforcement.

Consequently installing an evaluation mechanism that clearly shows the shortcomings of SIA's is indispensable but installing repressive sanctioning mechanisms might create frustration and negligence. In the beginning, constructive criticism seems indispensable to uphold goodwill and compliance.

3.3 SIA in an integrated context

In this Chapter, some possibilities will be provided if one would opt for an integrated approach. The answers this chapter offers were not explicitly ordered through this research project, so they will be quite brief and are only offered as thinking material. The option of an integrated approach is still too abstract and thin to make a profound study on, but should be considered thoroughly as has been mentioned many times before.

3.3.1. Pre-selection of policy proposals

The integrated institution might perform this task. Otherwise the public servants in the FPS, the ICSD or an outsourced institution could perform this task.

3.3.2. Selecting SIA

Cells on Policy Evaluation

In case the conclusion would be to work with an integrated institution, the Cells on SD could be transformed in Cells on Policy Evaluation, with the same kind of responsibilities towards the selection of policy proposals to be assessed. Those Cells could perform the selection and certain coordinating functions as well.

In this regard, it is also interesting to mention that the possible creation of an integrated broader kind of impact assessment and possibly those Cells on Policy Evaluation, are no reason at all to dismantle the Cells on SD. The Cells on SD have a major responsibility in their FPS concerning the implementation of measures on SD. Moreover, at present, the creation of Plans of Action concerning those responsibilities seems to be quite successful and the selection of SIA's should not be considered at all as their main reason of existence.

The integrated institution

The selection could be done through this integrated institution but this would depend on the credibility this institution manages to gather. At least, the integrated institution could be given an advisory function. This system is used in Flanders where the “Kenniscel Wetsmatiging” advises to the Flemish Government on the selection of heavy RIA’s.

3.3.3. The Public nature of the selection of SIA

If one would work with an **independent institution**, this institution might draft and host the SIA agenda.

3.3.4 Executing SIA

Public Servants + Single Integrated Coordinators

The same system as described in **3.2.6**.

Integrated Inspectors + Public Servants:

If an integrated approach would be the result, an alternative for the Inspectors on Sustainable Development would be to install some kind of Integrated Inspectors in the same kind of organizational structure as those on Sustainable Development.

3.3.5 Steering institution

This would be the main function for the Integrated Institution. Currently, three different ex-ante evaluation mechanisms are being/have been developed. On the one hand the Kafka test, which should be considered a liberal initiative and whose main goal is to improve the competitiveness of Belgian companies? At present, initiatives are (were) being taken to enlarge the scope of this Kafka test towards a light SIA. Secondly, the Environmental Impact Assessment, which is an execution of European Directives. Last but not least, the SIA. All tests could be considered as a form of ex ante policy evaluation and as has been mentioned before, if they would become more tuned, a coordinated execution will be indispensable. It is not indispensable to involve the EIA as much in this coordination as the EIA is meant for certain plans and programmes and consequently has a different scope than Kafka and SIA. The execution of an EIA should just be closely linked to the eventual execution of the other two.

If these two last assessments could be joined, this would simplify matters a lot and have one major consequence; the need for the creation of an **integrated institution**. These two assessments together would be a perfect opportunity to finally create a decent ex ante evaluation system although creating an elaborate framework on this does not fall within the scope of this report.

Nevertheless, this integrated institution could already be created in function of the SIA and be upgraded in case the Kafka test would be integrated in the SIA (or vice versa).

First question will be to house this institution as this will have a major impact on its functioning and its “maneuvering space”. Two feasible options exist in this regard:

- FPS Chancery of the Prime Minister
- FPS Budget and Management Control

Both FPS are well positioned within the federal policy making context.

The Chancery is responsible for coordinating the Government’s work and the logistic support. Moreover, they form the meeting point with the different Communities and Regions of this country and the European Union.

The FPS Budget and Management Control assist the Government in operating the follow-up and execution of the budgetary policy in accordance with the Belgian international duties and the institutional framework of the Federal State. This FPS has to approve all budgetary needs of the other FPS and is quite acknowledged and has influence.

Both FPS are quit independent from the other FPS’ although it should be mentioned that the Chancery is the better option as the FPS Budget and Management Control is originated for financial and budgetary purposes. It may not be desirable to enlarge these duties with a general policy evaluation mechanism.⁵⁴

If the Chancery would host this coordinating institution, this does not automatically mean the end of the DAS, as they will maintain their other duties beside the Kafka test on Administrative Simplification.

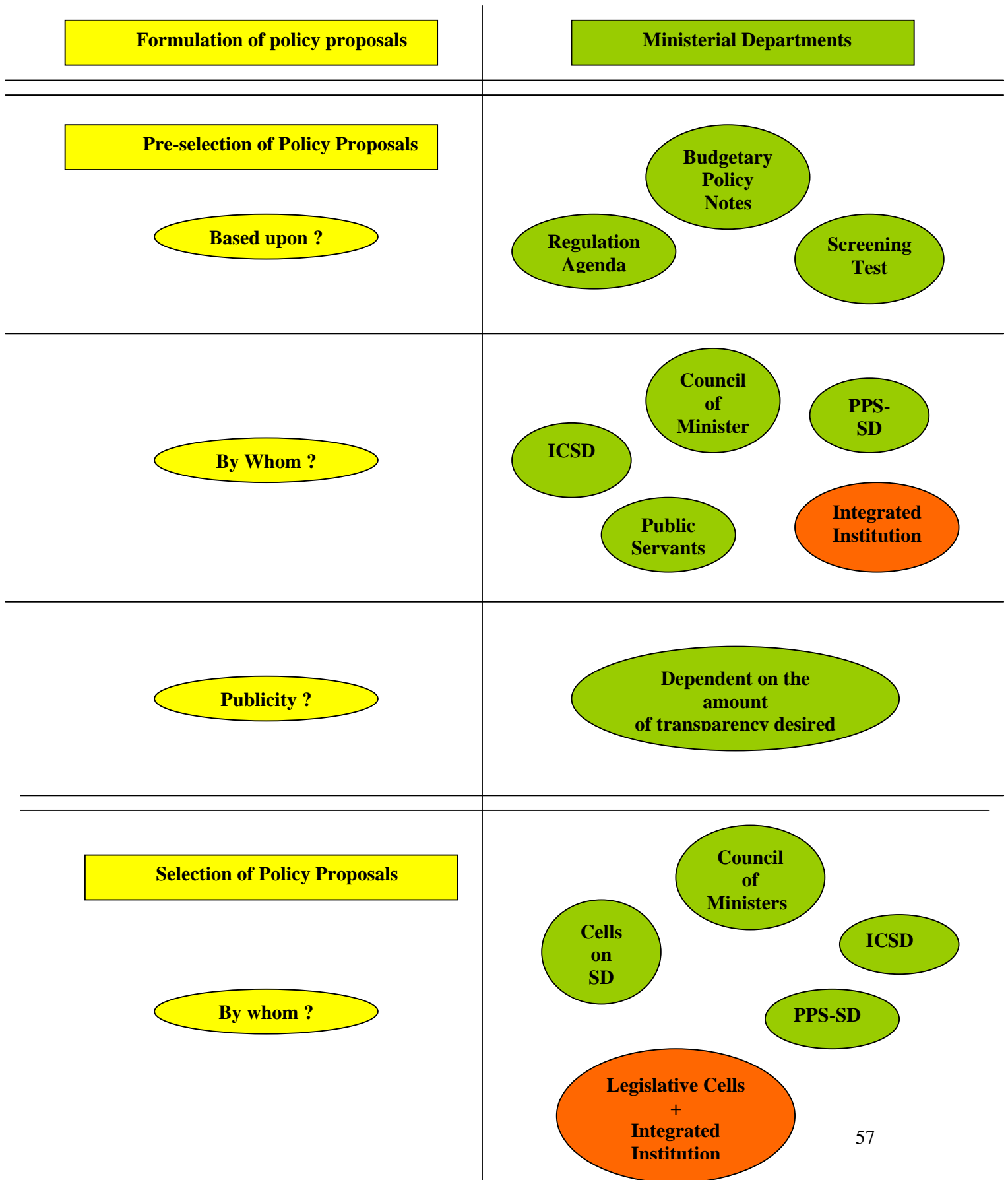
3.3.6. Evaluating SIA

If on the longer term one general assessment system would be created, the ex-post evaluation could be done by the coordinating mechanism (such as “the Kenniscel Wetsmatiging”) being an impartial institution, which does not carry the burden of being party and judge as much as the PPS-SD does. The integrated institution as evaluation mechanism would have several advantages. It could execute the evaluation even before the SIA is politically “cashed” and it would have much more authority than the PPS-SD, being part of the Chancery of the Prime Minister.

Of course, if the integrated institution performs these kinds of ex-post evaluation, they will not bear the same kind of objectivity as the Court of Audit, so a lot will depend on the weight the ex-post evaluation is given’.

⁵⁴ In the UK, the USA and Canada, the coordinating institutions are part of the Prime Ministers or Presidents services as well.

3.4 SIA in the Federal Policy Making Process - Flowchart



Publicity ?

Annual Reports
of the Members
of the ICSD

SIA Agenda

Annual Report
of the FPS

Executing the SIA

Public Servants
+
SIA-coordinators

Public Servants
+
Inspectors on
SD

Federal
Planning
Bureau

By whom ?

Public Servants
+
Integrated
Inspectors

Outsourced
Institution

Evaluation ?

None

Inspectors
On SD

Financial
Inspection

Integrated
Inspectors

Publicity ?

Regulative
Dossier

Annual
Report FPS

Annual
ICDS

Website
PPS SD

Steering SIA

By whom ?

PPS-SD

ICSD

**Integrated
Institution**

Evaluating SIA

How ?

**On the
Content**

**Regulative
Dossier**

**Secretariat
Of the
CoM**

On the content ?

Taskforce SD

FCSD

**Inspectors on
SD /
Financial
Inspection**

Court of Audit

PPS-SD

**Integrated
Institution**

Part 4. The juridical implementation of SIA

In this stage of the research project it is practically impossible to give a complete juridical survey on the implementation of SIA in the Belgian federal policy making context. The juridical implementation depends on the practical choices that will be made in a later stage by those who are politically responsible, and consequently creating an elaborate overview of all possible legal instruments and their possible content, would be useless in this stage. This report will be restricted to the possible juridical means, their legal value and (dis)advantages.

A brief juridical introduction:

4.1 Legal basis

A first important aspect will be to consider whether the SIA should be included in the Act of 5 May 1997 regarding the coordination of the federal policy on Sustainable Development.⁵⁵ Implementing SIA in a new Chapter of this Act would embed it very strongly in our federal policy making process because changing an Act is a very long and winding procedure. This would consequently create a stable SIA. Of course, the Act will only contain very basic information on SIA. It would define a SIA, the reason of its existence, its target group, etc. More detailed information would be embedded in more flexible legislative instruments like a Royal Decree, a Ministerial Decree or a Circular.

In this regard, it should be mentioned that the implementation of SIA in the Act of May 5 1997 might be a dangerous initiative because this would need an amendment of the law, which might trigger changes in other chapters of the Act. The participation of NGO's for example, might be decreased.

4.2 Concrete Implementation

This will be indispensable in order to create a basic legal foundation for the SIA. Regardless if the SIA would have been embedded in the Act, it will have to be organised in a more detailed manor. In this the instruments, which are at our disposal are a Royal Decree, a Ministerial Decree or a Circular.

A **Circular** has the advantage that it is easy to draft and to send out towards the different FPS. This would be the most appropriate way if one would decide to implement the SIA through different phases. During an experimental phase, the responsible Governmental institution (e.g. the PPS-SD) can autonomously adapt the procedure / scope / etc. of the SIA without too many formal obligations.

A disadvantage in this Circular is to be found in the fact that there is no protection in any way for the citizens because they are only meant to be used by the Government and its organs. A second problem might be the fact that if a FPS does not follow the prescription of the Circular, there are no official legal means to enforce the SIA. Last but not least, the Council of State does not do a legal check.

⁵⁵ http://www.juridat.be/cgi_loi/wetgeving.pl

Different kinds of circulars exist. We will probably aim at the Interpretative Circular, which is eligible to give instructions to the public servants on how certain Acts / Orders / Decrees have to be applied and interpreted.

A **Royal Decree/Ministerial Decree** is a second option. The advantage of this system is that the procedures will be stronger legally embedded. The Council of State does a legal check-up of the content of this Royal Decree / Ministerial Decree (as it contains a regulation). This should be considered as an ex-ante legal check-up on the content of the Royal Decree/Ministerial Decree.

The citizens can address the same Council of State if they can prove that the non-compliance by a Public Authority with the Royal Decree / Ministerial Decree, in this case the SIA, constitutes a breach of substantial formalities or formalities under penalty of nullity or an action ultra vires (art. 14 § 1 Act of January 12 1993 on the Council of State). This should be considered as an ex-post check-up whether the SIA has been executed in a proper formal way, in compliance with the principle of proportionality, etc.

Disadvantage is that the system will be a returning struggle to change because of all the formal procedures the Royal Decree / Ministerial Decree has to go through and should wisely not be implemented through these structures as long as they are in some kind of experimental or non-definitive phase. In the end, when consent on the SIA has been found, it would be highly recommendable to embed it into a Royal Decree / Ministerial Decree to ensure compliance.

In this, it is probably recommendable to use a Royal Decree, as SIA will be a system that concerns all different FPS. It might be wiser to introduce the SIA through a procedure of mutual consent (Royal Decree) then by a decision of one Minister / Department (Ministerial Decree).

Conclusion:

This report on the institutional/juridical integration of SIA in the Belgian federal Governmental structures, should be considered as a first step in thinking about this theme. The report is initially based on a very fragile juridical structure, which sometimes gives the impression of not being too well-considered in the general pursuit of a well-functioning system of ex ante policy assessment. In many ways, this report formulates alternatives, which should not be considered as holy grails, but should be seen as a way of taking all different options into account (although several options will still not be included).

A lot of emphasis is laid on the “integrated approach” and I truly hope this stress will be taking into account by those taking the relevant political decisions.

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PODO-II project Sustainability Impact Assessment (SIA)

INTEGRATION OF THE PARTICIPATION PRINCIPLE IN THE BELGIAN SIA-PROCESS

Working paper September 2005

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1. Introduction

A central theme in sustainable development and in the discourse of Sustainability Impact Analysis is the participation of the public or stakeholders in decision making. Sustainable development policies face the challenge of integration and have to deal with increasing complexity and uncertainty, large temporal and spatial scales and multiple trade-offs. In the rapidly evolving societal context of complexity and uncertainty, cause and effect of societal problems are not clearly delineated, which has altered the role of science in the policy-making process. Policy-making cannot rely on cognitive knowledge (based on technical expertise) alone for addressing contemporary sustainability issues, which are often value—loaded. Consequently a broader range of knowledge should be included into the decision-making process. A variety of value systems and world views has to be taken into account. However democratically elected representatives are not capable of capturing those diverse values and interests of their constituents. Therefore experiential knowledge (based on common sense and personal experience) and value-based knowledge (moral or normative, based on perceptions of social value) should be integrated in the decision-making process¹, increasing the significance of stakeholder identification and participation.

The need for participation is enshrined in both international obligations and national laws concerned with sustainable development. During the UN Conference on Environment and Development (UNCED) in 1992 the participation principle was an important issue, resulting in the embedment of this principle in the closing documents; the need for broad participation is referred to in several chapters of Agenda 21, and principle 10 of the Rio Declaration explicitly states that environmental issues should be handled with the participation of all concerned citizens. Nine major groups of civil society are identified to assure specific attention and responsibilities: youth, women, indigenous peoples, non-governmental organizations (NGO), local authorities, trade unions, business and industry, science and technology, and farmers.

Since the UNCED several regional and international treaties have incorporated principle 10. In the European context the 1998 UN/ECE Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (Aarhus Convention) is the most important initiative inferred from principle 10 of the Rio Declaration, aiming to support a participatory approach for important policy decisions, with obvious implications for European and national environmental law.

¹ Glicken, J. Getting stakeholder participation ‘right’: a discussion of participatory processes and possible pitfalls. *Environmental Science and Policy* 3 (2000) 305-310.

The principle of participation was also reinforced during the Johannesburg Summit on Sustainable Development in 2002.

Given the broadly acknowledged significance of participation in sustainable development issues, the participation aspect cannot be ignored when developing a framework for Sustainability Impact Assessment in Belgium. The aim of this paper is developing a useful perspective on public involvement for SIA in the Belgian federal policy context (task EX 5 of the research project '*Methodology and Feasibility of Sustainability Impact Assessment. Case: Federal Policy-making process*'). In chapters 2 to 4 of this paper a theoretical background on different aspects of participation is presented. In chapter 5 an interesting framework for the design of multi-stakeholder processes is presented, in which all questions, issues and challenges which need to be considered when organising a participation process are addressed (Hemmati²). Chapter 6 provides a general, non-exhaustive overview of participation practices in some more established forms of impact assessments. Based on the previous chapters, chapter 6 suggests a range of possibilities and guidelines for the selection of an appropriate participation procedure and methodology for SIA-practices in the Belgian federal context, as well as possible difficulties and challenges that might be encountered.

Input for this task comes from literature study on participation in general and on existing participation practices in current impact assessments and from the face-to-face interviews with potential users and providers of SIA, conducted for task EX 2 of the project (exploration of the potential demand for SIA). Moreover, a last form of input has come from experiences during the case studies and know-how build during the previous stages of the research project.

² Hemmati, M. (2000). *Multi-stakeholder Processes for Governance and Sustainability. Beyond Deadlock and Conflict*. London: Earthscan Publications.

2. Costs and benefits of stakeholder involvement

The main goal of stakeholder involvement in decision-making is to improve the decision-making process and the resulting policy decisions and to realize better governance. Engaging in a participation process can indeed bring along considerable benefits, however participation also involves costs. Those costs and benefits should be carefully identified and considered by the initiator as well as by the participants of a potential participation process.

The discourse on sustainable development stresses the importance of participation of stakeholders and/or population within the policy-making context for several reasons. For the policy-maker, the benefits are threefold. First, sustainable development implies far-reaching societal changes and these are not possible without support from the population. Involving stakeholders and population in analyzing problems and formulating policy measures will broaden public support. Second, and as a consequence, it strengthens the legitimacy and democratic content of governments by securing greater transparency and accountability. Third, it adds new perspectives and expertise and broadens the knowledge base on which policy is build and may thus allow for a more balanced formulation of policies. For the public or the stakeholders, their participation in the policy-making process offers the obvious benefit to introduce new concepts and values into the policy-making process which are otherwise neglected. Existing electoral democratic processes are insufficient to represent all interests in the policy-making process. Extended participation possibilities make it possible for all societal actors to draw policy attention to their needs and demands.

Whether these kinds of benefits are reached, depends in large measure on how participation is made operational in practice. Who is allowed to participate? At which moment are participants involved? Which influence and role do they have? Under which conditions can they play a useful role (e.g. information needed, capacities needed...)?

Webler et al (1995, in Stagl, 2003³) define three quality criteria for successful participatory decision processes: fairness, competence and social learning. They consider it "*essential to embed contributions of participants in a dialogue setting that guarantees mutual exchange of arguments and information, provides all participants with opportunities to add and challenge claims, and to create active understanding among all participants.*" Other authors also stress the importance of a learning approach in which the common discussion and debate attitude is replaced by real dialogue⁴. This means a change in mentality and moving away from adversarial conflicting interaction towards more open and constructive interaction in which consensus is being sought.

³ Stagl, S. (2003). Multicriteria evaluation and public participation: in search for theoretical foundations. <http://www.euroecolecon.org/old/frontiers/Contributions/F2papers/PL2-FPaper.pdf>

⁴ Hemmati, M. (2000). Multi-stakeholder Processes for Governance and Sustainability. Beyond Deadlock and Conflict. London: Earthscan Publications.

The multiple benefits of stakeholder involvement seem obvious. However participation processes also involve considerable costs for those who seek participation as well as for the participants. First of all the initiator of the process has to take on the monetary cost for organizing and managing the process (research, communication, logistic provisions, ...). Moreover once a participation process has been initiated, the exact course cannot be anticipated. Conflicts may arise, causing delays and unexpected dead-locks. A badly managed participation process might even generate resentment and aversion instead of a broader public support for the policy-making process.

Also the participants have to engage the necessary time, know-how and resources to participate in a stakeholder process. These costs are often substantial and can be insurmountable. In particular for small stakeholder groups, which often have very limited means, it might not be possible to sacrifice the required time and resources. These inevitable costs attached to participation processes may limit participation or cause bias in the stakeholders able to participate. Therefore attention should be given to make sure all relevant stakeholder groups are involved and not only have those who can afford to participate. It should be considered to make arrangements to compensate the costs for participation.

Not only time and financial resources needed to engage in a participation process might keep stakeholders from participating, also other cost-benefit-related issues can influence the willingness to participate. The relevance of their participation should be absolutely clear for the stakeholder groups. Potential participants have to be convinced of the importance of the issue. The policy in question has to be sufficiently significant, making it worthwhile to take on the effort to participate. Moreover the input has to be taken seriously by the decision-maker and really influence the outcome of the decision-process. If a participation process is perceived to be pointless or initiated for the wrong reasons, stakeholders will pull out and the process, as well as the policy maker, will lose its credibility.

Also for the policy maker, the policy concerned has to be of sufficient importance to organize a participation process. The initiator has to be convinced of the need for public support to strengthen the legitimacy of the policy. Consequently the participation process has to be taken seriously and should be in balance with the importance of the policy decision concerned. A participation process should only be initiated if the decision-maker has real participatory objectives and really wants to have the stakeholders involved into the decision-making process. After all, no participation process should be preferred above a failed one. A serious participation process however requires more than good intentions; enough resources and institutional capital have to be engaged.

3. The participation spectrum

Public involvement is a generic term which can have several meanings. Very often the terms 'involvement', 'consultation', 'participation', ... are used interchangeably and more notably, are perceived differently by respective user groups. Therefore it is important to clarify what we mean by these terms in the context of the policy-making process.

'Public involvement' encompasses the full spectrum of interaction between 'the public' and the decision process. However the degree and intensity of this interaction can vary from one end to the other on a scale of influence on the decision making process.

Several classifications of public involvement have been developed to clarify the different forms of involvement and participation. The participation ladder developed in 1969 by Sherry Arnstein⁵ is one of the most prominent classifications in literature. She situates her classification within questions of redistribution of power, allowing participants to join in determining how information is shared, goals and policies are set, tax resources are allocated etcetera. Participation without redistribution of power is an empty and frustrating process, according to Arnstein, since "it allows power holders to claim that all sides were considered, but (...) it maintains the status quo" (o.c. 217). This is an interesting point, since it is usually assumed that policies for sustainability require some form of disturbing the status quo. Arnstein distinguishes eight levels of participation, arranged in a ladder pattern with each rung corresponding to the extent of citizens' power in determining the end product (see figure). At the bottom of the ladder are two forms (manipulation, therapy) which merely serve to 'educate' participants or engineer their support. The three next forms are labelled 'tokenism', since citizens are either informed, invited to give their opinion, or made member of some advisory body, but there is no guarantee that their concerns and ideas will be taken into account. The three highest rungs on the ladder are characterized by a redistribution of power, with citizens being guaranteed some form of influence in decision-making.

⁵ Arnstein S.R., 1969, 'A Ladder of Citizen Participation', in *Journal of the American Institute of Planners*, 8(3), p. 217-224. Arnstein's ladder and variations on it have since appeared in thousands of publications and discussions on participation.

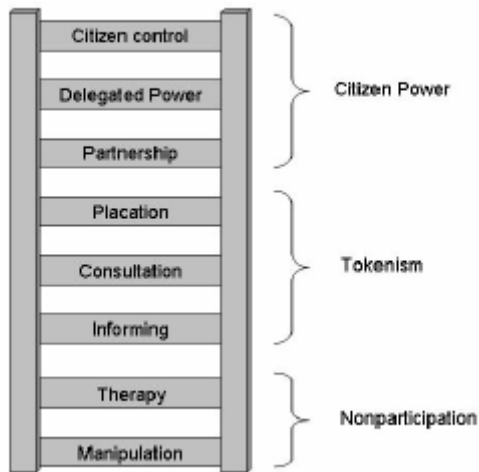


Figure 4. Arnstein's ladder of citizen participation

Pretty⁶ (1997) proposes another classification of participation more implicitly addressing the distribution of power. This classification is based on experiences in local-level development and distinguishes between 7 different types of participation with their specific characteristics that range from manipulative participation to the stage where communities take initiatives of their own:

Type	Characteristics
Manipulative participation	Participation is simply a pretence.
Passive participation	People participating by being told what has been decided or has already happened. Information shared belongs only to external professionals.
Participation by consultation	People participating by being consulted or by answering questions. No share in decision-making is conceded and professionals are under no obligation to take on board people's views.
Participation for material incentives	People participate in return for food, cash or other material incentives. Local people have no stake in prolonging practices when the incentives end.
Functional participation	Participation is seen by external agencies as a means to achieve project goals, especially reduced costs. People may participate by forming groups to meet predetermined project objectives.
Interactive participation	People participate in joint analysis, which leads to action plans and the formation or strengthening of local groups or institutions that determine how available resources are used. Learning methods are used to seek multiple viewpoints.
Self-mobilization	People participate by taking initiatives independently of external institutions. They develop contact with external institutions for resources and technical advice but retain control over how resources are used.

⁶ In: Organisation for Economic Co-operation and Development (2002). Sustainable Development Strategies, A Resource Book, p. 180. London: Earthscan Publications.

A third classification can be found from the International Association for Public Participation. This association developed an interesting public participation spectrum, based on the goals of the participation process⁷.

INCREASING LEVEL OF PUBLIC IMPACT				
INFORM	CONSULT	INVOLVE	COLLABORATE	EMPOWER
Public Participation Goal:	Public Participation Goal:	Public Participation Goal:	Public Participation Goal:	Public Participation Goal:
To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.	To place final decision-making in the hands of the public.
Promise to the Public:	Promise to the Public:	Promise to the Public:	Promise to the Public:	Promise to the Public:
We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and aspirations, and provide feedback on how public input influenced the decision.	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	We will look to you for direct advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.
Example Techniques to Consider:	Example Techniques to Consider:	Example Techniques to Consider:	Example Techniques to Consider:	Example Techniques to Consider:
<ul style="list-style-type: none"> ● Fact sheets ● Web sites ● Open houses 	<ul style="list-style-type: none"> ● Public comment ● Focus groups ● Surveys ● Public meetings 	<ul style="list-style-type: none"> ● Workshops ● Deliberate polling 	<ul style="list-style-type: none"> ● Citizen Advisory Committees ● Consensus-building ● Participatory decision-making 	<ul style="list-style-type: none"> ● Citizen juries ● Ballots ● Delegated decisions

⁷ <http://www.iap2.org/associations/4748/files/spectrum.pdf> (07/07/2005)

These different existing classifications are often simplified and represented in three levels of involvement, according to the objective of the process⁸:

- transmitting information (unidirectional);
- consultation (bi-directional, but the consulted party frames the issue);
- active participation: based on a partnership in which citizens, stakeholders, experts and/or politicians actively engage in (policy) debate.

It should be clear that within a sustainability context, the first level of transmitting information in one-direction is not satisfying. Although informing the public is an important aspect of good governance and an indispensable requirement for sustainable development policies, it cannot be classified under the participation principle as defined in Rio and as meant in subsequent international and national legislation. In the current policy context the conclusive power will generally remain within the existing government structures, but important policy decisions aiming for a sustainable development should be based on the consensual support of society, demanding some form of bi-directional consultation. Sigrid Stagl⁹ points to the fact that there is still considerable tension between public participation and legislatively delegated authority. For introducing democratic-like participation practices in the official policy-making process blurs the limits of legal decision procedures. However she stresses the need for decision-making as a social learning process, based on social interaction and open dialogue.

The actual organization of the participation process will vary according to the objective of the process and its location in the participation spectrum. A huge range of methodological possibilities to involve 'the public' is available. Michael K. Ewing¹⁰ provides a list of the most widely used tools in public participation, arranged in groups based on their general purpose and according to four levels of participation:

- Level 1: education and information provision: printed materials (fact sheets, newsletters, brochures, issue papers), advertisements, press releases, public displays, newspaper inserts, newsletters, bill stuffers, information repositories, site visits, video, independent technical documents and expertise.
- Level 2: information feedback: public meetings, public hearings, the internet, free-phone telephone lines, interviews, surveys (face-to-face, telephone, internet), response sheets, deliberative polling, teleconferencing, presentations to community groups, expert panels, field offices, informal small groups meetings.
- Level 3: involvement and consultation: workshops, focus groups, open house, Delphi method.

⁸ Slocum, N. (2003). Participatory Methods Toolkit: A practitioner's manual. UNU/CRIS.

⁹ Stagl, S. Multicriteria Evaluation and Public Participation: In Search for Theoretical Foundations. Frontiers 2: European Applications in Ecological Economics, Tenerife, Spain, 12-15 February 2003.

¹⁰ Ewing, M.K. (2003). Public Participation in environmental decision-making.
(<http://www.gdrc.org/decision/participation-edm.html>)

- Level 4: extended involvement: citizen juries, advisory groups, task forces, planning for real, community visioning.

Existing practices demonstrate that participation remains very often restricted to information and controlled consultation. The internet is a cost-effective and often used medium for involvement of the public, despite of the difficulties this brings along (digital divide).

4. The participants

Not only the degree of participation can generate confusion, also the parties to be involved are a matter of uncertainty and doubt. Often the terms public involvement or public participation is used; however there is no such thing as one “public”. The public is in fact a heterogeneous collection of interests, forming a constantly changing constellation of alliances and conflicts. Consequently, involving the general public in the policy-making process is an enormous issue, demanding serious time and money engagements. Therefore in most decision-making processes it is neither possible, nor desirable to include everyone in decision-making processes.

Public participation is often narrowed and specified as stakeholder participation, stakeholders being representatives of all parties (individual or organized) with a ‘stake’ in the decision. Hemmati defines stakeholders as “*those who have an interest in a particular decision, either as individuals or representatives of a group. This includes people who influence a decision, or can influence it, as well as those affected by it*”. Consequently stakeholders are always defined in reference to a particular issue, in a particular time and site context. Therefore ‘stakeholder’ is a relative term and each participation process will be specific to time, site and issue.¹¹

Various classifications of stakeholders can be found. Knigge and Leipprand¹² distinguish between parties who will be actively involved in the assessment, parties who have expertise in the field and parties who are likely to be affected by the measure. According to Stagl¹³ stakeholders can be categorized in 5 groups: citizens, stakeholders with special interests (NGO’s, industry, local communities, ad hoc groups, ...), researchers, facilitators and decision makers. Each of these groups has a specific role to play in the participatory process: Citizens are not selected according to any group membership. They can provide relevant subjective, value-based and grass-roots level information. Stakeholders with specific interests include all organized and ad hoc groups who feel affected by the issue at hand. Their main responsibility is to represent value positions and indicate how the problem impacts on their concerns. Researchers are trained in analyzing the actual and potential impacts of given policies and in designing methodologically and theoretically sound policy recommendations. Facilitators have process competence, which they use to design and run the process in a fair and effective manner. The role of decision makers depends on the division of decision power in the process, ranging from holding full decision power to following a decision made by other stakeholders.

¹¹ Glicken, J. Getting stakeholder participation ‘right’: a discussion of participatory processes and possible pitfalls. *Environmental Science and Policy* 3 (2000) 305-310.

¹² Knigge, M. & Leipprand, A. The role of participation in SIA’s. Paper for the SUSTRA workshop “Sustainability Impact Assessment of Trade agreements and New approaches to governance”, 27-28 March 2003.

¹³ Stagl, S. (2003). Multicriteria evaluation and public participation: in search for theoretical foundations. <http://www.euroecolecon.org/old/frontiers/Contributions/F2papers/PL2-FPaper.pdf>

However these groups represent the different actors that can be involved in a participation process rather than real stakeholders. Decision-makers and facilitators are mostly not considered as stakeholders. Very often the term stakeholders has a more restricted connotation, referring to the different groups from civil society such as environmental organizations, development organizations, consumers' unions, trade unions, employers' federations, energy producers and the world of science. Also groups representing the interests of youth, women, elderly, disabled persons, poor people, immigrants, ... can be identified as stakeholders in a specific context.

For important policy decisions broad participation and a representative selection of stakeholders should be aimed at. In an inclusive participatory process the widest possible range of stakeholders is involved, aiming to increase to a maximum the sense of ownership, the legitimacy of the outcomes and the extension of valid knowledge. Inclusiveness generates legitimacy and credibility, while exclusion of any kind can cause resistance and conflict. However, inclusiveness of a participation process should rather refer to the presence of all major views and to a lesser degree to the presence of all possible players. In this context special attention has to be given to make sure vulnerable groups are not under-represented.

Such an inclusive approach however is not always possible and might not be desirable for practical reasons. When designing a multi-stakeholder process the challenge is to find a balance between a representative participation of the diversity of views on the issue in question and the practical feasibility and effectiveness of bringing those representatives together. Engaging too many participants might prove to be inefficient, for it might lead to inertia. Moreover high levels of input are difficult to process and integrate. Therefore the participation process is often restricted to (a selection of) organized stakeholders with specific interests. These stakeholders are easier to contact and to engage because of their more or less structured organization. It is far more demanding to contact and engage citizens in a participatory process, while not always with proportional results.

5. Framework for participation process

It is not possible to present a one size fits all scenario for participation in a SIA. However Hemmati¹⁴ suggests an interesting framework for the design of multi-stakeholder processes (MSP), in which all relevant questions, issues and challenges which need to be considered when organising a participation process are addressed. This framework represents an ideal participation process. In reality it won't be possible to follow all steps of this framework or to provide an answer to all questions raised. However it can be very useful steppingstone and serve as inspiration source for organising a participation process within the Belgian SIA-context. Hemmati divides the multi-stakeholder process into 5 phases (context, framing, inputs, dialogue/meetings and outputs), each consisting of several points of attention (cfr. figure x). These phases will be briefly explained further on.

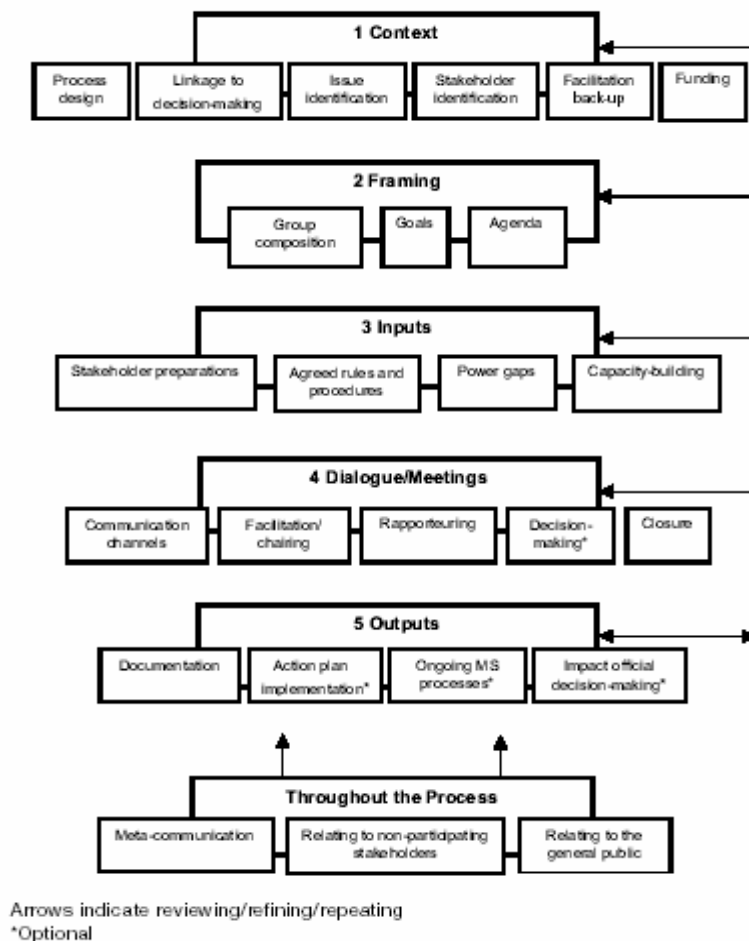


Figure x: designing MSP a detailed guide
Source: Hemmati, p.211

¹⁴ Hemmati, M. (2000). Multi-stakeholder Processes for Governance and Sustainability. Beyond Deadlock and Conflict. London: Earthscan Publications.

- 1) In the first phase the **context** of the participation process needs to be determined. The author identifies several aspects to be considered in this first phase:
 - Process design: A customized process has to be designed according to the circumstances, abilities and needs of the participants. A common agenda has to be defined and procedures need to be agreed upon (activities to be undertaken, respective roles and responsibilities, of participants, information sharing, time-frame, ...).
 - Linkage into official decision making: It has to be clearly defined how the results of the participation process will be used in the decision-making process. Transparency on this subject is absolutely necessary to ensure that officials as well as stakeholders are very clear about what they are engaging in.
 - Issue identification: A stakeholder process is to be productive only when a clear agenda and clear definitions of what issues to be addressed are identified.
 - Stakeholder identification: the aspect of stakeholder identification has already been extensively dealt with in chapter 4.
 - Facilitation / organisational back-up: sufficient organisational support needs to be provided. The process needs to be guided by a neutral facilitator, accepted by all participants. Moreover, several administrative tasks need to be executed. This back-up issue is of course closely related to the available budget. The author suggests the possibility to found a facilitating body for the sole purpose of facilitating the respective process. This would have the advantages that the body can be tailor-made for the specific process, staff will be taken on for specific tasks and funding will be provided for the process. A new facilitating body also has the potential to be perceived as neutral and committed to the process, while the installation of a new body will off course need extensive time and resources and will hamper flexibility.
 - Funding: appropriate resources have to be assigned to ensure legitimacy and credibility of the participation process. Those resources not only have to guarantee the administration and guidance of the process, but also have to enable the participants to prepare and attend the meetings and to consult with their respective constituencies. Only with sufficient resources can stakeholders build the capacity needed for effective input.

- 2) In a second phase the process has to be **framed**, including:
 - Group composition: When grouping all appointed stakeholders, a symmetry of powers needs to be guaranteed to ensure equitable representation. All relevant categories should be presented and well balanced (ex. gender, minority groups, faith groups, ...).
 - Setting the goals: A common goal has to be agreed upon by all participants in the participation process. The various representations of the issue at hand should be clarified.

- Setting the agenda: A common agenda should be agreed upon, defining the logistical issues (amount of meetings, amount of time needed for preparation, consultation, facilitation, documentation, timetable, ...) and substantive issues (key issues to be treated and sequence)
- 3) In the third phase the **inputs** for the participation process have to be generated.
- Stakeholder preparations: All stakeholders need to have equitable access to all relevant information and stakeholders should be able to communicate among themselves before actual meetings.
 - Ground rules for stakeholder communication: The ground rules for the purpose of dialogue and/or consensus-building need to be agreed upon.
 - Power gaps: Fundamental differences between stakeholders (knowledge and access to information, size, experience and skills, resources, ...) can create significant power gaps between the participants. These power gaps should be recognised and creatively dealt with.
 - Capacity building: Participants need sufficient background and knowledge. Capacity building measures can be considered.
- 4) In the following phase the actual **dialogue / meetings** take place. In this phase the following issues need to be reflected upon:
- Communication channels: As already discussed, various techniques and channels of communication can be used (face-to-face meetings, hearings, email, fax, telephone, letters, interactive websites, ...). The most appropriate channel(s) need to be selected and agreed upon. This choice should be guided by principles of inclusiveness, equity and transparency.
 - Facilitating / chairing: MSP meetings need guidance and facilitation. A suitable facilitator needs to be accepted by all participants. The role of the chairman or facilitator is very important and can influence the whole process; therefore this person should be impartial and familiar with group dynamics.
 - Reporting: Neutral reporters should be assigned. All reports need to be completely representative of the discussions.
 - Decision-making: At the beginning of the process it has to be defined what kind of decision-making process will be used (unanimity, consensus, majority vote, ...). Premature decision-making should be avoided. The dialogue process should be exhausted before entering into decision-making.
 - Closure: On the other hand, the dialogue process cannot last for ever. Criteria of closure of the discussion need to be agreed upon.

- 5) In the final phase **outputs** have to be generated.
- Documents: The type of output-documentation will have to be decided upon (meeting minutes, reports, chair's summary, ...).
 - Implementation: the results of the participation process will have to be implemented. Therefore solid support of the represented stakeholder groups is necessary. Moreover the group should decide how to monitor and evaluate the implementation of the decisions.
 - Impacting official decision-making: Participation processes which are meant to improve decision-making should result in documents with a high status in the official process.
- 6) Throughout the whole process attention should be given to
- Meta-communication: participants should have the opportunity to reflect on the process they are participating in.
 - Relating to non-participating stake-holders: The process should be open to input from non-participating stakeholders. This can be ensured in various ways (interactive websites, individual contacts, ...). Again it has to be clear in what way these inputs will be considered and used.
 - Relating to the general public: the participation process should be transparent and open to the wider public. The decisions taken for the respective sustainability issues eventually will be of concern to the whole public. Agreements have to be made on who will relate to the public and how this will be done.

The framework presented by Hemmati offers an interesting and exhaustive overview of problems and questions that need to be considered when developing a multi-stakeholder process. Consequently it can be a useful aide memoire when elaborating a participation process for a federal SIA in Belgium.

6. Participation in existing assessment processes

Contrary to the theoretical importance of participation, in most existing frameworks for integrated impact assessments the involvement of public or stakeholders is only vaguely defined. Some general guidelines and options for participation methods are often mentioned, but the choices concerning the actual implementation of participation and the modalities of the participation procedure are left to the initiators of the assessment process. Notwithstanding the lack of experience and concrete guidelines for participation within integrated impact assessments, there is an ever growing experience with multi-stakeholder processes in other contexts on local, national, regional and international level. However also for these more established experiences an enormous variety can be found as regards the issues concerned, the objectives, the participants, scope, time-lines and degree of linkage into formal decision-making.

In the context of this research project it is not possible to give a detailed description of all existing participation experiences. However the following general observations and conclusions concerning participation within some of the more established impact assessment processes are worth mentioning.

6.1 *Participation in Environmental Assessments*

Literature has demonstrated that Sustainability Impact Assessment as it is understood for this project (strategic, integrated, ex ante, participatory) is still in an early developing phase. However several initiatives are being developed at several levels. Those emerging experiences with SIA have partly¹⁵ evolved from existing practices and theories on Environmental Impact Assessment (EIA) on project-level and more recently on Strategic Environmental Assessment (SEA) for decisions made earlier in the decision-making process at a higher strategic level.

Environmental Impact Assessment is the most established form of impact assessment. All countries of the UN ECE¹⁶ have some form of EIA embedded in their national legislation, applying different methods and degrees of public participation. Public participation concerning potential environmental impacts on the level of plans, programs, policies and regulations has more recently been formalized. On European level a SEA-Directive (2001/42/EC) was adopted in June 2001, imposing the member states to identify and assess the environmental consequences of certain plans and programs during their preparation and before their adoption. The introduction of SEA in the European context also meant to contribute to more transparent planning by involving the public. On national level SEA has been officially adopted by most

¹⁵ Also Regulatory Impact Assessments can be considered to be at the origin of SIA-practices

¹⁶ United Nations Economic Commission for Europe

European and several non-European countries. In Belgium the European Directive has recently been transposed in regional legislation (in 2002 in Flanders, in 2004 in Brussels and the Walloon region), while the federal Council of Ministers has approved a proposal of law to introduce SEA on federal level in June 2005.

Within the UN ECE region a Protocol on Strategic Environmental Assessment was developed under the Espoo EIA Convention concerning EIA in a Transboundary Context¹⁷. In 2003 the SEA-Protocol was signed and adopted by 35 countries and by the European Commission. Concerning the participation issue, this protocol stipulates that the initiator shall ensure:

- early, timely and effective opportunities for public participation, when all options are open;
- timely public availability of the draft plan and the environmental report;
- that the public concerned is identified;
- that the public has the opportunity to express its opinion on the draft plan or programme and the environmental report within a reasonable timeframe;
- that the detailed arrangements for informing and consulting the public concerned are determined and made publicly available.

Furthermore provisions for consultation with environmental and health authorities and transboundary consultations were stipulated in the SEA-Protocol.

Due to these institutional evolutions on national and international level, public participation in the context of environmental assessment has become a regular practice, particularly on project level. In spite of these experiences there are no concrete scenarios for the organization of consultation within environmental assessments. Consultation is a very flexible issue within this context and is made operational taking into account all situational circumstances of the assessment process.

Some reviews of existing EIA-practices however can draw some general inferences and conclude that public involvement occurs too infrequently and often too late in the EIA process; that institutional provisions for participation are highly variable; that the quality of the consultation is often inferior; and that public involvement often has no significant influence on decision-making¹⁸. A general analysis of participation issues within Strategic Environmental Assessments in some more experienced countries¹⁹ similarly concludes that the notion of participation in SEA encloses a range of mechanisms and practices differing in modalities, institutional character, level of implication of the participants, moment of intervening in the decision process, etc.

¹⁷ Signed in Espoo, Finland, in 1991 and entered into force in 1997. See <http://www.unece.org/env/eia>

¹⁸ Lawrence, D.P. (2003). *Environmental Impact Assessment: Practical Solutions to Recurrent Problems*. New Jersey: John Wiley & Sons.

¹⁹ Gauthier et al.; 2000 in Risse, N. *Revue de littérature et synthèse de l'état de l'art en évaluation environnementale stratégique*, Working Paper dans le cadre du projet "Exploration de la méthodologie et de la faisabilité des évaluations stratégique du développement durable", Août 2004.

6.2 Participation in RIA's (Regulatory Impact Assessment)

In several countries a Regulatory Impact Assessment (RIA) has been introduced to support regulatory reform and better decision making procedures. A RIA assesses the direct and indirect impacts of any proposed regulation, in terms of costs, benefits and risks for the society as well as for the institutions which will be in charge of the implementation and maintenance of the regulation.

The RIA-practice has recently been introduced in Belgium. From the first of January 2005 on, RIA is compulsory in Flanders for all legislative proposals having a regulating impact on civilians, business or non-profit organizations. A detailed handbook has been published, but despite the fact that these general guidelines stress the importance of consultation within the RIA-process, no concrete procedures were established for the consultation process. However in the final RIA-document the manner in which the consultation was conducted and the results of it have to be explicitly mentioned. Again some general principles for the consultation process are referred to, but these remain rather vague. Consultation practices in the Flemish RIA-context thus have to be developed on a case-by-case base. An interesting advice in the guidelines however is to keep the scope of the consultation process in proportion with the importance of the regulation in question.

In a comparative analysis of regulatory impact assessment in ten EU countries²⁰ a set of core requirements for a good RIA was formulated, based on the "Mandelkern Report": *One of those requirements is that it should reflect the results of consultation 'One crucial element of a proper RIA is consultation (...) aimed mainly at information gathering. This should begin before the assessment, when the choice is still open; should be publicized, transparent and wide ranging, not a ritualistic exercise; should reach the actual stakeholders and represent the relevant interests (...) in the process; should last at least for a standard minimum period, appropriate to the matter at stake and to the range of stakeholders; should use feasible, fruitful and reliable techniques; and its results should be actually affect policy design.'*

In all national RIA-practices examined some form of consultation is pursued in practice. However public consultation is not formally required by statute in some of the countries considered (Denmark, Hungary and the Netherlands have no official guidelines for consultation); Minimum standards for consultation are explicitly established only in Sweden, UK, Germany and Austria, the latter dealing in its Guide only with who should be consulted and with the duration of the consultation. When examining the different national RIA-practices, again a considerable variety can be observed in the different aspects of the consultation processes. There is no common

²⁰ *A Comparative Analysis of Regulatory Impact Assessment in ten EU Countries*. Report prepared for the EU Directors of better regulation group. Dublin, May 2004.
(http://www.betterregulation.ie/attached_files/Pdfs/Report%20on%20RIA%20in%20the%20EUa.pdf)

understanding about criteria, procedures, stakeholder identification, methods and techniques, timing of consultation, expected results etc.

6.3 Participation in European Trade SIA's

In the methodological framework for SIA for application to international trade policy measures, developed for the European Commission, the need for an inclusive process of stakeholder consultation is stressed. In this context consultation is meant to serve three main purposes²¹:

- identify issues of concern, such that they are included in the scope of the study and subjected to informed debate;
- make use of specialist expertise in the prediction and evaluation of sustainability impacts;
- expose the quality of the assessment to open scrutiny.

Until now consultation is mainly organized by publication of reports and other documents on websites with the invitation to submit written comments. In addition some open public meetings and some thematic meetings were organized in Brussels and an extensive network of international experts has been developed. The European Union's own trade negotiators, representatives of (mainly European) trade associations and ngo's with environmental and social development interests were most active in these consultation processes.

Difficulties have been encountered in consulting as widely as should be desirable and in demonstrating that inputs have been taken into account within the existing time and resource constraints²². Also the reliance on electronic media has proven to be problematic, in particular taking into account the digital divide in many lower income countries.

Knigge²³ suggests a decentralized consultation process for European trade related SIA's. The SIA-process consists of several stages, which are very different in character. Consequently diverse kinds of expertise and stakeholder input becomes relevant in the different stages. Therefore the consultation process should be split up into components that reflect the evolution of the assessment. Hurdles in a decentralized approach can concern the increased workload, possible overlap, insufficient interest to ensure that all meetings are sufficiently attended and the problem of exclusion. A decentralized participation process however could mean an increased number of possible entry points for significant stakeholder input.

²¹ George, C.; Kirkpatrick, C; Mosedale, S. (2003). Participation in European Governance Reform: *The role of Sustainability Impact assessment*. Prepared for the Conference on 'Participation: From tyranny to Transformation? Exploring new Approaches to Participation in Development'. University of Manchester; January 2003

²² George, C. & Kirkpatrick, C. (2003). *Sustainability Impact Assessment of World Trade Negotiations: Current Practice and Lessons for Further Development*. Prepared for Conference on 'New directions in Impact Assessment for Development' University of Manchester; 24-25th November, 2003

²³ Knigge, M. *Public Participation in the EU's Sustainability Impact Assessments of Trade Agreements*. Institute for International and Environmental Policy: Berlin

6.4 Participation in European Impact Assessments for all major Commission Proposals

In 2001 the European Commission has published a White Paper on European Governance in which openness, participation, accountability, effectiveness and coherence are identified as the five main principles underpinning good governance. One of the outcomes of the European Better Regulation initiative was the Commissions Communication on general principles and minimum standards for consultation of interested parties by the Commission²⁴. In the Impact Assessment Guidelines the following aspects of stakeholder consultation in the SIA-process are elaborated:

- Establish a Consultation Plan to ensure input from interested parties and experts;
- Identify the objective of the consultation(s), the elements of the IA for which consultation is necessary, the target groups, the appropriate consultation tool(s) and the appropriate time for consultation.
- Respect the Minimum Standards for consultation in the IA process and reporting – COM(2002)704.

However it is stressed that “consultation must remain proportionate to the likely impact of the proposal”

Despite the formulation of these guidelines on consultation in general and more specific in European SIA-practices, the Institute for European Environmental Policy established a substantial diversity within the consultation practices as part of the extended SIA's in 2003²⁵. More in particular the consultation processes differed considerably on the following parameters:

- the extend of the consultation
- who is consulted
- timing
- timetable
- mechanisms
- resources

Generally the authors conclude that industrial interest groups have been more closely engaged than environmental or social groups, reflecting their considerably greater resources. They incite stakeholders – and particularly ngo's to give greater priority to contributing to Commission impact Assessments and to press the Commission to make financial support available.

²⁴ Commission of the European Communities, COM(2002)704. *Towards a reinforced culture of consultation and dialogue - General principles and minimum standards for consultation of interested parties by the Commission.*

²⁵ Wilkinson, D., Fergusson, M., Bowyer, C., Brown, J., Ladefoged, A., Monkhouse, C., Zdanowicz, A. (2004), *Sustainable Development in the European Commission's Integrated Assessments for 2003. Final Report.* IEEP, London

6.5 Conclusion

A general absence of concrete methodological information on how to organize public or stakeholder involvement in SIA-processes can be established. As already mentioned 'stakeholder' is a relative term, which is only meaningful in reference to a particular issue. Consequently participation processes have a time-, site- and issue-specific character, meaning that the results of the process are only valid for those particular people involved, in the particular circumstances concerned at that particular time. Therefore the outcome of a public participation process cannot be precedent-setting, resulting in a huge variety of more or less unique participation processes²⁶.

Due to the diversity in practice and size of integrated assessments and the particularities of each individual participation exercise, all participation initiatives should be managed according to the specific circumstances, taking into account several situational aspects of the assessment process in general and the demands of the participation exercise in particular (goal of the assessment process, goal of the consultation exercise, resources available, ...)

Notwithstanding the lack of concrete implementation scenarios, the following general guidelines and principles on participation are recurrent in existing practices and can be useful for the development of new SIA-initiatives:

- consultation should occur early in the assessment process;
- stakeholder groups should be well-balanced;
- Stakeholders should be well-informed;
- Participation process should be based on open access to information;
- Need for real dialogue, not just soliciting for views;
- Need for transparency in the way the contributions were used;
- Clear demonstration that contributions have been taken seriously;
- Allow enough time for consultation period
- ...

²⁶ Glicken, J. Getting stakeholder participation 'right': a discussion of participatory processes and possible pitfalls. *Environmental Science and Policy* 3 (2000) 305-310.

7 Participation in the Belgian federal SIA-process

7.1 *Participation as a flexible tool*

The research results from the Exploratory Phase suggest that it is neither possible nor advisable to develop a 'one size fits all' methodology for carrying out a SIA. Similarly literature and existing participation practices suggest that it is not possible to develop a 'one size fits all' scenario for the participation of stakeholders within a Belgian SIA. Yet, the SIA process which is being developed during this research project has some typical characteristics which will influence potential forms of participation: it is concerned with 1) formulation of policy, 2) at federal level, 3) at an early stage (*ex ante*), 4) from an integrated perspective. The current chapter aims to propose a range of guidelines for the selection of an appropriate participation procedure and methodology.

As has been demonstrated in the previous chapters, some valuable lessons can be learned from existing participation exercises in other contexts. However these experiences have also revealed that any participation process should be flexible and tailored to the needs and demands of the situation and actors concerned. Therefore several uncertainties and options are unavoidable when elaborating guidelines for the participation procedure for a Belgian SIA. In particular because the development of a SIA for the Belgian federal context still is in a very premature phase and the institutional context remains far from clear²⁷. Not only the general SIA-methodology, but also the participation process will be influenced for a great deal by the choices and decisions concerning the institutional situation. The broader institutional framework in all its aspects has to be defined to reduce the uncertainties and shed a clearer light on the organization of the SIA process in general and the participation process in particular. Therefore it is not possible to develop a detailed scenario for organizing participation in Belgian SIA-practices. However we will try to give an overview of the participation possibilities and the related questions for the federal SIA-process.

When dissecting the SIA-process in light of the participation procedure, a distinction should be made between the meta-level and the process-level. The meta-level includes the processes of defining SIA, determining its different components, formulating criteria for evaluation, formulating procedures, and – once SIA is established – evaluating this SIA process at regular moments. On this level participation is essential for the development of a SIA-practice for which all stakeholders recognize the relevance and significance. On the process-level, participation is an

²⁷ Thomaes, P.; Lavrysen, L.; Paredis, E. (2005). Institutional and juridical integration of SIA in the Belgian federal government's structure. Working Paper. UGent.

important element of the SIA-procedure, which can be split up in several stages (screening, scoping, impact analysis, impact evaluation, reporting). During each of these stages stakeholders can be involved; however costs and benefits need to be considered. Consequently for each phase it has to be decided if and how participation will be organized.

7.2 *Meta-level*

For making a Belgian SIA effectively work, it is of utter importance that there is broad political and public support for this tool. The decisions made at meta-level concerning what, how, why and who of a federal SIA-process are crucial for the future credibility and assimilation of the tool. Therefore participation of stakeholders during this first phase, in which the SIA-process is being defined, is of extreme importance. First of all the decision-makers at all levels have to back the process and be willing to cooperate in its implementation. Several potential users of SIA have suggested during the interviews to limit the participation process in first instance to the actors involved of the different administrations. This inter-departmental form of participation is considered to be a difficult, but crucial step to build administrative and political support for the tool. Taking the step towards participation from 'outsiders' is judged as too difficult and even a threat to the introduction of SIA. However also the stakeholders have to be convinced of the relevance and effectiveness of the tool. The most important stakeholders therefore should be involved in the process of defining SIA.

The next step for the actual introduction of SIA in the Belgian policy-making process will be the elaboration of a proposal on how to actually implement a SIA-methodology. The only formal document instituting SIA in the federal policy-making context is the Royal Decree of 22 September 2004 regarding the creation of Cells on Sustainable Development in the Federal and Programmatic Public services (FPS / PPS). According to the article 9 of this Decree, the Minister for Sustainable Development has to determine a date on which articles 8, stipulating the creation of the SIA methodology and inserting it into the FPS involved, will come into force.

As Thomaes²⁸ et al. have demonstrated in detail, this Decree leaves numerous obscurities and possibilities. Several institutional scenarios for embedding SIA in the policy-making process can be imagined based on this decree. Regardless of which organ should be assigned the task of outlining a concrete proposal, a detailed participation plan should be drafted outlining the process of defining the SIA-procedure, taking into account the suggestions of Hemmati's framework (see chapter 5).

The resulting proposal will have to be supported by all administrative services involved with sustainability policy (FPS SD, ICSD, task force, cells for sustainable development). Therefore

²⁸ Thomaes, P.; Lavrysen, L.; Paredis, E. (2005). Institutional and juridical integration of SIA in the Belgian federal government's structure. Working Paper. UGent.

sufficient consultation with those actors is needed when developing the SIA-practice. The institution of an interdepartmental working group for the elaboration of a proposal is a realistic option. This working group should be chaired by the coordinating organ and should consist of representatives of the other actors concerned.

In addition to this main group of political and administrative actors, other stakeholders have to be given the opportunity to contribute to the institutionalisation of a Belgian SIA-process. In this context it might be less preferable to engage individual citizens, because of the complexity and technical level of the subject. A certain amount of prior knowledge on the policy context and on evaluation practices is indispensable for understanding the issues at hand. The potential users of SIA have confirmed during the interviews that they do not see a lot of possibilities to involve the public in general.

At this level the involvement of organised stakeholder groups, familiar with federal consultation practices is to be preferred. Engaging the Federal Council for Sustainable Development (FCSD) is an appropriate and feasible option. The FCSD is composed of representatives of various social organizations (environmental organizations, development organizations, consumers' unions, trade unions, employers' federations, energy producers and the world of science) and advises the Belgian federal authorities about the sustainable development policy at the federal government's and parliament's request, as well as on its own initiative. In addition to its advisory duties the FCSD acts as a forum to encourage the sustainable development debate. This advisory body thus integrates two very important aspects for being a relevant institution to be consulted during this meta-phase. First of all the FCSD represents a variety of societal interests and concerns in one well-organized and established body. Secondly this institution is familiar with the federal policy-making process in general and the policy concerning sustainable development in particular. The involvement of the FCSD should be made clear in the participation plan, outlining how (written comments, meetings, ...) and at which decision points the FCSD will be consulted, and what will be done with the results (binding or non-binding advice). The most realistic possibility to include the stakeholders is to ask the FCSD to give a detailed advice on the draft proposal, as elaborated by the working group. The advice of the FCSD has to be intensively discussed by the working group while developing a definite proposal, extensively arguing the adoption or rejection of the recommendations.

The FCSD might also be asked to elaborate a first draft of a proposal; however this option is less preferable.

A last group of stakeholders to be considered is the scientific world. Researchers should be involved to bring in theoretical and practical know-how about evaluation practices, integrated assessment experiences, sustainable development policies, ... Again, as for the other aspects of participation during the meta-phase, the way scientists will be involved should be made clear in the participation plan.

7.3 Process level

A SIA exists of several stages (screening, scoping, impact analysis, impact evaluation, reporting) in each of which participation issues have to be considered. First of all the desirability and feasibility of participation in the different stages has to be decided upon. This will happen mostly during the meta-phase. If participation is considered relevant for the stage under consideration, decisions have to be made concerning the organization of the specific participation process, each time taking into account the general framework as suggested by Hematti.

a) Screening phase

The general objective for the screening-phase is to determine the necessity to pursue with an impact evaluation for different policy PPP's. As part of this research project a screening procedure for a Belgian SIA-process is being developed²⁹. The proposed screening process should provide the appropriate tools to make a justifiable selection of policy proposals to be subjected to a full SIA-procedure. This selection of policy proposals is based on the prediction of potential negative impacts on sustainable development. Participation in this phase can bring the necessary additional information about (perceptions on) estimated impacts and consequently the need for a SIA. As proposed by Bouler et al.³⁰ the screening process could consist of the following phases:

- prescriptive filter, excluding the policy proposals based on the formal nature and type of the proposal;
- impact matrix, roughly determining the potential economic, social and environmental impacts of policy proposals and identifying potential contradictory affects;
- argumentative form, developing an argumentation for or against an extended SIA;
- collection and ranking of the policy proposals to identify those who are eligible to undergo a SIA;
- final interdepartmental selection of the policy proposals which effectively will be subjected to the full SIA-procedure.

The selection of policy proposals to be subjected to SIA is a process in which mainly political and administrative criteria are of importance. Therefore the main actors to be involved are political and administrative actors. Again it remains unclear which institutional organ(s) will be responsible for this screening phase³¹. Depending on the political decisions concerning the

²⁹ Bauler, T. & Wäktare, M. (2005). Towards a screening mechanism for SIA: process and content issues related to the federal Belgian case. Working paper. ULB / IGEAT.

³⁰ idem

³¹ For a detailed review of the institutional questions and possibilities, see Thomaes, P.; Lavrysen, L.; Paredis, E. (2005). Institutional and juridical integration of SIA in the Belgian federal government's structure. Working Paper. UGent.

institutional responsibilities for implementing the screening phase, participation scenarios for the screening phase will vary. The desirability of more or less intensive participation during this phase should be well considered. The screening process in itself is quite an extensive task, also without stakeholders being involved in the discussion. For each political competence (federal service or ministerial cabinet) a considerable amount of policy proposals is supposed to be subjected to the screening tool, rising up to an extensive total of proposals to be individually assessed for the desirability for a full SIA. The time investment needed for the screening of one proposal is estimated at about one or two days³², meaning that the total time investment needed for screening the entirety of proposals will amount to considerable proportions. Since participation is a time- and energy consuming activity, both for the participants as for the initiator of the participation process, it can be supposed that participation of stakeholders in all the individual screening exercises might be considered as too burdensome by both sides. The responsible institutions for the screening will have to invest a serious amount of energy to put the screening instrument into practice within their own ranks. It will demand a great deal of goodwill and time-investment from the responsible civil servants to realize a qualitative screening for each proposal. Furthermore, this participation task might also prove to be too intensive to engage in for the potential stakeholders. Stakeholders probably won't have the time and resources to analyze in detail each of the policy proposals and decide upon their need for a SIA. Consequently it can be assumed that the involvement of stakeholders in the screening of policy proposals might be practically very difficult and even provoke resentment to the whole process.

However a limited form of participation could be considered. It might be relevant to organize the consultation process collectively at the end of the screening process. In fact the screening process can be depicted as a funnel, with decision points at several levels, starting with a great variety of policy proposals for each administration and resulting in a selection of a few important decisions for the whole government which will undergo a SIA. It seems undesirable to introduce participation mechanisms on each decision point; however a collective participation process at the end of this funnel might be considered. In that case stakeholders can look back on the screening process and give their comments and advice on the final outcome of it. The FCSD could be asked to comment on the results of the process and to provide the stakeholders with an opportunity to gain insight in the selection of proposals for SIA. In that case, the screening process needs to be standardized in time and concentrated in a single decision moment, allowing to integrate it into the formal agenda's of policy-makers, decision-makers and stakeholders. This procedure seems to be a possible theoretical option; however in practice this option seems not very realistic in practice. This procedure is likely to obstruct the policy-making process and cause serious delays, whilst the Governments Agreement introducing the idea of SIA, explicitly states that no delays in the decision-making are to be caused. The involvement of

³² Bauler, T. & Wåktare, M. (2005). Towards a screening mechanism for SIA: process and content issues related to the federal Belgian case. Working paper. ULB / IGEAT.

the FCSD however can be realized in an ex-post setting, in which they can contribute to the evaluation of the SIA-process in general. This option should be discussed as part of the meta-process of developing a SIA-practice for the Belgian context as well as ensuring the evaluation of it.

A more realistic option to involve stakeholders in the screening phase is to make the screening process public by introducing an easy accessible website on which all screening actions are published, giving a clear overview of the screening process in general and the state of the art at the moment of consulting. Moreover the availability of a Regulation Agenda on the website might increase the transparency of the screening process. A regulation Agenda offers a detailed overview of the intended regulations. All interested parties should be able to follow which proposals have been screened, which have been rejected and selected, and for what reasons. Obviously the website should also provide the possibility to comment on the process and guarantees should be made that the comments are actually taken into account.

b) Scoping phase

The general objective for the scoping phase is to determine the extent or the 'terms of reference' of the subsequent impact assessment. During this phase decisions are made for the succeeding phases (impact analysis, impact evaluation, reporting). Moreover during the scoping phase, the extent and the modalities of the participation processes in the proceeding SIA-stages have to be determined and the stakeholders to be involved throughout the further course of the assessment have to be defined. At this moment the desirability of participation during the scoping phase as well as during the subsequent phases will have to be considered. In this context the question arises if participation about the participation process is relevant. Since participation is a time and energy consuming activity, both for the participants as for the initiator of the participation process, it can be argued that participation during the scoping phase is not imperative. The initiator of the process could define the extent of the individual SIA in question and the stakeholders to be involved. However, according to Hemmati, the design of a stakeholder process should be a multi-stakeholder process in itself, by bringing together a small group of representative stakeholders of high diversity as early in the process as possible, to define the continuation of the process: *"Involving stakeholders in ... the design process is crucial to achieve the best design, commitment to the process, credibility, legitimacy and trust"*

When a policy proposal has been selected for further assessment during the screening phase, the respective proposal is likely to have significant sustainability impacts. Because of the importance (from a sustainability point of view) of the selected proposals, intense involvement of stakeholders should be planned during the further SIA-process, beginning as early as possible in the process and thus preferably during the scoping. However for practical reasons it might be advisable to start off the SIA-process only with a restricted group of persons, directly concerned

with the proposal, to be extended in the further course of the process. A relatively small group of stakeholders can be involved from the very beginning of a SIA to participate in the definition of the modalities of the specific SIA among which the definition of the upcoming stakeholder process and the identification of other relevant stakeholders.

One possible scenario for the concrete implementation of this suggestion is to compose a core working group of relevant stakeholders for each policy proposal selected during the screening phase. This core group will be involved in all further stages of the SIA-process and could consist of a combination of political-administrative actors and a restricted selection of stakeholder groups with specific interests. According to the mission statement of the cells on Sustainable Development as defined in the Royal Decree of 22 September 2004 the cells are given an important role in the execution or coordination of the execution of SIA. Consequently the core working group should comprise several representatives of the responsible cell on SD. Moreover the civil servants responsible for the elaboration of the policy proposal from the FPS concerned or from other involved FPS's should have a seat in the core group. Also the PPS on Sustainable Development can be represented in each working group. Alongside these administrative actors, a restricted selection of important and evident stakeholder groups with specific interests could be part of the original working group. The selection of relevant stakeholder groups depends on the subject of the proposal to be assessed and the nature of the potential impacts (social, economic, ecologic). Moreover, if the policy proposal concerned touches issues that go beyond the federal policy competences, representatives of other concerned policy levels should be engaged in the process ensuring a horizontal participation of policy-makers.

During the next stages of the SIA this group can be extended with other stakeholders according to the demands of the phase and the decisions of the core group. More in particular other specific interest groups might be invited to join the process and also scientist might be asked for scientific background on the subject. Again it seems not desirable for practical and efficiency reasons to involve citizens during the scoping phase and during the latter stages of the SIA-process. However if it concerns a policy proposal with specific effects on the population, the involvement of citizens might be considered. The selection of stakeholders to be involved during the scoping phase and the complementation of the stakeholder group during the subsequent phases is indeed very case-specific and should be thoroughly considered.

Not only the stakeholders to be involved have to be identified, also the concrete organization of the participation process has to be defined. Again I would like to refer to the general framework for participation as described by Hematti³³, in which all questions and issues for organising a participation process are addressed.

³³ Hemmati, M. (2000). *Multi-stakeholder Processes for Governance and Sustainability. Beyond Deadlock and Conflict*. London: Earthscan Publications.

c) Impact assessment (identification, analysis and evaluation of impacts)

After the scoping phase the time has come to actually analyze the social, environmental and economic impacts of the policy proposal. During the scoping phase the course of the actual impact assessment of the policy proposal has been defined, including the modalities of the participation process. In the subsequent phases of impact assessment, the choices and decisions made during the scoping phase have to be implemented.

As elaborated in detail in by Boulanger³⁴ there is a range of methodological tools available for performing an impact assessment. The choice of appropriate SIA-methodologies will be influenced by several variables such as the type of policy, the scope of the assessment, the availability of data, the time perspective, etc. Depending on the chosen methodological tools and the level of participation aimed for, a suitable participation procedure should have been agreed upon in the scoping phase and the relevant stakeholders should have been identified.

In practice a steering group will have to be installed, consisting of the original working group and extended with all relevant stakeholders. This steering group will provide the input for the impact identification and evaluation of the policy alternatives.

Because of the relative importance of the policy proposals selected for SIA, intensive participation of stakeholders during the phase of impact assessment is a prerequisite. However, as already mentioned, when involving a large amount of stakeholders, it is difficult to guarantee the consideration of all opinions. Therefore it has to be defined early in the process (during the scoping phase) how decisions will be made. Working towards a consensus might seem the most desirable option. But consensus-seeking is a time- and energy-consuming assignment for which guiding experience is needed. Another option is seeking for a majority decision, while explicitly reporting the disagreeing opinions. In any case, the participation process during the assessment phase will most probably be structured in more or less subsequent and guided meetings. The extended stakeholder group should therefore be complemented with facilitators, guiding the stakeholder process according to the expected outcomes. The availability of the necessary guiding expertise however is very small. Therefore the development of sound participation procedures will need to be built on empirical experience.

It has to be taken into account that the assessment phase can be of a very high technical level, for which background knowledge is a necessity. The nature and the scope of the topics to be discussed determine the knowledge needed for participation. It is crucial to define the capacity

³⁴ Boulanger, P-M. (2005). Integration in SIA: meaning, patterns, tools. Working Paper. Institut du développement Durable. Ottignies, Belgium.

needed for participation and the existing capacity within the stakeholder groups to be involved. When a disparity between these two is established, creative solutions have to be elaborated to fill in this gap. The participation process can for example be accompanied with a parallel learning process concerning the technicalities or contents. However this might burden the already demanding SIA-process. Another possibility is to split up the participation process into a technical / methodological component on the one side and a component concerning the content matters on the other side. Both components would demand another representation of stakeholders and organization of the interaction. For the technical part the involvement of scientists and experts will be of great importance, while for the evaluation part the involvement of a broad range of stakeholder groups with specific interests would be most central. In this case the process of both components has to be clearly communicated and the possibility of feed-back between the two has to be ensured.

d) Reporting

One of the main objectives of introducing a SIA procedure in the decision-making context is to increase the transparency of the policy-making. Therefore the public nature of the SIA-process is an important issue to be discussed during the elaboration of the meta-level. In the Federal Plan for Sustainable Development it is mentioned that the SIA will always be public. Thomaes, P. describes 4 possibilities for making the SIA publicly available³⁵: they could be inserted in the Regulative Dossier; They could be publicized in the FPS' Annual Reports; they could be integrated in the ICSD Reports; and they could be published on a website.

The first three options can ensure the availability of completed SIA's for political and administrative actors. This is off course a very important aspect to guarantee the effective use of the results of SIA's within the policy-making context. However also other stakeholders should be able to consult the completed SIA's. Therefore the idea of introducing a website specifically dedicated to the Belgian SIA-process might be relevant. The idea of a website has already been mentioned for the screening phase. This possibility could be extended towards the SIA-process as a whole, publicizing all interim and final documents of the individual SIA-exercices.

7.4 Summary

A lot of decisions still have to be made concerning the institutional context in which SIA will be installed. Not only the general SIA-methodology, but also the participation process will be influenced for a great deal by the choices and decisions concerning the institutional situation.

³⁵ Thomaes, P.; Lavrysen, L.; Paredis, E. (2005). Institutional and juridical integration of SIA in the Belgian federal government's structure. Working Paper. UGent. p. 48.

Therefore it is not possible to develop a detailed scenario for organizing participation in Belgian SIA-practices. However, based on the theoretical background, the participation practices in other contexts and the insights gained during this research project, we have made some suggestions for the organization of participation in a Belgian SIA-process.

A distinction was made between the meta-level and the process-level. As a first step towards the actual introduction of SIA in the Belgian policy-making process a proposal has to be elaborated on how to actually implement a SIA-methodology. This meta-phase includes the processes of defining SIA, determining its different components, formulating criteria for evaluation, formulating procedures, and – once SIA is established – evaluating this SIA process at regular moments.

For this meta-process we suggest to introduce a working group, consisting of representatives of all administrative services involved with sustainability policy (PFS SD, ICSD, task force, cells for sustainable development) and coordinated by the organ with the responsibility over this process. This working group is in charge of elaborating a draft proposal for a Belgian SIA-process. The Federal Council for Sustainable Development could then be asked to work out a detailed advice on this draft proposal. Based on this advice a final proposal should be made by the working group.

Participation on the process level has to be discussed in each phase of the SIA-process. During the screening phase it seems not possible nor desirable to organize an extensive participation process. However we suggest making the screening phase transparent by introducing a website on which all interested parties can constantly consult the evolution of the screening process. All actors concerned should be able to follow which proposals have been screened, which have been rejected and selected, and for what reasons. A Regulation Agenda would increase the transparency of the screening process.

In the scoping phase we suggest to introduce a core working group consisting of the responsible political and/or administrative actors for the policy proposal under consideration. This group could be extended with a limited selection of directly involved stakeholders. During the scoping phase this working group has to define the terms of reference for the specific SIA and also the stakeholders to be involved during the rest of the process have to be identified.

For the impact assessment itself a steering group should be established, consisting of relevant stakeholders as defined during the scoping phase. Experts and scientist will have an important role for the identification of the impacts, while stakeholders representing specific interest will offer the input for the evaluation of the policy options.

Moreover the SIA-process should be transparent. All interested parties should be able to consult the completed SIA's. Therefore we suggest to introduce an extensive website providing all

relevant information concerning the SIA-process in general as well as on the individual SIA's effectuated.



Integration in Sustainability Impact Assessment: Meanings, Patterns and Tools¹

I

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¹ This working paper is part of the research project “Methodology and Feasibility of Sustainability Impact Assessment. Case: Federal Policy Making process”, funded by the Belgian Science Policy under grant CP/F5/453. I am thankful to B.Lussis for his remarks and comments.

1 Introduction: which integration ?

SIA can be defined as an integrated assessment of social, environmental and economical impacts of projects, plans and policies. As such, it can be considered a response to the call for more integration between environmental, economic and social impact assessment and appraisal. As Lee and Kirkpatrick argue²:

“Since the sustainable development goal has interdependent economic, social and environmental components, it is argued that appraisal procedures and methodologies should use interconnected economic, social and environmental appraisal criteria which are consistent with achieving this goal. This has a bearing on a more general need to strengthen appraisal methods for use at more strategic levels of decision making relating to development policies, plans and programs”.

However, the way integration is used and called for in the literature is not restricted to appraisal methods. Indeed, Scrase and Sheate (2002)³ found no less than fourteen (14) different meanings for integration in their overview of this literature. They are summarized in the following table (Scrase & Sheate, 2002, 278).

While Scrase and Sheate’s overview is invaluable, their classification is not as satisfying because it is not based on a set of clear-cut criteria. For instance, what is the rationale of distinguishing between type E and type F? Or between B and N meanings? Or between G and K, etc.

It seems that the fourteen different meanings could easily be reduced to no more than four general categories of integration: policy, institutional or procedural, cognitive and evaluative or normative.

²Lee, N and Kirkpatrick, C., “Integrated appraisal, decision making and sustainable development”, in Lee, N. and C. Kirkpatrick (eds.), 2000, *Sustainable Development and Integrated Appraisal in a Developing World*. Edward Elgar: Cheltenham, UK and Northampton, MA, USA, pp.1-19, p4.

³ Scrase, J.I. and W.R. Sheate, “Integration and Integrated Approaches to Assessment: What Do They Mean for the Environment?”, *J. Environ. Policy Plann.* 4: 275–294 (2002)

Table 1. Meanings of integration in environmental assessment and governance

Meaning	Main focus	Type of policy learning ^a Level of policy change ^b
A. Integrated information resources	Facts/data	Technical, social Settings
B. Integration of environmental concerns into governance	Environmental values	Conceptual, social, technical Goals, delivery, settings
C. Vertically integrated planning and management	Tiers of governance	Social and technical Delivery, goals
D. Integration across environmental media	Air, land and water	Technical, conceptual, social Settings, delivery, goals
E. Integrated environmental management (regions)	Ecosystems	Conceptual, social, technical Goals, delivery, settings
F. Integrated environmental management (production)	Engineering systems	Technical Settings, delivery
G. Integration of business concerns into governance	Capitalist values	Conceptual Goals, delivery, settings
H. The environment, economy and society	Development values	Conceptual, social Delivery, settings
I. Integration across policy domains	Functions of governance	Technical, social Settings and delivery
J. Integrated environmental–economic modelling	Computer models	Technical Settings, delivery
K. Integration of stakeholders into governance	Participation	Social, conceptual Delivery, settings, goals
L. Integration among assessment tools	Methodologies/procedures	Technical Settings, delivery
M. Integration of equity concerns into governance	Equity/socialist values	Conceptual Goals, delivery, settings
N. Integration of assessment into governance	Decision/policy context	Social, technical Delivery, settings

^a Based on definitions in Glasbergen (1996) and Fiorino (2001). Ordering indicates importance to the meaning.

^b Based on definitions in Hall (1993). Ordering indicates importance to the meaning.

1.1 Policy integration

Policy integration “*concerns the management of cross-cutting issues in policy-making that transcend the boundaries of established policy fields, which often do not correspond to the institutional responsibilities of individual departments...Integrated policy-making refers to both horizontal sectoral integration (between different departments and./or professions in public authorities) and vertical inter-governmental integration in policy-making (between different tiers of government) or both*”.⁴

Scrase and Sheate explicitly address vertical integration under their C meaning (“Vertically integrated planning and management”). Horizontal integration is addressed with the E, F and I meanings.

1.2 Institutional integration

By “institutional” or “procedural integration” we are referring to the way sustainable impact assessment is taken into account in the policy-making process.

This corresponds to Scrase and Sheate’s B and N conceptions of integration, the former referring to the legal obligation to carry on impact assessments (environmental or others) of some policies, plans or programs while the latter concern their procedural

⁴ Meijers, E. and D.Stead, “Policy integration: what does it mean and how can it be achieved? A multi-disciplinary review”, 2004 Berlin Conference on the Human Dimensions of Global Environmental Change: Greening of Policies – Interlinkages and Policy Integration.

integration in the policy-making process. One historical landmark in this respect, even if limited to the environment, is the US National Environmental Policy Act of 1969 that established the procedure of Environmental Impact Assessment (EIA).

Two more recent examples of more comprehensive institutional integration in policy-making are the European Union's Directive 2001/42/EC, known as the "SEA Directive" and the UNECE's SEA protocol⁵.

1.3 Cognitive integration

This means integration of facts, data, problems and concerns. It covers the A, D, E, H, J, and L meanings.

Under the D meaning ("integration across environmental media"), Scrase and Sheate emphasize the need to acknowledge the interconnectedness of the various environmental media (air, water and land) and to take it into account in environmental regulations. The E ("Integrated environmental management of regions") and F ("Integrated environmental management of production") meanings are based on similar concepts, the former taking into account the ecological relationships across space, the latter being a concretisation of D meaning in production patterns. As example of lack of data integration, Lund and Iremonger (2000) pinpoint the use of statistical and forestry divisions of the United Nations Food and Agricultural Organization to define forested and agricultural land differently therefore leading to conflicting data sets (Lund and Iremonger,2000). These kinds of integration amount to a widening of the concerns and of the information basis of the decision-maker, be it public or private.

Integration of environment, economy and society (meaning H) takes us still one step further with concerns that are not limited to the environmental domain but takes into account the economy and society as well. Concerning the latter, Scrase and Sheate fear that: *"The limitations of time and resources going into any assessment mean that there will necessarily be a loss of depth in consideration of the environment if social and economic objectives and criteria are considered simultaneously. For example, there may be a neglect of environmental baseline studies, and a dependence on expert judgment rather than deeper analysis or wider participation"*(283). Fully agreeing with a strong conception of sustainability, they think that this kind of integration could too much easily leads to trade-off between the environment and economic gains at the expense of the former.

We obviously include in cognitive integration, "integrated environmental-economic modelling" (meaning 'J' in Scrase and Sheate paper), while pointing out the somewhat restrictive definition they give of it, as "computer models that combine natural science and economic optimisation modules"(284). It is true that most integrated assessment models in climate policy are of the optimisation kind but one find also macro-econometric, computable general equilibrium and input-output models in the field.

The L meaning "Integration among assessment tools" also takes place in this category.

1.4 Evaluative or normative integration

⁵ For a discussion of these two institutional landmarks, see Therivel (2004), especially the third chapter.

Evaluative integration refers to the way different values standpoints and perspectives are integrated in the decision-making process and outcome. Meanings G, K and M fit more or less in this category. Meaning G (“Integration of business concerns into governance”) refers explicitly to possible value conflict between environmental and business. As an example of how the concept of integration can endanger environmental concerns, Scrase and Sheate quote a standpoint from the Union of Industrial and Employers’ Confederation of Europe (UNICE, 2001, 6):

*“the integration process must take due consideration of the three pillars of sustainable development, and in particular the requirement of strengthened competitiveness, given the critical importance of the latter for sustainable development”.*⁷

Meaning K (“Integration of stakeholders into governance”) could also be related to cognitive integration insofar as stakeholders’ participation is instrumental also in providing factual information (local knowledge) indispensable for sound policy-making, as Scrase and Sheate rightly acknowledge (284):

“there is the instrumental view that input from a more diverse range of actors will improve decisions by introducing options or evaluation criteria that might otherwise be overlooked. In particular, people living in a locality (or working in an industry) that may be affected often hold valuable environmental knowledge that can be used to improve decisions.”

However, it is mostly as a condition for the free expression of the pluralism of values that stakeholders’ participation is praised even if:

“In practice, stakeholder participation often amounts to little more than consultation. This informs stakeholders of policy intentions, and provides an opportunity to comment. This may serve to legitimate decisions, while the process has not in fact been conducted in a way that yields any of the benefits discussed above.”(285)

It could be argued that integration of stakeholders in the policy-making process and therefore also in the sustainability assessment is so important that it should be considered as a fully-fledged kind of integration along with the institutional, cognitive and evaluative ones. On the other hand, as a condition for real integration in the three above-mentioned ways, it is perhaps better to refrain making it a separate category.

Finally, meaning M (“Integration of equity concerns into governance”) is obviously concerned with the integration of ethical values in policy-making.

In what follows, I deal only with integration at the cognitive and normative level. That is, we suppose achieved a level of policy integration such that sustainable development can be adequately addressed. Restricting oneself to cognitive and normative integration doesn’t mean that one do not appreciate the importance of policy and institutional integration. On the contrary, I am convinced that they are absolutely decisive for sustainable development policy-making in an age of globalisation and growing complexity, and

⁶ UNICE (Union of Industrial and Employers’ Confederations of Europe). 2001b. *European Industry’s Views on EU Environmental Policy-Making for Sustainable Development*. <http://www.unice.org> [28 February 2002].

⁷ Emphasis is from Scrase and Sheate.

probably more difficult to work out that methodologies and techniques for identifying, predicting and evaluating impacts.

2 Cognitive and evaluative integration in SIA

2.1 Cognitive and normative aspects of decision-making

The most convenient framework for discussing SIA from a methodological point of view is what is known in the ecological economic community as the multi-criteria decision-making model,⁸ which is actually a reformulation of the old-fashioned rational decision model. We will use it here for helping articulate and organize our discussions.

As exposed here, the framework looks probably more linear and straightjacket than it is in real political life. The real decision-making process is not like a succession of waterfalls, or, if so, waterfalls such as the ones in the famous Escher's painting where water seems going up and down the staircases. For instance, there will be back and forth going between criteria and alternatives; preliminary impact assessment⁹ leading to definition of new alternatives and so on. Indeed, this consideration is very important when it comes to define the role of impact assessment. Actually, one of the most useful outcome of assessment is precisely to suggest new ways, more environmentally efficient and socially fair to reach the goal. Environmental Impact Assessment, for example, is often criticized precisely for coming too late in the decision process and being therefore helpless in finding and evaluating alternatives¹⁰.

It is somewhat illusory to conceive of actual political decision-making as a totally – or even mainly – rational operation. A careful examination of real practices contradicts this platonic vision¹¹. However, I think this argument is irrelevant in the context of SIA because if policies are to be evaluated, it can only be on a rational basis, which is in terms of objectives, criteria, anticipated impacts and their relationships. Thus, whatever their real genesis, they have to be accountable in a rational framework. Admittedly, socio-economical policy-making, and even more, sustainable development policy-making, is a special kind of decision-making. First of all, and contrary to what happens in “normal” decision-making situations, the objectives here are not given beforehand. On the contrary, the very definition of the goals and objectives is an important part of the decision problem itself, and of the definition of sustainable development. Next, there is not just one decision-maker but a plurality of decision-makers each with her own preferences, goals, expectations and beliefs.

⁸ See Funtowicz, O., Martinez-Alier, J., Munda, G. and Ravetz, J., “Multicriteria-based environmental policy», in Abaza, H. and Baranzini, A., eds. (2002), *Implementing Sustainable Development. Integrated Assessment and Participatory Decision-Making Process*, UNEP, Edward Elgar : Cheltenham, UK and Northampton, Mass. USA, pp. 53-78.

⁹ At least if one understands SDIAPP as “objective-led impact assessment” (Pope, J. Annandale, D., Morrisson-Saunders, A., “Conceptualising Sustainability Assessment”, *Environmental Impact Assessment Review*, 24 (2004), 595-616.

¹⁰ Steinemann, A., “Improving alternatives for environmental impact assessment”, *EIA Rev.* 21-1, 2001, 3-21.

¹¹ See, for example, D. Stone, 2002, *Policy Paradox. The Art of Political Decision Making*, New-York, London : Norton & Company.

Finally, the assessment of consequences as well as the evaluation of costs and benefits is many orders of magnitude more difficult in SD problems than in any usual business. Therefore, SD has both substantive and procedural consequences for the policy-making process. As indicated in the project proposal, these consequences can be summarized by the concept of integration.

Briefly, decision-making as formulated in the multi-criteria framework consists in:

- An objective (O);
- A set $A = [a_1, a_2, \dots, a_n]$ of n alternative ways to reach the objective;
- A set $C = [c_1, c_2, \dots, c_m]$ of m evaluation criteria on which to assess the various alternatives;
- A set (perhaps empty) $W = [w_1, w_2; \dots, w_m]$ of m importance weights for each criterion;
- An evaluation function f such that $O = f(W * C * A_i)$.

In complex decision-problem, more often than not, every criterion will be, in turn, broken down in a subset of (sub)criteria, possibly with its own set of (sub)weights.

The decision problem may thus be represented as a hierarchy with O at the top, A at the bottom and several levels of criteria in between, as in the figure 1 below.

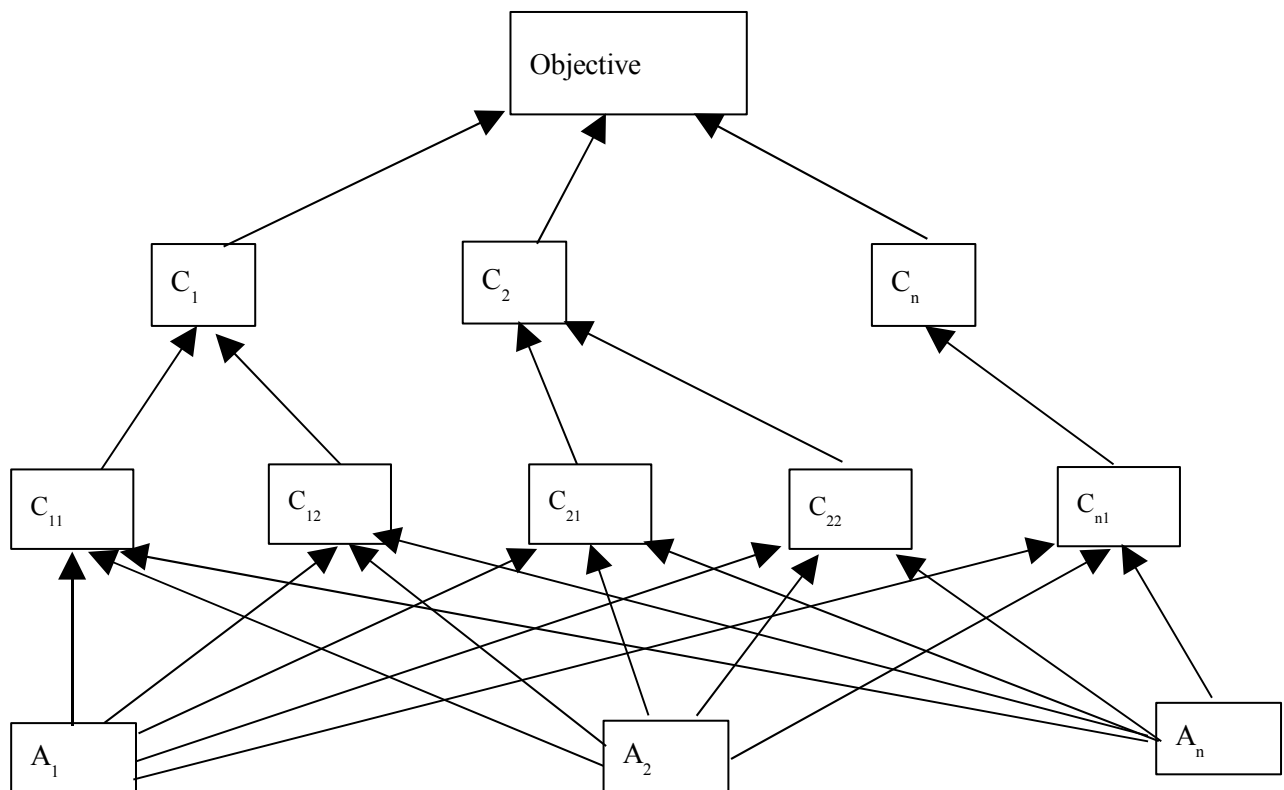


Figure 1. The multi-criteria decision making model

Every alternative is assessed against the various criteria, leading to the construction of what is called an impact matrix (see Table 1).

Table 1. The impact matrix in multi-criteria decision-making framework.

Criteria	Weights	Alternatives			
		a_1	a_2	•	a_n
c_1	w_1	$c_1 w_1 a_1$	$c_1 w_2 a_2$	•	$c_1 w_n a_n$
c_2	w_2	$c_2 w_2 a_1$	$c_2 w_2 a_2$	•	$c_2 w_2 a_n$
•	•	•	•	•	•
c_m	w_m	$c_m w_m a_1$	$c_m w_m a_2$	•	$c_m w_m a_n$
f		$f(c. w. a_1)$	$f(c. w. a_2)$	•	$f(c. w. a_n)$

In multi-attribute utility (or value) theory (MAUT) or in cost-benefit analysis, information is then aggregated with the help of a specified function (usually a simple summation or product but it can also be something more sophisticated). It is not the case with multi-criteria models based on the outranking methodology. We will come back to this in the section devoted to evaluative integration..

In the public policy context, the objective O is the main goal of the intended program or policy and the various alternatives [A] may refer to alternative measures or policies¹².

As for the criteria, they can sometimes be also interpreted as:

- sub-objectives or intermediate objectives;
- constraints (budget, human resources, timetable...);
- conditions of success.

The decision-making process itself consists in:

1. Setting the objective (E);
2. Identifying the criteria (I);
3. Weighing them (E);
4. Identifying the alternatives (I);
5. Assessing every alternative with respect to each criterion, that is filling the impact matrix with partial scores) (I);
6. Aggregating the partial scores for each alternative giving an overall evaluation (I+E);
7. Choosing the most preferred one (E).

These different stages may be classified as (mainly) informative or (mainly) evaluative. This is the meaning of the E or I between brackets after each item in the enumeration here above. It is patent that the overall process is both evaluative and informative, that is, it mixes axiological, normative and factual propositions.

¹² Or various possible “states of the world” in which the policy is going to take place.

- The first step is generally the outcome of a previous evaluation of past decisions and policies, especially with respect to their impact.
- The second step - identifying the criteria to be used in the assessment -, is mainly evaluative even if it can include some important purely cognitive (informative) elements, relating, for instance, to the factors of success or failure of the intended policy.
- The third step (weighing the criteria), is probably one the touchiest from a political point of view. It raises the very difficult problem of comparing sometimes totally different (even incommensurable) subject matters and weighing conflicting human and social interests, as is often the case in sustainable development context. It supposes also that answers can be given to the problem of the inevitable trade-offs between the various criteria. In a public policy context, there can be no purely scientific or a priori way of solving these problems. It is sometimes argued that a universally accepted and fully operational theory of justice could give rational answers to such questions. But one can be sceptical about this and, anyway, there is no such theory at the moment. In the meantime, only procedural rules and collaborative (participative) mechanisms can offer some guarantee of fairness in weighing and “trading” the various criteria.
- The fourth step is mainly informative (even if constrained by normative consideration which rule out, for ethical reasons, some policy instruments). Often, there is only one alternative to be considered, which is then called a baseline that can be, but not necessarily the *statu quo ante*.
- The fifth stage is purely cognitive. It consists in “predicting” the likely impacts of the various alternatives from each selected criterion point of view (i.e. for each sub-goal, constraint and/or prospect of success or failure). This is the core business of *ex ante* “impact assessment” strictly speaking. But beware: purely cognitive doesn’t mean only scientific. Local and “personal” knowledge can be as important an input here that scientific statements.

The distinction between cognitive and evaluative integration is helpful in providing a convenient basis for a – however crude- first taxonomy of the various tools and methods found in the impact assessment literature. Handbooks of Environmental Impact Assessment (EIA), Strategic Environmental Assessment (SEA), Integrated Assessment (IA), etc., are full of references to methods and techniques such as: checklists, life-cycle analysis, focus groups, system models, matrix methods, cost-benefit analysis, optimisation, multi-criteria analysis, input-output analysis, Computable General Equilibrium models (CGE), risk assessment, etc. However, it is very difficult to find a rationale to the way they are presented and organised. More often than not one is facing unordered lists, mixing cognitive and evaluative tools, data acquisition and data utilisation methods, qualitative and quantitative methodologies, simulation and optimisation, objective and subjective methodologies, causal and non-causal approaches, etc.

One will find in figure 2 a tentative¹³ taxonomy of several methods¹⁴ viewed from a integrative standpoint and based on the distinction between cognitive and normative integration.

¹³ Tentative insofar as it doesn’t pretend to be exhaustive or the most accurate.

¹⁴ We include in this overview some tools that are rarely -if any- mentioned in the environmental assessment literature but that we believe should be part of the assessment toolbox. We have in mind here (fuzzy) cognitive maps and, especially, Bayesian networks.

2.2 Patterns and tools of cognitive integration

Cognitive integration consists in putting together the various kinds and pieces of information necessary to take a well-informed decision. This is, a priori, not restricted to scientific knowledge, even if other sources of information are often omitted in the literature. Take, for instance, the definition of integrated assessment by Rotmans and Dowlatabadi¹⁵ :

“In general, integrated assessment can be defined as an interdisciplinary process of combining, interpreting and communicating knowledge from diverse scientific disciplines in such a way that the whole cause-effect chain of a problem can be evaluated from a synoptic perspective.” It deals only with scientific knowledge and leaves no room for other kinds of non-scientific information that are sometimes necessary for sound policy-making. This can be explained by the fact that most integrated assessment exercises occur in the climate change and climate policy domain where non-scientific knowledge is less relevant but it is certainly not the case in other domains such as land-use, mobility, agriculture, etc.

Not only does SIA need to integrate scientific and non-scientific knowledge, it need also integrate lack of knowledge and other sources of uncertainty¹⁶, as well as different time and space scales.¹⁷

Indeed, if one is to take seriously Lee argument about the need to “*bridge the gap between theory and practice in integrated assessment*”,¹⁸ (“*Sustainability Impact Assessment (SIA) ...assumes that the economic, environmental and social impacts are to be assessed according to the criteria consistent with the promotion of sustainable development*”) then the candidate methods and tools must themselves be assessed against the following criteria:

1. To what extent do they really help in integrating various disciplinary knowledge and economic, social and environmental concerns?
2. What level of stakeholders’ participation do they provide for?
3. How do they cope with uncertainty?
4. In what extent do they integrate long term and short term perspectives?
5. Do they provide for local and global interactions?

¹⁵ J. Rotmans, J. and H. Dowlatabadi, Integrated assessment of climate change: Evaluation of methods and strategies, in: *Human Choices and Climate Change: A State of the Art Report* (Batelle Pacific Northwest Laboratories, Washington, DC, 1997).

¹⁶ Rotmans, J. and M.B.A. van Asselt, “Uncertainty in integrated assessment modeling: A labyrinthic path”, *Integrated Assessment* (2001) 2:43-55.

¹⁷ See Boulanger, P.-M and T. Bréchet, 2005, “Models for sustainable development policy-making: state of the art and perspectives”, 2005, Institut pour un Développement Durable, Ottignies. <http://www.iddweb.be>, to appear in *Ecological Economics*.

¹⁸ Lee ,N.,2003, “Bridging the gap between theory and practice in integrated assessment”, EU,Workshop 3 “Towards Regional Sustainable Development: Evaluation Methods and Tools”, June 2003, Manchester.

6. For what kind of policy are they especially relevant?
7. Do they match an adequate conception of sustainable development?

The methods listed in figure 2 under the heading “cognitive integration” have been regrouped in three main classes: geographical, causal and accounting. The classification is partly based on the distinction proposed in the OECD report “Sustainable Development: Critical issues” between analytical and accounting frameworks¹⁹ for integration of economical, environmental and social variables.

OECD doesn’t give a precise definition of analytical frameworks but gives only two examples of such framework: the PSR, DSR, DPSIR approach and the “resource-outcome indicators” approach.

- The former is a kind of general causal model of the relationships between the environment, the economy and policy. It has proved very efficient in dealing with environmental issues but is less suited to the social and distributive aspects of sustainable development.
- The “resource-outcome indicators” approach focus on the various kind of assets (resources) necessary to meet the needs of future generations and the way these needs are met today (outcomes). It is very close to the definition of SD in terms of the four capital stocks (man-made, natural, human and social). If the DPSIR framework is basically a causal model, the resource-outcome is basically a stock-flow model. It is to be noticed that variables (indicators) in causal as in stock-flow models refer to systems, not to agents.

On the contrary, accounting frameworks are built on exchange relations or transactions between *agents*: industries, households, and institutions²⁰ as pictured in the Social Accounting Matrix (SAM), an extension of national economic accounts stated in matrix form. Another recent extension of national economic accounts, NAMEA (for National Accounting Matrix with Environmental Additions), allows also integration of natural resources, wastes and pollutions in the common framework. Actually, combining a SAM and a NAMEA opens the way to fully economic, social and environmental integration. The only example of such schemes is the SESAME²¹ (System of Economic and Social Accounting Matrices including Extensions) framework developed in the Netherlands. In SESAME, integration of environmental, economical and social variables is achieved in a consistent manner while expressing each sector in its “natural” units (money, physical units and time units).

The methods and tools listed beneath the “causal” heading can be seen as operationalisation of analytical models such as causal (DPSIR, for example) or stock-flows models of environment, society and economy. Indeed, structural equation models or Bayesian networks models suppose a cause-effect relationship between the variables. In system dynamics models, the dynamic behaviour of the system depends on the network

¹⁹ OECD, 2001, *Sustainable Development – Critical Issues*, p.62.

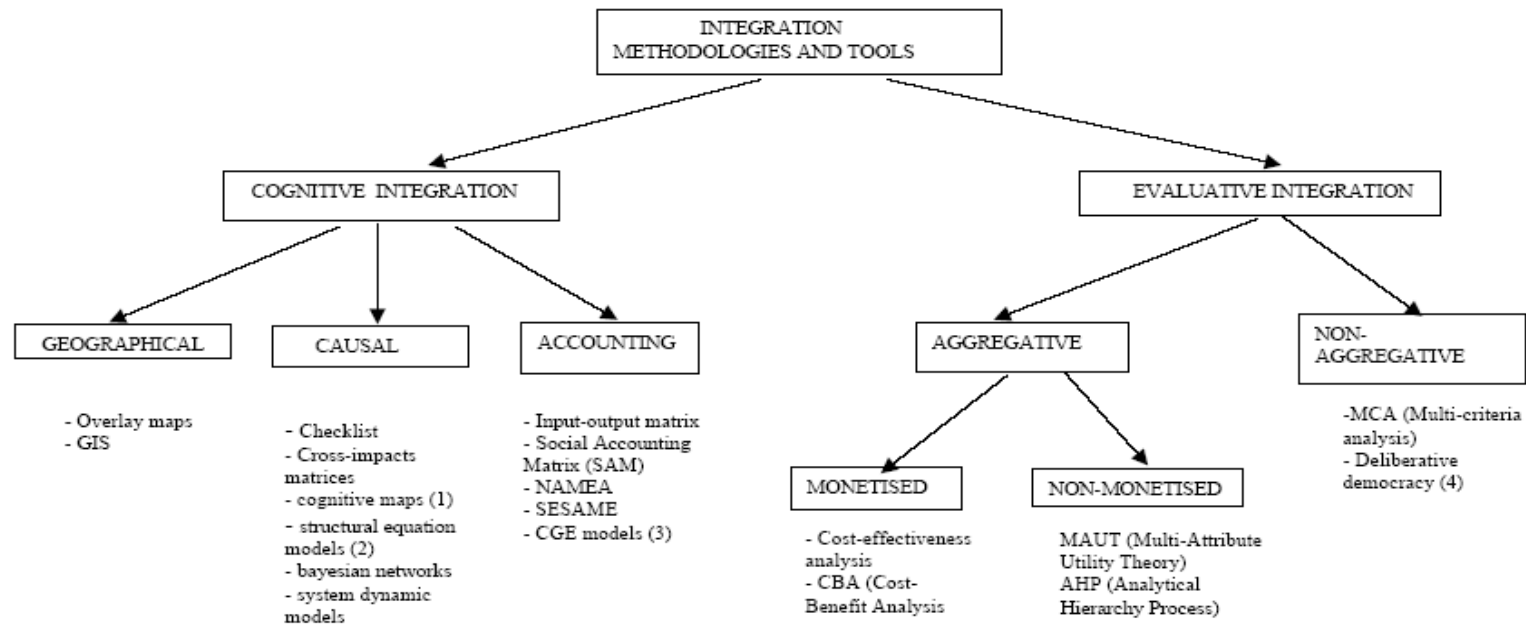
²⁰ If nature is introduced, as is the case with the NAMEA (National Accounting Matrix including Environmental Accounts), it is on the model of the economical agent delivering its production to others agents (industries, households..) and being serviced by them (as waste).

²¹ See for example, Timmerman, J. and P. van de Ven, 2000. “The SAM and SESAME in the Netherlands: A modular Approach” in United Nations, ed., *Handbook of National Accounting*, Studies in Methods, Series F, N°75/Vol 2., pp 309-351. See also : F. Duchin., 1998, *Structural Economics. Measuring Change in Technology, Lifestyles and the Environment*. Washington.D.C.: Island Press.

(structure) of interlinked positive and negative feedbacks loops between stocks (levels) and flow variables (rates).

With geographical methods, integration results from the superposition of representations of different point of views (as successive layers) on a topographical map of the concerned area. Overlay maps and GIS deserves a special treatment as very powerful integration techniques provided that the decision has physical impacts on land uses and landscape, which is far from always true.

The methods and tools are - rather loosely - ranked from the less demanding to the more demanding in terms of data requirements and/or skills. For instance, checklist is less demanding than cross-impact matrices, overlays maps less than full GIS application, etc. The less demanding will be preferred at the screening stage of the process or in case of lightweight assessments. However, beyond this consideration, it is very difficult to say which integration method is to be preferred. It depends heavily on the kind of policy or program to assess. Indeed, each has its strengths and weaknesses. For instance, Bayesian networks are very good in risk assessment, contrary to accounting methods. Social accounting matrices are probably the best way to explore the distributive impacts of macro-economic policies but are very weak when it comes to long-term consideration. Overlay and GIS methods are priceless in assessing land-use policies but inadequate for trade policies, for example, etc. Moreover, they are not necessarily exclusive one of the other. For example, input-output matrices and GIS are frequently associated in land-use and transport models.



- (1) Cognitive maps as well as interpretive structural models can be quantitated either in system dynamics models, in probabilistic (bayesian) networks or in structural equations models.
- (2) Structural equation models, bayesian networks and system dynamics models are viewed here as operationalisation of causal or stock-flows conceptual frameworks.
- (3) CGE models are often associated with I-O and SAM matrices on which they are calibrated.
- (4) Citizens' juries, consensus conferences, etc., are well-known methods of deliberative democracy.

**SEMI-INTEGRATED
(COGNITIVE + EVALUATIVE)**

- Optimisation models
- Decision making tools (influence diagrams)

**FULLY-INTEGRATED
(COGNITIVE + EVALUATIVE + INSTITUTIONAL)**

- ANSEA (Dalkman et al.)
- Positional Analysis (Söderbaum)

2.2.1 Causal tools

2.2.1.1 Checklists

The most usual tool for impact identification (or criteria selection) is the **checklist**, an ordered list of items to look at, such as the one supplied by the UE Commission in its “Handbook for Impact Assessment in the Commission”(Annexe 6). At best, the items are (loosely) ordered following some conception (or conceptual model) of sustainable development. Usually, it is the “Triple Bottom Line” (TBL) or “Three pillar” vision, as with the UE handbook checklist. There also a few checklists, mainly in the environmental domain, based on the DPSIR (Drive-Pressure-State-Impact-Response) framework. As such they can be considered the “ground zero” of analytical integration. They are useful because they allow for systematic consideration of all possible impacts. However they are unable to identify indirect effects or interactions between impacts. This is where interaction matrices come on stage.

2.2.1.2 Checklist * checklist = interaction matrix

Matrices are very easy way to express the relation between two sets of variables. Basically, if there is a relation between a row variable **i** and column variable **j**, then the cell **ij** of the matrix is non-empty. What is exactly in the cell depends on the frame in which the relationship is described. Generally, in impact assessment, we want to express how the row variable *influence* or *cause* the column variable. The cell can hold one or several information relative, for example, to the kind of influence, its sign (positive or negative influence), its magnitude, its significance, etc.

For example, in a “Leopold Matrix” a cell holds two information, one on the strength of the relation, another on its significance, both expressed in a scale from 1 to 10. A Saratoga matrix holds 4 information per cell.

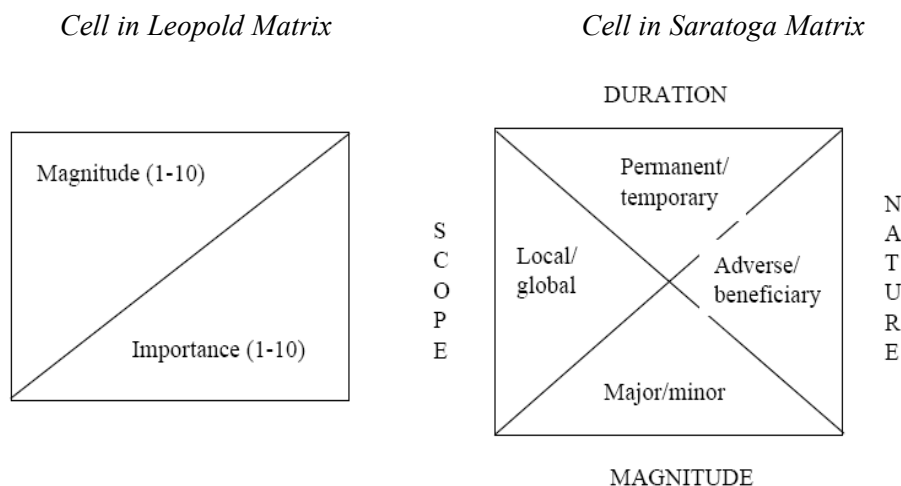


Figure 3. Examples of cells in cross-impact matrices

A matrix can be considered as a crossing between two checklists (or one checklist with itself). For instance, a Leopold matrix crosses a list of actions with a list of environmental factors. Many kinds of matrices have been developed in environmental impact assessments. One can consult Barrow (1997) for information on component interaction matrix, minimum link matrix, disruption matrix, goals achievement matrix, Moore impact matrix, compatibility matrix, etc. Binary matrices are square matrices with the same variables in row and in columns. Boolean matrices are binary

relations matrices where the cells can only hold 2 values: 0 or 1, or -1 and $+1$. Despite their simplicity, Boolean matrices can help in analysing the “structural complexity” of the model, and identifying indirect ‘nth’ order relations between the variables. See for example table 2 that shows the direct causal link between nine variables.

Table 2. Matrix **A** of direct influences between variables [a,b,c,d,e,f,g,h,i].

	a	b	c	d	e	f	g	h	i
a		1	1						
b				1	1				
c						1			
d							1		
e								1	1
f									1
g									
h									
i									

The direct links are the following: {a-b, a-c, b-d, b-e, c-f, d-g, e-h, e-i, f-i}. But, for instance, d is influenced by b and therefore, b indirectly influence g, by its link with a direct cause of g. If we multiply the matrix by itself, that is if we compute A^2 , we can see the first-order indirect links between the variables as in table 3.

Table 3. Matrix A^2 of first-order indirect influences between variables [a,b,c,d,e,f,g,h,i].

	a	b	c	d	e	f	g	h	i
a				1	1	1			
b							1	1	1
c									1
d									
e									
f									
g									
h									
i									

First-order indirect links are: $\{a-d, a-e, a-f, b-g, b-h, b-i, c-i\}$. One can see that variable a , which directly influences b and c , influences also indirectly d, e and f .

A^3 gives second-order indirect links. In this case, it consists in: $\{a-g, a-h, a-i\}$. Of course, it is most likely that the strength of a direct influence is bigger than that of a first-order indirect one, itself bigger than the second-order, and so on.

After a finite number of matrix multiplication, there is no more change in the results (no more indirect effects). Even if it is not the case with the above example, indirect links can be discovered between a variable and itself. It indicates a feedback loop in the causal structure of the system.

It is also possible to express in a single matrix the sum of direct and indirect links. For this, it is first necessary to normalise the initial matrix A of direct links by multiplying each of its element by a constant λ calculated as the reciprocal of the largest row sum of A .

$$X = \lambda A$$

The infinite series of direct and indirect effects has a finite sum given by:

$$X^* = X + X^2 + X^3 + \dots = X(I-X)^{-1}$$

We will meet this expression again in what follows, when dealing with Leontief matrices.

Methods such as “Interpretive Structural Modelling”²² or MICMAC²³ as well as the “component interaction matrix” developed by Environment Canada are based on these properties.

Table 4 shows a cross-impact matrix from Chan & Huang²⁴ (2004). The impacts are scaled on a 0-3 scale. AS refers to the *outdegree* of the row variables, which is the row sum of their absolute values. It measures the cumulative strengths of connections (a_{ij}) exiting the row variables. Inversely, the *indegree* (PS in table 4) of a variable is the column sum of its absolute values. It measures the cumulative strength of variables entering it. The most influencing variables have the highest outdegree – they can be called driving variables - while the most dependent (the driven ones) have the highest indegree. Here again, it is possible to uncover high order (indirect) effects by raising the matrix to its successive power. At each iteration, one computes the new rows and columns total, giving a new ranking of the variables on causal power and /or dependency. However, usually, after the fourth or fifth matrix multiplication, the ranking doesn’t change anymore (it stabilises itself). It is to be noted that Chan & Huang doesn’t look for higher order effects. On the other hand, they compute a couple of indexes such as the ratio and the product between the column total and the row total of the variables.

²² Warfield, J.N. (1976), *Societal Systems: Planning, policy and complexity*, New York : Wiley.

²³ Godet, M., (1997), *Traité de prospective stratégique*. Paris : Dunod.

²⁴ Shih-Liang Chan, Shu-Li Huang, « A systems approach for the development of a sustainable community—the application of the sensitivity model (SM) » *Journal of Environmental Management*, 72 (2004) 133–147

Effect of ↓ on →	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	AS ¹	P ²
1 Canals	3	1	3	2	2	3	3	1	2	0	1	0	3	0	0	0	0	2	2	0	0	2	1	1	3	35	1330	
2 Cultural activity	3	2	1	2	2	1	1	2	1	0	1	1	3	2	1	1	1	2	2	2	1	2	1	1	3	39	1911	
3 Tourism crops	0	1	1	3	2	1	3	3	1	0	0	3	2	2	2	2	1	1	1	1	1	0	2	1	3	37	1554	
4 Hiking trails	3	3	1	2	1	1	2	0	2	1	1	1	2	3	2	1	3	2	1	2	1	1	2	1	2	41	1107	
5 Local industry	2	2	3	0	2	0	1	3	1	0	0	3	2	3	2	0	1	1	2	1	1	2	1	2	1	36	1728	
6 Marketing promotion	2	2	3	0	2	0	1	3	1	1	1	2	3	1	2	2	2	1	2	1	1	1	2	2	3	41	1763	
7 Irrigation resource	1	0	2	1	1	0	3	1	2	1	2	0	0	0	0	0	0	1	1	1	1	2	2	1	2	26	572	
8 Agriculture	3	1	2	1	2	2	3	2	3	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	2	42	1302	
9 Competition	1	2	1	0	2	2	3	2	0	0	1	2	2	1	1	1	1	1	1	1	1	1	1	1	2	33	1221	
10 Water pollution	3	2	2	0	2	3	2	2	2	2	2	1	1	0	0	0	3	1	1	1	2	2	1	1	3	39	1131	
11 Waste treatment	3	1	0	1	1	1	2	2	2	3	3	3	1	1	0	0	0	3	1	1	2	2	1	2	1	36	828	
12 Recycling	2	1	1	1	1	1	2	2	2	3	2	3	0	0	0	0	0	1	1	1	2	1	1	2	1	29	783	
13 Employment	1	2	3	0	2	1	0	2	3	0	0	0	2	1	0	1	0	1	0	1	2	2	0	1	2	29	783	
14 Culture industry	2	3	2	1	3	2	1	2	2	1	1	1	2	2	2	2	2	1	3	2	1	1	2	1	2	45	2025	
15 Tourist turbulence	1	3	3	2	2	3	0	0	1	0	2	1	1	2	3	3	2	1	2	1	1	1	1	1	1	39	1248	
16 Traffic congestion	0	3	0	1	2	0	0	0	0	0	0	0	0	2	3	3	3	0	1	3	0	3	1	0	0	25	575	
17 Local Transportation	1	2	1	2	2	2	0	0	0	0	0	0	1	2	3	3	3	1	1	1	2	0	0	2	2	29	667	
18 Accessibility to water resource	0	1	0	0	0	2	0	0	0	2	0	0	0	1	2	1	2	3	2	3	2	0	1	2	3	27	999	
19 Infrastructure	3	2	2	3	2	1	0	0	1	1	1	0	0	1	1	0	1	2	2	2	1	0	1	2	3	32	1152	
20 Community conscience	1	3	2	2	3	3	0	0	2	0	2	2	3	1	0	0	2	2	2	2	2	2	3	2	3	44	2024	
21 Environment quality	1	2	1	1	0	2	0	1	2	2	2	0	2	1	0	0	3	2	3	2	2	1	1	2	3	36	1368	
22 Local security	0	1	1	0	2	1	0	0	1	1	0	1	1	2	1	1	1	1	1	3	2	1	2	1	2	27	918	
23 Local governance	0	2	2	0	3	2	0	0	1	0	1	2	1	2	0	0	0	1	2	3	3	2	2	1	2	32	896	
24 Education inputs	2	3	3	1	3	3	2	2	1	2	3	3	1	2	0	0	0	1	1	2	1	2	3	2	3	46	1656	
25 Dependence on imported resource	3	1	2	2	1	2	1	1	2	1	1	1	1	2	2	2	1	2	1	2	2	1	3	2	2	41	1558	
26 Community image	0	3	2	3	3	2	0	0	0	0	0	1	2	1	0	0	3	3	3	2	0	0	2	2	3	33	1980	
PS ³	88	49	42	27	48	43	22	31	37	29	23	27	27	45	32	23	23	37	36	46	38	34	28	36	38	60		
Q ⁴	92	80	88	152	75	95	118	135	89	134	157	107	107	100	122	109	126	73	89	96	95	79	114	128	108	55		

Note: 1. Summation of rows, 2. Product of row sum(AS) and column sum(PS), 3. Summation of columns, 4. Quotient of row sum(AS) and column sum(PS) × 100.

Table 4. An example of cross-impact matrix

2.2.1.3 Matrix + directed graph (digraph) = cognitive (or causal) map

Cognitive maps have been introduced in 1948 by the psychologist Tolman (1948) in his paper entitled *cognitive maps in rats and men*, as mental models (*belief systems*) of the way animals - including men- structure their environment. The basic idea is that animals have mental representation of their environment that can be pictured as directed graph with nodes referring to events or objects in the environment and the arcs between them referring to the (perceived) relationships between them. However, it is the political scientist Robert Axelrod (not to be confused with the Robert Axelrod who wrote *The evolution of cooperation*) who drew attention to the potential of cognitive mapping in his *Structure of Decision – The cognitive maps of political elites* (1976).

Cognitive or causal maps represents causal (or influence) relationships between concepts, events or more generally variables as nodes in a directed graph with edges or arrows between nodes indicating the presence of a (causal) link between the source of the arrow (node *a*) and its destination (node *b*). The edges can be signed. A positive arrow from node *a* to node *b* means that *a* reinforces *b*, that an increase of node *a* will cause an increase of *b*; a negative arrow that an increase of *a* will cause a decrease in *b*. Any digraph with *n* nodes can be associated to a (square) matrix of dimension *n*, called its adjacency matrix or connection matrix. For instance, the table 5 matrix is an exact representation of the digraph of figure 4, a schematic and incomplete representation of the greenhouse effect²⁵.

²⁵ From Ford, A., 1999, *Modeling the Environment. An Introduction to System Dynamics Modeling of Environmental Systems*. Island Press : Washington D.C.

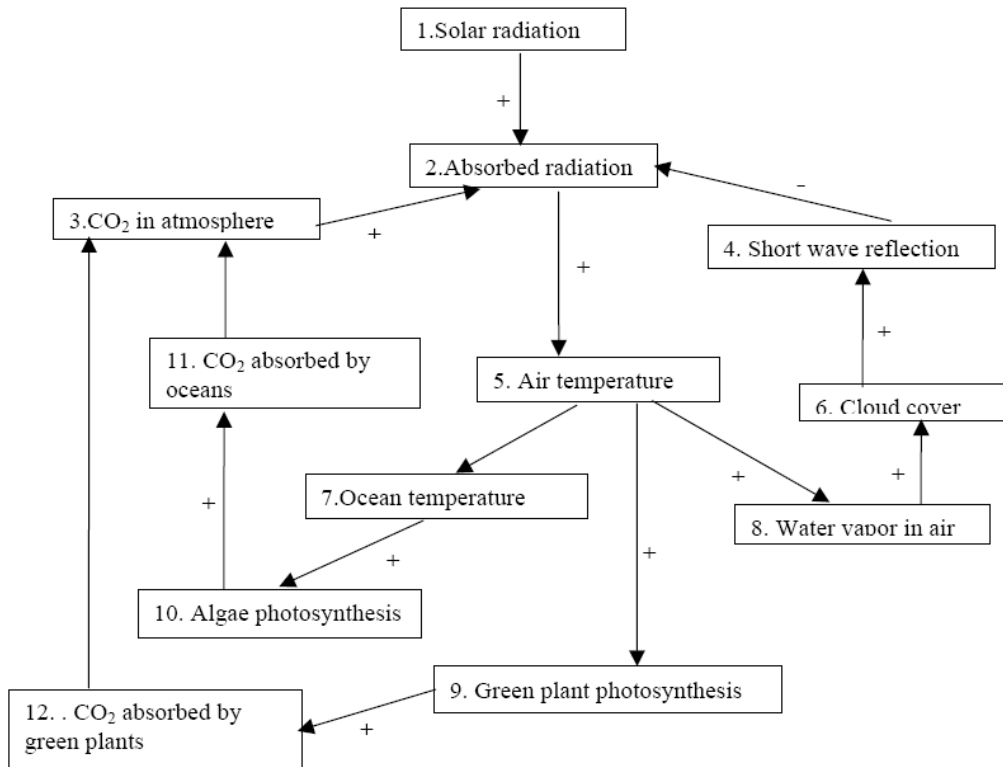


Figure 4. Cognitive map of the (simplified) greenhouse effect

The adjacency or connection matrix associated with the above figure is shown in table 5.

Table 5. Connection matrix of the cognitive map in Figure 4.

	1	2	3	4	5	6	7	8	9	10	11	12	Σ
1		+											1
2					+								1
3		+											1
4		+											1
5							+	+	+				3
6				+									1
7										+			1
8						+							1
9												+	1
10											+		1
11			-										1
12			-										1
Σ	1	3	2	1	1	1	1	1	1	1	1	1	

The table is to be read as follow: a sign (+ or -) in cell 'ij' means that the 'i' variable is influencing the 'j' variable. Recall: the value in the last column gives the number of variables influenced by the row variable (*outdegree*). Inversely, the value in last row shows how many variables influence the column variable (*indegree*). The most driving variable in table 5 is the variable 5 (Air temperature) while the most driven are the variables 2 (Absorbed radiation) and 3 (CO₂ in atmosphere). However these are only the first order influence. As explained above, by

raising the matrix in table 5 to its successive powers (2,3,4...), it is possible to uncover indirect influences between variables and to uncover higher order in- and outdegrees.

Graphs such as the one in figure 4 can also be analyzed in term of their dynamic properties provided they can be interpreted as a dynamical system. It is most likely the case if it has at least one closed loop, or cycle, defined as a path from one node to itself from one of its outgoing arrows. Graphs with closed loops are called directed cyclic graphs in graph theory and causal loop diagrams in the system dynamics school of thought. The graph in figure 4 has 3 closed loops:

- 2-5-8-6-4-2 (from absorbed radiation to itself via air temperature, water vapor in air, cloud cover and short wave reflection).
- 2-5-7-11-3-12-2 (from absorbed radiation to itself via ocean temperature, etc.)
- 2-5-9-12-3-2 (via green plant photosynthesis).

The qualitative analysis of causal loops diagrams consists in decomposing it in its elementary closed loops and studying the equilibrium property of the dynamical relations resulting from the interplay of positive and negative feedbacks. Indeed, closed loops are the graphic equivalent of feedbacks mechanisms: positive if their overall effect is positive, negative in the other case. The sign of a closed loop and of its associated feedback mechanism depends on the number of positive and negative edges it is made off. If the number of negative influences is even, we are dealing with a positive feedback; if it is odd, the feedback is negative. Positive feedbacks are at the heart of amplifying mechanisms (more and more or less and less); stabilizing mechanisms involve negative feedbacks. However, likewise the 'nth' order indirect effects, there can exist 'nth' order feedbacks loops in causal loop diagrams. To discover them and explore their consequences for the stability of the system it is necessary to use more sophisticated techniques²⁶. Unfortunately, these techniques are almost intractable with more than a few variables. When the model includes more than 5-6 variables it is probably better to use simulation as with Fuzzy Cognitive Maps.

Cognitive maps and causal loop diagrams are widely used in strategic management as a collaborative tool for extracting local knowledge from managers or as expert building tool in computer science. We don't know of examples of using cognitive maps in environmental assessment. However, we know of one interesting application in participative environmental management. Özemi²⁷ (1999) used them in its Ph.D dissertation on the sustainable development and participative management of the Kizilirmak Delta in Turkey to explore and model the perceptions and representations of the different stakeholders on the area. Practically, he built a total of 31 cognitive maps, of which 15 were drawn by villagers coming from 5 villages, 2 were drawn by vacation home owners, 7 were drawn by local and national NGO officials, 7 were from government officials. The cognitive maps were then transformed according to graph theory into adjacency matrices. The 31 maps were then additively superimposed forming what can be called a "social cognitive map". Figure 5 shows a cognitive map drawn with one of the villagers.

²⁶ See Puccia, C.J. and R.Levins, 1985, *Qualitative Modeling of Complex Systems*, Harvard University Press, Cambridge, Mass. And London.

²⁷ Özemi, U. 1999. *Conservation Strategies for Sustainable Resource use in the Kizilirmak Delta*, Turkey., University of Minnesota, Ph. D. Dissertation.

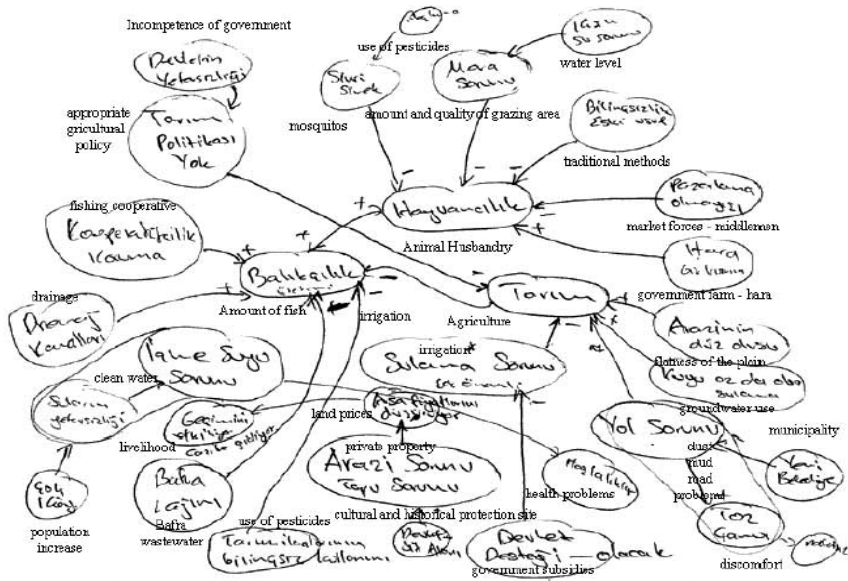


Figure 5. Cognitive map of the Kizilirmak Delta by a villager. Source: Özesmi, 1999.

2.2.1.4 Cognitive maps + numerical values + time = Fuzzy Cognitive Maps

Fuzzy cognitive maps (FCM) have been created by Kosko²⁸ by adding the following properties to cognitive maps:

- edges can take any real (constant) value in the [-1, +1] interval;
- nodes can take values in the set {-1, +1} or in the set {0,1};
- nodes are time-valued;
- The value of each node at any time is a function of the weighted sum of all its incoming edges, time the value of their outgoing node at previous time. In short:

$$N_{it} = f(\sum w_{ji} N_{jt-1}) \text{ where:}$$

- N_{it} is the value of node i at time t ;
- w_{ji} is the weight of connection from node j to node i .
- N_{jt-1} is the value of node j at time $t-1$.
- f is a function (a logistic function usually), such that $-1 \geq N_{it} \leq +1$ or $0 \geq N_{it} \leq +1$.

Therefore, FCM are discrete dynamical systems. For instance, the cognitive map of global warming (figure 4) can easily be transformed in a FCM by giving values to the edges and assigning initial values to each node.

²⁸ Kosko, B, 1986, Fuzzy cognitive maps, *International Journal of Man-Machine Studies* 1:65-75. See also Kosko, B., 1992, *Neural Networks and Fuzzy Systems. A Dynamical Systems Approach to Machine Intelligence*. Prentice Hall, Englewood Cliffs, New Jersey.

A FCM must be initialised with a vector of values, then its dynamical properties can be analysed by iterations until it ends with a fixed point attractor or reach a limit cycle. Simulations can be conducted by changing one or several values of the vector of initial values. Thus, if one or several variables (nodes) represent policy's measures, it is possible to explore their likely impact on the dynamical behaviour of the system.

As illustration, let us mutate the cognitive maps of figure 4 in FCM. To do this, we give real values to edges in the range $[-1,+1]$ and values to nodes in the set $\{-1,0,+1\}$ giving them the following semantics:

- -1 = below normal
- 0 = normal
- +1 = above normal

The values given to edges are arbitrary except for the sign, which is the same that in figure 3. Figure 5 shows the FCM in initial stage, where all variables are at their normal position. Notice that we added a new variable: fossil fuel burning that acts on CO₂ in atmosphere.

The simulation consists in giving an impulse to this new variable and observe what is going on for the whole system. Table 6 shows how the values of state variables (nodes) evolve through time.

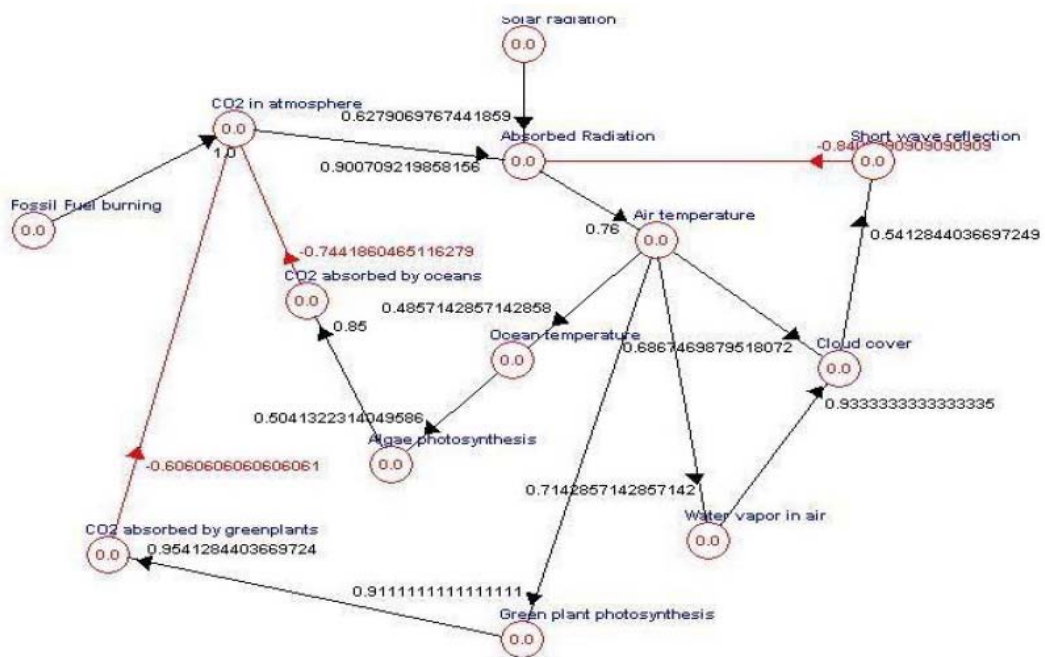


Figure 6. Fuzzy cognitive map of the greenhouse model.

TIME	Solar radiation	Aborbed radiation	CO2 in atmosphere	Short wave reflection	Air temperature	Cloud cover	Ocean temperature	Water vapor in air	Green plant photosynthesis	Algae photosynthesis	CO2 absorbed by oceans	CO2 absorbed by green plants	Fossil fuel burning
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0	1
2	0	0	1	0	0	0	0	0	0	0	0	0	1
3	0	1	1	0	0	0	0	0	0	0	0	0	1
4	0	1	1	0	1	0	0	0	0	0	0	0	1
5	0	1	1	1	1	1	0	1	1	0	0	0	1
6	0	1	1	1	1	1	0	1	1	0	0	1	1
7	0	0	0	1	1	1	0	1	1	0	0	1	1
8	0	-1	0	1	1	1	0	1	1	0	0	1	1
9	0	-1	0	1	-1	1	0	0	0	0	0	1	1
10	0	-1	0	1	-1	-1	0	-1	-1	0	0	0	1
11	0	-1	1	-1	-1	-1	0	-1	-1	0	0	-1	1
12	0	1	1	-1	-1	-1	0	-1	-1	0	0	-1	1
13	0	1	1	-1	1	-1	0	-1	-1	0	0	-1	1
14	0	1	1	-1	1	0	0	1	-1	0	0	-1	1
15	0	1	1	-1	1	0	0	1	-1	0	0	1	1
16	0	1	0	-1	1	0	0	1	-1	0	0	1	1
17	0	-1	0	1	1	0	0	1	-1	0	0	1	1
18	0	-1	0	1	-1	0	0	1	-1	0	0	1	1
19	0	-1	0	1	-1	1	0	-1	-1	0	0	1	1
20	0	-1	0	0	-1	-1	0	-1	-1	0	0	-1	1

Table 6. Results of simulation with the figure 5 FCM.

We see that the addition of CO₂ in atmosphere coming from burning more fossil fuels has the immediate effect of warming the atmosphere but also that it triggers a feedback mechanism that will eventually have the reverse effect. The feedback mechanism acts by increasing water vapour in air, green plant photosynthesis and *in fine* CO₂ absorbed by plants.

However, if we continue to burn too much fossil fuel, the whole system oscillates between periods of higher air temperature followed by periods of lower air temperature. As modelled here, the impact of ocean temperature, algae photosynthesis and CO₂ absorbed by oceans is nil. This is because we gave too low a value to the edge linking air temperature to ocean temperature. If we boost it slightly; it contributes to the homeostasis of the system by triggering the negative feedback.

Of course, this is a very crude model of the greenhouse effect and the values given to the relations between variables are totally fancy. But we can make our model more realistic, for example by introducing another (but positive) feedback mechanism missing in our first version: the effect on long wave absorption by water vapour, or the reduction in permafrost area that could let go huge amounts of methane. Figure 7 shows a augmented FCM taking them into account.

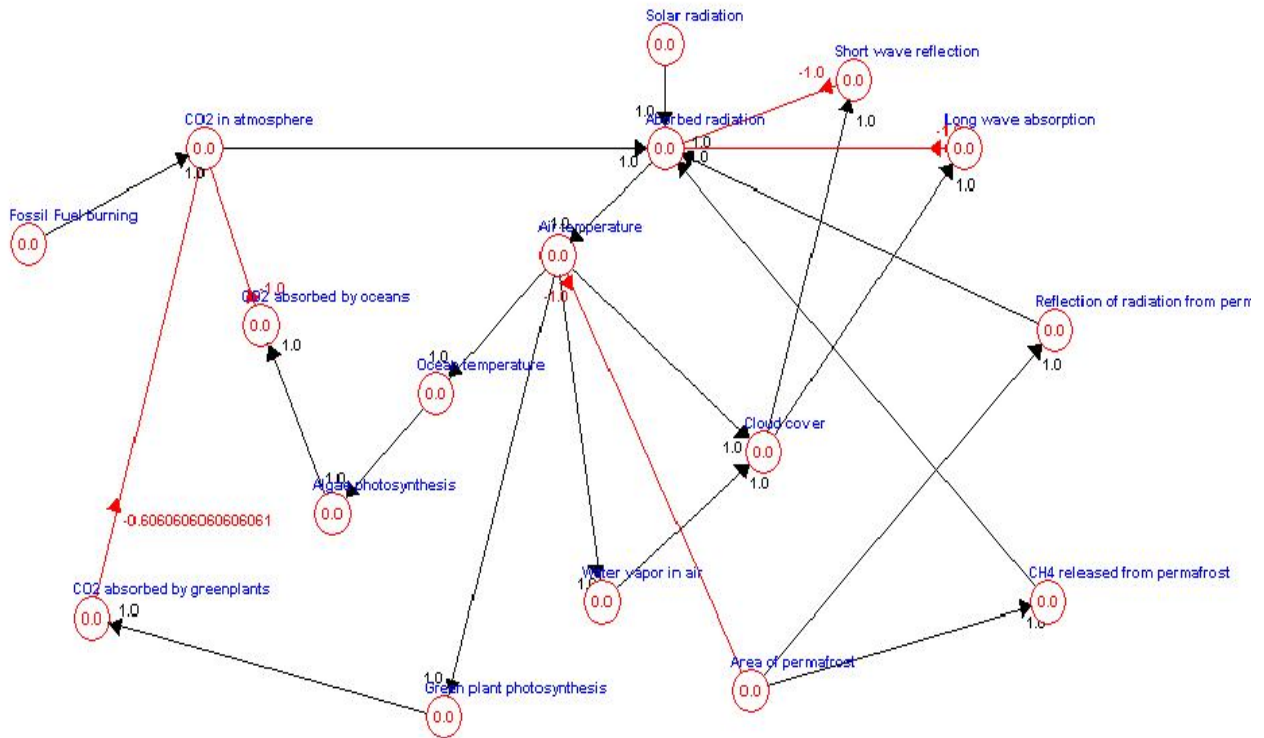


Figure 7. An augmented FCM of the greenhouse effect.

What is interesting in FCM from a cognitive integration point of view is that it is possible to superpose additively FCM from different stakeholders in order to compose something like a “social FCM”. The final SFCM will include all the nodes present in the partial FCM while the values of the edges will be calculated as – possibly weighted – averages of values given in the partial FCM. Hence, FCM is a truly participative integration tool. Of course, it suffers from serious flaws that make them unsuitable for some kind of problems. Notably, it is impossible with “classical” FCM to model irreversible phenomena such as, for example, the depletion of a non-renewable stock, or, inversely, cumulative impacts. Only system dynamic models make this possible for the moment. However, nothing prevents us from endowing FCM with this additional possibility. It boils down to allow edges from one node to itself or, what is equivalent, to change the equation driving node evolution as follows:

$N_{it} = f(\sum w_{ji}N_{jt-1} + N_{i,t-1})$ instead of the usual $N_{it} = f(\sum w_{ji}N_{jt-1})$. However, it would also be necessary to get rid of the restrictions to the allowed nodes’ values.

This would make FCM still closer to full-fledged (discrete) system dynamic models.

2.2.1.5 Fuzzy Cognitive Maps (Directed cyclic graphs)+ stocks-flows + real numbers = System Dynamics models

Figure 8 shows a FCM of a simple population model taking into account some crowding effects on fertility and mortality. Crowding increase with population growth but contributes to regulating population by acting on mortality, which it increases, and fertility which it tampers. A FCM of such a system can only uncover its general dynamical behaviour. In order to predict the actual values of the different variables, it is necessary to give them real values and to allow for accumulation in stock variables.

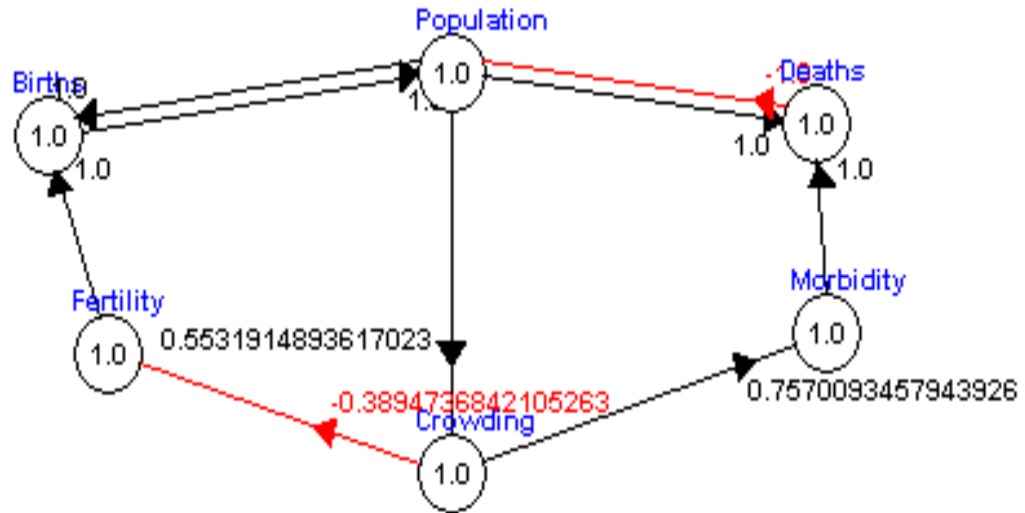


Figure 8. A FCM of a simple population system

This is exactly what system dynamics (SD) models do. Figure 9 shows the equivalent in SD of FCM in figure 8.

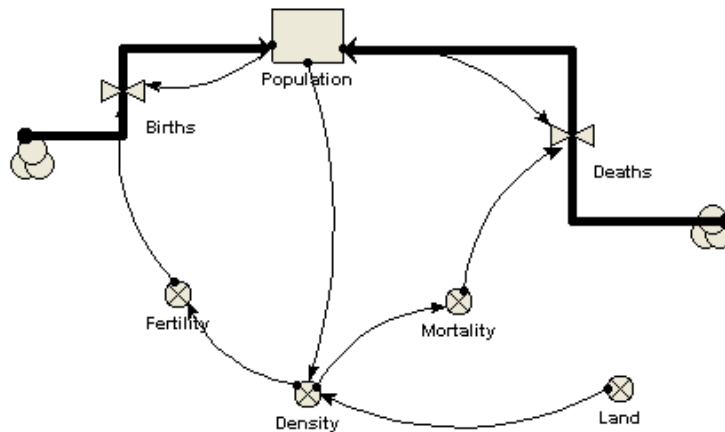


Figure 9. The population model in SD graphical mode

System dynamics (SD) models are fully-fledged representation of continuous dynamical systems allowing the modelling of all kind of behaviour, including accumulation or depletion. Contrary to FCM they allow nodes and edges taking real values in the interval $-\infty$ to $+\infty$. Basically, SD Models are graphical models (directed cyclical graphs) associated to the following semantics:

- nodes represent stock variables, fed by incoming edges and depleted by outgoing ones. They are called *levels* and are equivalent mathematically to integral equations. If a node has no parent (no incoming edge) it is called a source, if it has no child (outgoing edge), it is called a sink. Non-renewable resources are, for instance, easily modelled as sources.
- Edges correspond to derivative or differentials. They are called *flow* or *rate* variables because they act on levels, making them growing or decreasing. Actually, levels act on other levels by rates variables.
- Time is usually continuous and the model is numerically simulated using algorithms such as, for instance, Runge-Kutta algorithm.

The first real global integrated impact assessment models, the (in)famous “Limits to Growth” models to the Club of Rome by Meadows and alii, were also the first system dynamic models to reach a wide audience. System dynamic methodology has become a well-recognised tool in environmental modelling and management as well as in business but it still suffers from a bad reputation amongst economists. This is somewhat undeserved and has more to do with the way it has sometimes been used than with supposed inherent flaws. It is also that system dynamics models are, as their name makes clear, dynamical, yet economists are more used to static equilibrium or optimisation models.

2.2.1.6 Direct acyclic graph (DAG) + probabilities = Bayesian Network

Cognitive maps and fuzzy cognitive maps use some properties of graphical models to express the causal relations between variables. Indeed any cause-effect relation can be graphically depicted as a (directed) graph consisting in a set V of vertices (or nodes) representing the causes and the effects (variables, events, concepts...) and a set E of Edges (or links) connecting every pair of node for which a cause-effect relation holds. The fact that the relation is causal is implicit in the fact that the edges are oriented in the direction of the causal relation, i.e. from the cause to the effect. A causal diagram or graph is thus necessarily directed even if all directed graphs are not necessarily causal diagrams.

Figure 10 is an illustration of such a causal diagram. It describes the relationships between the season of the year (X_1), whether rain has fallen or not (X_2), whether the sprinkler is on or off (X_3), whether the pavement would get wet (X_4) and whether it would get slippery (X_5). Wetness causes the pavement to be slippery. Wetness itself is caused either by the rain or by the sprinkler being on, which depends on the season.

The graph is said to be acyclic because there is no path from one node to itself that follows the direction indicated by the edges (arrows) going out of it. This means, in the language of structural equation models (where they are called non-recursive) or of system theory that there is no feedback in the causal chain. Indeed, slippery doesn't cause wetness, or wetness rain, or rain falling being in whatever season. Of course, the real world is full of causal mechanisms with feedbacks, negative or positive so more often than not, causal diagrams will be cyclic. However, it is to be noted that any directed cyclic graph can be converted in a directed acyclic graph (DAG) just by duplicating and time-indexing some of its nodes. For instance, if node X is member of a path it can be duplicated in X_t and X_{t+1} , to suppress the cycle it is included in.

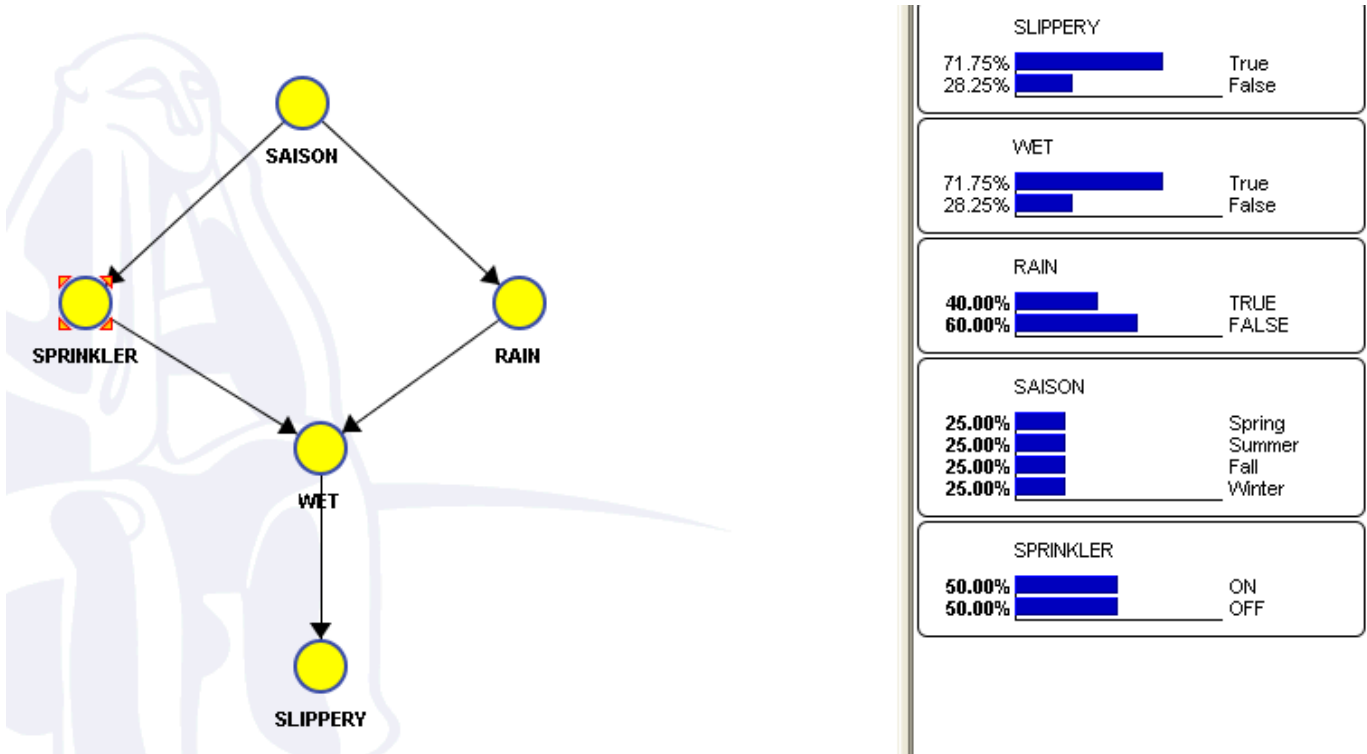


Figure 10. An example of Bayesian network

A DAG associated with a set of probability distributions is called a Bayesian network. In other words, Bayesian networks are directed acyclic graphs (DAGs) in which the nodes represent variables of interests and the links represent causal influences among the variables. The strength of the influence is represented by conditional probabilities that are attached to each cluster of parents-child nodes in the network.

The conditional probabilities corresponding to figure 10 are expressed in the following equations:

$$p(X_1, X_2, X_3, X_4, X_5) = p(X_5 | X_4, X_3, X_2, X_1) = p(X_5 | X_4) p(X_4 | X_3, X_2) p(X_3 | X_1) p(X_2 | X_1) p(X_1) \quad (1)$$

Compare equation (1) with equation (2) that is a strict application of the chain rule of probabilities for the computation of the joint probability distributions of the variables in the figure 1.

$$p(X_1, X_2, X_3, X_4, X_5) = p(X_5 | X_4, X_3, X_2, X_1) p(X_4 | X_3, X_2, X_1) p(X_3 | X_2, X_1) p(X_2 | X_1) p(X_1) \quad (2)$$

(1) is much simpler than (2) because it takes into account the conditional independence relations expressed by the DAG of figure 10. Indeed, the figure 10 shows that different variables are not sensitive to all their predecessors in the graph but only to a subset of them. The subset of all the predecessors of one variable in a DAG on which this variable is sensitive is called its Markovian parents, or its parents for short.

Formally: Let $V = \{X_1, \dots, X_N\}$ be an ordered set of variables and let $P(v)$ be the joint probability distributions on these variables. A set of variables PA_j is said to be Markovian parents of X_j if PA_j is a minimal set of predecessors of X_j that renders X_j independent of all its other predecessors.

In the example of figure 10, once we know that pavement is wet, we don't need any further information on the state of the sprinkler or the probability of rain, not speaking of the season, in order to predict the slipperiness of the pavement. In the same way, once we know that the sprinkler is

ON we are not interested anymore in the probability of rain in order to predict if the pavement will be wet or not. Fixing a variable in a Bayesian network to some of its possible value is called “conditioning on” it. For instance, fixing $X_4 = \text{'ON'}$ or 'OFF' is equivalent to fixing $[p(X_4=\text{'ON'}) = 1 \text{ and } p(X_4=\text{'OFF'}) = 0]$. It is said “conditioning on” X_4 . It is apparent from figure 1 that conditioning on X_4 , X_5 is conditionally independent of all the other variables of the DAG, because they convey no more information on it.

The conditions of conditional independence and dependence in a Bayesian network are entrenched in the topology of its graph. They correspond to conditions of “D-separateness” which can appear in three topological patterns.

- The chain : “ $x \rightarrow m \rightarrow y$ ” . x and y are conditionally independent, knowing m .
- The fork: “ $x \leftarrow m \rightarrow y$ ” . x and y are conditionally independent, knowing m
- The inverse fork : “ $x \rightarrow m \leftarrow y$ ” . x and y , while marginally independent, are conditionally dependent knowing m because once m is known, an information on x (y) lowers the probability of y (x).

In the chain and fork configuration, x and y are marginally dependent but become independent once we condition on m (i.e. once we fix the value of m). The information on m “blocks” the information flow between x and y . Knowing m , the observation of x (y) is of no use in order to predict y (x). For example, in figure 10, once we know the season, X_2 and X_3 are independent, assuming that the sprinklers are set in advance, according to the season.

In the inverted fork case, when an effect can be the product of two separated causes it is the opposite. The two causes (x and y) are marginally independent but become conditionally dependent once we know m . Referring to figure 10, finding that the pavement is slippery or wet, makes X_2 and X_3 dependant since knowing one of them helps in predicting the other (refuting the falling of rain make sprinkler = off more likely).

Note that the all variables in figure 10 are discrete, as is usually the case in Bayesian networks. However, it could include also continuous variables defined by their distribution (Gaussian, most often) and their parameters (mean, variance). One speaks then of mixed Bayesian (or graphical) models.

Bayesian networks can be used for different purposes. They can help in explaining, predicting and intervening.

- (a). *Prediction* consists in using elementary probabilities rules, mainly the following :

$$p(\text{effect}|\text{cause}) = p(\text{ effect \& cause}) / p(\text{ cause})$$

Therefore, once the cause is observed, it is possible to predict the probability of occurrence of the effect.

- (b). *Explanation* is possible thanks to the Bayes theorem (which gives its name to the method), that states that:

$$p(\text{cause}|\text{effect}) = [p(\text{effect}|\text{cause}) * p(\text{cause})] / p(\text{effect})$$

In words, once an effect is observed, it is possible to go up to its most likely cause by using Bayes theorem, which gives us the probability of the cause knowing the effect.

- (c). *What about intervention?* What is the difference, for example, between observing that the sprinkler is ON (refer to figure 1) and manipulating the sprinkler and turning it on? Or between predicting the probability that it rained after observing that the pavement is wet or after having made it wet? It is of course totally different. Though, Bayesian mathematical formalism doesn't make a difference between the two problems, it is expressed with the same formula: $p(\text{rain}|\text{wet})$. This is why Pearl suggested to create the new symbol 'do' and to introduce it in Bayesian network. If we follow him, we will be able to distinguish between $p(\text{rain}|\text{wet})$ which reads "probability of rain given that we **see** wet" and $p(\text{rain}|\text{do}(\text{wet}))$ which reads "probability of rain knowing that we **did make** it wet".

The difference between the two formulations corresponds to what Pearl calls a surgery on the DAG. The surgery of doing "sprinkler = ON" is visible in figure 11.

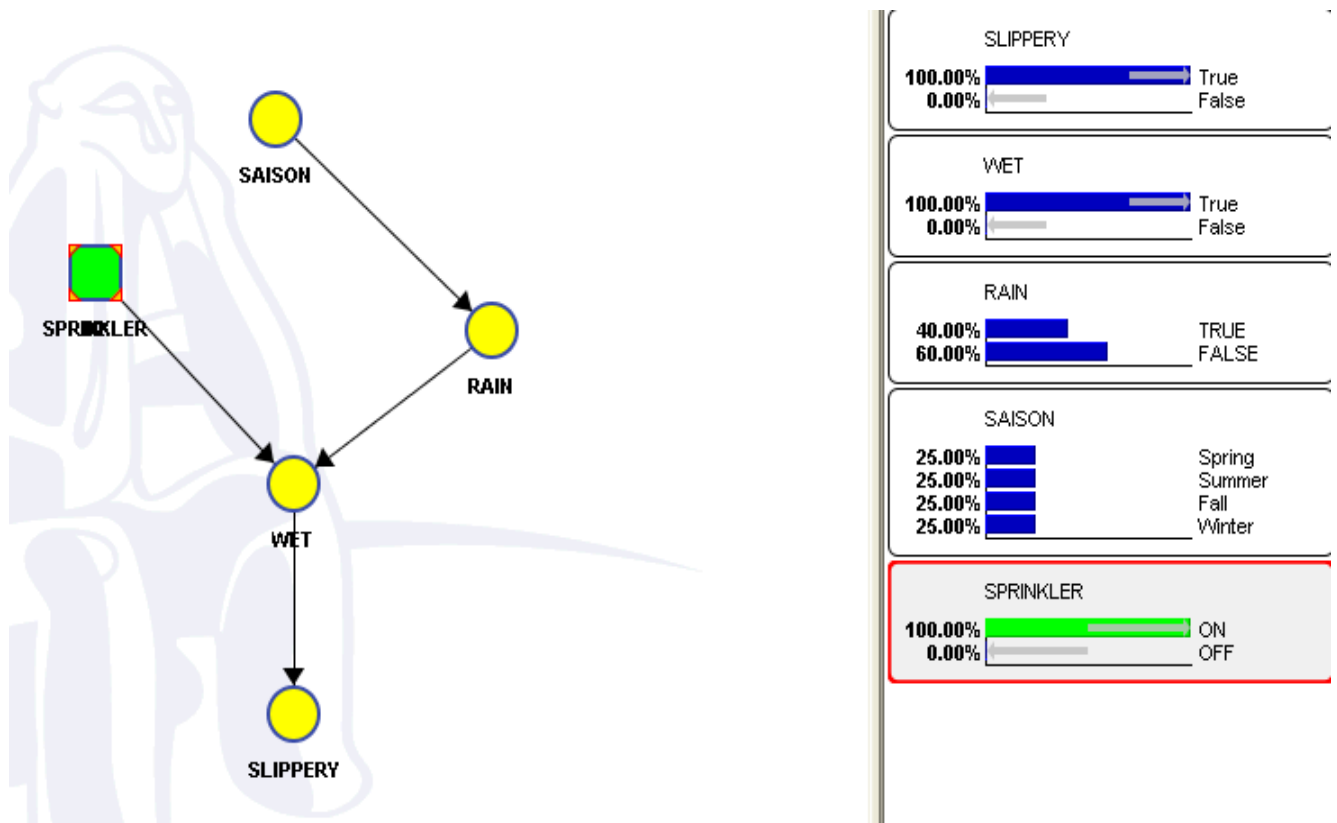


Figure 11. Bayesian network representation of the action "turning the sprinkler On".

The difference with figure 10 is in the removal of the arrow from X_1 to X_3 . It represents the fact that, whatever relationship existed between seasons and sprinklers prior to action, that relationship is no longer in effect while we perform the action.

Thus, Bayesian networks allow an intuitive representation of policy intervention from outside on a pre-existent reality made of causal relations.

2.2.2 An accounting integration toolbox: SAM, NAMEA and structural economics

2.2.2.1 Foundations of the approach

The cornerstone of structural economics is the supply-uses table that links together the production of goods and services of all the industries by expressing each industrial final production as a combination of goods and services coming from itself and from the other industries of the considered economy. The structure of such tables is shown in table 7.

Table 7. A Schematic supply-uses table.

	A, B, C	N
A	Inter-industry Flows	Final deliveries
B		
C		
·		
·		
N	Primary inputs	

A,B, C ..N are the different industries taken *latu senso*, that is including services.

The table is summarizing a set of linear relations such as:

$$x\mathbf{A} = a\mathbf{A} + b\mathbf{B} + c\mathbf{C} + \dots + n\mathbf{N} + \mathbf{Y}$$

Which express that in order to produce x units of \mathbf{A} you need a units of \mathbf{A} , b units of \mathbf{B} , c units of \mathbf{C} ... n units of \mathbf{N} , \mathbf{Y} being the final delivery to households and institutions. \mathbf{A} could mean wood production, \mathbf{B} buildings, furniture, etc. \mathbf{A}, \mathbf{B} , etc. can be expressed either in physical or in monetary units. This requires a workable classification of industries and data about their production and intermediary consumption patterns. For instance, Belgian input-output tables are built on the NACE classification, which is an European standard.

Primary inputs are necessary inputs that are not produced inside the considered economy but are coming from outside: other economies or nature.

Table 8. Schematic supply-uses table in physical units

	Extraction	Production	Households	TOTAL
Extraction (cubic meters)	25	20	55	100
Production (metric tons)	14	6	30	50
Households Labour (hours)	70	140		210
Households Capital (Tons)	10	40		50

If one divides each figure in the supply-uses table by its corresponding row total, one obtains a matrix of coefficients a_{ij} expressing the number of units of industry i needed to produce **one** unit of industry j product.

Table 9. Technical coefficients corresponding to table 8.

	Extraction	Production
Extraction	0,25	0,40
Production	0,14	0,12
Households Labour	0,70	2,80
Households Capital	0,10	0,80

The technical coefficients can be normalized (divided by their column total) giving the well-known input-output table, which describes the production structure of the economy.

Table 10. Input-output table corresponding to supply-uses table 8

	Extraction	Production
Extraction	0,21	0,01
Production	0,12	0,29
Households Labor	0,59	0,68
Households Capital	0,08	0,02

Here, the production sector appears to be more labor intensive but less capital intensive than the extractive sector. Now, if the cubic meter's price is 2 € and the metric ton's price 5 €, if the wage rate is 1 € /hour and interests on capital 20%, we have the monetary equivalent of table 8 in table 11.

Table 11. Schematic input-output table in €.

	Extraction	Production	Households	TOTAL
Extraction	50	40	110	200
Production	70	30	150	250
Households	Labor	70	140	210
	Capital	10	40	50
TOTAL	200	250	260	710

Usually, the matrix of technical coefficients is calculated from input-output tables in money unit, as in table 12.

Table 12. Technical coefficients from table 8.

	Extraction	Production	Households	
Extraction	0.25	0.16	0,423	
Production	0.35	0.12	0,577	
Households	Labor	0.35	0.7	0
	Capital	0.05	0.16	0

One sees that, when technical coefficients are calculated directly from a supply-uses table in money units, they are all necessarily less than or equal to 1, and rows total are equal to their corresponding column total.

Let us call **A** the matrix of technical coefficients, **y** the vector of final demand, **x** the total output vector. Then the following relations holds:

$$\mathbf{y} = \mathbf{x} - \mathbf{Ax}$$

This expresses the fact that final deliveries are the difference between total production and intermediary consumption, that is the part of production consumed to produce other final goods and services.

It is always liable to multiply a matrix by the identity matrix **I** without changing its value, so:

$$\mathbf{y} = \mathbf{Ix} - \mathbf{Ax}$$

Therefore:

$$\mathbf{y} = \mathbf{x}(\mathbf{I} - \mathbf{A})$$

$$\Rightarrow \mathbf{x} = (\mathbf{I} - \mathbf{A})^{-1}\mathbf{y}$$

The above expression can only be solved if **x** or **y** are exogenously given.

$(\mathbf{I} - \mathbf{A})^{-1}$ is called the Leontief inverse. It allows computing the production required (\mathbf{x}) for any final income \mathbf{y} , taking into account the intermediary consumptions. Indeed, the Leontief inverse gives the ‘direct’ requirements of input for each unit of output as the table of technical coefficients plus all the indirect requirements.

Suppose we want to consume (final demand) 1 unit more of each production, if they were no intermediary consumption, it would suffice to produce the vector \mathbf{I} of these additional units. However, because of the intermediary consumption (productive consumption) we need also to produce \mathbf{A} , and then the total required production is $\mathbf{I} + \mathbf{A}$. But, \mathbf{A} itself needs \mathbf{A} more to be produced, etc. All in all we need a total production of:

$$\mathbf{I} + \mathbf{A} + \mathbf{A}^2 + \dots + \mathbf{A}^n$$

All the coefficients in \mathbf{A} being < 1 , \mathbf{A}^n converges to 0 as n goes to infinity. But, $\mathbf{I} + \mathbf{A} + \mathbf{A}^2 + \dots + \mathbf{A}^n$ is the development of $\mathbf{I} / (\mathbf{I} - \mathbf{A})$ or $(\mathbf{I} - \mathbf{A})^{-1}$.

There is an equivalent of the Leontief matrix if the transactions are expressed in money. Suppose \mathbf{v} is the vector of added values, \mathbf{p} the vector of prices, then we have

$$\mathbf{p} - \mathbf{A}'\mathbf{p} = \mathbf{v} \Rightarrow \mathbf{p} = (\mathbf{I} - \mathbf{A}')^{-1} \mathbf{v}.$$

It states that the price of a unit of output (\mathbf{p}) is equal to the cost (quantity times prices) of input ($\mathbf{A}'\mathbf{p}$) plus value-added (\mathbf{v}).

2.2.2.2 Introducing the environment

In the example above, although an extracting activity was recorded, the natural resource itself was absent as well as the corresponding rent. In the following example²⁹ both activities and resources are taken into account. Suppose a hypothetical economy producing wheat, coal, iron pellets, machinery and electricity using labor, capital, land, raw coal and iron ore as factors of production. Outputs of the first three sectors are measured in tons; machinery in numbers of units and electricity in kWh. Land is measured in hectares, raw coal in tons, iron ore in tons of metal content, labor in person-years and capital in \$.

Table 13 shows the technical coefficients extracted from the inter-industry supply-uses tables and the coefficients calculated from the activities-factors supply-uses table. The former is the classical \mathbf{A} matrix. Lets us call the latter the \mathbf{F} matrix.

²⁹ From Duchin, F., 2004, “Input-Output economies and material flows”, Rensselaer Working Paper in Economy, N° 0424, December 2004..

Table 13. A and F Matrices for a hypothetical economy

A Matrix	Wheat	Coal mining	Iron mining	Machinery	Electricity
Wheat	0.020	0.000	0.000	0.000	0.000
Coal mining	0.000	0.023	0.214	0.259	0.833
Iron mining	0.000	0.000	0.286	0.556	0.139
Machinery	0.020	0.068	0.143	0.111	0.278
Electricity	0.049	0.045	0.179	0.370	0.056
Table 13 continued					
F Matrix	Wheat	Coal mining	Iron mining	Machinery	Electricity
Land	0.245	0.045	0.107	0.000	0.000
Raw coal	0.000	1.250	0.000	0.000	0.000
Iron ore	0.000	0.000	1.071	0.000	0.000
Labor	0.196	0.182	0.286	0.444	0.056
Capital	0.980	2.727	5.714	11.111	16.667

Table 14. Values for exogenous vectors \mathbf{y} and $\boldsymbol{\pi}$ and calculated values for endogenous vectors

	Exogenous	Endogenous		
	\mathbf{y}	\mathbf{x}	\mathbf{v}	\mathbf{p}
Wheat	100	102	6.23	9.28
Coal mining	0	44	9.66	15.23
Iron mining	0	28	8.32	35.99
Machinery	5	27	7.56	51.29
Electricity	12	36	4.00	38.06
	$\boldsymbol{\pi}$	\mathbf{f}		
Land	15	30		
Coal	5	55		
Iron	2	30		
Labor	12	50		
Capital	0.2	1280		

We have two production equations here. The first is the already encountered one:

$$(\mathbf{I} - \mathbf{A})\mathbf{x} = \mathbf{y}$$

The second is $F\mathbf{x} = \mathbf{f}$, with \mathbf{f} being the k vector of total factor use in physical unit. Let \mathbf{p} be the vector of prices and \mathbf{v} the value-added as above. Let $\boldsymbol{\pi}$ be the k -vector of factors prices. Then:

$$(\mathbf{I} - \mathbf{A}')\mathbf{p} = \mathbf{F}'\boldsymbol{\pi}$$

$$\mathbf{p}\mathbf{y} = \boldsymbol{\pi}\mathbf{F}\mathbf{x}.$$

Table 14 shows values for exogenous variables \mathbf{y} and $\boldsymbol{\pi}$ and solutions values for endogenous variables \mathbf{x} , \mathbf{p} , \mathbf{f} and \mathbf{v} , where factor use is calculated as $\mathbf{f} = \mathbf{F}\mathbf{x}$ and value-added as payments to all factors per unit of output or, $\mathbf{v} = \mathbf{F}'\boldsymbol{\pi}$.

The rent for land is observed as 15 \$ /ha and the royalties for coal are 5\$/tons. Wages are 12\$/person-year. To quantify the dependence of all sectors on the individual resources inputs, we calculate the $k * n$ matrix $\mathbf{F}(\mathbf{I} - \mathbf{A})^{-1}$ where each entry measures the amount of one factor required directly and indirectly to deliver a unit of final deliveries of product. This is shown in table 15.

Table 15. Factor Requirements to satisfy final deliveries ($\mathbf{F}(\mathbf{I} - \mathbf{A})^{-1}$)

	Wheat	Coal	Iron	Machinery	Electricity
Land	0.265	0.074	0.272	0.268	0.184
Raw coal	0.160	1.548	1.500	1.829	2.273
Iron ore	0.087	0.175	2.171	2.336	1.011
Labor	0.287	0.356	1.117	1.739	1.049
Capital	4.438	8.821	33.372	55.355	46.619

It shows that even if each sector doesn't require directly every factor, all of them use every factor indirectly. For example, delivering 100 tons of wheat to final consumer requires 27 ha of land, 16 tons of raw coal, 9 tons of Iron ore, etc.

The same logic can be used to calculate prices paid, directly and indirectly to each factor of production. It is given by the matrix $\boldsymbol{\pi}'\mathbf{F}(\mathbf{I} - \mathbf{A})^{-1}$, $\boldsymbol{\pi}'$ being the price-vector of factors.

2.2.2.3 Introducing the social pillar: the Social Accounting Matrix

Another extension of the input-output matrix consists in adding institutions, notably households but also government, forming what R.Stone called the "Social Accounting Matrix" (SAM), "*a comprehensive, flexible, and disaggregated framework which elaborates and articulates the generation of income by activities of production and the distribution and redistribution of income between social and institutional groups. A principal objective of compiling a SAM is, therefore, to reflect various interdependencies in the socioeconomic system as a whole by recording, as comprehensively as is practicable, the actual and imputed transactions and transfers between various agents in the system. The key distinguishing features of the SAM relative to alternative accounting systems are, first, the system is represented by a set of single-entry accounts; secondly, it places relatively more importance on the factorial, household and institutional dimensions; and thirdly, the framework is complete and comprehensive.*"(Round, 2003, p.2)

A SAM is a square matrix where rows and columns refer to activities (the industries of the basic I-O model), factors (the value-added is disaggregated as factors payments) and institutions (which own factors and pay for final deliveries). Table 16 shows a condensed macro-SAM.

Table 16. *A simplified macro-SAM.*

Table 1: Macro SAM							
	Activities	Commodity	Factors	Hshld	Govt	S-I	World
Activities		D					E
Commodity				C	G	I	
Factors	X						
Household			Y				
Government	T ^X			T ^H			
S-I				S ^H	S ^G		S ^F
World		M					
Definitions:							
D: production sold domestically E: exports X: production (GDP at factor cost) T ^X : indirect taxes T ^H : direct taxes on households M: imports Y: factor payments to households				C: consumption G: government demand I: investment demand S ^H : household savings S ^G : government savings S ^F : foreign savings S-I: savings-investment account			

One can verify that the fundamental macroeconomic identities are preserved:

- $GDP = X + T^X = D + E$
- $C + G + I = D + M$ (demand)
- $GDP + (M - E) = C + G + I$
- $Y = X = GDP$ at factor costs

The SAM brings about three benefits

- Its construction allows for the collection and integration of information usually lacking in national accounts but very useful in order to characterize an economy;
- It displays this information in an illuminating way by emphasizing the structural interdependence of factors, activities and institutions at the macro and meso levels. Indeed, the SAM gives the possibility to disaggregate activities, factors and or institutions and moving from a macro to a meso perspective. For example, in the Indonesian SAM used by Duchin³⁰ (1998), households are disaggregated in the following classes: landless agricultural, small farmers, medium farmers, bigger farmers, rural non-farm low-status, rural outside labor force, rural high-status, urban low-status, urban outside labor force, urban high status. It can even be used at a micro-level, for example at village level in LDC³¹.

³⁰ Duchin, F, 1998, *Structural Economics. Measuring Change in Technology, Lifestyles, and the Environment*. Washington, D.C. : Island Press.

- It allows multiplier analysis akin to the classical Leontief analysis of input-output table with the so-called “generalized Leontief matrix”. Multiplier analysis estimates the effects of one-time increases in exogenous variables on endogenous variables in the accounting framework and it is used for short-term policy analysis. Such an analysis is very useful in estimating the effects of exogenous variables, such as increases in exports, on outputs, employment and incomes, with each of these being disaggregated in relation to the classification system embodied in the social accounts. The richness of SAM multipliers comes from their tracing out chains of linkages from changes in demand to changes in production, factor incomes, households’ incomes, and final demands. However, multiplier analysis and the very computation of the generalized Leontief inverse call for the partitioning of the SAM in endogenous and exogenous transactions. In table 17 below, only A, F, C, W and T are endogenous, forming a sub-matrix **M**. $(\mathbf{I} - \mathbf{M})^{-1}$ is the so-called “Generalised Leontief Inverse”.

Table 17. A partitioned simplified SAM with endogenous and exogenous accounts.

		EXPENDITURES				
		<i>1</i> <i>Production</i> <i>Activities</i>	<i>2</i> <i>Factors of</i> <i>Production</i>	<i>3</i> <i>Institutions</i>	<i>4</i> <i>Other</i> <i>expenditures</i>	TOTAL
1.	<i>Production</i> <i>Activities</i>	A		C	X	X
2.	<i>Factors</i> <i>of</i> <i>production</i>	F			X	X
3	<i>Institutions</i>		W	T	X	X
4	<i>Other</i>	X	X	X	X	X
	TOTAL	X	X	X	X	X

Table 18 shows the matrix of coefficients (M) corresponding to a simplified SAM matrix for Indonesia (Duchin, 1998). It has to be read as follow, for example: a 1.000.000 rupiah of output in agriculture need 266.000 rupiah of agricultural inputs (seeds, fodder, etc.), 196.000 rupiah of manufactured goods, 204.000 rupiah of agricultural labour, etc. Table 19 shows the Leontief Generalised Inverse or multipliers matrix corresponding to the SAM coefficients matrix in table 18. It takes into account all direct and indirect effects

³¹ Taylor, J.E and Adelman (1996). *Village Economies: The Design, Estimation and Use of Villagewide Economic Models*. Cambridge: Cambridge Press.

Table 18. Coefficient matrix for SAM for Indonesia 1980 (rupiahs of input per rupiah of output)

	1	2	3	4	5	6	7	8
1. Agriculture	0.266	0.037	0.00	0.00	0.00	0.00	0.584	0.183
2. Manufacturing & services	0.196	0.237	0.00	0.00	0.00	0.00	0.243	0.206
3. Agricultural labor	0.204	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4. Nonagricultural labor	0.022	0.219	0.00	0.00	0.00	0.00	0.00	0.00
5. Agricultural capital	0.279	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6. Nonagricultural capital	0.00	0.394	0.00	0.00	0.00	0.00	0.00	0.00
7. Rural households	0.00	0.00	0.943	0.094	0.835	0.00	0.006	0.002
8. Urban households	0.00	0.00	0.057	0.906	0.00	0.942	0.007	0.049

One sees that in order to satisfy a 1.000.000 rupiahs additional final consumption of agricultural goods, one needs to produce a 2.51 millions output of agricultural sector, 1.22 millions of manufactured output, etc.

Table 19. Multipliers for the SAM coefficients matrix of Indonesia, 1980 (Duchin, 1998)

	1	2	3	4	5	6	7	8
1. Agriculture	2.51	0.63	1.57	0.72	1.36	0.59	1.63	0.62
2. Manufacturing & services	1.22	1.88	1.15	0.69	0.99	0.61	1.18	0.64
3. Agricultural labor	0.51	0.13	1.32	0.15	0.28	0.12	0.33	0.13
4. Nonagricultural labor	0.32	0.43	0.29	1.17	0.25	0.15	0.29	0.16
5. Agricultural capital	0.70	0.18	0.44	0.20	1.38	0.16	0.46	0.17
6. Nonagricultural capital	0.48	0.74	0.45	0.27	0.39	1.24	0.47	0.25
7. Rural households	1.11	0.31	1.65	0.42	1.45	0.27	1.73	0.28
8. Urban households	0.82	1.15	0.81	1.40	0.65	1.38	0.77	1.46

2.2.2.4 Miscellaneous

- The SAM-NAMEA accounting framework can be used for modeling either in a “neo-classical economics way “ (with a CGE model) or in a “structural economics” way. The neo-classical economist approach is a static, comparative equilibrium one. The structural economics approach builds scenarios of significant changes in production technologies or households lifestyles and evaluates its effects on incomes, activities, factors uses and the environment.

-
- The SAM-NAMEA framework can mix different measurements units: money, physical units and even time. Anyhow, the coefficients and the multipliers are dimensionless.
 - It can be seen as an expansion of the Ehrlich accounting expression $I = P \cdot A \cdot T$ which means that the impact on the environment of the consumption of any good is a function of the number of consumers of the good (P, for population), their level of consumption (A, for affluence), that is the number of units consumed by consumer, and the unitary environmental impact of the good. In the SAM scheme, the P factor is expressed as the number of (different kinds of) households, the A factor as their consumption habits or lifestyles (C matrix in table 10) and the T factor is the technologies embedded in the input-output matrix (matrix A in table 10) with respect to environment.
 - Belgium already has only an embryo of NAMEA accounts and doesn't seem to be on the way to any social accounting matrix. In contrast, Statistics Netherlands already has an overall integrated environmental, social and economical accounting scheme called SESAME.

2.2.3 Conclusions and synthesis on cognitive integration tools

- Causal tools may be expressed either in matrix or in graphical form. The latter is more convenient for collaborative (participative) modelling; the former is best suited to mathematical manipulations. However, it is always possible to switch between the two modes of presentation.
- Though the impact assessment literature seems unaware of it, there is a whole continuum between purely qualitative causal framework (such as the DPSIR) and tools (such as checklist or cross-impact matrices) and fully quantitative models such as systems dynamics models. In between, one find semi-quantitative tools such as FCM (Fuzzy cognitive maps), or Bayesian networks³². It is therefore possible to enrich progressively the assessment as needed, beginning with a cognitive map, then quantifying it a bit as FCM, finishing if necessary and feasible with a full-fledged system dynamic model or, if risk is at stake, with a Bayesian network (or an influence diagram).
- In any case, it is helpful to start with a graphical model of the relations between the relevant variables (policy variables, identified impacts, intermediary variables). If the problem is mainly a dynamical one, the graph will contain cycles, and feedbacks will have to be considered. If not, it will boils down to an event tree likely to mutate to a Bayesian network if endowed with probabilities.
- Accounting integration is much more demanding in terms of existing database. It supposes the existence of highly disaggregated social accounting matrices, input-output tables and environmental accounts.
- Cognitive integration can be *ex post* or *ab initio*. If *ex post*, it can only be done by coupling pre-existing disciplinary causal models. The different causal integration tools discussed here can be used either *ex post* or *ab initio*. It is much less the case for the accounting approach. Integration of economical, environmental and social variables in SAM-NAMEA frameworks is mainly an *ab initio* process, because they must have been identified from the beginning in the categories of the accounted for activities, factors and institutions.

³² I don't mention here qualitative physics nor neural networks, the former because I don't believe in its potential in assessment (although I believe in its pedagogic virtues), the latter because of their "black box" character.

- The causal and accounting integration pattern differs also from a sustainable development point of view. For example, the accounting scheme is better suited to analysis of impacts on production and consumption patterns. On the other hand, a non-linear dynamical causal model is the only way to explore far from equilibrium behaviours. Likewise, the probabilistic approach of Bayesian networks is especially fitted to the evaluation of risks such as in health impact assessment.

To conclude, Table 20 gives an overview of the strength, weaknesses and main characteristics of the two kind of integration patterns with respect to some requirements of sustainable development assessment.

Table 20. Overview of strengths and weaknesses of the main cognitive integration tools.

INTEGRATION OF	CI-Matrix/CM/FCM-/SD	Bayesian networks-influence diagrams	Accounting
Environmental, economical, social	Yes (<i>ex post</i> or <i>ab initio</i> coupling)	Yes (good in <i>ex post</i> coupling and reduced forms)	Yes but only <i>ab initio</i>
Different spatial scales	Difficult	Possible	No but possibly multi-regional, imports-exports...
Different time scales	Yes but mostly long term	?	No (mostly short term)
Different kinds of knowledge (participation)	Yes for FCM, Difficult for SD	Yes (mixing objective and subjective probabilities)	No (dominance of the economical language)
Uncertainties, risks	Only by sensibility analysis	Yes	No
Sustainable development paradigm	DPSIR – Resiliency Productive assets (long term)	DPSIR Procedural interpretation (precautionary principle)	Ehrlich equation Triple Bottom Line Productive assets (short term)
Sustainable development concerns and impacts	Environmental problems	Risks and uncertainties (health...)	Production and consumption patterns
Strengths	Dynamical, non-linearities	Risk assessment	Coherence Social acceptability Objectivity Distributional concerns Close to life-cycle analysis, material flows...
Weakness	Calibration highly demanding in data (less for FCM) and skills	Elicitation of Probabilities Subjectivity	Static framework Huge data requirements (national accounting system)

REPORT OF THE CASE-STUDY ON ETHICAL PUBLIC PURCHASES

17 November 2005

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1. Introduction

As part of the Integration and Testing phase of the research ‘Methodology and feasibility of Sustainability Impact Assessment’, a preliminary proposal for a Belgian SIA will be applied to a selection of case-studies. Based on these exercises lessons will be drawn to elaborate an improved version of a SIA for the Belgian federal context. Three case-studies have been selected of which the current case concerning the introduction of ethical criteria within government purchases is one. In close cooperation with a group of civil servants involved with the subject, all phases of SIA will be dealt with (screening, scoping, impact identification, impact prediction, impact evaluation, reporting). More concrete this means that the policy measure concerned will be analyzed and alternatives for the measure will be identified. The potential economic, ecologic and social impacts of the alternatives will be described, based on an impact matrix and the policy alternatives will be compared. Moreover the possibility of stakeholder participation in the process will be discussed.

The persons involved in this case-study are mentioned in the Annex. This group was invited for a kick-off meeting on 13/07/2005 and a closing meeting on 14/09/2005. In between some restricted meetings and individual consultation over the telephone have taken place.

2. Cause and purpose

Based on several personal contacts with Mr. Bruggeman and Mr. Lerno (Federal Public Service Personnel and Organization) in addition to an extensive discussion during the kick-off meeting¹ on July 17th, a description of the societal problem on which the policy initiative aims to formulate an answer was formulated. Also the related risks (societal consequences) and the causes were discussed as well as why the current legislation is not satisfactory.

Sustainable consumption is a vital component of reaching a more sustainable development. Governments have an important role to play in implementing and stimulating more sustainable consumption patterns. On the one hand because government purchases represent a substantial part of the market economy; on the other hand because governments need to fulfil an exemplary role; by purchasing sustainable products and services, the government can send an important signal towards the rest of the society. Moreover the importance of sustainable government's purchases has been repeatedly stressed in several official documents (national and international).

¹ the research group, the FPS P&O, the PPS SD en the chancellery of the prime minister were represented during this kick-off meeting

Sustainable products and services can contain an ecological approach, a social / ethical approach or a combination of these. Concerning the social and ethical aspect of public purchases a confusion of concepts needs to be clarified. Within the international discourse on sustainable public purchasing ethical criteria are understood as the working conditions in which products / services are produced. In this context the 8 basic principles as determined by the International Labour Organization (ILO) are frequently referred to (syndicate freedom, no discrimination, gender equality, no forced labour, no child labour). Social criteria were included in the European Directive 2004/18/EC of 31 March 2004 as **uitvoeringsmaatregel (implementation measure)**, as well as within the context of restricting the access to a **gunningsprocedure** to sheltered workplaces, social insertion companies, etc. (it **can be** stipulated for example that 20% of the employees in the implementing company comes from unemployment or 10% of the personnel is disabled). In the continuing of this text the term “ethical criteria” refers to the basic principles of the ILO².

If a government chooses to take into account sustainable aspects (social, ethical, ecological or a combination) of the products and services it purchases, several practical and legislative obstacles stand in the way. The definition of sustainability criteria and the verification of the achievement of these criteria is an important pitfall. Anyone can declare to bring sustainable products / services on the market. Labelling is an important instrument to confirm and communicate the sustainability aspects of products / services. However only recognised labels, verified by an independent third party (ISO Type I labels), can provide adequate reliable product information on which a responsible selection can be based.

A variety of independent and controlled labels are available on the European market with each their own priorities and social / ethical or ecological accents (such as Biogarantielabel, Max Havelaar, European eco-label, Belgian social label, FSC, Nordic Swan, Blue Angel, ...). Most of these initiatives only have a limited application and are only valid for a limited amount of product categories. The market penetration is often relatively restricted because of practical difficulties.

The regulation concerning public purchases is strongly determined by the global principles of the free market. The European legislation (Directive 2004/18/EC of the European Parliament and of the Council of 31 March 2004 on the coordination of procedures for the award of public works contracts, public supply contracts and public service contracts) offers a binding framework that leaves the national governments only very limited freedom to integrate sustainability criteria in public contracts. Taking account of the principles of open competition it is impossible to introduce the possession of a label as a criterion for public purchases. This would implicate a form of unfair competition for other products / services which meet the same criteria, but do not have the label, should also be able to subscribe for the public contract involved. According to the Directive public contracts can be granted, based on the

² Moreover the confusion of concepts remains. A circular letter of 2002 addressing all Federal and Programmatic Public Services employs the term “social criteria” for implementation criteria based on the ILO-principles. Those ILO-principles are also used for the Belgian Social Label.

price ('aanbesteding') or based on the comparative relation of price to quality ('offerteaanvraag'). In the first possibility the order has to be assigned to the tenderer which has submitted the most economical regular tender. In the second possibility the order is assigned to the most economical tender, however taking into account the granting criteria. The evaluation is based on the weighing of these criteria (for example through a scoring system). However these granting criteria have to be directly related to the subject of the order, that is the product or service concerned (quality, technical value, aesthetic or functional features, ...). Also ecological characteristics can be defined as granting criteria, while, according to these stipulations, the ethical circumstances in which a product / service was produced are not directly linked to the subject of the order.

The introduction of ecological and social criteria in public contracts has been a political issue for quite some time now. There is relative consensus for these aspects and the use of ecologic and / or social criteria in calls for tender has been rather established, unlike the use of ethical criteria. Introducing ethical criteria in public contracts remains a rather problematic issue and currently an international discussion is taking place on how to effectively introduce ethical criteria in public orders.

In Belgium the European Directive is currently being transposed in a national law on public orders, which should become valid by the end of 2005. This new law will regulate all aspects of public orders will leave some possibilities to introduce ethical criteria in public contracts within the free market context. The general principles and possibilities as described by the law, should later on be implemented by practical 'uitvoeringsbesluiten'

In 2002 a circulation letter with recommendations for the purchasing of sustainable office products (guide for sustainable procurement) has been send to all Federal and Programmatic Public Services. These recommendations are based on a combination of social (in fact ethical) and ecological norms. The social criteria are implementation criteria derived from the 8 basic conventions of the ILA, as applied in the Belgian social label. The ecological criteria are granting criteria and are mainly based on the criteria of the European eco-label. More recently a similar guideline has been developed with instructions on how to introduce ethical criteria when purchasing vehicles (May 2004) and computers or electronic material (December 2004). A circular letter of January 27th 2005 makes the use of these recommendations obligatory for all federal and programmatic public services. An important stipulation in this circular letter is that the application of the guidelines should not cause additional budgetary burdens. The Cells on Sustainable Development of the administrations are theoretically responsible for the monitoring of the compliance of this regulation. However, up till now no mechanism of control, sanction or monitoring has been created and consequently no data are available on the actual integration of sustainability criteria in public contracts. It has been suggested that the circular letter does not hold more than a pure theoretical obligation. Despite the lack of data it is presumed these obligations are (mostly?) not complied with. The circular letter defines the criteria the products have to comply with,

however it remains unclear which products effectively meet these criteria. The PFS SD suggests the development of a list with concrete product brands effectively complying with the criteria and thus offering suggestions for public purchasers.

Keeping this legal background in mind, a specific part of the new Belgian law concerning public contracts, which should become valid by the end of 2006 (including **uitvoeringsbesluiten**), has been defined as the subject of the current case-study. During the carrying out of this case-study the policy concerned was in a preliminary design phase (**'voorontwerpfase'**). More specifically the different possibilities will be analysed to take into account ethical criteria in public contracts within the European context.

3. Identification of policy alternatives

Taking the introduction of ethical criteria as objective, four alternatives can be identified which will be analysed for this case-study. In view of the limited freedom within the European legal context, these alternatives are situated on the level of implementation of the national law on public contracts. The European Directive and consequently also the Belgian law, offer the possibility to take ethical criteria into account in public contracts. However the application of this possibility completely depends on the willingness of the contracting authority to effectively bring ethical criteria into play in the tender.

Within the upcoming law the following implementation alternatives can be identified:

1. First of all the zero option has to be considered. In this case the possibilities to introduce ethical criteria in public contracts, as allowed within the law, are not used. After all the contracting authority has the choice to take ethical criteria into account or not.
2. The law provides the possibility to use ethical criteria as implementation clause (art. 40, 5°). This means that the tenderer agrees not to put forward products / services for which the ILO-conventions have not been respected during one or more phases of the product life cycle. Implementation criteria have to be mentioned in the call for tender, but they cannot be used for the valorisation of the tenders as such in the stage of awarding the contract. Consequently, this possibility purely consists of a written engagement of the tenderer. The contracting authorities can only intervene during the execution of the contract when it is clear that the implementation criteria are not complied with. However there are no means available to actively search for possible infringements of those criteria.
3. Secondly the possibility can be considered to use ethical criteria as granting criteria during the granting procedure. In the European Directive, this possibility was rejected. Ethical criteria have no direct link with the subject of the contract and thus cannot be used as granting criteria. According to the European Commission these criteria can only be applied under the form of an implementation clause or in the context of qualitative selection. Also in the Belgian transposition of the Directive this reasoning was followed and only the possibility to include social criteria as granting criteria was restrained. During the treatment of the preliminary draft ('**voorontwerp**') of the law, a short discussion took place concerning the possibility to use social and ethical criteria as granting criteria in Belgium. Since the criteria are scored in a granting procedure, the burden of proof shifts towards the tenderer, while in case of the implementation criteria the burden of proof rests with the contracting authority. However, this stipulation would be

contrary to the European Directive. Only when the European Directive is modified, this option could be realised.

4. A more implicit possibility to use ethical criteria in public contracts is provided by application of art 26 of the new law. This article stipulates the modalities for negotiated procedures without previous notification, in which the contracting authority consults the economic operators of their choice and negotiate the terms of contract with one or more of these. In this procedure the contracting authority is free to consult only those potential tenderers of whom is known that they meet the defined ethical criteria. Negotiated procedures are only possible in certain well-defined circumstances, such as secret assignments, urgent orders or orders with limited financial importance (less than 67.000€). **Orders off less than 5.500€ can be granted op aanvaarde factuur; In this case no motivated decision is required and no specifications are used.** Most of the public contracts however can be categorised as being of limited financial importance and therefore can be awarded by means of a negotiated procedure. Despite this possibility however, it is assumed that ethical criteria are rarely or never taken into account in this context. Mostly it is not clear which potential tenderers are ethical. The availability of information about providers of ethical products / services is needed for realizing this implementation-option in practice. Among other things, this requires proactive market research by the administration.

4. Identification of impacts

On the 24th of August 2005, two meetings were held with the respective contact persons of FPS P&O (Mr. Bruggeman en Mr. Debray) and of the PPS SD (Mevr. Smeets, Mevr. Sokolowski en Mr. Henrix). The goal of these meetings was to identify the potential impacts of the possibilities offered by the new law to introduce ethical criteria in public contracts. Based on the impact matrix, elaborated in for this research project, an attempt was made to identify the economical, ecological and social impacts. This exercise illustrated that there seems to be disagreement between those federal services concerning the potential impacts of the policy proposal.

According to the civil servants of the FPS P&O the possibilities as offered by the law can only effectively bring about a change of practice if an extensive control mechanism would be instituted and if an widespread sensitisation campaign would be organised. Such a control mechanism would be needed to verify if the written statement that the ethical criteria will be complied with during the implementation of the contract (cfr. Implementation option 2 and 3) corresponds with reality. The majority of public purchases are complex compounded products of which it is extremely difficult to retrieve the origin of the separate parts. Therefore the statement that a product is produced in ethical circumstances in fact remains free of real engagements, for even the importer of these products often has no clue of the respective product life cycle. A control mechanism to verify the actual working circumstances in which the production takes place should have an international dimension and would be extremely resource-demanding. Moreover an extensive communication campaign would be necessary to inform the actors concerned of the possibilities of the law to use ethical criteria, of the way these possibilities can best be put into practice and of the relevance of doing so. This way a network can be formed of people who are convinced of the value of using ethical criteria in public contracts. However, in the current Belgian context, it can be assumed that these preconditions (especially the control mechanism) are not realistic. According to this point of view the effects of the possibilities the new law offers to integrate ethical criteria in public contracts will be zero.

The FPS SD on the other hand considers this law and the possibilities it offers for ethical purchasing as part of an ongoing awareness process that needs to be stimulated. The ethical aspects of purchases are more and more considered as important on national as well as on international level. Only by persistently bringing the need for ethical consumption to the attention an actual change in attitude can be achieved. According to PFS SD it is within this broader context of process of awareness raising that the new law (the possibilities it offers to introduce ethical criteria in public contracts) undeniably will have an important impact. In this point of view even the smallest effect is a gain. Also these civil servants are convinced of the need for a communication campaign to inform administrative actors as well as the public.

With these opposing points of view concerning the potential impacts of the law in mind, the impact matrix has not been filled in during the reunion with the people from FPS P&O, because the law as such is believed to be ineffective. During the meeting with the people from PPS SD the matrix was filled in. This exercise showed that the estimated impacts are situated on the economical and social level. No ecological impacts are anticipated. Most identified potential impact concern indirect effects on developing countries on medium term (5 to 10 years).

This disagreement demonstrates that the potential impacts of the possibilities the law offers to use ethical criteria in public contracts are far from clear. A considerable uncertainty factor about the occurrence of effects has to be taken into account. As a result we have to conclude at this stage that the policy proposal as defined for this case-study is in fact too modest and the potential effects are too limited to justify an extensive methodology such as SIA. Consequently this measure does not pass the screening phase and therefore is not eligible to undergo the subsequent phases of SIA.

Concerning the screening-instrument itself (the matrix), the following remarks were made:

- The economic part was judged to be too abstract. It seemed to be quite difficult to imagining what was actually meant by the different impacts possible.
- It often seemed to be difficult to speak in terms of increase or decrease. Ex. Economic activity in the sectors: a change in the structure of particular sectors as predicted, without it necessarily being an increase or decrease of the activity (principle of communicating barrels).
- The matrix is perceived as too long. It proved to be difficult to keep the persons attention focussed.

5. Identification of stakeholders

After the kick-off meeting it appeared to be unrealistic to involve stakeholders in this case-study. For practical as well as fundamental reasons it was decided that it was not a good idea to organise an extensive participation process. First of all it concerns a very technical issue for which a certain amount of prior knowledge of the existing legislation and the international discussions concerning ethical consumption and production is a precondition. Secondly the available timing is too limited for organising a sound participation process. Lastly, the measure is likely to be insufficiently important to motivate potential stakeholders for investing the time and money needed to engage in a participation process. Therefore it was decided not to involve other stakeholders than the different administrative actors concerned in the current case-study. The PPS SD has stated that in this phase of trial and error it is not desirable to organise broad participation. Of prior importance is the commitment and knowledge building of the civil servants concerned. The people of the FPS P&O do see a possibility to involve some relevant stakeholders in a more definite SIA-process (ex. UNIZO, VBO, FEDIS, sectors, ...).

6. Conclusions and suggestions for follow-up

As already mentioned before, the translation of the European guideline into Belgian law probably won't have any significant short-term impact on the government's ethical purchasing practises. Potential long-term effects might occur, but only if a number of specific preconditions are met. Because of the minimal expected impact it is considered irrelevant to implement a further procedure for a profound SIA.

However, a lighter form of RIA can also represent a relevant policy exercise. First of all, a light RIA can provide structured and argued information on the quality, the presuppositions and the effects (intended or not, direct or indirect, ...) of the policy proposal. Secondly, it offers the possibility to elaborate alternative or complementary options for the realisation of the policy objectives. During the meeting of September 14th 2005 a debate took place concerning the additional policy measures which are necessary to realise the policy goal of augmenting the purchase of ethical products by public services. Discussing this question was part of this case-study. In case of SIA being effectively institutionalised in Belgium, a report with such recommendations will be handed over to the competent authority (for example the Minister in question).

The following suggestions for complementing the policy proposal at hand were discussed:

1. Introducing ethical criteria as granting criteria: As mentioned before this would be contradictory to the European guideline. Therefore an adaptation of the guideline would be needed, requiring political initiatives.

2. The competent Minister could draw up a circular letter imposing a certain amount of ethical purchase behaviour on public buyers. This circular letter could for example contain the following aspects:
 - 25% of all contracts resulting from negotiated procedures should be granted to tenderers of whom is known that they meet the defined ethical criteria. If this is not possible, this should be reported to the sustainability cell of the FPS/PPS concerned, which consequently can keep an eye on the case. Network consultation, for example within ICDO/CIDD, can bring about exchange of experiences and good practices³.
 - Ethical criteria are included in all calls for tender as implementation criteria.
 - During the qualitative selection, the contracting authority seriously examines the “ethical” aspects of the candidates or tenderers. The qualitative selection is a part of the granting procedure in which the **persoonlijke bekwaamheid (personal capability)** of the tenderers is investigated. This selection is based on exclusion criteria (negative characteristics) on the one hand, which can be divided in compulsory exclusion criteria (observance of social security requirements, registration and recognition requirements for construction orders) and optional exclusion criteria (bankruptcy, tax fraude, false declarations, serious fault, ...). On the other hand criteria are used to investigate the technical, financial and economical capability (positive characteristics). For example turnover, references of past services, amount of employees, etc.
 - For all cleaning and security orders 20% of the personnel should come from unemployment or be from foreign origin. The sector will be informed on this measure.⁴
 - Special training for public buyers is regularly organised.
 - Public buyers are compelled to perform pro-active market research, searching for suppliers who can guarantee compliance with ethical criteria.
2. A standardisation process for ethical products and services should be initiated on Belgian as well as European level.

³ During the meeting of 14/09/05 no elaborated and detailed propositions were formulated concerning this point and the following points. This was also not intended. For this point this means that it should be clarified at which level ethical criteria should apply (throughout the whole chain?) and how the sustainability cells can effectively organise the follow-up.

⁴ This proposition in fact concerns social criteria as defined above.

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Les impacts environnementaux des biocarburants¹

Benoit Lussis, le 18 août 2005

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Introduction

Début 2003, l'Union européenne adoptait une directive recommandant aux États membres de fixer un objectif minimum de 2% de biocarburant dans le total de l'essence et du gazole mis à la consommation, objectif croissant annuellement jusqu'à atteindre 5,75% en 2010. Cette directive est accompagnée d'une modification de la directive 2003/96/CE du 27 octobre 2003 qui permet, dans une certaine mesure, la défiscalisation des biocarburants mis sur le marché.

L'objectif de cette politique européenne de promotion des biocarburants est, à la fois, de réduire les émissions de gaz à effet de serre dues au transport et de réduire la dépendance énergétique vis-à-vis des produits pétroliers. Cependant, l'impact environnemental global de l'utilisation des biocarburants est incertain. En effet, s'il est communément admis que les biocarburants permettent une réduction des émissions de gaz à effet de serre, les autres impacts environnementaux – liés à la production des plantes énergétiques et à leur transformation – ont été analysés moins en profondeur et sont soumis à plus d'incertitudes.

Ce rapport compare une série d'analyses de cycle de vie (ACV) des biocarburants réalisées, pour la plupart, dans des pays européens proches de la Belgique. L'objectif de cette comparaison est de :

- Identifier les points de recoupement et les causes de divergences entre les résultats de ces études et analyser dans quelle mesure il est possible de tirer des conclusions quant à l'impact environnemental global des biocarburants en Belgique ;
- Comparer les profils environnementaux des différents biocarburants disponibles ;
- Évaluer dans quelle mesure l'introduction des biocarburants permettrait de réduire les émissions de gaz à effet de serre dans le transport en Belgique.

La première partie de ce rapport rappelle brièvement les caractéristiques des biocarburants susceptibles d'être mis sur le marché en Belgique ainsi que de leurs filières. La deuxième partie est consacrée à l'identification des principaux impacts environnementaux des biocarburants. Dans une

¹ Ce document a été réalisé par l'IDD dans le cadre du projet financé par le SPP « Politique scientifique » intitulé « Méthodologie et faisabilité de l'évaluation des impacts des décisions sur le développement durable. Le cas de l'Etat fédéral belge », coordonné par le Centrum Voor Duurzame Ontwikkeling (CDO) de l'Université de Gand. Et réalisé en collaboration avec le Centre d'Etudes du Développement Durable (CEDD-IGEAT-ULB) et l'AURAP (UCL). Je remercie Philippe Defeyt et Paul-Marie Boulanger pour leurs remarques et suggestions.

troisième partie nous détaillons les hypothèses, champs d'étude et résultats de 7 analyses concernant les impacts environnementaux des biocarburants.

La dernière partie est consacrée à l'analyse des enseignements de l'analyse bibliographique de la partie 3. Elle permettra de cerner dans quelle mesure les résultats des différentes analyses de cycle de vie (ACV) peuvent être comparés et présentera les profils environnementaux de différents types de biocarburants. Elle proposera enfin une évaluation des économies de gaz à effet de serre suivant différents scénarios d'incorporation des biocarburants dans le transport en Belgique.

Ce rapport est complémentaire au rapport de l'Institut pour un Développement Durable analysant les enjeux économiques de l'introduction des biocarburants en Belgique.

1 Les biocarburants

Différents types de biocarburants sont produits de par le monde. On distingue en général deux grandes filières.

La **filière sucre** consiste à produire de l'éthanol à partir de plantes sucrières (canne à sucre ou betterave), de blé ou de maïs. Ce « bioéthanol », qui peut être mélangé à l'essence en des proportions allant de 5 à 85% (au-delà de 20% des adaptations aux moteurs de voitures sont cependant nécessaires), a connu un fort développement au Brésil et aux États-Unis. En Belgique, la betterave, le froment et, dans une moindre mesure, le maïs grain et la pomme de terre sont les cultures les plus adaptées pour la production d'éthanol. Dans d'autres régions du monde, comme en Amérique latine, la canne à sucre est la culture privilégiée pour la production d'éthanol.

L'éthanol est obtenu par fermentation du sucre extrait de la plante sucrière ou par distillation de l'amidon du froment ou du maïs. L'éthanol peut également être transformé en ethyl tertio butyl ether ou ETBE par action d'isobutène. L'ETBE peut être mélangé à l'essence à des taux de 5 à 20% sans qu'aucune adaptation du moteur ne soit nécessaire (comme c'est le cas en France par exemple). Notons que la directive européenne 2003/30/CE considère que l'ETBE ne contient que 47% en volume de biocarburant (l'ETBE n'est donc pas un biocarburant pur).

La seconde filière, dite **oléagineuse**, transforme une huile végétale, souvent de colza, en un ester méthylique d'huile végétale (EMHV), aussi appelé biodiesel. Un taux de 5% de biodiesel peut être mélangé au diesel classique sans que des adaptations de moteurs ne soient nécessaires. Un tel mélange est d'ailleurs déjà disponible en France. L'Allemagne et l'Autriche ont, de leur côté, mis à disposition du consommateur des pompes spécifiques contenant du biodiesel pur utilisable seulement par des véhicules équipés de moteurs adaptés. L'huile végétale peut également être utilisée en mélange avec du diesel classique (jusque 25% selon Valbiom) ou pure dans des moteurs adaptés.

2 Les impacts environnementaux des biocarburants

Les biocarburants constituent une source d'énergie renouvelable puisque leur utilisation s'inscrit dans un cycle fermé du carbone : le carbone émis lors de la combustion est absorbé par les plantes qui serviront de matière première à la fabrication des biocarburants. Cependant, leur production implique toute une série d'activités, telles que la culture de la plante, l'extraction et la transformation, le transport, etc., qui consomment des ressources et donnent lieu à des émissions de gaz à effet de serre (GES).

Les analyses de cycle de vie de biocarburants actuellement disponibles peuvent conclure à des impacts environnementaux très différents, parfois même contradictoires. Ceci s'explique aisément dès lors que les filières analysées sont elles-mêmes différentes. En effet, une des principales caractéristiques des biocarburants, par rapport aux combustibles fossiles, est qu'un même produit peut avoir des impacts environnementaux différents selon la filière dont il est issu et les pratiques et technologies utilisées pour le produire. Ainsi, l'éthanol peut être produit à partir de sucre de betterave ou de canne à sucre ou encore à partir de céréales. Or, ces cultures ont des rendements et nécessitent des intrants différents. De même, le type de culture (plus ou moins intensif) influencera le profil environnemental du biocarburant.

Il est donc nécessaire de distinguer les biocarburants non pas seulement sur base des caractéristiques du produit mais aussi sur la base d'autres caractéristiques liées à leur production, notamment :

- l'origine géographique ;
- la matière première (plante d'origine) ;
- le type de culture (intrants) et la culture remplacée par la culture énergétique ;
- les procédés de transformation ;
- le type d'énergie utilisée dans les processus de transformation.

Néanmoins, on peut s'attendre à ce que le profil environnemental des filières de biocarburants diffère davantage par l'amplitude des impacts que par leur nature puisque le cycle de vie est classique quel que soit le biocarburant produit et sa filière. Les principales étapes de la production d'un biocarburant sont les suivantes:

1. Culture et récolte de la plante : betterave, canne à sucre, maïs ou froment pour l'éthanol ; soja, colza, tournesol, orge pour le biodiesel ;
2. Transport vers l'installation de transformation ;
3. Transformation de la plante en biocarburant : broyage, fermentation et distillation pour l'éthanol ; transestérification pour le biodiesel ;
4. Transport jusqu'à la station de distribution.

Chaque étape est potentiellement source de nuisances environnementales qu'il convient de comptabiliser afin de déterminer le profil environnemental de la production de biocarburant. A titre d'exemple, De Nocker et al. (1998), dans la seule analyse de cycle de vie du biodiesel réalisée en Belgique à ce jour, classent les impacts potentiels des biocarburants comme suit :

1. Consommation de combustibles fossiles : due à la fabrication des engrais utilisés lors de la culture de la plante, au transport et à la consommation d'énergie nécessaire à la transformation en biocarburant ;
2. Consommation de matière inorganique : matière première minérale nécessaire pour la fabrication des engrais ;

3. Consommation d'eau notamment lors du processus d'estérification et la production d'engrais ;
4. Contribution à l'effet de serre : émissions de CO₂ dues à la combustion de combustibles fossiles (transport, machine agricole, procédé de transformation) mais aussi émissions de N₂O (dues notamment à l'utilisation d'engrais azotés) et de CH₄ lors de la culture de la plante ;
5. Acidification due à l'émission de NO_x et SO_x lors de la croissance de la plante (fonction notamment de la quantité d'engrais utilisée) et suite à l'utilisation de combustibles fossiles (pour le NO_x) ;
6. Eutrophisation des eaux : elle est due principalement à l'émission de NH₃ et à l'utilisation d'engrais phosphatés.
7. Formation d'oxydants photochimiques due aux émissions de composés organiques volatiles principalement lors de l'étape de production du biodiesel.
8. Déchets non radioactifs : principalement le gypse qui est un sous-produit de la production d'engrais phosphatés
9. Déchets radioactifs : si l'électricité utilisée notamment lors des processus de transformation est d'origine nucléaire.

<i>Étapes du cycle de vie</i>	<i>Impacts environnementaux</i>								
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>
<i>Culture</i>	X	X	X	X	X	X		X	
<i>Transport</i>	X			X	X				
<i>Trans-formation</i>	X		X	X	X		X		X

Tableau 1: impacts environnementaux des différentes étapes du cycle de vie des biocarburants

Le Tableau 1 montre quels sont les impacts environnementaux potentiels de chaque étape du cycle de vie des biocarburants. Selon que l'on envisage une filière plutôt qu'une autre, l'amplitude des impacts sera évidemment différente. Ainsi, un bioéthanol produit au Brésil induira beaucoup moins de consommation de combustibles fossiles qu'un biodiesel produit en Europe, ne serait-ce qu'en raison de la part d'énergie renouvelable utilisée dans le transport et dans les processus de fabrication (voir ci-dessous).

La culture de la plante est identifiée comme étant génératrice de nuisances dans 7 des 9 catégories d'impacts. Les pratiques agricoles constituent donc plus que probablement une étape cruciale du point de vue environnemental dans la fabrication des biocarburants.

3 Les analyse des cycles de vie des biocarburants

3.1 Qu'est-ce qu'une analyse de cycle de vie ?

Une analyse de cycle de vie (ACV) est une méthode qui « étudie les aspects environnementaux et les impacts potentiels tout au long de la vie d'un produit (c'est-à-dire du berceau à la tombe), de l'acquisition de la matière première à sa production, son utilisation et à sa destruction. » (ISO, 1997)

L'intérêt de ce type de méthode est de regrouper dans une seule analyse, d'une part, les différentes catégories d'impacts environnementaux (les changements climatiques, la couche d'ozone, l'acidification, l'eutrophisation des eaux, etc.) et, d'autre part, l'ensemble des étapes du cycle de vie d'un produit (l'extraction, la transformation, la fabrication, la distribution, l'utilisation, le recyclage éventuel, le traitement des déchets).

Typiquement, une analyse de cycle de vie est caractérisée par :

- La définition de l'objectif : cet objectif est généralement de comparer deux produits (par exemple le biodiesel et le diesel) ou deux process permettant d'obtenir un même produit (par exemple de l'éthanol obtenu à partir de cannes à sucre produites au Brésil ou de betteraves produites en Belgique) ;
- La définition d'une unité fonctionnelle qui permet de comparer deux produits sur base du même service rendu. Ainsi, pour comparer deux carburants l'unité fonctionnelle pourrait être « 100 km parcourus avec un véhicule défini » ou, si l'efficacité de combustion est considérée comme identique, elle pourrait être définie sur base du contenu énergétique ;
- La définition des frontières du système : il est en effet impossible de suivre tous les entrants et sortants d'un système. A titre d'exemple, la réaction d'estérification, étape de la production de biodiesel, produit également de la glycérine dont l'utilisation est susceptible de remplacer celle d'une glycérine obtenue par des processus chimiques. L'intégration de ce remplacement dans l'analyse est donc plus correct d'un point de vue méthodologique mais nécessite un surplus de travail en termes de collecte de données ;
- Une plus ou moins grande qualité et spécificité des données. La collecte et la validation des données sont des étapes très importantes et très exigeantes en termes de ressources et de temps dans la réalisation d'une ACV ;
- Le choix des catégories d'impacts : selon les étapes du cycle de vie, différentes catégories d'impact seront à prendre en considération : les changements climatiques, l'acidification, l'eutrophisation, la contribution au smog photochimique, la consommation de matières minérales et fossiles, etc. sont des catégories d'impacts possibles. Cependant, ces catégories peuvent varier d'une ACV à l'autre ;
- Le choix des indicateurs de catégories : il peut y avoir différents impacts environnementaux à inclure dans une même catégorie d'impacts. Ainsi, le N₂O émis lors de la production agricole et le CO₂ émis lors du transport sont des gaz à effet de serre qui participent au changement climatique. Il faudra donc transformer ces émissions en équivalent CO₂ (en appliquant un coefficient prédéfini, dans ce cas, le *global warming potential*).
- La normalisation qui consiste à calculer l'amplitude des résultats pour chaque catégorie d'impact par rapport à une valeur de référence. Cette valeur peut être le résultat de la catégorie d'impacts pour l'ensemble d'une région ou un objectif déterminé. Les résultats de chaque catégorie d'impact sont ainsi exprimés dans la même unité de mesure ;

-
- L'aggrégation qui consiste à intégrer les résultats partiels en une seule valeur censée exprimer l'impact environnemental global. Ce résultat sera cependant fonction de la pondération attribuée à chaque catégorie d'impact. Le choix des pondérations laisse une très grande place à la subjectivité et est donc souvent très controversé. La norme ISO 14042 recommande d'ailleurs de ne pas aller jusqu'à cette étape lorsque les résultats d'une étude comparative sont communiqués au public (Ulg, 2003).

3.2 Les analyses de cycle de vie des biocarburants

Il existe de nombreuses analyses de cycle de vie plus ou moins complètes des biocarburants. Ces études diffèrent par plusieurs aspects et notamment par la nature des produits analysés et les conditions de fabrication, les impacts envisagés, la définition des catégories d'impact, les unités fonctionnelles, la réalisation et le choix d'une normalisation, l'attribution de pondérations et l'intégration en une évaluation globale.

Les principales ACV portant sur des biocarburants produits en Europe sont présentées dans De Nocker et al. (1998), Jossart (2003), van Gerpen (2000), Kaltschmitt et al. (1997), IFEU (2003), IEA (2004).

Le texte qui suit détaille les hypothèses, champs d'analyse et résultats de 7 études concernant les impacts environnementaux des biocarburants. Les résultats de ces études seront ensuite utilisés afin de cerner quels sont les impacts environnementaux probables des biocarburants en comparaison des combustibles fossiles classiques et d'analyser, notamment du point de vue des émissions de GES, différents scénarios d'incorporation des biocarburants pour le transport en Belgique.

3.2.1 *Kaltschmit et al. (1997)*

Objet de l'étude : comparaison du **biodiesel** produit en Allemagne à partir de colza avec le diesel classique. La culture du colza est réalisée sur des jachères permanentes ou de rotation.

Impacts et catégories d'impacts

Les impacts analysés concernent les émissions de GES, de SO₂ et SO_{2eq}, de NO_x, d'HCl, de NH₃, de CO, de particules liées à la combustion de diesel et de poussières. Les catégories d'impacts sont la consommation énergétique, les changements climatiques, l'acidification, les émissions de N₂O, les émissions de NO₂ et les émissions de SO₂.

Unité fonctionnelle : nombre de km que l'on peut parcourir avec le biodiesel produit durant une année sur une surface de 1 ha (rendement de 1143 kg/ha et pouvoir calorifique inférieur de 37.2 MJ/kg, soit 42 519,6 MJ/an).

Frontières : deux co-produits sont considérés : le tourteau généré lors de l'extraction et destiné à l'alimentation animale auquel on attribue 60% des dépenses énergétiques et la glycérine produite par la réaction d'estérification à laquelle on attribue 4% des dépenses énergétiques.

Résultats :

<u>Effets positifs</u>	<u>Effets négatifs</u>
L'utilisation du biodiesel permet, par rapport à la filière diesel classique, des économies : <ul style="list-style-type: none">• d'énergie de 0.72 MJ/MJ biodiesel• de 50,8 gCO_{2eq}/MJ biodiesel. Les émissions de CO₂ sont fortement réduites au contraire des émissions de méthane et de N₂O qui proviennent de l'agriculture;• de 12.3 mg de particules de diesel/ha,an	L'utilisation du biodiesel induit, par rapport à la filière diesel classique l'émission supplémentaire de <ul style="list-style-type: none">• 37.2 mg NO₂/ MJ biodiesel• 25.3 mg N₂O/ MJ biodiesel• 15.8 mg SO_{2eq}/ MJ biodiesel

3.2.2 Jossart (2003)

Objet de l'étude : Il ne s'agit pas d'une ACV à proprement parler mais plutôt d'une revue de conclusions d'autres analyses concernant soit l'ensemble du cycle de vie des biocarburants soit un aspect environnemental particulier. L'intérêt de ce document est de regrouper des informations pour différents types de biocarburants : bioéthanol produit à partir de betterave ou de blé et biodiesel produit à partir de colza ou d'huiles usagées.

Impacts et catégories d'impacts : les catégories d'impacts traitées dans ce document sont les suivantes.

NB : seule la première (bilan énergétique et effet de serre) fait l'objet d'une analyse relativement détaillée.

- Bilan énergétique et effet de serre
- Acidification
- Eau et sol
- Eutrophisation
- Consommation de ressources non renouvelables
- Toxicité humaine et écologique

Unité fonctionnelle : Le document compare une filière biocarburant avec la filière fossile correspondante (diesel pour le biodiesel et essence pour le bioéthanol) et exprime les résultats par rapport kg de diesel remplacé.

Frontières : La définition des frontières n'est pas clairement exprimée et dépend de chaque étude analysée.

Résultats :

- **Changement climatique – biodiesel :** Jossart (2003) propose une valeur moyenne d'économie de CO₂ égale à 3,35 kg CO_{2eq}/kg de diesel remplacé soit, avec une masse volumique du diesel de 42,335 MJ/kg, 79,131 gCO_{2eq}/MJ de diesel remplacé. Si on estime qu'il faut le même contenu énergétique dans chaque combustible pour faire rouler un véhicule sur 100 km, on peut exprimer cette même valeur en gCO_{2eq}/MJ de biodiesel.
- **Acidification – biodiesel :** l'étude cite des chiffres de 16,216 gSO_{2eq}/kg de diesel remplacé contre 12,315 g SO_{2eq}/kg de diesel soit resp. 0,383 gSO_{2eq}/MJ et 0,291 gSO_{2eq}/MJ. L'utilisation du biodiesel plutôt que le diesel classique mènerait donc à une augmentation des émissions de SO_{2eq} de 0,092 gSO_{2eq}/MJ.
- **Eutrophisation – biodiesel :** non quantifié. Il semble que ce poste soit en défaveur du biodiesel mais des incertitudes subsistent.

3.2.3 *Mortimer et al. (2003)*

Objet de l'étude

L'objectif de cette étude est de réaliser une évaluation la plus complète possible des impacts en termes de consommation énergétique et d'émission de GES de l'utilisation du biodiesel au Royaume-Uni. Cette étude ne se base pas sur une collecte de données mais préfère se concentrer sur l'analyse des données fournies par la littérature et les adapter au cas particulier du Royaume-Uni.

Les études prises en considération sont les suivantes :

- **ETSU 1992** "A Review of the Potential of Biodiesel as a Transport Fuel" by F. Culshaw and C. Butler, ETSU-R-71, Energy Technology Support Unit, United Kingdom, Septembre 1992
- **AFAS 1993** "Technikfolgenabschaatzung zum Thema Nachwachsende Rohstoffe" (Technical Process Assessment of Renewable Energy Raw Materials), D. Wintzer, B. Furniss, S. Klein-Vielhauer, L. Leible, E. Nieke, Ch. Rosch and H. Tangen, Division for Applied Systems Analysis, Nuclear Research Centre, Germany, 1993.
- **ETSU 1996** "Alternative Road Transport Fuels – A Preliminary Life-Cycle Study for the UK", M. P. Gover, S. A. Collings, G. S. Hitchcock, D. P. Moon and G. T. Williams, Rapport R92, Volume 2, Energy Technology Support Unit, United Kingdom, March 1996.
- **VITO 1996** "Comparative Life-Cycle Assessment of Diesel and Biodiesel", C. Spirinckx et D. Ceuterick, Vlaamse Instelling voor Technologisch Onderzoek, 1996.
- **IFEU 1997** "Nachwachsende Energieträger – Grundlagen, Verfaben, Ökologische Bilanzierung", M. Kaltschmitt et G. A. Reinhardt (eds), Institute for Energy and Environmental Research, Allemagne, 1997
- **ECOTEC 1999** "Financial and Environmental Impact of Biodiesel as an Alternative to Fossil Diesel in the UK" ECOTEC Research and Consulting Ltd., Royaume-Uni, Novembre 1999.
- **Levington 2000** "Energy Balances in the Growth of Oilseed Rape and of Wheat for Bioethanol", I. R. Richards, Levington Agriculture Ltd., Royaume-Uni, Juin 2000.
- **ECOTEC 2000** "Emissions from Liquid Biofuels" ECOTEC Research and Consulting Ltd., Royaume Uni, 2000
- **ECOTEC 2001** "Lifecycle Greenhouse Gas Assessment of RME – Comparative Emissions from Set-aside and Wheat" ECOTEC Research and Consulting Ltd., Royaume-Uni, 2001.
- **CSIRO 2002** "Comparison of Transport Fuels: Life-Cycle Emissions Analysis of Alternative Fuels for Heavy Vehicles", T. Beer, T. Grant, G. Morgan, J. Lapszewicz, P. Anyon, J. Edwards, P. Nelson, H. Watson et D. Williams, Commonwealth Scientific and Industrial Research Organisation, Australie, 2002.
- **ECOTEC 2002** "Analysis of Costs and Benefits from Biofuels Compared to Other Transport Fuels" ECOTEC Research and Consulting Ltd., Royaume-Uni, 2002.

Mortimer et al. analysent ces différentes études d'abord d'un point de vue qualitatif et ensuite d'un point de vue quantitatif. L'analyse qualitative a pour but d'établir dans quelle mesure les résultats et données de ces 11 études sont utilisables pour une analyse de l'utilisation du biodiesel au Royaume-Uni.

Un enseignement majeur tiré de cette comparaison est que la plupart de ces études ne présentent pas suffisamment de transparence pour pouvoir interpréter et/ou utiliser leurs résultats. C'est notamment le cas de l'étude VITO 1996 (la seule réellement spécifique à la Belgique jusqu'à présent). L'étude la plus transparente est celle d'IFEU 1997 qui fournit des résultats très détaillés ainsi que des précisions importantes sur leurs méthodes de calculs.

L'analyse quantitative montre qu'il est difficile de comparer les résultats de ces études en raison des différences de données, hypothèses, méthodes de calcul. Il insiste, comme nous l'avons fait ci-dessus, sur la nécessité d'une bonne compréhension des objectifs et hypothèses de chaque étude avant de comparer les résultats.

Impacts et catégories d'impacts : l'étude est centrée uniquement sur la consommation énergétique et les émissions de GES.

Résultats :

Les résultats agrégés des différentes études analysées par Mortimer et al. sont repris dans le Tableau 2. Ceux-ci sont fonction de différentes hypothèses et paramètres et notamment du type de culture et de leur rendement et de la valorisation des co-produits (principalement la paille de colza, la glycérine et le tourteau). On peut ainsi voir dans ce tableau que la majorité des études considèrent que la paille de colza sera valorisée comme combustible (Tableau 3).

Le Tableau 2 montre que :

- l'énergie consommée pour produire 1 MJ de biodiesel est estimée entre 0.33 et 0.89 MJ ;
- la quantité de CO₂ émise pour produire 1 MJ de biodiesel est estimée entre -0.091 et 0.036 kg CO₂. Il est à noter que l'étude ETSU 1992 suppose une valorisation énergétique de tous les co-produits (y compris la glycérine) et donc l'obtention de crédits CO₂ grâce au remplacement d'une production d'énergie à partir de sources primaires. Par ailleurs, il ne s'agit ici que des émissions de CO₂ et non de l'ensemble des émissions de GES. Les émissions de N₂O et de méthane lors de la culture ne sont donc pas prises en compte.

Mortimer et al. considèrent que différents facteurs influencent significativement les résultats :

- l'apport de fertilisants azotés qui peut varier du simple au double (il en va donc de même pour l'énergie nécessaire à leur production) ;
- les besoins énergétiques pour produire ces engrais et les émissions de CO₂ liées ;
- le rendement de la culture. Ce rendement varie du simple au double selon les études et apparemment n'est pas directement fonction de la région ou de la quantité d'intrants. Les hypothèses faites sur les pratiques agricoles et les rendements obtenus sont importantes et devraient être précisées (ce qui n'est pas toujours le cas dans les études reprises ci-dessus) ;
- les besoins énergétiques pour la culture et les émissions de CO₂. Il s'agit des émissions dues à l'utilisation des machines agricoles et à la production d'engrais (azotés ou non), pesticides, herbicides, etc. ;
- les données concernant le processus de transformation de l'huile : les études considèrent deux méthodes principales sont le pressage à froid suivi de l'utilisation d'hexane (solvant) ou le pressage et le broyage à chaud. Les données de consommation d'énergie et d'émissions de CO₂ sont cependant très différentes selon les études pour un même procédé ;
- le système de référence qui définit ce qui se serait passé si on avait pas utilisé de biocarburant. La définition de ce système est particulièrement importante notamment dans la question de l'affectation des terres. La terre utilisée pour la culture du colza aurait, sans l'utilisation du biocarburant, été affectée à d'autres usages : par exemple une mise en jachère ou une autre culture peut-être très « énergivore ». La comparaison des deux types de culture (biocarburant - référence) serait évidemment plus favorable, en termes de bilan global, aux biocarburants dans le second cas que dans le premier ;
- les procédures d'allocation : ces procédures ont pour but d'imputer, par exemple, les consommations et les productions d'énergie à chaque produit ou service d'un cycle de vie. La production de

biodiesel menant également à la production de glycérine et de tourteau, il faut répartir l'énergie consommée pour cette production entre les différents produits. Cette allocation peut être faite sur base de critères tels que le prix, la masse, le volume, le contenu énergétique, etc. L'approche par les prix est souvent difficile à appliquer en raison des fluctuations et de la difficulté d'estimation. L'approche par contenu énergétique est généralement considérée comme valable si les produits et co-produits sont utilisés comme combustibles, ce qui n'est généralement pas le cas pour la glycérine par exemple. L'approche la plus pertinente semble être celle de la substitution : on considère que le produit ou co-produit se substitue à un produit équivalent obtenu par une autre chaîne de production (c'est le cas quand on considère que le tourteau remplace du soja importé).

Etude	Culture	Pays	Intrants					Culture	
			Intrants kg N/ha, an	Emissions de CO2 g CO2/MJ	Cons. Énergie MJ/MJ biodiesel	Cons. Énergie MJ/kgN	Emissions de CO2 kgCO2/kgN	Cons. Énergie MJ/ha, an	Emissions de CO2 kgCO2/ha, an
ETSU 1992	Colza d'hiver	RU	260	-91	0,33	59,7	1,87	21167	877
ETSU 1992	Colza d'été	RU	150	36	0,33			14600	671
AFAS 1993	Colza d'hiver	All.	134	36	0,47			12620	
ETSU 1996	Colza d'hiver	RU	185	32	0,89	65,3	2,26	18131	521
ETSU 1996	Colza d'hiver	RU	185	20	0,66	65,3	2,26	18131	521
ETSU 1996	Colza d'hiver	RU	185	32	0,88	65,3	2,26	18131	521
ETSU 1996	Colza d'été	RU	120	20	0,66	65,3	2,26	12162	314
VITO 1996	Colza d'hiver	Bg	-	-	0,55	45 ?			
IFEU 1997	Colza d'hiver	All.	146	30	0,39	47,1	2,47	10015	544
ECOTEC 1999	Colza d'hiver	RU	290					4600	421
Levington 2000	Colza d'hiver	RU	180	12	0,54	38	1,14	13254	626
Levington 2000	Colza d'hiver	RU			0,55	38	1,14	13911	751
ECOTEC 2000	Colza d'hiver	RU	180	14					
ECOTEC 2001	Colza d'hiver	RU	188						

Tableau 2: Comparaison de la consommation énergétique et des émissions de CO₂ pour la production de biodiesel (Mortimer et al., 2003)

Etude	Culture	Pays	Système de référence			Méthode d'extraction			Allocation et valorisation		
			Crédits énergie MJ/ha, an	Crédits de CO2 kg CO2/ha, an		Cons. Énergie MJ/kg biodiesel	Emissions de CO2 CO2/kg biodiesel	Base de la procédure d'allocation	Commentaires de Mortimer et al.	Valorisation paille de colza	
ETSU 1992	Colza d'hiver	RU	Pas de référence	0	0	Pressage	9,6	0,67	Contenu énergie	surévaluation l'extraction et utilise des procédures d'allocation injustifiées	combustible
ETSU 1992	Colza d'été	RU	Pas de référence	0	0	Pressage	9,6	0,67	Contenu énergie	idem	combustible
AFAS 1993	Colza d'hiver	All.	Jachère en rotation	7074 ?						manque de transparence sur données et hypothèses	?
ETSU 1996	Colza d'hiver	RU	Pas de référence	0	0	Pressage	20,92	0,97	Substitution du soja (tourteau)	surévaluation l'extraction et n'applique pas les procédures d'allocation à tous les co-produits	pas de valorisation
ETSU 1996	Colza d'hiver	RU	Pas de référence	0	0	Pressage	20,92	0,97	idem		combustible
ETSU 1996	Colza d'hiver	RU	Pas de référence	0	0	Pressage	20,92	0,97	idem		pas de valorisation
ETSU 1996	Colza d'été	RU	Pas de référence	0	0	Pressage	20,92	0,97	idem		combustible
VITO 1996	Colza d'hiver	Bg				Solvant			Prix du marché	manque de transparence sur données et hypothèses	?
IFEU 1997	Colza d'hiver	All.	Jachère en rotation	1024	75	Solvant	11,43	0,75	Contenu énergie	très détaillée et documentée	?
ECOTEC 1999	Colza d'hiver	RU							Pas d'allocation?	manque de transparence sur données et hypothèses	?
Levington 2000	Colza d'hiver	RU	Pas de référence	0	0	Pressage	11,43 ?		Contenu énergie	rendement agricole très élevé, très peu d'énergie nécessaire à la fabrication des intrants, procédures d'allocation injustifiées	intransit
Levington 2000	Colza d'hiver	RU	Pas de référence	0	0	Pressage			Contenu énergie	idem	combustible
ECOTEC 2000	Colza d'hiver	RU	Jachère en rotation	?	58				Pas d'allocation?	rendement agricole très élevé, très peu d'énergie nécessaire à la fabrication des intrants, pas de procédures d'allocation	combustible
ECOTEC 2001	Colza d'hiver	RU	Culture de blé	?	389				Prix du marché (glycérine)	système de référence très favorable et n'applique pas les procédures d'allocation à tous les co-produit	combustible

Tableau 3: Comparaison des données et hypothèses des ACV de la production de biodiesel (Mortimer et al., 2003)

Sur base de cette analyse de la littérature, Mortimer et al. ont construit un schéma type d'une production d'une tonne de biodiesel en Grande-Bretagne. Ce schéma comprend les étapes suivantes :

- une culture de colza sur 0.924 ha qui produit 2.839 t de graines de colza avec 9% d'humidité et 2.782 t de paille de colza. Les hypothèses suivantes sont également faites :
 - apport d'engrais azotés : 196 kg N/ha, an (données basées sur des moyennes pour le RU),
 - le système de référence est une jachère de rotation ;
 - la consommation énergétique et les émissions de CO₂ dues à la production d'engrais sont basées sur des moyennes représentatives de l'UE ;
 - un taux d'émissions de N₂O de 6.736 +/- 0.276 kg CO₂eq/kg N a été utilisé ;
- le transport, séchage et stockage qui débouchent sur l'obtention de 2.664 t de graines de colza sèches ;
- l'extraction au solvant qui donne 1.079 t d'huile et 1.575 t de tourteau ;
- le raffinage qui fournit 1.052 t d'huile raffinée ;
- l'estérification qui produit .1 t de glycérine et 1 t de biodiesel ;
- la distribution du biodiesel.

Les résultats du cas pris comme référence par Mortimer et al. sont repris dans le Tableau 4. Ces résultats, à l'origine ramenés à la tonne de biodiesel produite, sont ici exprimés par rapport au contenu énergétique en faisant l'hypothèse que le PCI du biodiesel s'élève à 37270 MJ/t (Mortimer et., 2003). On peut en tirer les conclusions suivantes :

- le ratio énergétique du biocarburant selon Mortimer et al. est estimé à 0,44 ;
- les émissions de GES sont dominées par trois postes importants : la culture du colza, l'extraction de l'huile et la réaction d'estérification. Ces trois postes sont les plus énergivores du cycle de vie.
- Les émissions de méthane et N₂O de l'agriculture grèvent de manière très importante le bilan « émissions de gaz à effet de serre » du biodiesel. Les 41 kg CO₂eq/GJ sont à comparer à la valeur de référence des émissions de GES du cycle de vie du diesel classique (GM et al., 2002) : 83,5 kg CO₂eq/GJ. Le biodiesel ne peut donc pas être considéré comme neutre du point de vue du cycle du carbone mais comme permettant une économie d'environ 50% des émissions de GES.

Activités	Consommation énergétique			Emissions de CO2			Emissions de GES		
	MJ/GJ de biodiesel	+/-	%	kg CO2/GJ de biodiesel	+/-	%	kg CO2eq/GJ de biodiesel	+/-	%
Intrants azotés	106	15	24	5	0,72	20	21	2,04	51
Autres intrants	50	6	11	2	0,35	10	3	0,35	6
Transport	14	1	3	1	0,03	4	1	0,03	2
Séchage	15	2	3	1	0,16	4	1	0,16	3
Stockage	6	0	1	0	0,05	2	0	0,05	1
Extraction	64	6	15	3	0,35	12	3	0,35	8
Rafinage	11	1	3	1	0,05	3	1	0,05	2
Estérification	153	16	35	10	1,07	40	10	1,07	25
Construction et maintenance de l'usine	4	1	1	0	0,03	1	0	0,03	0
Distribution	13	1	3	1	0,03	3	1	0,03	2
Total	437	24	100	25	1,40	100	41	2,36	100

Tableau 4: Consommation énergétique et émissions de GES par tonne selon Mortimer et al. (2003)

3.2.4 Denoeker et al., 1998

Objet de l'étude :

L'objectif de l'étude est de comparer, tout au long du cycle de vie, les impacts environnementaux du biodiesel obtenu à partir de colza et du diesel classique.

Impacts et catégories d'impacts

Les catégories d'impacts analysées sont les suivantes :

- Utilisation de combustibles fossiles
- Consommation de matières inorganiques
- Eau
- Effet de serre
- Acidification
- Eutrophisation
- Formation d'oxydants photochimiques
- Déchets non radioactifs
- Déchets radioactifs.

Unité fonctionnelle :

L'unité fonctionnelle est définie comme étant la quantité de carburant nécessaire pour parcourir 100 km à l'aide d'un véhicule défini au préalable. Dans ce cadre, 1 kg de biodiesel sont équivalents à 0.9 kg de diesel classique. L'étude est spécifiquement centrée sur le contexte belge, les données européennes ne sont utilisées qu'en dernier recours.

Frontières :

Le schéma fonctionnel utilisé comprend les étapes habituelles :

- culture et récolte, cette étape produit de la paille mais sa valorisation n'est pas précisée ;
- séchage, stockage et transport de la matière première ;
- extraction de l'huile par pressage à froid et utilisation de solvant (la production d'hexane entre dans les frontières) et transestérification ;
- pré-raffinage et transport,
- estérification

Résultats :

Les résultats de l'étude sont repris dans la Figure 1. Ils sont exprimés en pourcentage de l'impact le plus important de la catégorie concernée. Ainsi, selon ce graphique, on peut estimer que le biodiesel émet approximativement 50% de GES en moins que le diesel classique. Cette manière de présenter les résultats est intéressante en ce sens qu'elle permet une comparaison rapide des impacts au sein de

chacune des catégories. Malheureusement, elle ne permet pas de chiffrer l'impact et donc de comparer les résultats avec ceux d'autres études²

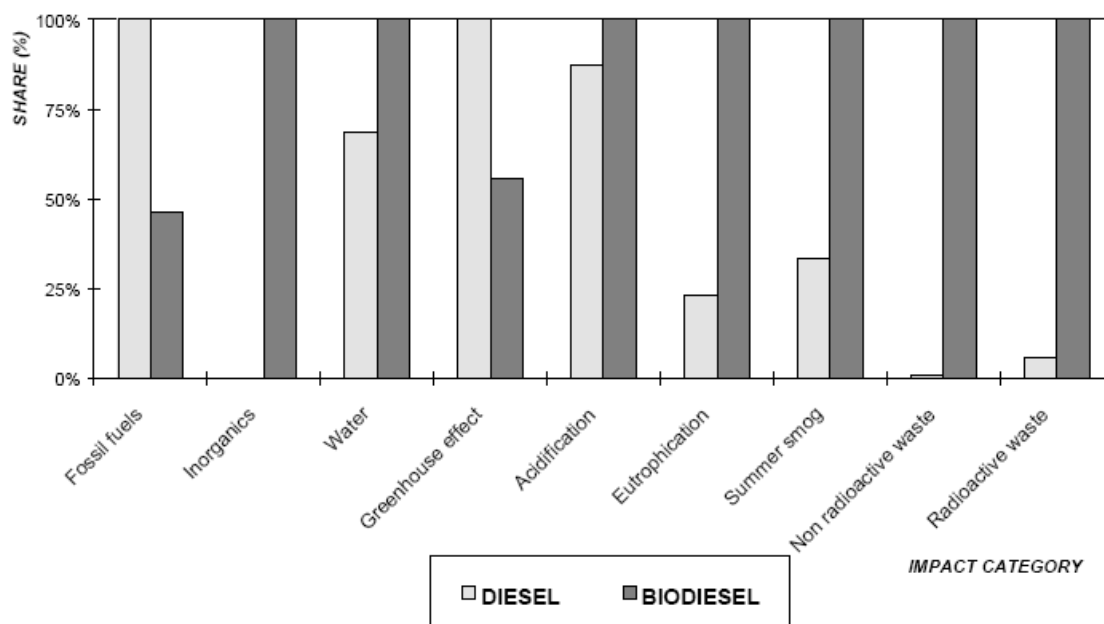


Figure 1: Impacts environnementaux du biodiesel et du diesel selon de Nocker et al. (1998)

Il apparaît, dans cette figure, que le biodiesel n'est plus avantageux que le diesel que pour les catégories « combustibles fossiles » et « émissions de gaz à effet de serre ». Cependant, il est impossible de conclure, à partir de cette figure, sur l'impact environnemental global des deux filières puisqu'il est impossible d'additionner ces différents impacts.

En effet, si la Figure 2 tend à montrer que l'impact sur les déchets radioactifs du biodiesel est nettement plus important que celui du diesel, rien ne permet de dire que l'impact du biodiesel dans cette catégorie n'est pas négligeable dans l'absolu (et donc celui du diesel encore plus négligeable !). Par ailleurs, cette catégorie d'impact est peut-être moins cruciale qu'une autre pour laquelle les conséquences sur la santé humaine ou les éco-systèmes sont plus dommageables. Une normalisation et une pondération des impacts seraient nécessaires pour comparer l'impact environnemental global (index environnemental).

De Nocker et al. ont tenté l'expérience sur 4 catégories d'impacts (effet de serre, acidification, eutrophication et oxydants photochimiques) en normalisant les impacts par rapport à l'impact total de toutes les activités de l'économie belge en 1997. La pondération utilisée est tirée d'un rapport hollandais de méthodologie d'ACV « *Eco-Indicators* ».

² si on estime que diesel émet 87,6 kgCO_{2eq}/GJ produit, on en déduit que le biodiesel induit des émissions de GES équivalentes à 43,8 kgCO_{2eq}/GJ (estimation personnel sur base de GM et al., 2002 et de l'interprétation du graphe). Cette valeur est similaire à celle trouvée par Mortimer et al. (2003).

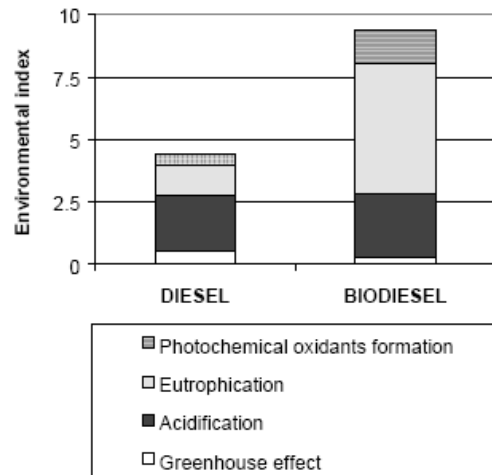


Figure 2: Calcul de l'index environnemental du biodiesel et du diesel (De Nocker et al, 1998)

La Figure 2 montre le résultat obtenu après calcul de l'indice environnemental des deux produits. Celui-ci suggère que l'impact environnemental global du biodiesel est deux fois plus grand que celui du diesel classique. Néanmoins, ces conclusions sont à relativiser en raison du caractère hautement subjectif de la pondération et de la non-prise en compte des autres catégories d'impacts. Toujours est-il que les résultats de De Nocker et al. soulignent que la substitution de biodiesel au diesel aura un impact négatif sur l'eutrophisation et l'acidification et un impact positif sur les émissions de GES.

3.2.5 Bernesson et al., 2004

Objet de l'étude :

L'objectif de l'étude est de déterminer si la production de biodiesel par des petites installations réduit la charge environnementale par rapport à une production plus centralisée. L'étude est spécifique aux conditions suédoises. 4 types de production sont étudiés :

- Petite échelle : production de colza d'hiver sur 40 ha – efficacité de l'extraction : 68% – pas de transport des graines et tourteau ;
- Echelle moyenne : production de colza d'hiver sur 1000 ha – efficacité de l'extraction : 75% – transport du tourteau et graines sur 7 km par tracteur avec remorques (tonnage 20t) ;
- Grande échelle : production de colza d'hiver sur 50000 ha – efficacité de l'extraction : 98%. L'extraction est accompagnée de l'utilisation d'hexane (solvant) – transport des graines et tourteau sur 110 km (tonnage 40t) ;

Le rendement annuel est de 2670 kg de graines de colza (15% d'humidité) /ha. Séchées, les graines de colza ne contiennent 8% d'humidité et 45% d'huile. Pour toutes les installations, l'huile est extraite mécaniquement et ensuite transestérifiée. La différence principale entre ces installations est le rendement de l'extraction et le transport.

Impacts et catégories d'impacts

L'ACV est limitée aux émissions dans l'air et à la consommation énergétique. Les émissions concernées sont les suivantes : émissions de CO₂ d'origine fossile, CO, HC, CH₄, NO_x, SO_x, NH₃, N₂O, et HCl. Ces impacts sont regroupés dans les catégories : réchauffement climatique, acidification, eutrophisation, oxydation photochimique.

Unité fonctionnelle : l'unité fonctionnelle est 1MJ de carburant produit

Frontières :

Le schéma fonctionnel utilisé comprend les étapes classiques :

- culture et récolte, la valorisation de la paille n'est pas prise en compte ;
- séchage et transport
- extraction de l'huile par pressage à froid et utilisation de solvant (seulement pour les installations à grande échelle) ;
- transestérification

Les procédures d'allocation concernent le biodiesel, le tourteau et la glycérine. Pour chaque produit on détermine sa valeur calorifique inférieure ainsi que son prix sur le marché. 3 types d'allocation des charges environnementales sont comparés :

- allocation économique basée sur le prix ;
- allocation énergétique basée sur le contenu énergétique (pouvoir calorifique inférieur) du produit et de ses sous-produits ;
- pas d'allocation : tous les impacts sont imputés au biodiesel et aucun aux sous-produits ;

- allocation dans un système étendu : le tourteau remplace du soja importé et la glycérine remplace de la glycérine produite à partir de propane. Les émissions et l'énergie nécessaires pour produire le soja et la glycérine issue de propane sont déduites du profil environnemental global.

Résultats :

Les résultats par catégorie d'impact sont repris dans le Tableau 5.

Bernesson et al. en tirent les conclusions suivantes :

- la taille des installations de production de biodiesel n'est pas un facteur déterminant. Il existe bien des différences du point de vue du rendement et de l'efficacité (meilleure pour les grandes installations) mais elles sont souvent compensées par des différences en termes d'exigence de transport ;
- la culture du colza induit la part la plus importante des impacts environnementaux du biodiesel, or cette étape est commune à toutes les installations ;
- le choix de la méthode d'allocation est, par contre, crucial puisque les résultats peuvent presque varier du simple ou double selon la méthode. La définition des frontières du système est également particulièrement importante. D'un point de vue méthodologique, les auteurs expriment leur préférence pour ce système avec déduction des impacts environnementaux des produits remplacés. Par contre, cette méthode paraît plus incertaine que les trois autres (incertitude sur l'évolution des caractéristiques et modes de production des produits remplacés) ;
- par rapport à un diesel classique, le biodiesel a un impact positif certain sur les changements climatiques et l'oxydation photochimique. Par contre, il a un impact négatif sur l'acidification et l'eutrophisation.

Type de production	Allocation	CC	AC	EUTR	OP.	CE
		gCO ₂ eq /MJ	mgSO ₂ eq /MJ	mgPO ₄ /MJ	mgC ₂ H ₄ eq /MJ	kJ /MJ
Petite échelle	Physique	40,3	236	39,1	3,3	295
Echelle moyenne	Physique	39,6	232	38,4	3,2	276,7
Grande échelle	Physique	40,3	236,5	39,2	3,4	284,1
Grande échelle	Economique	45,8	270	44,9	3,84	313
Grande échelle	Aucune	61,9	366	60,9	5,21	407
Grande échelle	Syst. Étendu.	30,9	161	44,5	1,38	-147

Tableau 5: Impacts environnementaux de la production de biodiesel en Suède selon 3 catégories de production avec allocation physique basée sur le contenu énergétique (Bernesson, 2004)

CC = changements climatiques ; AC = acidification ; EUTR = eutrophisation ; OP = oxydation photochimique ; CE = consommation énergétique

3.2.6 *Levington, 2000*

Objet de l'étude :

Etudier les exigences en termes d'énergie de la production de biodiesel et de bioéthanol au Royaume-Uni. Cette analyse a également pour but de prendre en compte des données actualisées en ce qui concerne le rendement des cultures et la fabrication des engrais azotés. Deux filières sont étudiées :

- Le bioéthanol produit à partir de froment : la quantité d'intrants nécessaire est estimée à 195 kgN/ha, le rendement est de 8,96 t de MS/ha avec une production de paille de 6,5 t/ha (MS ; 15 MJ/t). 1 tonne de froment donne 276 kg d'éthanol (PCI = 30 MJ/kg) ;
- Le biodiesel produit à partir de colza : la quantité d'intrants nécessaire est estimée à 180 kgN/ha, le rendement est de 4,08 t de MS/ha avec une production de paille de 4 t/ha (MS ; 15 MJ/t). 1 tonne de graine de colza donne 370 kg de biodiesel (PCI = 36 MJ/kg). 1 tonne de graines donne approximativement 0.58 t de tourteau qui ne peut être utilisé que si on ne se trouve sur une culture en rotation (dans le cas contraire, le tourteau est utilisé comme intrant et réduit la quantité d'engrais nécessaires) ;

Impacts et catégories d'impacts

Une seule catégorie d'impact : la consommation d'énergie

Unité fonctionnelle :

Un ha de champ cultivé.

Frontières :

Les étapes incluses dans les frontières sont les suivantes : fabrication et transport des engrais et emballage des produits, culture, transport de la production agricole, broyage (graine de colza) et transformation (transestérification ou fermentation).

Les données utilisées sont reprises dans le Tableau 6.

	Biodiesel	Bioéthanol
Engrais azotés (kgN/ha)	180	195
Engrais phosphatés (kg P ₂ O ₅ /ha)	50	70
Engrais potassium (kg K ₂ O)	40	90
Pesticides, herbicides, fongicides (MJ, ha, an)	1	3
Rendement agricole (t MS/ha, an)	4.08	8.96
Production de paille (t/ha, an)	4	6.5
PCI paille (MJ/kg)	15	15
Rendement de la transformation (kg biocarburant/t MS)	370	276
PCI du biocarburant (MJ/kg)	36	30
Co-produits et PCI des co-produits	Glycérine (35 MJ/kg)	Résidu de distillation (2MJ/kg)
Energie nécessaire au broyage (GJ/t biocarburant)	0.428	0
Energie nécessaire à la transformation (GJ/t biocarburant)	11	23.3

Tableau 6: Données utilisées par Levington (2000)

En outre, Levington fait l'hypothèse que 100 km doivent être parcourus pour acheminer la production agricole du champ à la ferme et 100 également de la ferme à l'unité de transformation. La consommation énergétique du transport intervient dans la comptabilisation de la consommation énergétique des biocarburants.

Résultats :

Les résultats de Levington sont repris dans le Tableau 7 pour 4 scénarios différents :

- La production de biocarburant (biodiesel et bioéthanol) où la paille est réutilisée comme intrant (et donc permet une économie d'engrais) ;
- La production de biocarburant (biodiesel et bioéthanol) où la paille est comptabilisée selon son contenu énergétique et ne sert donc pas d'intrant.

Levington exprime les résultats en MJ par ha. Dans ce tableau, nous les avons transposés en kJ par MJ de biocarburant produit. Le ratio énergétique exprime le ratio entre l'énergie utilisée par l'énergie délivrée (biocarburants + sous-produit) dans chaque scénario. On constate que, du point de vue de la consommation énergétique, le biodiesel est plus favorable que le bioéthanol. On peut également constater que la méthode d'allocation de la paille a un impact majeur sur les résultats, une allocation énergétique étant plus favorable. Cependant, cette dernière méthode semble la moins réaliste étant donné que la valorisation énergétique peu utilisée dans nos régions.

	Biodiesel avec paille utilisée comme intrant (kJ/MJ biocarburant)	Biodiesel avec paille utilisée comme combustible (kJ/MJ biocarburant)	Ethanol avec paille utilisée comme intrant (kJ/MJ biocarburant)	Ethanol avec paille utilisée comme combustible (kJ/MJ biocarburant)
Biocarburant	1000,00	1000,00	1000,00	1000,00
Tourteau	24,22	24,22	0,00	0,00
Paile	0,00	1104,04	0,00	1314,21
Total	1024,22	2128,25	1000,00	2314,21
Combustible agricole	-86,24	-90,99	-57,96	-64,34
Engrais	-132,30	-132,30	-105,34	-108,78
Pesticides, herbicides, fongicides	-6,20	-6,20	-14,09	-14,09
Graines	-0,64	-0,64	-12,47	-12,47
Emballage	-5,19	-5,19	-6,03	-6,54
Transport	-13,30	-20,65	-20,15	-28,97
transformation	-317,43	-317,43	-684,87	-684,87
Total	-561,31	-573,40	-900,90	-920,04
Balance	462,90	1554,85	99,10	1394,17
Ratio énergétique	0,55	0,27	0,90	0,40

Tableau 7: Bilan énergétique du biodiesel et du bioéthanol (Levington, 2000)

Levington estime également, pour les étapes de fabrication et d'utilisation des engrais, les émissions de composés azotés et de CO₂ dans l'air ainsi que les émissions de nitrates, d'azote et de composés phosphatés dans l'eau. Ces résultats sont repris dans le Tableau 8.

	Biodiesel avec paille utilisée comme intrant	Biodiesel avec paille utilisée comme combustible	Ethanol avec paille utilisée comme intrant	Ethanol avec paille utilisée comme combustible
	mg/MJ biocarburant	mg/MJ biocarburant	mg/MJ biocarburant	mg/MJ biocarburant
AIR				
NH3	69,527	33,460	56,477	24,405
NOx	119,651	74,182	92,736	52,886
N2O	119,651	57,582	99,880	43,159
CO2	11246,452	6493,057	8842,281	4653,763
EAU				
N composés pendant la fabrication	6,468	3,113	5,257	2,272
Nitrate N après utilisation	32,338	15,563	26,958	11,649
P composés pendant la fabrication	0,359	0,173	0,404	0,175

Tableau 8: Emissions lors de la fabrication des engrais, suite à leur application et dues au transport (Levington, 2000).

Les émissions des deux principaux GES impliqués dans la production de biocarburants, le CO₂ et le N₂O, sont comprises entre 18 et 48 gCO_{2eq}/MJ de biocarburant produit. L'éthanol est responsable en moyenne de moins d'émission de N₂O que le biodiesel et a donc un impact climatique moins important. En comparaison des combustibles fossiles classiques, les biocarburants permettent une économie de GES :

- Pour le biodiesel, comprise entre 42% (allocation de la paille comme intrant) et 71% (allocation énergétique de la paille) ;
- Pour l'éthanol, comprise entre 51% (allocation de la paille comme intrant) et 78% (allocation énergétique de la paille).

D'une manière générale, la culture du froment semble responsable de moins de nuisances environnementales que la culture du colza, ce qui est dû, apparemment, à une exigence plus faible en termes d'engrais.

3.2.7 de Calvalho Macedo (2004)

Objet de l'étude :

L'objectif de l'étude est de réaliser un bilan du point de vue de la balance énergétique et des émissions de GES de l'éthanol obtenu à partir de canne à sucre au Brésil grâce à une méthodologie d'ACV. Les résultats ont pour but d'être représentatifs de la production au Brésil et se base donc sur des moyennes nationales. 2 scénarios principaux sont envisagés : le scénario 1 qui est représentatif de la situation actuelle et le scénario 2 qui représente une situation améliorée tenant compte des meilleures technologies et pratiques disponibles au Brésil. Macedo se place dans le cas d'une culture exclusive de canne à sucre et donc pas dans le cas d'une rotation de cultures.

Impacts et catégories d'impacts :

Deux seules catégories d'impacts : la consommation énergétique et les émissions de GES.

Unité fonctionnelle :

Les résultats sont généralement exprimés en tonne de sucre de canne (TC) et sont ramenés à cette unité.

Frontières :

Les étapes prises en compte sont les suivantes:

- Fabrication des engrais
- Construction des équipements et des bâtiments nécessaires
- Culture et récolte de la canne à sucre
- Transport de la ferme à l'unité de transformation
- Transformation en éthanol
- Transport de l'unité de transformation à la station de distribution
- L'utilisation de l'éthanol à la place d'essence

La procédure d'allocation ne concerne qu'un seul co-produit : la bagasse qui est un résidu fibreux de la canne à sucre. On fait ici l'hypothèse que la bagasse est utilisée pour produire de l'électricité qui remplace une production à partir d'énergie fossile (mix brésilien). Cette méthode d'allocation (allocation physique) correspond aux pratiques existantes au Brésil.

Résultats :

Les résultats, exprimés par rapport au 1 GJ de bioéthanol produit, sont repris dans le Tableau 9. On constate que le ratio énergétique est particulièrement favorable dans cette région en raison du haut rendement de sucre de la canne à sucre mais également de la valorisation énergétique de la bagasse. Par ailleurs, les émissions de GES par GJ produit sont particulièrement faibles en comparaison des émissions des biocarburants produits en Europe.

Ces résultats comprennent l'ensemble des étapes du cycle de vie de l'éthanol brésilien mais l'étude ne donne pas d'estimation sur les autres impacts environnementaux. Un autre aspect intéressant de cette étude sont les données concernant l'utilisation d'engrais pour la production de bioéthanol à partir de canne à sucre : 75 kgN/ha, an ; 100 kg K₂O/ha, an ; 36,7 kg P₂O₅/ha, an, ce qui correspond, exprimés par rapport à l'énergie de biocarburant produite : 0,532 gN/MJ ; 0,709 g K₂O/MJ ; 0,260 g P₂O₅/MJ.

Consommation énergétique (MJ/GJ biocarburants)		
	Scénario 1	Scénario 2
Agriculture	98,4	89,5
Procédés industriels	24,1	19,4
<i>Total</i>	<i>122,4</i>	<i>108,9</i>
Production d'énergie (éthanol + bagasse)	-1019,0	-1154,3
Bilan énergétique	-896,5	-1045,4
Ratio énergétique	-0,12	-0,09

Emissions de GES (kgCO₂eq/GJ biocarburants)		
	Scénario 1	Scénario 2
dues à la combustion fossile	9,4	8,6
autres émissions	7,5	7,5
<i>total émissions</i>	<i>16,8</i>	<i>16,1</i>
évitée par substitution éthanol-essence	-118,2	-126,2
évitée par combustion bagasse	-6,1	-11,4
<i>Total émissions évitées</i>	<i>-124,3</i>	<i>-137,6</i>
Bilan émissions	-107,5	-121,5

Tableau 9: Bilan énergétique et des émissions de GES de la production d'éthanol au Brésil

3.2.8 IEA (2004)

Objet de l'étude :

L'objectif de cette étude est de réaliser une analyse relativement complète des filières biocarburants dans le monde. Elle envisage ainsi les différentes matières premières et technologies disponibles pour leur production, la réduction des émissions de GES et le bilan énergétique, les coûts et les impacts de marché, la performance des véhicules, l'utilisation des sols, ainsi que les politiques de promotion des biocarburants mises en place dans différents pays du monde.

Cette étude ne reprend que les émissions de GES et la consommation énergétique comme impacts environnementaux. Il ne s'agit donc pas d'une ACV bien qu'elle incorpore, dans l'analyse de ces impacts environnementaux, les résultats d'analyses de cycle de vie complètes ou partielles.

Impacts et catégories d'impacts : émissions de GES et consommation énergétique

Résultats :

Différentes études européennes (notamment GM et al, 2002) citées dans le rapport de l'IEA (2004) évaluent les émissions de GES et le bilan énergétique de la production d'éthanol à partir de sucre de betterave (Tableau 11). Ces études tendent à montrer que la réduction d'émission de GES, estimée sur l'ensemble du cycle de vie, est sans doute supérieure de 35% par rapport aux combustibles fossiles classiques, le bilan énergétique étant également largement favorable au biocarburant.

Au Brésil, le ratio énergétique de la production d'éthanol à partir de canne à sucre est de 6 à 8 fois plus favorable que ceux obtenus dans l'UE ou aux USA. Les raisons sont à chercher dans les rendements particulièrement élevés qui peuvent être obtenus au Brésil grâce à un ensoleillement intense, la faible utilisation d'intrants et, également, dans la récupération de la bagasse (résidus fibreux) de la canne à sucre pour la production d'énergie. L'énergie ainsi produite à partir de source renouvelable est utilisée pour le processus de transformation mais peut également être réinjectée, sous forme d'électricité, dans le réseau régional, économisant ainsi éventuellement l'utilisation de combustibles fossiles. L'utilisation de combustibles fossiles pour produire le biocarburant peut donc, dans les cas les plus favorables, être négative.

Matière première (MP)	Efficienc de la production (litre/tonne de MP)	Ratio énergetique	Variation des émissions de GES (par rapport à la filière essence classique)
Betterave(UE)	54.1 à 101.3	0.56 à 0.84	-35 à - 56%
Cane à sucre (Brésil)	-	0.10 à 0.12	-92%

Tableau 10: bilan énergétique et climatique du bioéthanol- filière céréale (IEA, 2004)

De nombreuses études ont comparé les bilans énergétiques et les émissions de gaz à effet de serre (GES) du bioéthanol obtenu par la filière céréale à ceux de l'essence classique. L'IEA a répertorié une série de ces études et montre que l'économie de GES due à l'utilisation du bioéthanol provenant de la filière céréale peut être estimée entre 20 et 40 % des émissions de la filière essence classique. Une étude répertoriée indiquait cependant une augmentation des émissions de GES pour une production à partir de maïs (Pimentel, 2001).

Le ratio énergétique (ratio entre l'énergie nécessaire à la production du bioéthanol et l'énergie libérée lors de sa combustion), selon ces mêmes études, varie entre 0,5 et 0,98 pour le maïs et entre 0,81 et 1,03 pour la filière froment. Pimentel (2001) calcule cependant un ratio largement défavorable au biocarburant produit à partir de maïs (1.65).

Matière	Efficienc de la produc-	Ratio énergeti-	Variation des émissions de
----------------	--------------------------------	------------------------	-----------------------------------

première (MP)	tion (litre/tonne de MP)	que	GES (par rapport à la filière essence classique)
Mais	366.4 à 470.0	0.50 à 0.98	-21 à - 38%
Froment	346.5 à 385.4	0.81 à 1.03	-19 à - 47%

Tableau 11: bilan énergétique et climatique du bioéthanol – filière céréales (IEA, 2004)

Comme on peut le constater dans le Tableau 11 les différences entre les estimations sont significatives puisque, dans certains cas, le bilan énergétique du biocarburant pourrait même se révéler négatif. Différents facteurs peuvent expliquer ces différences, notamment :

- l'efficacité de la transformation matière première-éthanol est particulièrement importante car, non seulement, elle détermine la quantité de carburant (souvent fossile) nécessaire à la transformation mais également la quantité de matière première nécessaire pour produire une même quantité de biocarburant ;
- la prise en compte des sous-produits : nourriture animale, co-génération d'électricité, etc.
- les différences dans les pratiques agricoles, notamment dans l'utilisation des engrais, peuvent générer des émissions supplémentaires de N₂O, un puissant gaz à effet de serre.
- les hypothèses concernant le changement d'utilisation des terres : la déforestation ou le remplacement du système de racine dans le sol relâche dans l'atmosphère des quantités de carbone (séquestrées dans le sol ou les plantes) qui peuvent grever le bilan du biocarburant même si cet impact « one-shot » est réparti sur de nombreuses années.

Les émissions de GES et la consommation énergétique due à la production de biodiesel varie largement en fonction des hypothèses faites en ce qui concerne l'utilisation d'engrais, les systèmes de culture et la prise en compte des co-produits. Le Tableau 12 reprend les résultats cités par l'IEA.

Matière première (MP)	Ratio énergétique	Variation des émissions de GES (par rapport à la filière essence classique)
Colza	0.34 à 0.56	-49 à - 66%
Cane à sucre (Brésil)	0.10 à 0.12	-92%

Tableau 12: bilan énergétique et climatique du biodiesel (IEA, 2004)

4 Discussion et conclusion

4.1 Une comparaison des résultats est-elle possible ?

Dans la partie précédente, nous avons résumé les résultats de différentes analyses de cycle de vie ou études concernant différents types de biocarburants. Même si la plupart de ces études appliquent les principes d'une ACV, une comparaison de leurs résultats s'avère presque impossible, et ce en raison de leurs caractéristiques spécifiques.

La première caractéristique est bien sûr le **biocarburant analysé** : on distingue le biodiesel d'huile végétale mais les impacts environnementaux dépendront en outre du type de culture dont ils sont issus. Il convient donc de faire également une distinction entre un bioéthanol obtenu à partir de betteraves ou de froment.

La seconde est la **région de production du biocarburant et les technologies utilisées**. En effet, les pratiques et les rendements agricoles, les distances de transport, les sources d'énergie, etc. sont différents d'une région à l'autre et affectent, d'une manière ou d'une autre, les résultats d'une ACV.

Plusieurs ACV sont partielles et se contentent d'analyser quelques **impacts environnementaux** (généralement la consommation énergétique et les émissions de gaz à effet de serre). D'autres, plus complètes, analysent un plus grand nombre d'impacts. Cependant, les catégories d'impacts diffèrent également (Par exemple, Denocker évalue la quantité de déchets induite par la production de biodiesel, or cette catégorie d'impact n'est reprise par aucune autre ACV).

Le **système de référence** et les **méthodes d'allocation** sont des éléments méthodologiques importants qui ne sont pas toujours suffisamment explicités dans les ACV (cf. Mortimer et al., 2003). On sait ainsi qu'une terre en jachère permanente ne nécessitera pas la même quantité d'engrais qu'une jachère en rotation. Par ailleurs, on a vu que différentes méthodes d'allocation sont envisageables mais que leur pertinence dépend du contexte. Ainsi, dans nos régions il semble plus probable que la glycérine remplace une glycérine synthétique et que le tourteau se substitue à du soja importé plutôt que de voir ces co-produits utilisés comme combustibles. Cependant, pour des raisons de disponibilité des données, la méthode d'allocation basée sur le contenu énergétique est encore utilisée pour ces co-produits.

Bernesson et al. (2004) ont montré que deux éléments revêtent une importance capitale dans les ACV des biocarburants :

- La culture de la plante de base et les hypothèses sur ses impacts. En effet, la culture est la source principale des impacts environnementaux des biocarburants ;
- Les méthodes d'allocation en particulier si les produits remplacés par les co-produits du biocarburant ont des impacts environnementaux importants.

Les hypothèses sous-jacentes à la normalisation et à la pondération sont potentiellement des éléments de divergence entre les études. Cependant, peu d'entre elles vont jusqu'à cette étape de comparaison (une seule dans notre sélection : Denocker et al., 1998).

4.2 Quels sont les principaux impacts environnementaux des biocarburants ?

4.2.1 La consommation énergétique et les émissions de GES

Comme on vient de le voir, il est difficile de comparer les résultats des différentes analyses de cycle de vie. Cependant, on peut tirer différents enseignements de ces études quant aux impacts environnementaux en comparaison de l'utilisation des combustibles fossiles.

Ainsi, la plupart des études concluent à un avantage pour les filières biocarburants, que ce soit de l'éthanol ou du biodiesel et quelle que soit la région de production, en ce qui concerne les émissions de GES et la consommation énergétique. On peut y ajouter, bien entendu, la réduction de consommation de ressources fossiles. Ces impacts positifs sont dus principalement à la substitution du biocarburant aux combustibles fossiles (essence et diesel). Néanmoins, on ne peut considérer que les biocarburants sont neutres d'un point de vue du carbone. Ils sont en effet responsables d'émissions de CO₂ (suite à l'utilisation de combustibles fossiles pour leur production) mais également de N₂O et de méthane lors de la production d'engrais et la culture de la plante.

Les émissions de GES des filières biocarburants ont été estimées comme suit :

- Entre 20 et 41 kg CO_{2eq}/GJ pour le biodiesel obtenu à partir de colza ;
- Entre 43,3 et 66,2 kg CO_{2eq}/GJ pour le bioéthanol obtenu par la filière céréale en Europe ;
- Entre 35,9 et 53,1 kg CO_{2eq}/GJ pour le bioéthanol obtenu par la filière sucre (betteraves) en Europe ;
- Entre 4,7 et 10,7 kg CO_{2eq}/GJ pour le bioéthanol obtenu par la filière canne à sucre au Brésil ;

Ces valeurs sont à comparer aux émissions dues aux combustibles fossiles diesel et essence (estimée également via des ACV) : 87,6 kg CO_{2eq}/GJ et 85,8 kg CO_{2eq}/GJ respectivement.³

La filière céréale, parce qu'elle implique une consommation énergétique plus importante lors de la transformation, apparaît comme la moins intéressante de ce point de vue. Par contre, au Brésil, la canne à sucre, grâce à son haut rendement et la valorisation énergétique de la bagasse, permet des économies de GES supérieures à 90%. Dès lors, même si on inclut la consommation d'énergie et les émissions de GES du transport international, le bioéthanol brésilien reste une alternative plus intéressante du point de vue de ces deux catégories d'impacts que les biocarburants européens !⁴

4.2.2 Acidification et eutrophisation

La plupart des études concluent également à un impact négatif de la filière des biocarburants sur l'acidification et l'eutrophisation. Ces deux impacts sont imputables aux pratiques agricoles et à l'utilisation d'engrais azotés et phosphorés. Les résultats sont extrêmement sensibles au système de référence choisi. En effet, l'impact environnemental ne sera pas le même si la culture énergétique remplace une jachère permanente, une jachère de rotation ou une culture alimentaire.

³ Source : CONCAWE

⁴ Michaelowa et Krause (2000) proposent un coefficient d'émission pour le transport de combustible de 7,7 gCO₂/t.km. En faisant l'hypothèse d'un transport Buenos-Aires – Anvers de 9500 km et d'un PCI du bioéthanol de 27763 MJ/t, les émissions dues au transport maritime de l'éthanol brésilien se montent à moins de 3 kg CO₂/GJ.

L'acidification est causée par les émissions d'oxydes d'azote, oxydes de sulfure et ammoniacale lors de la culture de la plante. Ces émissions sont fortement dépendantes de la quantité d'engrais utilisée. L'eutrophisation des eaux est causée par les surplus de phosphate et d'azote utilisés comme engrais. Ce phénomène se manifeste par la prolifération excessive d'algues dans les eaux de surface au détriment d'autres organismes.

Les études qui analysent en profondeur les émissions acidifiantes et eutrophisantes de la production de biocarburants en Europe ne sont pas nombreuses (Jossart, 2003 ; Denocker, 1998 ; Bernesson, 2004). Jossart (2003) estime que les émissions acidifiantes pour la production du biodiesel s'élèvent à 0,383 g SO_{2eq}/MJ, ce qui correspond à une augmentation d'environ 25% par rapport à un diesel classique. Denocker (1998) parvient aux mêmes conclusions. Ces résultats sont comparables à ceux de Bernesson et al. (2004) sauf si on prend en compte une allocation étendue à l'ensemble des co-produits pour laquelle une valeur de 0,161 g SO_{2eq}/MJ serait à retenir⁵.

Ces valeurs ne concernent que le biodiesel. Aucune étude n'évalue les émissions acidifiantes de la production de bioéthanol. Etant donné que les cultures de betteraves et de froment requièrent des quantités d'engrais du même ordre de grandeur que celles des cultures de colza, on peut s'attendre à un impact similaire. Puisque la teneur en soufre de l'essence est particulièrement faible, il apparaît que le bilan « acidification » est en défaveur du bioéthanol européen.

Jossart (2003) estime que l'impact du biodiesel sur l'eutrophisation des eaux est incertain au contraire de Denocker et al. (1998) qui jugent le biodiesel contribue 4 fois plus à l'eutrophisation que le diesel.

Quelle que soit la comparaison avec les combustibles classiques, il apparaît que la quantité d'engrais utilisée pour produire les biocarburants est directement liée à l'ampleur des impacts « eutrophisation » et « acidification ». 3,3 kg N/GJ et 2,6 kgN/GJ sont des ordres de grandeur d'intrants nécessaires à la production, respectivement, de biodiesel et d'éthanol. Or, Macédo (2004) estime la quantité d'engrais azoté nécessaire à la production de bioéthanol à partir de canne à sucre au Brésil à 0,53 kgN/MJ. Des conclusions similaires s'appliquent également aux autres types d'intrants.

Ces chiffres sont cependant purement indicatifs et ne permettent pas de tirer de conclusions quant à l'impact global du bioéthanol brésilien sur l'eutrophisation en raison, notamment, des différences importantes de caractéristiques des sols. Néanmoins, on peut supposer que le problème de l'eutrophisation revêt une importance moins grande au Brésil que dans nos régions.

4.2.3 Les autres effets environnementaux

D'autres effets sont parfois pris en compte dans les analyses de cycle de vie mais les données sur ces impacts sont beaucoup plus lacunaires :

- **La production d'ozone photochimique** par la réaction de N₂O, de composés organiques volatiles et du soleil. Le diesel et l'essence sont responsables de l'émission de composés organiques volatiles lors de leur combustion. L'utilisation d'hexane lors de l'extraction de l'huile de colza peut également induire de telles émissions. Denocker et al. estiment d'ailleurs que l'incidence du biodiesel dans cette catégorie d'impacts est nettement plus importante que celle du diesel classique. Rappelons que l'utilisation d'hexane n'intervient que dans la préparation du biodiesel (et non des autres biocarburants) et peut être évitée si on se contente d'une extraction mécanique.

⁵ Il est à noter que de nouvelles qualités de diesel à faible teneur en soufre seront bientôt disponibles sur le marché. Les émissions de SO₂ du diesel seront donc probablement bien inférieures à celles utilisées dans les études citées ci-dessus.

-
- **L'utilisation de ressources naturelles** : les biocarburants permettent une économie de combustibles fossiles mais sont plus exigeants en termes d'autres ressources minérales (chaux, phosphate, potasse, soufre) nécessaires à la production d'engrais (Jossart, 2003 ; Denoeker, 1998) ;
 - **L'utilisation d'eau** : nécessaire à la fabrication du biocarburant serait plus importante que dans le cas d'un combustible fossile, en tout cas pour le biodiesel (nettoyage des produits agricoles, production d'engrais, processus d'estérification pour le biodiesel). La mesure de cet impact apparaît cependant comme très incertaine ;
 - **La production de déchets** a été envisagée dans l'étude de Denoeker (qui conclut au désavantage du biodiesel) mais est exclue des frontières de la majorité des autres ACV.

4.2.4 Conclusions sur les effets environnementaux

Les analyses de cycle de vie évoquées ci-dessus montrent que la substitution des biocarburants aux carburants fossiles classiques a des effets positifs en ce qui concerne la réduction des émissions de gaz à effet de serre et la préservation des ressources fossiles. Par contre, différents effets néfastes pourraient être amplifiés comme l'eutrophisation des eaux et l'acidification des eaux et des sols.

Quel que soit le biocarburant et la plante dont il est issu, la culture des plantes énergétiques est l'étape critique responsable des impacts environnementaux négatifs les plus importants. Ceux-ci sont fonction de la quantité d'engrais apportés lors de la culture.

Le bioéthanol brésilien a, apparemment, des effets négatifs moins importants en raison du haut rendement de la canne à sucre et de la faible quantité d'engrais nécessaire à sa culture. De plus, en raison de la valorisation énergétique de la bagasse ainsi que de la faible mécanisation de l'agriculture, le bilan énergétique et climatique du bioéthanol brésilien est plus favorable que celui des biocarburants européens, malgré la distance séparant le lieu de fabrication du lieu de consommation.

Soulignons cependant que ces conclusions ne sont valables que si la culture de la canne à sucre ne se fait pas au détriment de surfaces protégées et de puits carbone permanents.

Notons enfin que les analyses de cycle de vie considérées ici n'envisagent pas certaines catégories d'impacts qui sont pourtant souvent citées comme problématiques par les associations de défense de l'environnement. Ainsi, par exemple, l'utilisation de l'espace et la biodiversité ne sont évaluées dans aucune ACV.

4.3 Les biocarburants : une stratégie efficace pour réduire les émissions de gaz à effet de serre ?

La directive européenne 2003/30/CE propose des objectifs indicatifs de mise sur le marché des biocarburants entre 2005 et 2010. Afin de mesurer l'impact potentiel de cette politique sur les émissions du transport, nous avons construit 3 scénarios extrêmes. Ces scénarios sont construits pour la période 2003 – 2008. 2008 est en effet l'année où les taux d'incorporation maxima prévus par la loi-

programme de juillet 2005 (7% pour l'essence, 5% pour le diesel) seront d'application. Ce qui se passera après 2008 est plus difficile à cerner à l'heure actuelle⁶.

- Le scénario 1 dans lequel les biocarburants ne sont pas introduits sur le marché belge. La consommation de carburants routiers est supposée augmenter de 5,4% en volume (litres) et de 5,6% en émissions de GES (en équivalent CO₂). Dans ce scénario, la consommation d'essence continue de diminuer au profit du diesel ;
- Le scénario 2 : les biocarburants sont supposés être introduits sur le marché au taux d'incorporation maxima prévus par la loi-programme de juillet 2005. Dans ce scénario, les impacts sont évalués pour les valeurs basses et hautes des coefficients d'émission des biocarburants⁷. Tous les autres paramètres sont identiques au scénario 1 ;
- Le scénario 3 : la même quantité de biocarburants que dans le scénario 2 est introduite sur le marché belge mais l'éthanol provient uniquement du Brésil.

		Scénario 1	Scénario 2		Scénario 3	
Taux d'émission des biocarburants						
Biodiesel (colza)	kgCO ₂ eq/GJ	NA	25,3	35,8	NA	
Bioéthanol_ETBE(betteraves et céréales)	kgCO ₂ eq/GJ	NA	41,8	53,7	NA	
Bioéthanol (canne à sucre)	kgCO ₂ eq/GJ	NA	NA	NA	9,2	12,2
Résultats						
Emissions totales du transport en 2003	ktCO ₂ eq/an	29230	29230	29230	29230	29230
Emissions totales du transport routiers en 2008	ktCO ₂ eq/an	30860	29890	30070	29800	29812
Variation 2004-2008	% du BAU	5,58	2,26	2,87	1,95	1,99
Economie due aux biocarburants	% du BAU	0,00	-3,14	-2,56	-3,43	-3,40
Surface agricole nécessaire en Belgique	% de la SAU	0,00	23,10		NA	

Tableau 13: Hypothèses et résultats des 3 scénarios d'introduction des biocarburants en Belgique

Le Tableau 13 montre que le respect des prescriptions de la loi programme permet, en 2008, une économie de gaz à effet de serre de 0.79 à 0.97 MtCO₂eq par rapport à un scénario BAU, soit moins de 4% des émissions projetées du transport. Pour réaliser cet objectif, la Belgique devrait alors consacrer plus de 23% de sa surface agricole utile à la culture des trois plantes énergétiques envisagées ici : le colza, la betterave et le blé.⁸

A titre de comparaison, l'utilisation de bioéthanol Brésilien permettrait une économie de GES d'environ 1.5 MtCO₂eq soit un peu plus de 3% des émissions du transport en Belgique en 2008. Notons que la surface nécessaire à la production de cette quantité de biocarburants au Brésil est deux fois moins importante que dans le scénario 2.

⁶ Pour plus de détail sur les taux d'incorporation maximaux et les prescriptions de la loi-programme, voir le rapport de Philippe Defeyt : « Quelques données et enjeux économiques », Institut pour un Développement Durable, août 2005, disponible sur le site de l'IDD : www.iddweb.be.

⁷ Les intervalles des valeurs ont cependant été resserrés autour des bornes 25-75% on nous avons supposé que l'éthanol céréales ne représenterait jamais, en Belgique, plus de la moitié de l'éthanol produit.

⁸ Etant donné l'importance de la surface à consacrer aux biocarburants, une estimation rigoureuse des économies de gaz à effet de serre devrait également tenir compte de l'impact de cette politique sur les émissions de l'agriculture. Dans ce calcul, on a en effet fait l'hypothèse que les terres utilisées pour la production de biocarburant n'auraient pas été cultivées dans un scénario BAU.

Quelle que soit la provenance du biocarburant, on peut néanmoins constater que cette politique ne permet pas d'enrayer la progression observée des émissions du transport en Belgique. L'objectif de Kyoto appliqué au transport routier belge demanderait une réduction d'émission de 12,6MtCO_{2eq} par rapport à notre scénario BAU soit plus 10 fois plus que la réduction escomptée par l'introduction des biocarburants.

Il apparaît donc clairement qu'une politique de l'offre, comme celle des biocarburants, n'est pas suffisante pour réduire de manière significative les émissions de gaz à effet de serre dans le domaine du transport et ne pourra, en aucun cas, se substituer à une réelle politique de la demande.

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Données et enjeux économiques de la politique de promotion des biocarburants¹.

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(Août 2005)

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¹ Ce document a été réalisé par l'IDD dans le cadre du projet financé par le SPP « Politique scientifique » intitulé « Méthodologie et faisabilité de l'évaluation des impacts des décisions sur le développement durable. Le cas de l'Etat fédéral belge », coordonné par le Centrum Voor Duurzame Ontwikkeling (CDO) de l'Université de Gand. Et réalisé en collaboration avec le Centre d'Etudes du Développement Durable (CEDD-IGEAT-ULB) et l'AURAP (UCL). Je remercie Paul-Marie Boulanger et Benoît Lussis pour leurs remarques et suggestions.

Introduction

Présent depuis longtemps, le débat sur les biocarburants a reçu un coup de fouet à l'occasion de l'adoption de la Directive 2003/30 sur les biocarburants² et des discussions accompagnant sa mise en œuvre.

Cette Directive est trop souvent présentée de manière sommaire. En gros ce qui est retenu en général est un résumé du genre : « il faut passer de 2% (en 2005) à 5,75% (en 2010) de biocarburants dans les carburants routiers vendus dans le pays ».

La directive est plus souple que cela. Plus souple d'abord en ce que les valeurs de 2 et 5,75% sont des « valeurs de référence ». On sait ce qu'il en est en général des objectifs non contraignants définis par l'Union européenne. Par ailleurs, les « objectifs nationaux indicatifs » à définir sont à calculer (sur base de la teneur énergétique) par rapport à « la quantité totale d'essence et de gazole mise en vente sur (le) marché à des fins de transport »³, et non par rapport à chaque litre vendu. Ceci veut donc dire, par exemple, qu'un pays pourrait parfaitement atteindre les valeurs de référence en équipant tout ou partie des flottes captives (sociétés de transport publiques, services postaux, etc.) de véhicules n'utilisant que des biocarburants ou dans une plus grande proportion, sans que les carburants routiers vendus par le réseau de distribution normal ne contiennent nécessairement des biocarburants⁴. Enfin, l'article 4 de la Directive biocarburants précise qu'il peut y avoir des divergences entre les objectifs nationaux et les valeurs de référence, notamment si le pays concerné peut se fonder sur le « volume des ressources affectées à la production de la biomasse à des fins énergétiques autres que le transport » et / ou « des politiques nationales affectant des ressources comparables à la production d'autres carburants utilisés pour le transport et provenant de sources d'énergies renouvelables »⁵, comme la filière hydrogène. Autrement dit, une autre utilisation de la biomasse est parfaitement possible, à condition d'obtenir un bénéfice environnemental comparable. La Fédération Pétrolière Belge (FPB) s'appuie sur cette possibilité pour avancer sa principale critique à cette Directive : « Les Etats membres qui le souhaitent peuvent intégrer dans le calcul le volume des ressources qu'ils affectent à la production de biomasse à des fins énergétiques autres que le transport, par exemple comme substitut aux combustibles fossiles pour la production d'électricité. Le Danemark, notamment, privilégie cette option et les Pays-Bas envisagent de le faire. La FPB plaide pour qu'elle soit également retenue en Belgique, au moins pour atteindre les objectifs fixés à l'horizon 2010. Par tonne de CO₂ réduite, l'option biomasse est en effet bien moins coûteuse que l'option biocarburant. » (voir Annexe 1 pour la position complète de la FPB telle que reprise sur son site web).

Deux aspects importants du dossier influencent également l'analyse socioéconomique qu'on peut en faire. On rappellera d'abord que les biocarburants mis en vente ne doivent pas nécessairement être produits localement. Ils peuvent, en fonction des règles en vigueur, être importés d'autres pays, à commencer, bien évidemment, par les autres pays de l'Union mais également de l'extérieur de l'Union. Ensuite, la Directive 2003/96/CE du 27 octobre 2003 restructurant le cadre communautaire de taxation des produits énergétiques et de l'électricité⁶ prévoit que, « sans préjudice d'autres dispositions communautaires, les États membres peuvent appliquer sous contrôle fiscal des exonérations totales ou partielles ou des réductions du niveau de taxation: a) aux produits imposables utilisés sous contrôle fiscal dans le cadre de projets pilotes visant au développement technologique de produits moins polluants, ou en ce qui concerne les combustibles ou carburants provenant de ressources renouvelables (...) » (Article 15). Comme le souligne la FPB (voir Annexe 1), il s'agit d'une possibilité, non d'une obligation.

² Directive 2003/30/CE du Parlement européen et du Conseil du 8 mai 2003 visant à promouvoir l'utilisation de biocarburants ou autres carburants renouvelables dans les transports (Journal officiel de l'Union européenne du 17.05.03).

³ Directive 2003/30/CE, article 3, alinéa 1 a) i).

⁴ Comme le dit d'ailleurs la Directive 2003/30/CE dans son considérant 8, « les flottes captives offrent la perspective d'une utilisation de biocarburant en concentration plus élevée. »

⁵ Et bien évidemment compatibles avec les objectifs de la Directive 2003/30/CE.

⁶ Journal officiel de l'Union européenne, 31.10.03, pp.L.283/51-70.

Ce rappel succinct du contenu de la Directive amène à définir des orientations de base pour les analyses socio-économiques qu'appelle la Directive

- dans son considérant 25 : « L'utilisation accrue de biocarburants devrait s'accompagner d'une analyse détaillée des incidences environnementales, économiques et sociales pour que l'on puisse décider s'il est opportun d'accroître la part des biocarburants » ;
- dans l'alinéa 4 de l'article 3 : « les Etats membres (...) pourraient encourager en priorité les carburants dont le bilan environnemental global et la rentabilité sont excellents » ;
- dans l'alinéa 2. b) de l'article 4 : Le rapport que doit remettre chaque Etat membre tous les deux ans portera notamment sur « les aspects économiques et les incidences sur l'environnement de l'augmentation de la part de marché des biocarburants et autres carburants renouvelables ».

Le rapport qui suit a pour objectif d'éclairer ce débat dans ses dimensions et enjeux économiques, les aspects environnementaux ayant été abordés par l'IDD dans un rapport joint⁷.

* * *

La littérature (socio)économique sur les biocarburants se caractérise – si on compare avec la littérature sur les dimensions écologiques – par :

- une faible production (à proprement parler) scientifique ; les rapports existants sont plus souvent de nature technico-économique et/ou concernent un projet concret (de ce fait ces rapports ne sont pas, le plus souvent, accessibles) ;
- l'extrême variabilité des conclusions (sur la rentabilité, sur les prix de revient...) en fonction des hypothèses de travail ou des conditions d'observation, à savoir (principalement) : les paramètres industriels (ex : la taille de l'unité de production envisagée), les prix pétroliers envisagés, le contexte économique-fiscal et les coûts des matières premières (biomasse).

Remarque en passant : cette extrême variabilité rend risibles certaines affirmations « définitives » que l'on peut lire dans certaines publications. On n'attirera jamais assez l'attention sur les hypothèses de travail ou les conditions d'observation pour évaluer, par exemple, le coût de production d'un biocarburant.

Tenant compte des informations disponibles et de cette double observation, l'IDD a choisi de rédiger son analyse économique de la problématique des biocarburants principalement :

- 1° en recourant à des analyses de sensibilité ;
- 2° en mettant les données économiques en perspective les unes par rapport aux autres ;
- 3° en proposant des données économiques sous la forme d'ordres de grandeur réfléchis.

L'IDD a estimé que cette approche permettra plus facilement aux commanditaires de repérer les enjeux et les nœuds du débat et de suivre l'évolution du débat en fonction des importants développements qu'il connaîtra dans les semaines et les mois à venir.

Cette approche apparaît d'autant plus intéressante que le contexte est, en effet, éminemment fluctuant et (parfois) flou :

- l'évolution institutionnelle du secteur betteravier n'est pas claire,
- le marché pétrolier est en plein bouleversement, et la production de biocarburants en plein essor (voir graphique reproduit dans l'Annexe libre) ;
- la défiscalisation des biocarburants en Belgique a fait l'objet de dispositions dans la dernière loi-programme mais doit encore être concrétisée par un futur AR,
- le risque de plaintes à l'OMC concernant la préférence communautaire pour la production de biocarburants est réel même si non mesurable.

NB : les passages particulièrement importants pour la compréhension ou l'interprétation sont surlignés en jaune !

⁷ Benoît LUSSIS, « Impacts environnementaux des biocarburants », Institut pour un Développement Durable, août 2005. Ce rapport rappelle tout ce qu'il faut pour comprendre ce qu'est la biomasse et ce que sont les biocarburants.

La structuration des coûts microéconomiques de trois filières de biocarburants

Pour bien comprendre la microéconomie de la production de biocarburants le mieux est de détailler les trois chaînes de production principales que nous avons retenues (betteraves / blé > éthanol et colza > biodiesel).

Nous expliciterons – dans un premier temps, à titre d’illustration pour mieux comprendre – les productions, rendements et coûts sur base de l’étude, dont le rapport final a été publié en 2003, effectuée pour la Commission européenne par un consortium d’instituts de recherche allemands (voir bibliographie). Les données utilisées – dans cette section – viennent donc pour l’essentiel de cette étude (présentée par commodité sous l’appellation « Renewable Fuels »), sauf mention contraire. Dans cette première étape c’est essentiellement la structuration et la décomposition des coûts de production qui compte, plus que chaque donnée spécifique, d’autant plus que certaines d’entre elles ne correspondent pas ou peu au contexte belge. C’est pourquoi, dans un second temps (section suivante), nous comparerons ces données économiques avec d’autres.

NB : D’une manière générale, les données ci-dessous doivent être considérées comme des ordres de grandeur. Les décimales sont reproduites pour le "contrôle" des calculs mais ne peuvent être interprétées comme l’expression d’une volonté de précision, de toute manière inatteignable dans ce type d’exercice.

FILIERE : BETTERAVE SUCRIÈRE > ÉTHANOL

Pour obtenir des rendements élevés, on estime qu’en moyenne, en Europe, il faut – d’après l’étude Renewable Fuels – prévoir les intrants agricoles suivants :

Filière betteraves sucrières Intrants agricoles pour des rendements élevés

Azote	120 – 160 kg/ha
Phosphore	35 – 70 kg/ha
Potassium	170 kg/ha
Magnésium	35 – 50 kg/ha

Source : Renewable Fuels

Tenant compte de l’ensemble des facteurs de production, y compris l’énergie consommée directement (ex : tracteur) et indirectement (ex : engrais), voici quelques données clé de l’étape de production.

Filière betteraves sucrières Données clé de l’étape de production

Coût de production	46 €/tonne
Emissions de CO ₂	15,6 kg/tonne
Effizienz énergétique*	13,6

Source : Renewable Fuels * nombre de GJ d’énergie produite par GJ d’intrants énergétiques

L’étape suivante est la transformation du glucose extrait de la betterave en éthanol. Cette opération est assez coûteuse en énergie : 17,45 kWh (62,6 MJ) par tonne de betteraves pour toutes les étapes de transformation plus 0,1055 kWh (0,38 MJ) par kg d’alcool pur. La fermentation microbienne permet de transformer 1 kg de glucose en 0,51 kg d’éthanol mais relâche 0,49 kg de CO₂. Enfin, on notera qu’au niveau européen il faut en moyenne 12,6 tonnes de betteraves pour produire 1 tonne d’éthanol. (données : Renewable Fuels 2003)

Tenant compte de tous ces inputs et paramètres techniques, on obtient les données suivantes qui résument le bilan économique et énergétique de l’opération de transformation en éthanol.

Filière betteraves sucrières
Données clé de l'étape de transformation en éthanol

Coût de production	Environ 13,40 €/GJ*
Emissions de CO2	15 – 20 kg/GJ*
Efficiencé énergétique	0,4

Source : Renewable Fuels

* par GJ d'éthanol

Le tableau suivant consolide la comptabilité économique de ces deux étapes. Le calcul qu'il détaille est basé sur l'hypothèse d'un PCI du bioéthanol de 21,3 MJ/l ou 27 GJ/t.

Filière betteraves sucrières
Calcul du coût de production total de l'éthanol

Quantité de betteraves	1 tonne
Coût de production des betteraves	46,00 €
Production correspondante d'éthanol	0,0794 tonne
ou encore	2,1429 GJ
Coût de production de l'éthanol	
- étape : production de betteraves	21,47 € par GJ
- étape : production d'éthanol	13,40 € par GJ
Coût total	34,87 € par GJ
ou encore	0,74 €/litre
En équivalent essence	1,12 €/litre

Source : Renewable Fuels - Calculs : IDD

FILIERE : FROMENT (D'HIVER) > ETHANOL

Pour des rendements corrects, on estime qu'en moyenne, en Europe, il faut prévoir les intrants agricoles suivants :

Filière froment (d'hiver) - Intrants agricoles

Azote (dont printemps)	80 - 120 kg/ha (50 - 70 kg/ha)
Phosphore	28 kg/ha
Potassium	80 kg/ha
Magnésium	12 kg/ha

Source : Renewable Fuels

Tenant compte de l'ensemble des facteurs de production, y compris l'énergie consommée, voici quelques données clé de l'étape de production.

Filière froment (d'hiver)
Données clé de l'étape de production

Coût de production	120 €/tonne
Emissions de CO2	163 kg/tonne
Efficiencé énergétique*	5,3

Source : Renewable Fuels * nombre de GJ d'énergie produite par GJ d'intrants énergétiques

L'étape suivante est la transformation du glucose extrait du blé en éthanol. Cette opération est – comme pour la betterave – assez coûteuse en énergie : 156 kWh par tonne de blé pour toutes les étapes de transformation plus 0,08 kWh par kg d'alcool pur. La fermentation microbienne permet de transformer 1 kg de glucose en 0,51 kg d'éthanol mais relâche 0,49 kg de CO2. Enfin, on notera qu'au niveau européen il faut en moyenne 12,6 tonnes de betteraves pour produire 1 tonne d'éthanol. (données : Renewable Fuels 2003)

Tenant compte de tous ces inputs et paramètres techniques, on obtient les données suivantes qui résument le bilan économique et énergétique de l'opération de transformation en éthanol.

Filière froment (d'hiver)
Données clé de l'étape de transformation en éthanol

Coût de production	24 - 30 €/GJ*
Emissions de CO2	env. 45 kg/GJ
Efficience énergétique	n.d.

Source : Renewable Fuels

* par GJ d'éthanol (NB : ce coût est basé sur l'hypothèse d'installations de grande taille !)

Le tableau suivant consolide la comptabilité économique de ces deux étapes. Le calcul qu'il détaille est basé sur l'hypothèse d'un PCI du bioéthanol d'environ 21,3 MJ/l ou 27 GJ/t.

Filière froment (d'hiver)
Calcul du coût de production total de l'éthanol

Quantité de froment	1 tonne
Coût de production du froment	120,00 €
Production correspondante d'éthanol	0,2935 tonne
ou encore	7,92 GJ
Coût de production de l'éthanol	
étape : production du froment	15,14 € par GJ
étape : production d'éthanol	27,00 € par GJ
Coût total	42,14 € par GJ
ou encore	0,90 €/litre
En équivalent essence	1,35 €/litre

Source : Renewable Fuels - Calculs et estimations : IDD

Pour ces deux filières, il faut encore tenir compte des coûts de transport de l'unité de production vers les raffineries où se fera le mélange essence-éthanol. Nous avons estimé ces coûts à 0,02 € par litre d'éthanol.

FILIERE : COLZA > BIODIESEL (OU EMC)

Pour obtenir des rendements corrects, on estime qu'en moyenne, en Europe, il faut prévoir les intrants agricoles suivants :

Filière colza - Intrants agricoles

	Colza d'hiver	Colza d'été
Azote	80 - 250 kg/ha	140 - 180 kg/ha
Phosphore	100 kg/ha	80 kg/ha
Potassium	220 kg/ha	120 kg/ha
Magnésium	25 - 30 kg/ha	40 kg/ha

Source : Renewable Fuels

Tenant compte de l'ensemble des facteurs de production, y compris l'énergie consommée, voici quelques données clé de l'étape de production.

Filière colza
Données clé de l'étape de production

Coût de production	169 €/tonne
Emissions de CO2	252 kg/tonne
Efficience énergétique*	4,0

Source : Renewable Fuels * nombre de GJ d'énergie produite par GJ d'intrants énergétiques

L'étape suivante est la production de l'huile de colza. Deux procédés sont utilisés : le pressage mécanique et l'extraction (en utilisant des solvants). L'extraction étant plus productive en huile, on combine souvent les deux méthodes. Cette opération nécessite bien sûr de l'énergie sous forme d'électricité et de chaleur, mais beaucoup moins que pour la filière éthanol. (données : Renewable Fuels 2003)

Tenant compte de tous ces inputs et paramètres techniques, on obtient les données suivantes qui résument le bilan économique et énergétique de l'opération de transformation en huile de colza.

Filière colza
Données clé de l'étape de transformation en huile

Coût de production	3,0 – 3,5 €/GJ*
Emissions de CO2	2,3 – 2,5 kg/GJ
Efficacité énergétique	0,56

Source : Renewable Fuels * par GJ d'énergie contenue dans l'huile

Pour améliorer les paramètres techniques pour l'étape d'utilisation de l'huile de colza on transforme celle-ci par estérification pour produire de l'EMC (ester méthylique de colza – RME en anglais). Tenant compte de tous ces inputs et paramètres techniques, on obtient les données suivantes qui résument le bilan économique et énergétique de l'opération de transformation en biodiesel ou EMC.

Filière colza
Données clé de l'étape de transformation de huile en biodiesel (EMC)

Coût de production	24 - 30 €/GJ*
Emissions de CO2	env. 45 kg/GJ
Efficacité énergétique	n.d.

Source : Renewable Fuels

* par GJ d'éthanol (NB : ce coût est basé sur l'hypothèse d'installations de grande taille !)

Le tableau suivant consolide la comptabilité économique de ces deux étapes. Le calcul qu'il détaille est basé sur l'hypothèse d'un PCI du bioéthanol d'environ 21,3 MJ/l ou 27 GJ/t.

Filière colza
Calcul du coût de production total du biodiesel

Quantité de colza	1 tonne
Coût de production du colza	169,00 €
Quantité correspondante d'huile	436,68 litres
idem en contenu énergétique	14,98 GJ
Quantité correspondante de biodiesel	437,06 litres
idem en contenu énergétique	14,50 GJ
Coût de production du biodiesel	
étape : production du colza	11,66 € par GJ
étape : production de l'huile	3,62 € par GJ
étape : production du biodiesel	3,00 € par GJ
Coût total	18,27 € par GJ*
ou encore	0,61 € par litre
en équivalent diesel	0,65 €/litre

Source : Renewable Fuels - Calculs et estimations : IDD

* notre calcul aboutit à un coût quelque peu inférieur à celui de Renewable Fuels qui propose un coût de 20 € par GJ

Ici aussi, bien sûr, il faut encore tenir compte des coûts de transport du diester de l'unité de production vers le lieu d'utilisation. Ici aussi nous avons retenu un coût de 0,02 €/l.

Comparaison des coûts de production donnés par différentes sources et études de sensibilité

LA FILIÈRE BETTERAVES

Pour la filière betteraves, nous avons repris comme point de comparaison les estimations de l'AIE (Agence Internationale de l'Energie – Rapport sur les biocarburants de 2004 – voir bibliographie) et du rapport Licht (« Ethanol Production Costs » – voir bibliographie).

Coûts de la filière betterave – en € par litre d'éthanol

	AIE est. basse	AIE est. haute	Renewable Fuels	Licht 1*	Licht 2*
Coût matières premières	0,2165	0,3465	0,4572	0,2400	0,2400
Recettes des co-produits	0,0108	0,0000	0,0108	0,0495	0,0495
Coûts de capital	}0,2382	}0,3032	}0,2854	0,0956	0,0612
Coûts d'exploitation autres				0,2179	0,1835
Coût total de production	0,4547	0,6388	0,7318	0,5040	0,4352

*Licht 1 : capacité de 500.000 hl, Licht 2 : 2.000.000 hl

Note méthodologique : Le rapport de l'AIE propose des estimations en US\$. Celles-ci ont été converties en € sur base des taux de change nominaux (l'AIE a en fait effectué la conversion inverse).

L'étude Renewable Fuels donne un coût total supérieur à celui que donne le haut de la fourchette proposée par l'AIE et à ceux donnés par Licht. L'explication réside – pour l'essentiel – dans le coût estimé de la matière première. Il est vrai que le coût utilisé par Renewable Fuels – 46,00 €/t – est très élevé par rapport à la réalité belge des dernières années, à la fois parce que la productivité et donc la rentabilité y sont meilleures mais aussi à cause de l'évolution du marché (largement influencé par les quotas et l'importance de la catégorie C).

Le graphique en haut de la page suivante détaille les évolutions des prix des betteraves au cours des dernières années. Comme le note Agriculture wallonne, « en 2003, on assiste à un recul du prix moyen dû à une production importante qui a amené une proportion de sucre C (partie valorisée au prix mondial) plus importante encore qu'en 2002. Il en résulte une baisse sensible quand on exprime les prix à teneur moyenne de 16 %. Cependant, à teneur réelle en sucre, comme la richesse en 2003 fut élevée, le recul du prix est nettement plus faible (-2 %). » (p.71). On notera encore que cette teneur moyenne de référence de 16 % est très proche de celle – implicite – de l'étude Renewable Fuels, à savoir 15,6%.

Tenant compte

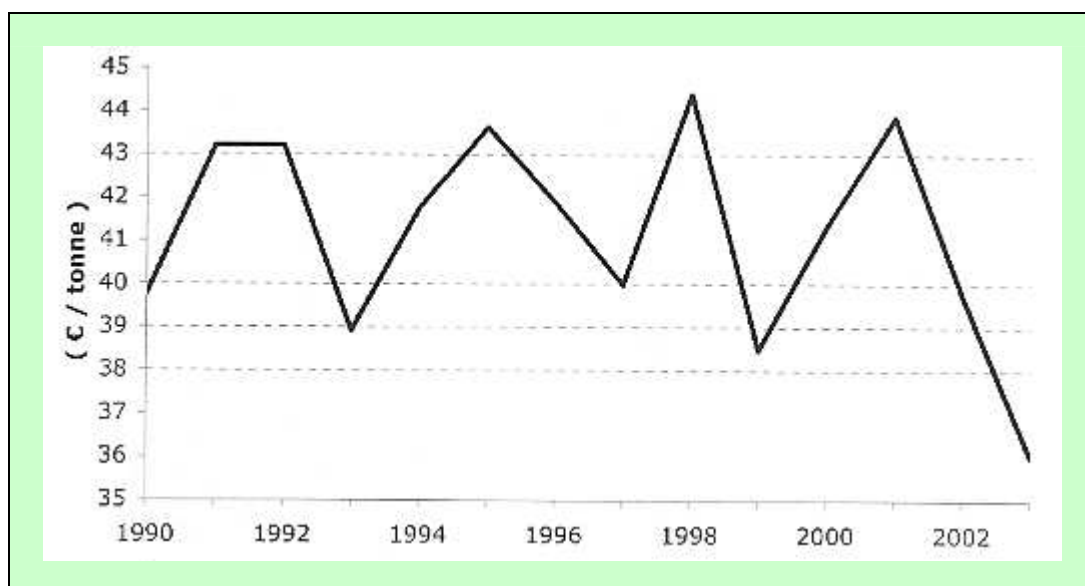
- des données et considérations qui précèdent,
- de ce qu'une éventuelle filière betteraves utilisera d'abord – en tout cas tant que le système existera – des betteraves C,
- et de l'incertitude encore assez grande en ce moment (août 2005) sur ce que deviendra le système sucre en Europe,

on retiendra pour faire une étude de sensibilité 1° un intervalle d'analyse de sensibilité du prix de la betterave situé entre 20 et 40 €/t et 2° la structure suivante de coûts de production (hypothèses essentielles : grande usine – 200.000 m³ - et betterave à 40 €/t).

Filière betteraves : structure de coûts retenue comme référence en € par litre – prix des betteraves : 40 €/t

Coût matières premières	0,3976
Recettes des co-produits	0,0302
Coûts de capital	0,0612
Coûts de transformation	0,1835
Coût total de production	0,6121

**Evolution du prix des betteraves sucrières à 16% de sucre
Belgique : 1990/91 à 2003/2004 (€/t)**



Source : Agriculture wallonne

**Prix de l'essence défiscalisée retenu comme prix de référence
dans un scénario de défiscalisation totale
(en € par litre – prix maxima au 09.07.05)**

	98 oct (BTS)	95 oct	Moyenne Pondérée*
Prix ex-raffinerie	0,411	0,370	0,3830
Accises	0,592	0,592	0,5920
Total	1,003	0,962	0,9750

Source : Fédération Pétrolière de Belgique - Calculs : IDD
* en fonction des ventes en 2003

Tenant compte des paramètres retenus, la simulation dont les résultats sont reproduits sur le graphique en haut de la page suivante indique que, dans l'hypothèse d'une défiscalisation totale, la production d'éthanol à partir de betteraves est rentable – avant rémunération du capital – dès lors que le prix de la tonne donné au producteur est inférieur à 39 €/t. Ce dernier prix constituera probablement, a fortiori après la réforme du marché du sucre betteravier, un plafond.

LA FILIÈRE FROMENT

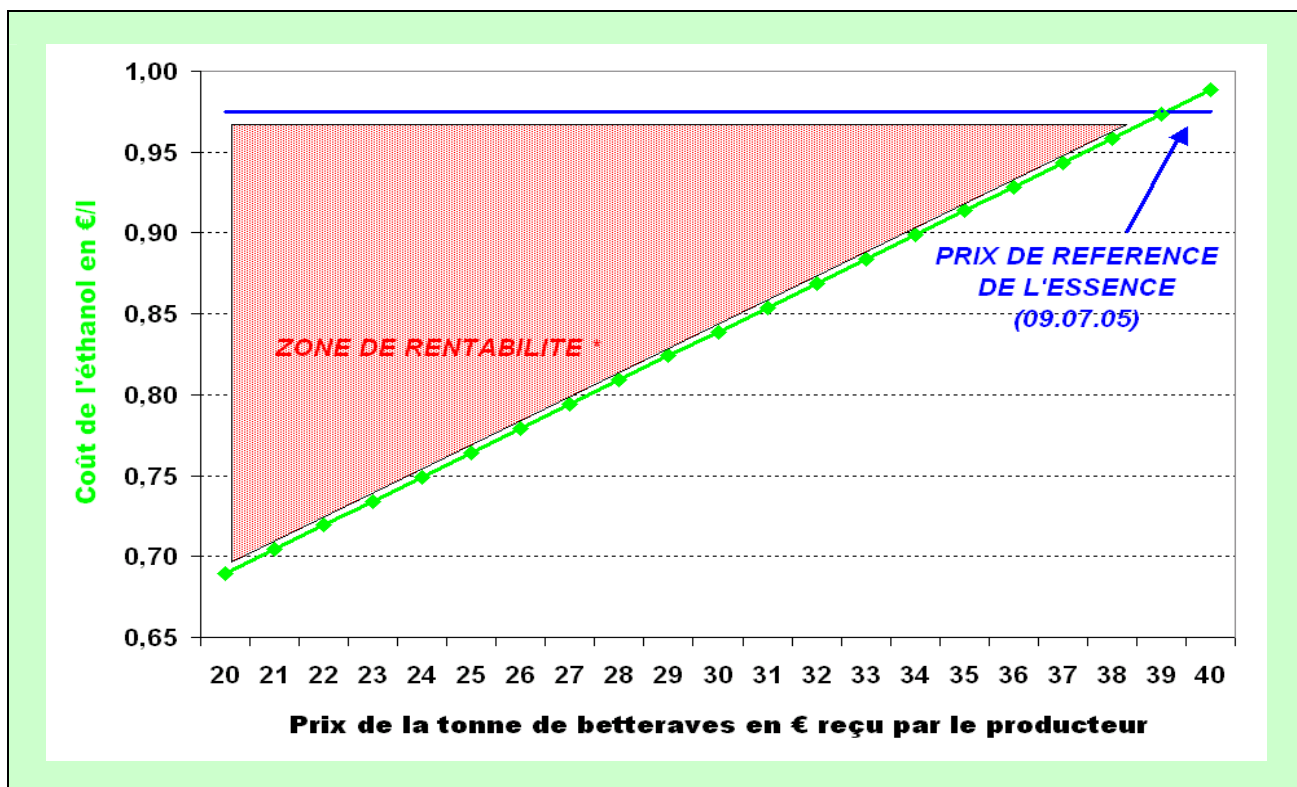
Pour la filière froment, nous avons également repris comme point de comparaison les estimations de l'AIE (Agence Internationale de l'Energie – Rapport sur les biocarburants de 2004 – voir bibliographie) et du rapport Licht (« Ethanol Production Costs » – voir bibliographie).

Coûts de la filière froment – en € par litre d'éthanol

	AIE est. basse	AIE est. haute	Renewable Fuels	Licht 1*	Licht 2*
Coût matières premières	0,2382	0,3681	0,3225	0,3456	0,3456
Recettes des co-produits	0,1624	0,1191	0,1408	0,0680	0,0680
Coût de capital	0,0866	0,1408	}0,5751	0,0956	0,0612
Autres coûts d'exploitation	0,2165	0,2707		0,2454	0,2110
Coût total de production	0,3789	0,6604	0,7569	0,6186	0,5498

*Licht 1 : capacité de 500.000 hl, Licht 2 : 2.000.000 hl

**Prix comparés de l'essence et de l'éthanol betterave
en fonction du prix des betteraves - scénario de défiscalisation totale
Attention : coût de l'éthanol = coût en équivalent (énergétique) essence !**



* Dans cette zone le prix de l'éthanol mesuré en équivalent essence est inférieur au prix de l'essence (moyenne essence normale / essence super – prix maxima au 09.07.05) sans la TVA et sans la marge de distribution. Au plus on va vers la gauche, au moins il faut donc défiscaliser.

L'étude Renewable Fuels donne – pour le froment – un coût total supérieur à celui que donne le haut de la fourchette proposée par l'AIE tandis que Licht donne une fourchette de coûts qui se trouve à l'intérieur de la fourchette de l'AIE. On notera ici que les estimations des différents coûts et des recettes des co-produits sont moins homogènes que pour les betteraves. On retiendra la structure de coût de production suivante comme référence pour nos simulations.

Il est clair cependant que le coût des matières premières joue ici aussi un rôle essentiel. Rappelons, à cet égard, qu'au cours des dernières années le prix du froment a fluctué entre 0,08 et 0,13 €/kg (Source : Agriculture wallonne). On retiendra comme intervalle de sensibilité la fourchette 0,08 – 0,16 €/kg.

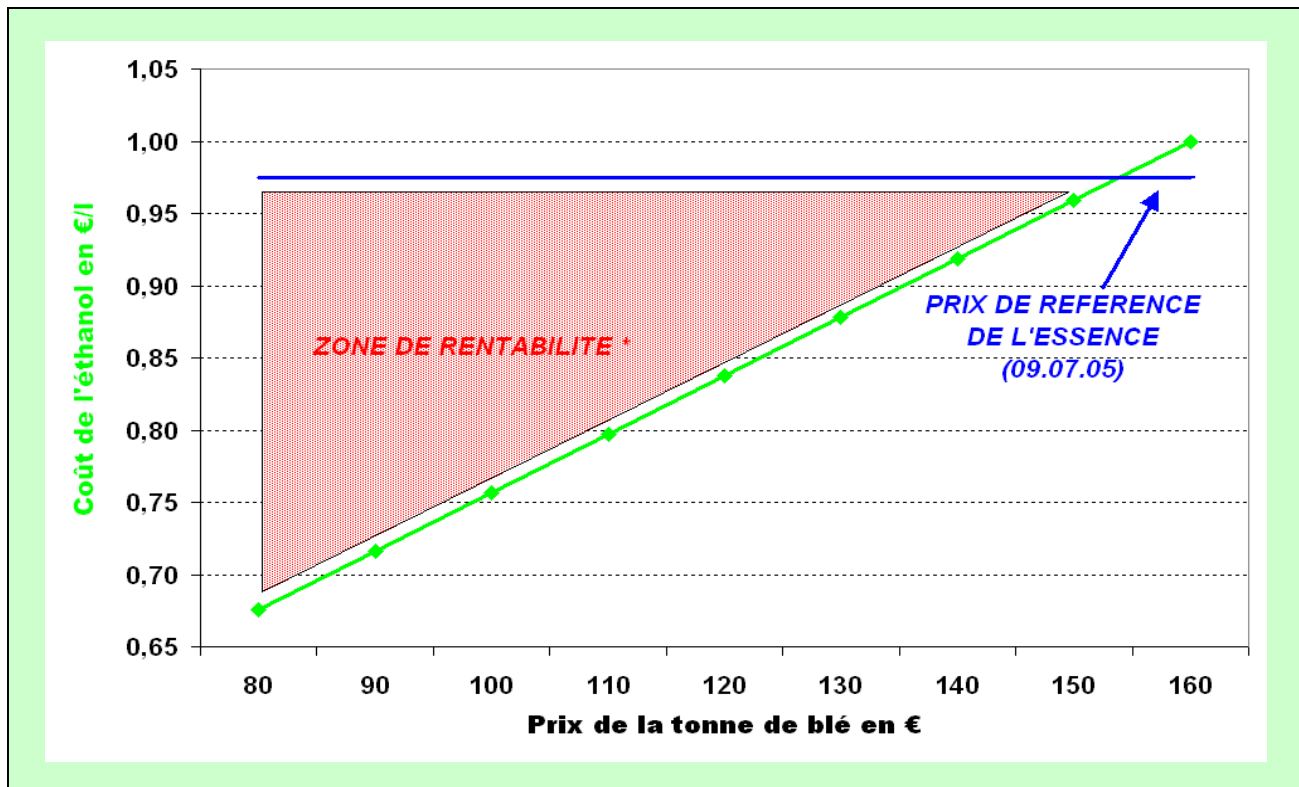
**Filière froment : structure de coûts retenue comme référence
en € par litre – prix du froment : 120 €/t**

Coût matières premières	0,3225
Recettes des co-produits	0,0680
Coûts de capital	0,0612
Coûts de transformation	0,2110
Coût total de production	0,5267

Tenant compte des paramètres retenus, la simulation dont les résultats sont reproduits sur le graphique suivant indique que, dans l'hypothèse d'une défiscalisation totale, la production d'éthanol à partir de froment est rentable – avant rémunération du capital – dès lors que le prix de la tonne donné est inférieur à 150-160 €/t. Notons cependant que le prix du blé peut, comme le montre le graphique du haut de la page suivante, connaître des prix plus élevés que le haut de la fourchette que nous avons retenue. Un tel épisode de hausse importante est in-

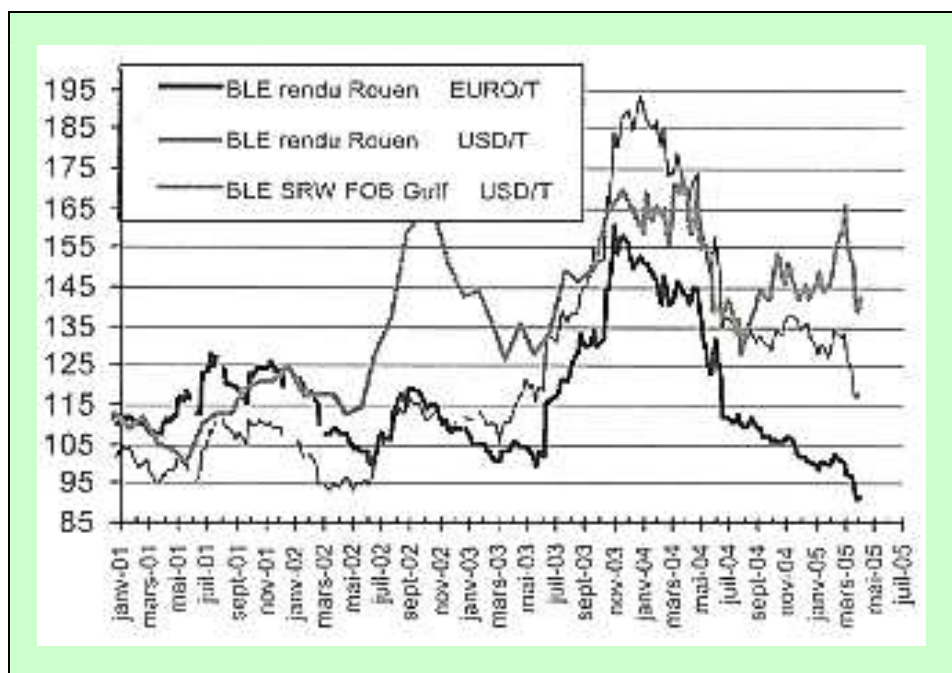
tervenu pendant la période 4^{ème} trimestre 2003 – 1^{er} semestre 2004 et est peut être annonciateur de prix du blé tendanciellement plus élevés. La filière éthanol froment n'est plus rentable à ce niveau de prix, même dans l'hypothèse d'une défiscalisation totale.

Prix comparés de l'essence et de l'éthanol froment en fonction du prix du froment - scénario de défiscalisation totale
Attention : coût de l'éthanol = coût en équivalent (énergétique) essence !



* Dans cette zone le prix de l'éthanol mesuré en équivalent essence est inférieur au prix de l'essence (moyenne pondérée essence normale / essence super - prix maxima au 09.07.05) sans la TVA et sans la marge de distribution. Au plus on va vers la gauche, au moins il faut donc défiscaliser.

Prix international du blé depuis le 1^{er} janvier 2001



Source : PROLEA

LA FILIÈRE COLZA

Pour la filière colza, nous avons repris comme point de comparaison les estimations de l'AIE.

Coûts de la filière colza – en € par litre de biodiesel

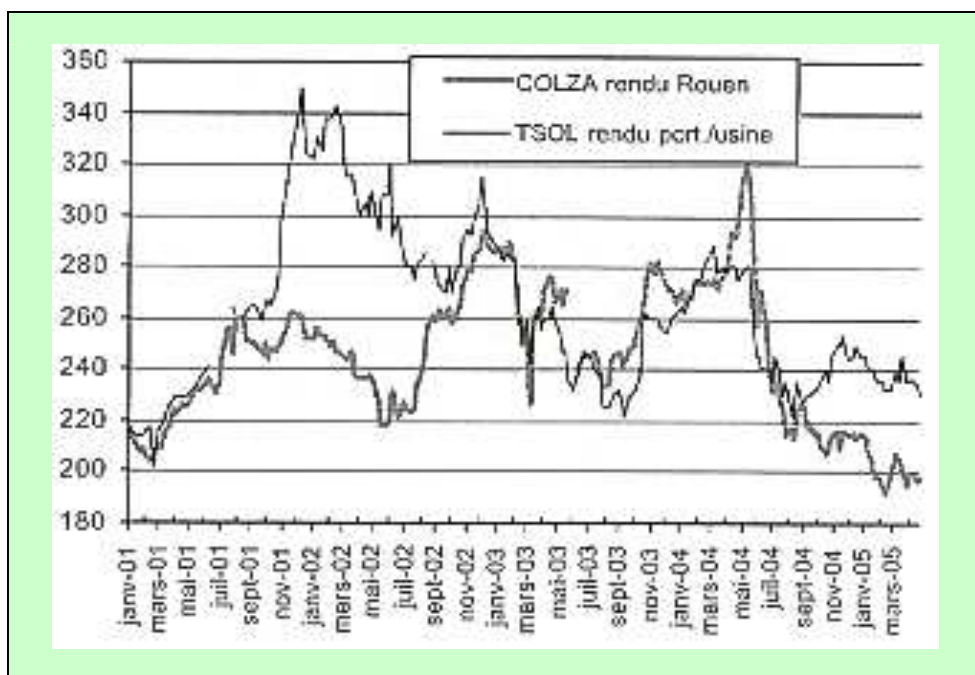
	AIE (1)	AIE (2)	AIE (3)	AIE (4)	Renewable Fuels
Coût de l'huile de colza	0,3048	0,6097	0,3048	0,6097	0,5066*
Coût de conversion	0,2032	0,2032	0,0508	0,0508	0,0995
Coût total de production	0,5080	0,8129	0,3556	0,6605	0,6061
Recette glycérine (moyenne**)	0,0750	0,0750	0,0750	0,0750	0,0750
Coût sans recette glycérine	0,5830	0,8879	0,4306	0,7355	0,6811

AIE (1) : unité de production de petite taille, prix du colza bas
 AIE (2) : unité de production de petite taille, prix du colza élevé
 AIE (3) : unité de production de grande taille, prix du colza bas
 AIE (4) : unité de production de grande taille, prix du colza élevé
 * il s'agit en fait du prix du colza en graines !
 * Source : IEA (moyenne entre \$0,05-\$0,10 par litre de biodiesel)

L'étude Renewable Fuels donne un coût total en phase avec les estimations de l'AIE si on tient compte du coût de l'huile de colza et de ce que Renewable Fuels considère plutôt des installations de production relativement grandes. On notera aussi l'extrême importance des recettes procurées par les ventes de glycérine – sous-produit de la transformation de l'huile en diester (transestérification) – dont beaucoup d'observateurs pensent que la valeur tendra vers pas grand chose si la production de diester devait se développer fortement.

Relativement plus « simple » techniquement que la filière éthanol, la filière colza est aussi, de ce fait, beaucoup plus dépendante du cours de la matière première, dont le prix connaît en outre d'importantes fluctuations comme le montre le graphique suivant.

Prix international des graines de colza depuis le 1^{er} janvier 2001

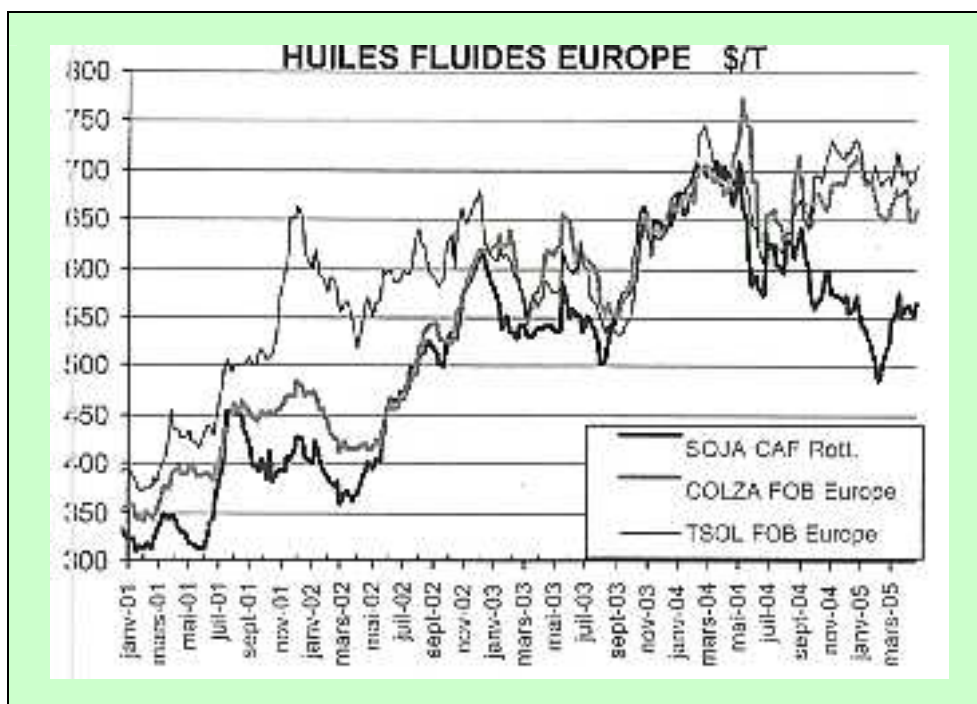


Source : PROLEA

Cependant, in fine, plus que le prix du colza en graines, c'est le prix de l'huile de colza (qui fait l'objet d'un commerce international important) qui va déterminer la rentabilité de la production de diester. Il y a bien sûr un lien économique entre les deux prix. Mais le prix de l'huile – dont les fluctuations au cours des dernières années sont reproduites ci-dessous – est aussi influencé par les variations du cours du pétrole, du dollar et des tourteaux et du contenu en huile. Pour

de multiples raisons (spéculations, coût du fret, etc.), les fluctuations relatives ne sont pas parfaitement – loin s’en faut – proportionnelles ni même toujours en phase.

Prix (en US \$!) international de l’huile de colza depuis le 1^{er} janvier 2001



Source : PROLEA

Les fluctuations des cours en US\$ observées au cours des dernières années, voir graphique ci-dessus, permettent de définir la fourchette suivante des prix de l’huile en € pour effectuer une étude de sensibilité :

- prix le plus bas : environ 350 US\$ la tonne, taux de change +/- 0,95 ⇒ +/- 360 €/t
 - prix le plus élevé : environ 750 US\$ la tonne, taux de change +/- 1,25 ⇒ +/- 600 €/t.
- Nous retiendrons donc l’intervalle de sensibilité de 350 à 600 €/t d’huile de colza.

Pour cette étude de sensibilité, nous retiendrons l’intervalle de coût de transformation de l’huile de colza en diester suivant : 0,0508 € par litre de diester produit pour les grandes installations et 0,2032 € par litre pour les petites installations et une moindre valorisation de la glycérine, augmentant le coût de production de 0,025 €/l. Le prix de référence du diesel que nous avons utilisé pour l’étude de sensibilité est donné dans le tableau suivant.

**Prix du diesel retenu comme prix de référence
(en € par litre – prix maxima au 16.07.05)**

Prix ex-raffinerie	0,392
Accises	0,365
Total	0,757

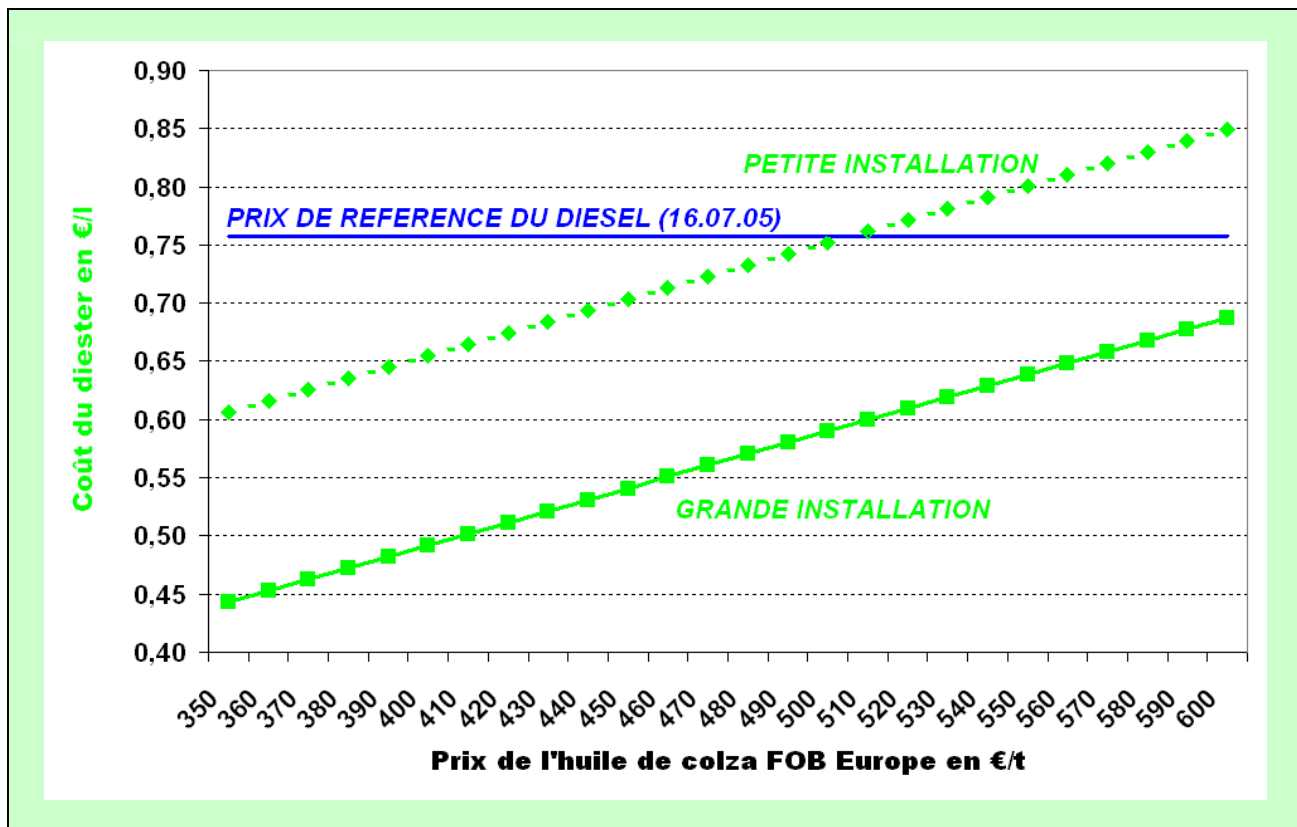
Source : Fédération Pétrolière de Belgique

Tenant compte des paramètres et hypothèses retenus, la simulation dont les résultats sont reproduits sur le graphique suivant indique que la production de diester à partir de d’huile de colza devient rentable – **avant rémunération du capital et dans l’hypothèse d’une défiscalisation totale** – dès lors que

- pour une petite installation d’estérification le prix de la tonne d’huile de colza (cotation internationale) est inférieure à 500 €/t, ce qui compte tenu du contenu en huile du colza et des coûts de trituration et de transport implique – dans des conditions normales – un prix du colza d’environ 200 € la tonne pour le producteur (ce qui est insuffisant, même si on tient compte des aides) ;

- pour une grande installation, le prix de la tonne d'huile reste inférieure à 600 €/t, maximum atteint au cours des dernières années.

**Prix comparés du diesel et du diester
en fonction du prix de l'huile de colza – scénario de défiscalisation totale
Attention : coût du diester = coût en équivalent (énergétique) diesel !**



La défiscalisation

On en sait (un peu) plus sur la défiscalisation envisagée en Belgique depuis la loi-programme du 11 juillet 2005 (Moniteur du 12 juillet 2005) dont le chapitre Ier du Titre V de cette loi est consacré aux biocarburants⁸. On peut dès lors se livrer à quelques considérations, micro- et macroéconomiques, pour alimenter le débat.

RÉDUCTIONS DES ACCISES ET (SUR)CÔÛTS DE PRODUCTION DES BIOCARBUANTS

S'y retrouver dans les évolutions récentes des accises sur les carburants n'est pas chose aisée : deux modifications structurelles à six mois de distance (loi-programme de décembre 2004 et celle de juillet 2005), hausses (et baisses pour le diesel) intermédiaires intervenues en 2005 et adaptation à la hausse des (futurs) taux de base pour compenser la (future) défiscalisation en faveur des biocarburants. Le tableau page suivante présente les informations nécessaires pour, espérons-nous, s'y retrouver.

⁸ Le lecteur intéressé trouvera le texte complet sur la défiscalisation des biocarburants à l'annexe 2.

Historique 01.01.2005 > ... des accises sur les carburants routiers (€/1000l à 15°)

	Droit d'accise	Droit d'accise spécial	Cotisation énergie	Total
Essence sans plomb > 98 octane				
- à haute teneur en soufre et en aromatiques				
Loi-programme du 27.12.04	245,4146	305,0150	28,6317	579,0613
<i>Maximum possible en 2005</i>	<i>245,4146</i>	<i>333,0150</i>	<i>28,6317</i>	<i>607,0613</i>
Loi-programme du 11.07.05	245,4146	367,6753	28,6317	641,7216
A la date du 13.08.05	245,4146	333,0150	28,6317	607,0613
- à faible teneur en soufre et aromatiques				
Loi-programme du 27.12.04	245,4146	290,1414	28,6317	564,1877
<i>Maximum possible en 2005</i>	<i>245,4146</i>	<i>318,1414</i>	<i>28,6317</i>	<i>592,1877</i>
Loi-programme du 11.07.05				
> Taux normaux	245,4146	352,9681	28,6317	627,0144
> Taux biocarburant	245,4146	311,5150	28,6317	585,5613
A la date du 13.08.05	245,4146	318,1414	28,6317	592,1877
Autre essence sans plomb				
Loi-programme du 27.12.04	245,4146	290,1414	28,6317	564,1877
<i>Maximum possible en 2005</i>	<i>245,4146</i>	<i>318,1414</i>	<i>28,6317</i>	<i>592,1877</i>
Loi-programme du 11.07.05				
> Taux normaux	245,4146	352,9681	28,6317	627,0144
> Taux biocarburant	245,4146	311,5150	28,6317	585,5613
A la date du 13.08.05	245,4146	318,1414	28,6317	592,1877
Gasoil				
- d'une teneur en poids de soufre excédant 50 mg/kg				
Loi-programme du 27.12.04	198,3148	134,5942	14,8736	347,7826
<i>Maximum possible en 2005</i>	<i>198,3148</i>	<i>169,5942</i>	<i>14,8736</i>	<i>382,7826</i>
Loi-programme du 11.07.05	198,3148	177,9987	14,8736	391,1871
A la date du 13.08.05	198,3148	164,8942	14,8736	378,0826
- d'une teneur en poids de soufre n'excédant pas 50 mg/kg				
Loi-programme du 27.12.04	198,3148	119,7206	14,8736	332,9090
<i>Maximum possible en 2005</i>	<i>198,3148</i>	<i>154,7206</i>	<i>14,8736</i>	<i>367,909</i>
Loi-programme du 11.07.05				
> Taux normaux	198,3148	163,1488	14,8736	376,3372
> Taux biocarburant	198,3148	154,1350	14,8736	367,3234
A la date du 13.08.05	198,3148	150,0206	14,8736	363,2090
Huile de colza utilisée comme carburant (LP 11.07.05)				0,0000

Sources : Ministère des Finances et Moniteur belge

Ce tableau appelle un certain nombre de commentaires :

- pour les taux normaux, la loi-programme de décembre 2004 a prévu que, au cours de chaque année d'ici 2007, les taux de base pouvaient augmenter de maximum 28 €/kl, an pour l'essence et de 35 €/kl,an pour le gasoil ; ceci explique la présence d'une ligne *Maximum possible en 2005* ;

- l'Arrêté royal du 24 mai 2005 (Moniteur du 1^{er} juin 2005) concrétise la disposition de la loi-programme de décembre 2004 qui prévoit la possibilité de réduire le droit d'accise spécial ; cet AR a été appliqué trois fois à ce jour (18.08.05), et uniquement pour le gasoil ;
- pour les taux biocarburants,
 - > le taux essence repris dans la loi-programme concerne l'essence complétée à concurrence d'au moins 7% vol de bioéthanol
 - > le taux gasoil concerne lui le gasoil complété à concurrence d'au moins 2,45% vol d'EMAG (= esters méthyliques d'acide gras) ;
- on notera que le législateur a, dans le cadre de sa politique de promotion fiscale des biocarburants, souhaité privilégier, pour l'essentiel, les carburants "propres" ;
- les taux décidés par la loi-programme du 11 juillet 2005 (taux normaux et taux biocarburant) seront mis en place par un arrêté délibéré en Conseil des Ministres ; notons à cet égard que les taux qui seront finalement d'application pour les biocarburants ne seront probablement pas ceux repris dans la loi-programme ; en effet, comme le précise l'exposé des motifs du projet de loi-programme (31 mai 2005), « l'exonération ou la réduction de taxation appliquées par les Etats membres sont modulées en fonction de l'évolution des cours des matières premières, afin que lesdites réductions ne conduisent pas à une surcompensation des produits susvisés » (pp.22-23) ; c'est pourquoi l'article 33 de la loi-programme de juillet 2005 prévoit que « Le Roi fixe par arrêté délibéré en Conseil des ministres les conditions d'application du taux d'accise (spécial applicable aux biocarburants) » ;
- le gouvernement a été accusé par l'opposition de profiter de la mise en route de la défiscalisation des biocarburants pour augmenter plus que nécessaire (par rapport à un objectif de neutralité budgétaire) les taux normaux⁹ ; il est difficile, à ce stade, de trancher dans cette (peu bruyante) polémique, comme il est tout aussi difficile de déterminer comment vont s'articuler les diverses dispositions (hausses annuelles, cliquets, prix maxima) relatives au droit d'accise spécial.

Tout ceci précisé, examinons maintenant de plus près la réduction fiscale envisagée pour les carburants fossiles mélangés avec des biocarburants.

L'exposé des motifs du projet de loi-programme du 31 mai 2005 justifie ainsi les réductions envisagées. « (Tenant compte de) l'interdiction de surcompensation mentionnée à l'article 16 de la directive 2003/96, le taux d'accise à appliquer aux carburants d'origine entièrement fossile a été obtenu en ajoutant au taux du droit d'accise spécial relatif aux biocarburants, un montant égal au coût supplémentaire de production, à valeur énergétique égale, du biocarburant par rapport au carburant d'origine fossile ; en l'occurrence, pour l'essence, ce surcoût est de 41,4531 EUR par 1000 litres pour un mélange à 7% vol, et, pour le gasoil, de 9,0138 EUR par 1000 litres, pour un mélange à 2,45% vol. » (p.23). Traduction : si nous comparons le coût de production d'un litre d'essence non mélangée à celui d'un litre d'essence contenant 7% vol d'éthanol, le second est supposé coûter 0,041 €/l en plus.

On ne connaît pas le détail des calculs qui ont conduit le gouvernement à proposer les réductions fiscales pour l'essence contenues dans la loi-programme. Cependant :

1. On sait qu'un des scénarios envisagés (ou en tout cas possibles) est de mettre sur le marché de l'essence incorporant de l'éthanol à concurrence de +/- 50 litres par incorporation directe et +/- 20 litres par incorporation indirecte via de l'ETBE. C'est en quelque sorte un scénario intermédiaire entre un scénario d'incorporation de 15% d'ETBE (avec implicitement 7% de bioéthanol) et un scénario d'incorporation directe de 7% d'éthanol (pas autorisé pour le moment mais techniquement tout à fait possible).
2. On peut penser que 0,30 €/l est plus ou moins un prix représentatif pour l'essence raffinée qui a servi de référence pendant la période de « négociation » politico-industrielle.

⁹ « M. Devlies (député CD&V) maintient que le ministre se sert de la réduction du droit d'accise sur les biocarburants pour procéder à une nouvelle augmentation d'impôts. Il estime qu'il ne s'agit manifestement pas d'une opération neutre sur le plan budgétaire. » (Rapport de la discussion en Commission des finances, p.20)

Tenant compte de ces paramètres, voici les données qui permettent de comprendre les réductions fiscales qui seraient appliquées à l'essence mélangée contenant 7% vol de bioéthanol.

Comprendre les réductions fiscales – l'essence - €/1000l

Scénario « intermédiaire » : ETBE = 4,3% - Ethanol en direct = 5%

Rappel accises (€)	Total	dont spécial
Taux normaux	627,0144	352,9681
Taux biocarburants	585,5613	311,5150



Surcoût implicite de l'incorporation de l'éthanol* =	0,592 €/l
---	------------------

Quantités physiques (litres)	Essence non mélangée	Essence mélangée 7%
Ethanol direct	-	50
ETBE	-	43
Essence fossile	1000	907
Carburant	1000	1000

Coûts de production + accises	
Hypothèses : Coût de l'essence fossile =	0,300 €/l
Coût maximum de la filière l'éthanol** =	0,892 €/l



	Essence non mélangée	Essence mélangée 7%
Coûts de production		
> Essence fossile	300,0000	279,0000
> Filière éthanol	-	62,4531
> Carburant	300,0000	341,4531
Accises carburant	627,0144	585,5613
Coût total carburant	927,0144	927,0144

* il s'agit de la réduction des accises totale nécessaire pour compenser l'ensemble des coûts liés à l'incorporation de 70 l d'éthanol, 50 directement et 20 via l'incorporation d'ETBE

** cette « marge de manœuvre » économique est supposée couvrir le surcoût de l'éthanol et l'ensemble des autres coûts économiques liés à la mise en route d'une filière éthanol (investissements nouveaux par exemple), qu'elle passe ou non par l'incorporation d'ETBE

Insistons bien sur le sens de la valeur de 0,892 €/l. Il ne s'agit pas du prix qui sera donné aux producteurs d'éthanol, dans la mesure où il y aura d'autres (sur)coûts économiques à couvrir, par exemple pour produire de l'ETBE. Ceci dit, cette « marge de manœuvre » économique est largement suffisante pour garantir un prix de l'éthanol qui se situe dans le haut de la fourchette dans nos études de sensibilité (cet ordre de grandeur est proche de coûts de production qui ont été acceptés par la Commission européenne dans les demandes de défiscalisation introduits par d'autres pays). La question centrale qui se pose ici est de savoir comment va se répartir cette « carotte » économique entre les différents acteurs de la filière (producteurs de la matière première agricole, transformateurs, firmes pétrolière (y compris, le cas échéant, les producteurs d'ETBE) et, pourquoi pas, le consommateur de biocarburants. Il est trop tôt pour y répondre. Mais les pouvoirs publics devront éviter la domination d'un seul acteur qui prendrait une trop grande part de l'aide publique (généreusement calculée).

Un tableau semblable peut être élaboré pour le biodiesel. Ici non plus, on ne connaît pas le détail des calculs qui ont conduit le gouvernement à proposer les réductions fiscales contenues dans la loi-programme. Mais si on considère que 0,30 €/l est un coût de production du diesel fossile également représentatif des coûts qui ont servi à calculer les taux d'accises applicables au diesel mélangé, on en déduit logiquement que le coût de production du biodiesel pris en compte (implicitement) par le gouvernement est d'environ 0,67 €/l. Ce coût apparaît – si l'on s'en réfère à nos études de sensibilité – comme relativement « généreux » (au sens de calculé « large »). En effet, un coût de production d'environ 0,67 €/l de biodiesel correspond, dans le cas d'une installation de production de grande taille, à un prix de l'huile de colza historiquement élevé, à savoir environ 630 €/tonne (ou environ 250 €/tonne de graines de colza). En avril 2005, on en était à environ 500 €/tonne pour l'huile. Certes, ici aussi il s'agit d'un maximum possible ; mais il est évident que les autres (sur)coûts à prévoir sont moins importants que dans la filière éthanol.

Comprendre les réductions fiscales – le diesel – €/1000l

Rappel accises (€)	Total	dont spécial
Taux normaux	376,3372	163,1488
Taux biocarburants	367,3234	154,1350



Surcoût implicite du diester* =	0,368 €/l
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Quantités physiques (litres)	Diesel non mélangé	Diesel mélangé 2,45%
Diesel fossile	1000	975,5
Diester	-	24,5
Carburant mélangé	1000	1000

Coûts de production + accises		
Hypothèses :	Coût du Diesel fossile =	0,300 €/l
	Coût (implicite) de la filière diester =	0,668 €/l



	Diesel non mélangé	Diesel mélangé 2,45 %
Coûts de production		
> Diesel fossile	300,0000	292,6500
> Filière diester	-	16,3638
> Carburant	300,0000	309,0138
Accises carburant	376,3372	367,3234
Coût total carburant	676,3372	676,3372

* obtenu en divisant la réduction d'accises par 24,5 litres

Pour conclure cette section, on fera encore remarquer que la Commission semble assez « généreuse » (il n'y a de pire aveugle que celui qui ne veut voir ?) dans les coûts économiques de production qu'elle accepte pour autoriser les pays concernés à mettre en œuvre une réduction des accises. A titre illustratif, voici deux calculs fournis respectivement par l'Irlande et la Hongrie et acceptés comme tels.

Deux exemples de coûts de production de biocarburants - €/l

	Irlande		Hongrie	
	Bioéthanol	Biodiesel	ETBE	Biodiesel
Matières premières	0,320	0,700	0,409	0,675
Coûts de production	0,350	0,320	0,044	0,117
Coûts logistiques	0,120	0,110	0,124	0,100
Valorisation de co-produits	0,050	0,330		0,272
Total (Hors taxes)	0,740	0,800	0,577	0,620

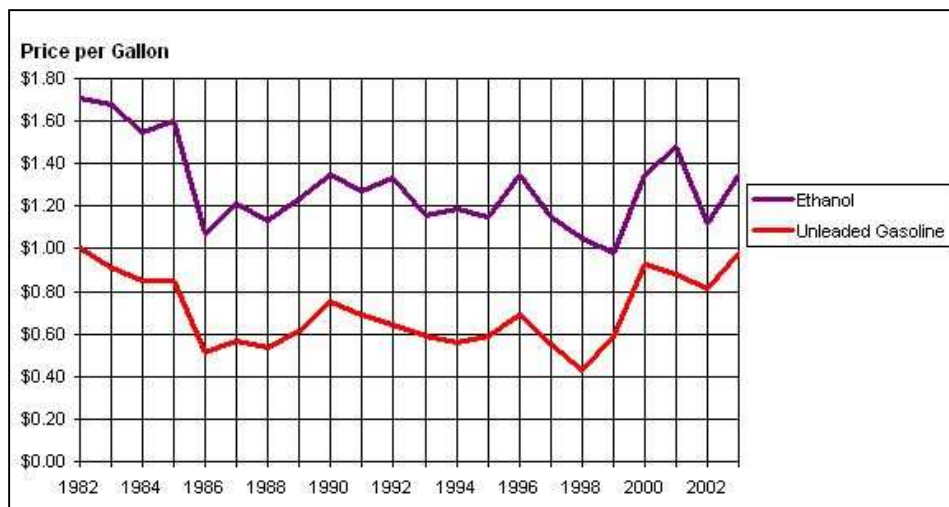
NB : Ce serait – politiquement et économiquement – intéressant de comparer les structures de coûts pour les pays pour lesquels l'Europe a accordé des autorisations de réduction des accises. Si des différences sont explicables (on peut supposer que les rendements agricoles ne sont pas partout les mêmes), d'autres – on pense par exemple à des coûts de production liés à des unités très capitalistiques – le sont moins.

SENSIBILITÉ DES RÉDUCTIONS FISCALES AUX FLUCTUATIONS DES PRIX PETROLIERS

En toute logique on doit s'attendre à ce que le subsidie fiscal s'ajuste à la baisse en cas de hausse des prix pétroliers. Mais cette évidence n'est peut-être pas aussi évidente que cela.

Envisageons d'abord le cas de l'éthanol. Comme le montre le graphique suivant (voir haut de la page suivante), il y a, en tout cas aux Etats-Unis, une évidente corrélation entre les évolutions des prix de l'éthanol et de l'essence.

**Evolutions des prix de l'éthanol et de l'essence sans plomb
Omaha – Etats-Unis – 1982/2003**



Source : R.J. BROWN (voir références complètes dans la bibliographie)

Cette corrélation, si elle devait, à l'avenir, s'observer en Europe, pose deux questions :

- le subsidie fiscal ne risque-t-il pas d'être « privatisé » tant qu'il n'y aurait pas de véritable concurrence entre les fournisseurs de biocarburants ou, ce qui revient quasiment au même, tant que le prix de l'éthanol effectivement incorporé restera supérieur au coût ex-raffinerie du carburant fossile ? ;
- à qui profiterait cette éventuelle « manne », alimentée par des subsides publics ? aux producteurs de matières premières ou aux transformateurs ?

Pour visualiser un peu mieux les ordres de grandeur (possibles), le tableau ci-après présente deux simulations. La première calcule l'évolution du subsidie fiscal nécessaire en supposant que les (sur)coûts de la filière éthanol ne « bougent » pas. La seconde fait l'hypothèse d'un lien positif entre le prix de l'essence fossile et les (sur)coûts de la filière éthanol (le coût de la filière éthanol est supposé augmenter à concurrence de la moitié de la hausse du prix de

l'essence ex-raffinerie). On voit que, fort logiquement, dans le cas de la première hypothèse le subside fiscal diminue d'environ 1/3 contre seulement 15% environ dans le second scénario. **NB** : un prix de l'essence ex-raffinerie de 0,4 €/l est proche de celui observé début août 2005.

**Sensibilité du subside fiscal aux fluctuations du prix de l'essence ex-raffinerie
Essence 7% vol éthanol - Deux scénarios**

	Scénario 1			Scénario 2		
Prix de l'essence ex-raffinerie (€/l)	0,300	0,400	0,500	0,300	0,400	0,500
Coût de la filière éthanol (€/l)	0,892	0,892	0,892	0,892	0,942	0,992



Accises taux réduit (€/1000 l)	585,56	592,56	599,56	585,56	589,06	592,56
Diminution* accises (€/1000 l)	41,45	34,45	27,45	41,45	37,95	34,45

* par rapport au taux applicable à l'essence non mélangée

L'évolution possible du prix du diester est tout aussi soumise à de multiples influences économiques qui peuvent jouer, dans des sens variés : coût des autres huiles, prix de valorisation des co-produits, etc. Ici aussi, il ne nous est pas possible de trancher entre ces diverses possibilités et interprétations. **Pour visualiser un peu mieux les ordres de grandeur (possibles), le tableau ci-après présente deux simulations.** La première calcule l'évolution du subside fiscal nécessaire en supposant que le prix du diester ne « bouge » pas. La seconde fait l'hypothèse d'un lien positif entre le prix de diesel fossile et celui du diester (le prix du diester est supposé augmenter à concurrence de la moitié de la hausse du prix du diesel ex-raffinerie). On voit que, fort logiquement, dans le cas de la première hypothèse le subside fiscal diminue sensiblement tandis que dans l'autre cas il diminue beaucoup moins.

NB : un prix du diesel ex-raffinerie de 0,4 €/l est proche de celui observé début août 2005.

**Sensibilité du subside fiscal aux fluctuations du prix du diesel ex-raffinerie
Diesel 2,45% EMAG - Deux scénarios**

	Scénario 1			Scénario 2		
Prix de du diesel ex-raffinerie (€/l)	0,300	0,400	0,500	0,300	0,400	0,500
Coût de la filière diester (€/l)	0,668	0,668	0,668	0,668	0,718	0,768



Accises taux réduit (€/1000 l)	367,32	369,77	372,22	367,32	368,55	369,77
Diminution* accises (€/1000 l)	9,01	6,56	4,11	9,01	7,79	6,56

* par rapport au taux applicable au diesel non mélangé

LE COÛT IMPLICITE DES RÉDUCTIONS DES ÉMISSIONS DE CO₂

Un des objectifs de l'incorporation de biocarburants est de réduire globalement les émissions de CO₂. Mais cette diminution ne peut pas être obtenue « gratuitement ». Nous avons détaillé et explicité le subside fiscal nécessaire.

La réduction des accises introduite par la loi-programme de juillet 2005 doit en effet être considérée comme une aide (d'Etat). Doublement.

D'abord au sens de la législation européenne. C'est la raison pour laquelle le (actuellement la) Commissaire européen en charge de la concurrence doit donner son approbation aux demandes d'adaptation des accises introduites par les Etats membres.

Ensuite d'un point de vue économique. Certes, pour un non-économiste, il est difficile de considérer les réductions d'accises comme une aide, dans la mesure où il y a, simultanément, adaptation des taux normaux pour assurer la neutralité budgétaire. Pour un économiste il s'agit pourtant bien d'une aide publique, dans la mesure où il y a un coût d'opportunité. L'augmentation des recettes découlant de la hausse des taux d'accises normaux pourrait être

affectée à d'autres objectifs (y compris d'ailleurs, nous y reviendrons ci-après, à d'autres moyens de réduire les émissions de CO₂).

La hauteur des réductions d'accises dépend de plusieurs paramètres mais, essentiellement, de la variation des prix du pétrole et de la plus ou moins grande corrélation entre le prix du pétrole et les coûts des biocarburants (y compris de l'ETBE fabriqué à partir de bioéthanol). Nous avons reproduit à la section précédente les résultats de calculs de sensibilité déterminant la hauteur de la réduction.

Mais il nous faut ici introduire un 3^{ème} paramètre, dans la mesure où l'incorporation de biocarburants dans les carburants fossiles diminue le contenu énergétique (à volume identique). Nous avons pris comme hypothèse générale que la diminution du contenu énergétique conduisait à une augmentation des volumes vendus à due concurrence. Dans ce cas, les recettes d'accises diminuent évidemment moins dans la mesure où les diminutions des taux d'accises sont en partie compensées, sur le plan budgétaire, par une hausse des volumes vendus.

Quel est dès lors le coût budgétaire ex-ante des réductions des émissions de CO₂ découlant de l'introduction de biocarburants ? Pour répondre à cette question, il faut :

- déterminer les réductions des accises dans divers scénarios (ce que nous avons fait ci-dessus) ;
- déterminer les réductions des émissions de CO₂ ; ici aussi il y a malheureusement une grande marge d'incertitude. Le tableau ci-après donne les coefficients techniques que nous avons retenus pour effectuer nos calculs. Ils sont en phase avec le rapport de l'IDD sur les dimensions environnementales des biocarburants¹⁰.

Hypothèses quant aux émissions de CO₂ – kg CO_{2eq}/GJ
Les valeurs sont basées sur les cycles de vie

	Limite inférieure	Limite supérieure
Essence	85,8	
Diesel	87,6	
Ethanol céréales	43,3	66,2
Ethanol betteraves	35,9	53,1
Diester	20,0	41,0

Sources : CONCAWE, IFP, LUSSIS

Pour réduire l'ampleur de la fourchette nous avons, dans la suite des travaux, considéré la marge 25-75 des intervalles tels qu'ils sont donnés dans ce tableau et supposé que l'éthanol céréales ne représenterait jamais, en Belgique, plus de la moitié de l'éthanol produit.

En mettant toutes ces données et hypothèses ensemble, on obtient les résultats suivants (voir tableau haut de la page suivante).

Deux conclusions sautent aux yeux :

1. Les réductions des émissions de CO₂ qui peuvent être obtenues par l'incorporation de biocarburants le sont à des coûts budgétaires élevés ! A titre de mise en perspective, il ne s'agit pas à proprement parler d'une comparaison, rappelons que le cours de clôture d'un quota d'une tonne de CO₂ était de 22,62 € le 22.08.05 sur Powernext Carbon (voir 4 pour une brève présentation de ce marché). Il serait donc, d'une certaine manière, plus intéressant pour l'Etat belge – si l'objectif est de réduire les émissions de CO₂ – d'augmenter les taux normaux des accises, de consacrer une partie de ces recettes à acheter des quotas CO₂ et de consacrer le reste des moyens budgétaires dégagés à soutenir d'autres politiques de réduction des émissions de CO₂, par exemple via des subsides fiscaux et, si nécessaire, de garantir des revenus suffisants aux agriculteurs concernés.
2. Les réductions de CO₂ obtenues via la filière Diester apparaissent nettement moins coûteuses sur le plan budgétaire que celles obtenues via la filière éthanol !

¹⁰ Benoît LUSSIS (voir référence complète dans la bibliographie)

Coût budgétaire brut par tonne de CO₂ évitée

	Bas de la fourchette d'estimation	Haut de la fourchette d'estimation
Essence + bioéthanol	170 €/tonne	500 €/tonne
Diesel + diester	70 €/tonne	200 €/tonne
Hypothèse commune	➤ Les volumes vendus augmentent à due concurrence de la baisse du contenu énergétique	
Autres hypothèses propres à chaque scénario	➤ Limites inférieures pour les émissions de CO ₂ de la production des biocarburants ➤ Prix du pétrole élevé* ➤ Peu d'influence du prix du pétrole sur les coûts des biocarburants	➤ Limites supérieures pour les émissions de CO ₂ de la production des biocarburants ➤ Prix du pétrole faible** et / ou prix élevé* avec influence « positive » sur les coûts des biocarburants

NB : montants arrondis à la dizaine

* prix ex-raffinerie de l'ordre de 0,5 €/l ** prix ex-raffinerie de l'ordre de 0,3 €/l

Précisons d'abord qu'il s'agit d'un coût budgétaire brut (ex-ante), à savoir hors retombées budgétaires, positives (ex : développement d'activités nouvelles) ou négatives (ex : moindre consommation de carburants routiers suite à la hausse des accises). Ensuite, il faudrait encore ajouter les autres aides publiques au calcul, ce qui rendrait le coût budgétaire à la tonne évitée encore plus élevé. Nous avons en tête en particulier les aides suivantes : aides régionales à l'investissement, aides fédérales fiscales à l'investissement et aides (> revenus) aux agriculteurs. Enfin, il faudrait aussi pouvoir évaluer les coûts privés liés à l'utilisation de biocarburants, par exemple l'éventuelle consommation – à kilométrage inchangé – supplémentaire découlant d'une baisse du contenu énergétique des carburants mis sur le marché.

LES MASSES BUDGÉTAIRES EN JEU

Pour terminer le chapitre consacré à la défiscalisation, le tableau suivant évalue le coût budgétaire total (ex-ante) de la réduction des accises sur base de deux scénarios. Le tableau a été calculé pour 2008, année où les taux d'incorporation de bioéthanol et de diester atteindront les maxima (actuellement) prévus dans la loi-programme de juillet 2005. **Nous avons supposé que tous les carburants vendus en Belgique devenaient des biocarburants.**

**Coût budgétaire total (ex-ante) des réductions d'accises
2008 – millions €**

	Bas de la fourchette d'estimation	Haut de la fourchette d'estimation
Essence	33,1	71,2
Diesel	51,4	126,3
Total	84,5	197,5
Hypothèses communes	➤ Consommation d'essence diminue de 4,9% entre 2003 et 2008 ➤ Consommation de diesel augmente de 9,3% entre 2003 et 2008 ➤ Toutes les essences se voient incorporer 7% d'éthanol ➤ Tous les diesels se voient incorporer 5% de diester ➤ Les volumes vendus augmentent pour compenser la baisse du contenu énergétique	
Principales hypothèses par scénario	➤ Prix du pétrole élevé* ➤ Peu d'influence du prix du pétrole sur les coûts des biocarburants	➤ Prix du pétrole faible** et / ou prix élevé* avec influence « positive » sur les coûts des biocarburants

* prix ex-raffinerie de l'ordre de 0,5 €/l ** prix ex-raffinerie de l'ordre de 0,3 €/l

Conclusions, enjeux politiques et économiques, recommandations

CONCLUSIONS

Les données et analyses présentées ci-dessus nous amènent à mettre en évidence six conclusions essentielles :

- les réductions d'accises prévues par la loi-programme de juillet 2005 apparaissent (très) « généreuses » (au sens de « calculées large ») au vu des éléments d'appréciation économique que nous avons pu rassembler et décortiquer ;
- une des questions centrales est évidemment de savoir à quoi et à qui va profiter cette « carotte » ... pour autant qu'elle soit utilisée (on notera en effet que le gouvernement belge n'a pas choisi d'obligation légale d'incorporation de biocarburants) ;
- dans l'hypothèse où cet incitant économique devait se révéler suffisant - malgré les tensions liées à des enjeux industriels tendus et à des intérêts régionaux au minimum différents - pour mettre sur le marché des biocarburants, encore faudra-t-il veiller à des retombées économiques équilibrées entre les acteurs de la filière ; ce n'est pas garanti à ce stade-ci des décisions et discussions ;
- le coût budgétaire (ex-ante) par tonne de CO₂ évitée est, même dans le cas d'hypothèses favorables, particulièrement élevé ;
- le coût budgétaire (ex-ante) par tonne de CO₂ évitée est néanmoins significativement plus faible pour la filière diester que pour la filière éthanol ; le problème est qu'en Belgique on est plus performant pour produire du froment ou des betteraves que du colza ! ;
- il n'est enfin pas du tout évident que les subsides fiscaux seront véritablement allégés en cas de hausse des cours pétroliers.

Ceci dit, on ne rappellera jamais assez que le dossier baigne dans de multiples incertitudes portant sur :

- les cours pétroliers à venir ;
- les percées technologiques (notamment l'amélioration des rendements agricoles ou d'autres modes de production de biocarburants, comme par exemple la filière cellulosique) ;
- le lien entre prix pétroliers et cours des matières premières ;
- l'évolution institutionnelle et économique du marché sucrier ;
- ...

Les conclusions tirées ci-dessus, de même que les estimations chiffrées, devront donc bien évidemment être nuancées, voire adaptées, en fonction des évolutions du contexte politique, industriel et économique.

ENJEUX POLITIQUES ET ECONOMIQUES ET RECOMMANDATIONS

Les analyses qui précèdent, mais aussi les informations glanées dans la littérature, nous amènent à prolonger les conclusions avec la mise en valeur de quelques enjeux et la formulation de quelques recommandations (dont on a bien conscience que leur éventuelle concrétisation devrait passer, le plus souvent, par un accord européen).

Exiger la transparence des informations et études

Le moins qu'on puisse dire est que l'information stratégique dans le dossier biocarburants est lacunaire, en tout cas l'information publique. Si on peut le comprendre - encore que... - pour les dossiers à proprement parler industriels, on ne peut l'accepter pour les données qui expliquent, explicitent ou justifient les choix politiques, fédéraux comme régionaux. Les masses budgétaires en cause sont importantes, les risques industriels le sont tout autant, comme les enjeux écologiques. Un minimum de débat public et contradictoire est donc nécessaire ; celui-ci exige des informations de qualité et suffisantes. Ce n'est pas le cas pour le moment. Le débat public ne peut être l'otage des seuls lobbies agricoles et industriels concernés. Il faut exiger cette information.

Clarifier et élargir le débat

On peut considérer que l'incorporation des biocarburants poursuit trois objectifs principaux : 1° diminuer la dépendance énergétique ; 2° diminuer les émissions de CO₂ ; 3° aider le monde agricole. Pour ce qui est des deux premiers objectifs, qui se recouvrent largement, les données et analyses de l'IDD donnent à penser qu'il y a probablement beaucoup d'autres manières, plus efficaces et moins coûteuses d'y arriver. Comme d'habitude, en Belgique en particulier, on a réussi à réduire à l'extrême le débat. En fait la question politique a été réduite à sa plus simple expression : « comment produire des biocarburants à partir des préoccupations agricoles ? ». Les intérêts du monde agricole sont légitimes. Mais il existe certainement d'autres possibilités pour rencontrer de manière plus efficace, plus efficiente, plus sociale, les objectifs poursuivis (moindre dépendance énergétique, moins d'émissions de GES, garantir la survie économique et sociale d'une partie du monde agricole). Ces perspectives font l'objet d'un schéma reproduit à la page suivante.

Il faut que des études complémentaires à la nôtre essaient de chiffrer des alternatives aux (seuls) biocarburants pour – au minimum – exploiter au mieux la biomasse. On notera à cet égard, à titre d'illustration, que la biomasse peut aussi servir à alimenter la (future) filière "hydrogène". Or, il y a ici concurrence entre usages alternatifs. Certains produits incorporés comme biocarburants (éthanol, méthanol) peuvent en effet servir également comme vecteur énergétique de base pour la filière "pile à combustible" ce qui permet d'éviter le stockage, coûteux et difficile, de l'hydrogène. Ne serait-ce pas un meilleur choix stratégique de "renoncer" aux biocarburants concernés pour sauter une étape et commencer à mettre en place une filière hydrogène ?

Réfléchir à l'allocation de la biomasse et donc des terres

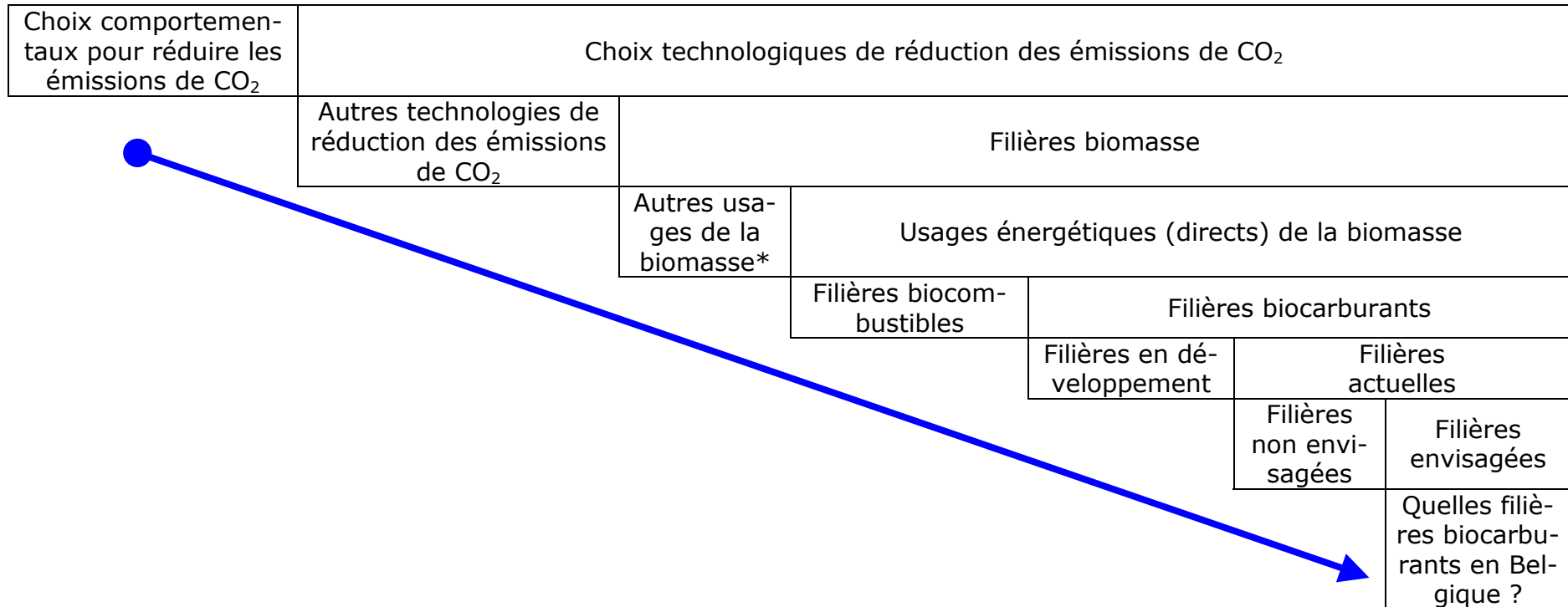
On a vu apparaître, en Wallonie, un premier conflit dans l'utilisation de la biomasse. Le conflit entre les fabricants d'agglomérés et les producteurs de pellets pour "profiter" des déchets des scieries n'est pas anecdotique. A notre avis il laisse entrevoir d'autres conflits qui ne pourront qu'être exacerbés par des prix pétroliers durablement élevés, voire en hausse tendancielle, et par l'aboutissement de recherches technologiques et des projets industriels menés à bien par des grands groupes. Pour le moment, et encore pour un bon bout de temps, on doit craindre qu'ici aussi cette concurrence sera rude, entre pays, entre filières, entre groupes industriels. Sans orientations politiques nouvelles, les écologistes pourraient bientôt regretter de voir leurs souhaits (chimie verte, bois-énergie...) se concrétiser aussi vite mais dans un certain désordre. Concurrence rude à la fois parce que les pouvoirs publics – à aucun niveau de pouvoir – ne se sont vraiment saisis de cette question et parce que les signaux prix sont probablement insuffisants ou inadéquats, surtout dans un contexte de mondialisation non maîtrisée. Il faut construire les bases d'un débat sur cette question, y compris en Région wallonne, avec les ministres et administrations concernés. On notera, d'une manière générale, que d'autres techniques d'utilisation de la biomasse à des fins énergétiques – directes (biocombustibles) ou indirectes (par exemple : chimie verte) semblent avoir un meilleur rendement énergétique global et, dans certains cas, devoir mobiliser moins de ressources publiques pour émerger.

Les biocarburants : la méthode choisie est-elle la bonne ?

Comme souvent en Belgique, les orientations politiques choisies en matière de biocarburants ont évité toute mesure coercitive et essaient de faire plaisir à tout le monde. Ce n'est malheureusement pas toujours possible. Il faut dire que le contexte européen n'est pas très favorable. On essaie de gagner du temps d'ici le moment où il faudra bien relever deux défis : harmoniser au niveau européen et rencontrer les exigences des pays hors UE producteurs de biocarburants compétitifs. On ferme les yeux sur l'importance des défiscalisations demandées par les uns et les autres, et on les accorde donc. Peut-être, on verra à l'expérience, fallait-il lancer la machine. Mais il faut – pouvoirs publics, industriels, agriculteurs, société civile – réfléchir à la suite.

... suite du texte p.26

De l'art de simplifier les débats à l'extrême



* Exemple : production de lin se substituant à des fibres synthétiques

Ce schéma a été construit sur base de l'idée simple qu'il est parfois bon de (re)situer une problématique dans son contexte (large). Il ne s'agit pas de nier l'intérêt d'un débat plus ou moins approfondi sur les biocarburants. Mais, à coût budgétaire et / ou économique identique, d'autres possibilités s'offrent déjà ou seront accessibles à courte échéance pour rencontrer de manière plus efficace, plus efficiente, plus sociale les objectifs poursuivis (moins dépendance énergétique, moins d'émissions de GES, garantir la survie économique et sociale d'une partie du monde agricole). On notera que deux autres (méta)choix interfèrent avec ceux schématisés ci-dessus :

- la concurrence potentiellement montante entre les usages alimentaires et les usages non alimentaires de la biomasse
- la compétition entre la biomasse locale et la biomasse étrangère.

Dans la mesure où le choix politique de soutenir de manière prioritaire les biocarburants dans l'utilisation de la biomasse à des fins énergétiques serait confirmé, il nous semblerait urgent de :

- introduire une obligation d'incorporation couplée avec un système de certificats verts ; la mise en place d'un tel système – qui s'inspire fortement du système des certificats verts instauré en Région wallonne en matière d'électricité verte – devrait être mis en place au niveau européen ;
- se donner des normes qui favorisent les filières les plus intéressantes sur le plan environnemental (il n'est pas sûr, par exemple, que la filière ETBE pour incorporer du bioéthanol soit le meilleur choix environnemental) ;
- s'assurer que les agriculteurs recevront leur juste part d'un gâteau dont la levure aura été fournie par la collectivité ;
- soutenir plus clairement et plus fermement les filières courtes et l'utilisation de biocarburants 100% dans les flottes captives, très nombreuses.

Ethanol importé ou produit localement ?

Des deux côtés de l'Atlantique on fait ce qu'il faut pour essayer de soutenir des biocarburants produits localement. Comme le dit le Président Bon DINNEEN de la Renewable Fuels Association (Etats-Unis), « *Countries should be allowed to incentivize local ethanol production without subsidizing foreign producers or creating unnecessary trade barriers* » (World Biofuels 2005 Conference in Seville). En Europe, les discours et intentions des industriels concernés comme des décideurs politiques sont fort semblables.

Mais cela va-t-il marcher (longtemps) ? Des évolutions économiques, politiques... récentes permettent d'en douter, certainement pour les Etats-Unis, plus que probablement aussi pour l'Europe.

En ce qui concerne les Etats-Unis, voici l'analyse du Département de l'Agriculture : « *Although the cost of corn, the main feedstock for ethanol, has been rising sharply, strong ethanol prices and rising co-product prices have kept pace or in many cases increased more. Prices of co-products such as corn gluten feed and meal, corn oil, and distillers' grains, have been lifted by the soaring market for protein meal and vegetable oil, as well as higher grain prices. This has kept economic incentives for ethanol producers favorable. High ethanol prices and the increasing size of the U.S. market have recently spurred increased interest in imports. Ethanol imports are constrained by a 54-cent-per-gallon tariff, but spot prices were high enough in the spring of 2004 to offset the effects of the tariff. September through March 2004 trade data show a 4-percent increase in imports, and there have been reports that more imports are planned this summer. Brazil is reportedly investing in ethanol export infrastructure and is supporting a new ethanol futures contract on the New York Board of Trade to facilitate trade expansion. In addition to imports with the tariff, ethanol can be imported duty free from qualifying Central American and Caribbean countries under the Caribbean Basin Initiative (CBI). Potential imports of ethanol produced from regional feedstocks are negligible due to the region's tiny production capacity. However, the CBI also allows duty-free imports of ethanol reprocessed in the region of up to 7 percent of the U.S. ethanol market. This provides an indirect route for ethanol from Brazil, the world's largest producer. With the phenomenal growth in the U.S. market, this 7-percent window is increasing significantly. Thus, the continuation of high ethanol prices, that is expected if gasoline prices remain strong, could lead to increased imports.* »¹¹ (l'analyse est datée de mai 2005)

Déjà en 2003, Marianne HAUG, de l'AIE, estimait que le Brésil pouvait produire de l'éthanol moitié moins cher que celui produit en Europe¹². Une estimation plus récente – pour l'année 2004 – donne un coût de l'éthanol brésilien livré aux Etats-Unis (coûts de transport compris donc) égal à environ 0,21 €/litre, soit environ 0,32 €/l en équivalent énergétique essence. Si on tient compte des conditions actuelles (mi-août 2005) du marché (prix du pétrole élevés, hausse du prix international de l'éthanol et mouvements des taux de change), il semblerait que l'éthanol brésilien n'est pas loin d'être compétitif avec l'essence fossile, même sans aucun

¹¹ « Feed Outlook », USDA, May 14, 2004, p.5 (référence complète dans la bibliographie)

¹² Marianne HAUG, p.7 (référence complète dans la bibliographie)

subside fiscal, et ce en Europe comme aux Etats-Unis ! Certes, à moyen terme, les prix de l'éthanol sur le marché international collera d'une manière ou d'une autre aux cours pétroliers. Mais un écart plus ou moins important dans les coûts de production devrait subsister entre l'Europe et le Brésil mais aussi entre l'Europe et les Etats-Unis. A titre indicatif, précisons que les cours à terme de l'éthanol aux Etats-Unis tournent aux environs de 1,60 \$ le gallon, soit environ 0,35 €/l au taux de change moyen de juillet 2005 (ou environ 0,53 €/l en équivalent énergétique essence).

Il semble que l'UE et les Etats membres producteurs aient trouvé un moyen terme acceptable pour « protéger » les productions locales. Tôt ou tard – sauf changements malheureusement non prévisibles à ce jour dans les mécanismes de la libéralisation des échanges internationaux, en particulier dans le domaine agricole – il faudra ouvrir le marché. « *Brazilian officials and industrialists have made it clear their goal is to eliminate tariff and quota barriers in more developed countries, targeting industries ranging from sugar to orange juice to ethanol.* » (Khigh Ridder Newspapers, 04.08.05)

Cette menace devrait inciter les producteurs de biocarburants à amortir au maximum leurs investissements pendant la période de « grâce » prévue par la Directive européenne (6 ans maximum pour les réductions fiscales). On peut également prévoir que les pressions internationales pour lever les barrières à l'entrée de biocarburants étrangers vont s'intensifier, ce qui ne peut que renforcer la « prudence » économique dont vont faire preuve les producteurs européens. Mais si cette orientation se vérifie il est clair que le subside fiscal jugé nécessaire par les industriels concernés sera supérieur à celui qui serait nécessaire dans des conditions normales d'amortissement.

Ceci dit, la concurrence jouera aussi, à un moment donné, entre producteurs européens. Supposons qu'on aboutisse un jour à un accord global sur les biocarburants, avec, par exemple, un quota de production indigène et une ouverture pour le surplus : le quota de production indigène pourrait très bien être libéralisé au niveau européen (il y aura en tout cas des demandes dans ce sens).

Revoir le Contrat de programme (pétrolier)

La mise en œuvre d'une politique de biocarburants significative risque d'avoir des répercussions économiques et industrielles importantes dans le secteur pétrolier : le prix du carburant pourrait dépendre d'un plus grand nombre de facteurs économiques encore qu'aujourd'hui, tous les pétroliers ne fabriquent pas de l'ETBE, la structuration des coûts de production va changer, etc. La composition même des produits est appelée à changer, parfois ou potentiellement de manière très significative. Tout ceci plaide pour, certainement, un réexamen du contenu du Contrat de programme pétrolier et, probablement, son adaptation à un nouveau contexte. Un enjeu secondaire mais néanmoins important doit être mis en évidence si la nature des carburants mis sur le marché devait conduire, à cause d'un contenu énergétique moindre, à une augmentation des volumes vendus. Ne faudrait-il pas, dans ce cas, revoir le niveau de la marge de distribution telle que calculée actuellement dans le Contrat de programme (pétrolier). Rappelons que la marge de distribution (MD dans la formule de calcul du prix de vente maximum définie à l'article 13 du Contrat de programme) est définie ainsi : « marge de distribution de la société pétrolière comprenant outre les frais de distribution de ce produit, le bénéfice de la société pétrolière et les marges de distribution garanties (aux revendeurs) ». En tout état de cause il ne serait pas inutile de se pencher en détail sur un des paramètres les moins clairs – peut-être parce qu'il concerne notamment les profits – intervenant dans le calcul du prix de vente maximum des carburants, d'une part à la lumière des évolutions multiples intervenues au cours des dernières années dans le secteur pétrolier et d'autre part en fonction de l'arrivée des biocarburants. Cette révision peut rencontrer l'intérêt de la collectivité comme des producteurs et distributeurs de carburants. Un peu de volontarisme politique serait donc le bienvenu.

Annexes

Annexe 1 : Les biocarburants, le point de vue de la Fédération Pétrolière Belge

Issus de programmes lancés à la fin des années 70 avec pour objectif de réduire la dépendance pétrolière, ainsi que de politiques nationales destinées à soutenir le secteur agricole, les biocarburants ou carburants d'origine végétale souffrent toujours d'un handicap majeur : leur coût trop élevé. Le litre de biodiesel, par exemple, coûte encore entre 0,50 et 0,75 € / l contre 0,20 € / l pour le diesel. Un nouvel avenir s'ouvre cependant à eux car ils pourraient permettre de réduire, dans le secteur des transports, la consommation de pétrole et les émissions de gaz à effet de serre.

Ainsi le Conseil et le Parlement européens ont-ils validé en 2003 deux propositions de directives en ce sens :

- la Directive sur la promotion des biocarburants (2003/30/CE) vise à favoriser le remplacement d'une part croissante de l'essence et du diesel vendus dans les États membres par les biocarburants. Elle fixe pour ce faire des objectifs croissants en termes de taux de substitution dans le domaine des transports. Ainsi la part des biocarburants devra-t-elle représenter au minimum 2% en 2005 et 5,75% en 2010 de la consommation globale de carburants dans les transports, ces pourcentages étant calculés sur une base énergétique. Ces objectifs sont indicatifs et non obligatoires, mais les États membres n'en devront pas moins informer la Commission des mesures prises pour les atteindre ;
- la Directive sur la fiscalité (2003/96) a quant à elle pour but de permettre aux États membres, sans les y obliger, d'exonérer partiellement ou totalement d'accises les biocarburants. Le coût des biocarburants étant encore à peu près trois fois plus élevé que celui des carburants pétroliers équivalents, l'équilibre économique de ces « carburants agricoles » ne peut être aujourd'hui atteint que grâce aux soutiens fiscaux accordés par les pouvoirs publics des pays qui décident de les promouvoir.

Du point de vue de la FPB, il s'agit cependant moins de s'interroger sur la meilleure façon de promouvoir l'introduction des biocarburants que sur l'opportunité réelle de le faire. La directive 2003/30 fixe en effet des objectifs indicatifs et donc non contraignants en la matière. Elle prévoit la possibilité de dérogations (art. 4 § 1 b) par rapport à ces objectifs : les États membres qui le souhaitent peuvent intégrer dans le calcul le volume des ressources qu'ils affectent à la production de biomasse à des fins énergétiques autres que le transport, par exemple comme substitut aux combustibles fossiles pour la production d'électricité. Le Danemark, notamment, privilégie cette option et les Pays-Bas envisagent de le faire. La FPB plaide pour qu'elle soit également retenue en Belgique, au moins pour atteindre les objectifs fixés à l'horizon 2010. Par tonne de CO₂ réduite, l'option biomasse est en effet bien moins coûteuse que l'option biocarburant.

La FPB ne peut donc que regretter la décision prise par le gouvernement, lors du super Conseil des ministres d'Ostende le 20 mars 2004, de favoriser fiscalement l'introduction des biocarburants dès 2005. Elle a également attiré l'attention des autorités sur le risque de développement de la fraude que fait peser l'adoption d'un système de double tarification avec différentiel de taux d'accises.

Mais puisque le choix politique est fait, il importe désormais de créer un cadre économique stable et transparent pour atteindre les objectifs fixés. Et de laisser à chaque opérateur la liberté de choisir, dans ce cadre, les éléments qui lui conviennent dans le respect des règles fixées par le droit de la concurrence.

A l'heure actuelle, le principal biocarburant prêt à connaître un prochain développement industriel est l'ester méthylique d'huile végétale (EMHV), pour lequel existe une norme. Inadaptées à l'alimentation directe des moteurs diesel modernes, les huiles végétales de colza ou de tournesol doivent être transformées, au travers d'une opération dite de « transestérification », avec du méthanol. Cette transformation aboutit à produire lesdits esters méthyliques d'huiles végétales, encore appelés « biodiesels ».

Il reste à prendre en compte, notamment, une analyse de la disponibilité de ces produits aux niveaux national et européen, ainsi que l'analyse coût / bénéfice pour l'environnement des différentes options envisageables.

Annexe 2 : Les dispositions fiscales concernant les biocarburants dans la loi-programme du 11 JUILLET 2005 (Moniteur du 12 juillet 2005 – Ed. 2)

TITRE V. - Finances

CHAPITRE I^{er}. - Biocarburants

Art. 30. A l'article 419 de la loi-programme du 27 décembre 2004 sont apportées les modifications suivantes :

1° les b) et c) sont remplacés par la disposition suivante :

« b) essence sans plomb relevant du code NC 2710 11 49 :

i) à haute teneur en soufre et en aromatiques :

- droit d'accise : 245,4146 EUR par 1 000 litres à 15 °C;
- droit d'accise spécial : 367,6753 EUR par 1 000 litres à 15 °C;
- cotisation sur l'énergie : 28,6317 EUR par 1 000 litres à 15 °C;

ii) * à faible teneur en soufre et en aromatiques :

- droit d'accise : 245,4146 EUR par 1 000 litres à 15 °C;
- droit d'accise spécial : 352,9681 EUR par 1 000 litres à 15 °C;
- cotisation sur l'énergie : 28,6317 EUR par 1 000 litres à 15 °C;

** à faible teneur en soufre et en aromatiques, complétée à concurrence d'au moins 7 % vol de bioéthanol relevant du code NC 2207 10 00 d'un titre alcoométrique volumique d'au moins 99 % vol, pur ou sous la forme d'ETBE relevant du code NC 2909 19 00, et qui n'est pas d'origine synthétique :

- droit d'accise : 245,4146 EUR par 1 000 litres à 15 °C;
- droit d'accise spécial : 311,5150 EUR par 1 000 litres à 15 °C;
- cotisation sur l'énergie : 28,6317 EUR par 1 000 litres à 15 °C;

c) essence sans plomb relevant des codes NC 2710 11 41 et 2710 11 45 :

i) non mélangée :

- droit d'accise : 245,4146 EUR par 1 000 litres à 15 °C;
- droit d'accise spécial : 352,9681 EUR par 1 000 litres à 15 °C;
- cotisation sur l'énergie : 28,6317 EUR par 1 000 litres à 15 °C;

ii) complétée à concurrence d'au moins 7 % vol de bioéthanol relevant du code NC 2207 10 00 d'un titre alcoométrique volumique d'au moins 99 % vol, pur ou sous la forme d'ETBE relevant du code NC 2909 19 00, et qui n'est pas d'origine synthétique :

- droit d'accise : 245,4146 EUR par 1 000 litres à 15 °C;
- droit d'accise spécial : 311,5150 EUR par 1 000 litres à 15 °C;
- cotisation sur l'énergie : 28,6317 EUR par 1 000 litres à 15 °C;".

2° le e), i), est remplacé par la disposition suivante :

i) utilisé comme carburant :

- droit d'accise : 198,3148 EUR par 1 000 litres à 15 °C;
- droit d'accise spécial : 177,9987 EUR par 1 000 litres à 15 °C;
- cotisation sur l'énergie : 14,8736 EUR par 1 000 litres à 15 °C;".

3° Le f), i), est remplacé par la disposition suivante :

i) utilisé comme carburant :

* non mélangé :

- droit d'accise : 198,3148 EUR par 1 000 litres à 15 °C;
- droit d'accise spécial : 163,1488 EUR par 1 000 litres à 15 °C;
- cotisation sur l'énergie : 14,8736 EUR par 1 000 litres à 15 °C;

** complété à concurrence d'au moins 2,45 % vol d'EMAG relevant du code NC 3824 90 99 et correspondant à la norme NBN-EN 14214 :

- droit d'accise : 198,3148 EUR par 1 000 litres à 15 °C;
- droit d'accise spécial : 154,1350 EUR par 1 000 litres à 15 °C;
- cotisation sur l'énergie : 14,8736 EUR par 1 000 litres à 15 °C;".

Art. 31. Un article 419bis, rédigé comme suit, est inséré dans la même loi :

« Art. 419bis. § 1^{er}. Au plus tard le 31 décembre de chaque année et ce, jusqu'en 2007, le droit d'accise spécial du gasoil visé à l'article 419, f), i), sera modifié afin de tenir compte d'une augmentation annuelle et linéaire de 0,92 % vol, du pourcentage d'EMAG relevant du code NC 3824 90 99 indiqué pour le gasoil mélangé visé à l'article 419, f), i)**. Ce pourcentage ne peut excéder 5 % vol.

§ 2. La différence de taux de droit d'accise spécial entre le gasoil non mélangé et le gasoil mélangé conformément au § 1^{er}, ne peut pas conduire à une surcompensation des coûts addition-

nels liés à la production des produits ajoutés au gasoil. Elle doit prendre en considération la différence de teneur énergétique entre les produits concernés.

§ 3. Le Roi autorise par arrêté délibéré en Conseil des Ministres, aux conditions qu'Il détermine, que le pourcentage de produits mélangés à l'essence visée à l'article 419, b), ii) **, et à l'article 419, c), ii), ainsi qu' au gasoil visé à l'article 419, f), i), **, excède le pourcentage fixé. Le produit obtenu pourra bénéficier d'une réduction du droit d'accise spécial proportionnelle à la différence de droit d'accise spécial existante entre soit l'essence non mélangée et l'essence mélangée, soit le gasoil non mélangé et le gasoil mélangé. »

Art. 32. A l'article 429, § 2, de la même loi, il est ajouté un m), rédigé comme suit :

« m) l'huile de colza relevant du code NC 1514 utilisée comme carburant. »

Art. 33. Le Roi fixe par arrêté délibéré en Conseil des ministres, les conditions d'application du taux d'accise de l'article 419, b,) ii) **, c), ii) et f), i) **, et de l'article 429, § 2, m), de la même loi.

Art. 34. Le Roi fixe par arrêté délibéré en Conseil des Ministres, la date d'entrée en vigueur des articles 30 à 33.

Annexe 3 : Un exemple de calcul des économies de CO2

Le calcul des économies de CO2 d'alcosuisse se fonde sur :

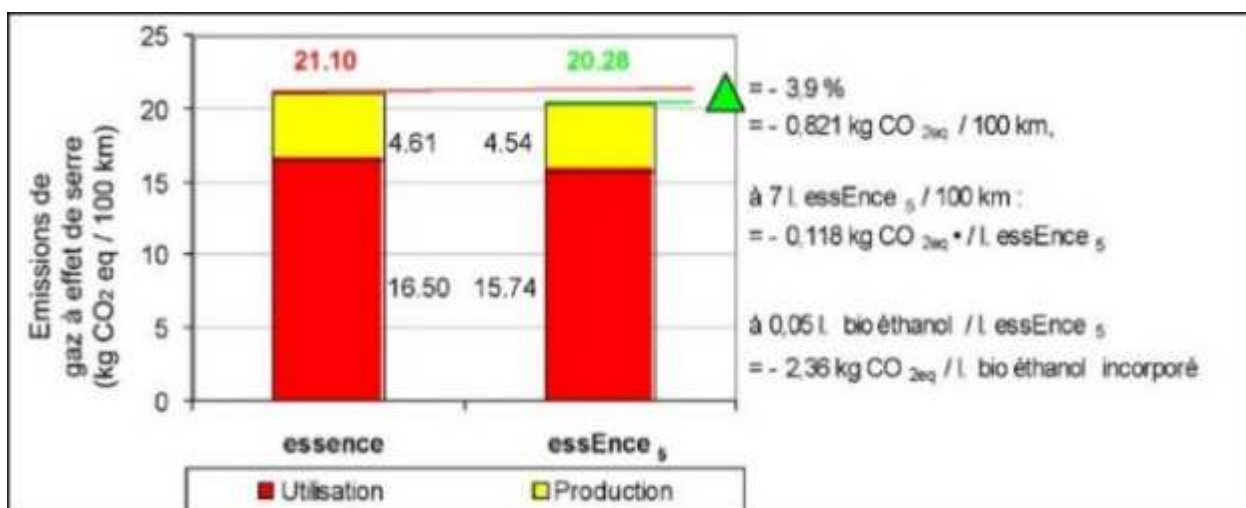
- des mesures d'émissions comparatives essEnces / essence 95 octane réalisées par l'EMPA sur un véhicule très répandu, sans aucune modification, et, selon un cycle de test reconnu (NEFZ, Neue Europäische Fahr-Zyklus),
- l'analyse de cycle de vie réalisée par le Laboratoire de systèmes énergétiques (LASEN) de l'EPFL. Cette analyse tient compte de toutes les étapes, de la production des matières premières jusqu'au transport du bioéthanol-carburant à son lieu de mélange,
- des pouvoirs calorifiques inférieurs volumiques de 32 MJ/litre pour l'essence, respectivement de 21,285 MJ/litre pour l'éthanol (qualité déshydratée).

Le résultat principal du test de l'EMPA en matière d'émissions de CO₂ est la réduction, pour la même prestation de transport, de 1% de consommation de carburant. Fort du résultat de la mesure de consommation du test EMPA et de l'analyse comparative du cycle de vie de la filière de bioéthanol, le résultat se présente comme suit :

A prestation équivalente (100 km parcourus selon le cycle NEFZ), le véhicule testé a émis, globalement, 3,9% de moins de CO₂ avec de l'essEnces qu'avec de l'essence commerciale 95 octane. Ces 3,9% correspondent à une économie de 0,821 kg CO_{2eq}/ 100 km, soit avec une consommation de 7 l/100 km, à 0,821 / 7 = 0,118 kg CO_{2eq} par litre d'essEnces.

Source : <http://www.etha-plus.ch/page.asp?page=2360>

Comparaison des émissions de gaz à effet de serre de l'essence95 octane et de l'essEnces



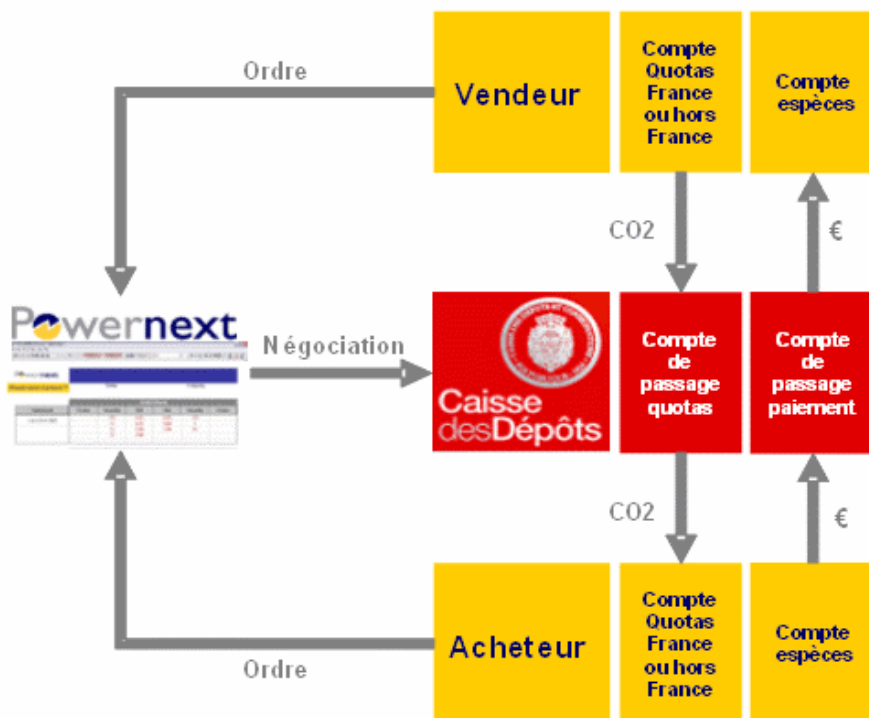
Annexe 4 : Présentation de Powernext Carbon

Powernext Carbon offre un marché organisé en continu facilitant l'échange au comptant de quotas de CO₂ et la gestion du risque de non-conformité. Ce marché est basé sur quatre principes : la simplicité d'un système intégré de la négociation à la livraison la transparence des prix l'accès non discriminatoire et l'anonymat des intervenants la sécurité des transactions reposant sur un mécanisme de règlement permettant le paiement des espèces et de livraison des quotas. Powernext Carbon est le fruit d'une collaboration avec deux partenaires :

- La Caisse des Dépôts : Institution financière publique (...) elle a, d'une part, initié la création d'un fonds d'investissement en Quotas, le Fonds carbone européen et, d'autre part, mis au point le logiciel Seringas pour tenir le registre français d'échange des Quotas.
- Euronext : Entreprise de marché est membre du groupe Euronext lequel offre un ensemble de services intégrés en matière de marchés d'instruments financiers. Première bourse paneuropéenne, elle regroupe les marchés actions et dérivés d'Amsterdam, de Bruxelles, de Paris et de Lisbonne ainsi que le LIFFE, la bourse internationale de produits dérivés. Euronext a contribué à l'élaboration du modèle de marché et assure un rôle de place auprès des différents acteurs concernés.

Powernext, la Caisse des Dépôts et Euronext ont signé le 14 décembre 2004 une lettre d'intention afin de joindre leurs expertises pour mettre en place un marché organisé au comptant de Quotas ou permis d'émissions de dioxyde de carbone ("CO₂"). Dans ce cadre : Powernext intervient comme opérateur du marché Powernext Carbon, agréé les membres du marché, met à disposition une plateforme de négociation continue et édicte les règles de marché. Une direction de la Caisse des Dépôts - indépendante de celle exerçant la fonction de teneur de registre - intervient comme gestionnaire du mécanisme de Livraison Contre Paiement (LCP) de Powernext Carbon et assume le rôle d'intermédiaire sécurisant les engagements financiers et les engagements de livraison pris par les membres lors des transactions. Euronext a contribué à l'élaboration du modèle de marché et assure un rôle de place auprès des différents acteurs concernés.

Source : http://www.lesechos.fr/pratique/faq/aide_carbon.htm



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The “Actions-Consequences-Objectives” model: an integrative framework for SIA ?¹

Draft

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1. A new conception of SIA

There exist many definitions of Sustainability Impact Assessment (Pope 2004). Most of them simply extend the range and the scope of already existing impact assessments such as Environmental Impact Assessment, Social Impact Assessment, Strategic Environment Assessment, etc. to sustainable development (SD). In doing so, they conceive of Sustainability Impact Assessment (SIA) essentially as an exercise of impact identification, prediction and evaluation. While there is nothing fundamentally wrong with this conception, we believe that it doesn't take into account the fact that SD has already given birth to a whole hierarchy of cascading commitments from the top of the institutional ladder (the United Nations) to the bottom (municipalities, companies, etc.). First at the Rio conference (1992) and then at the several conferences that took place in its aftermath, most countries and several Intergovernmental organisations have very formally and officially committed themselves to sustainable development. As a consequence, many have adopted sustainable development strategies and/or legislations that aim at giving a concrete substance to these somewhat abstract and general commitments. A few of them have even written down this commitment in their fundamental law or constitution and others contemplate to do so. In parallel, all over the world many infra-national entities (provinces, areas, cities) have also adopted SD strategies, plans or programs. As a consequence, in many countries, every new policy whatever its range, sector and goal, has to take place in an institutional setting already populated with ongoing SD policies be it at the same institutional level or at higher and lower ones. In other words, it has to integrate itself in a complex network of multi-level multi-sectorial commitments. It is not haphazardly that the notion of integration has come to play such a role in SD discourse. The whole process of putting sustainable development (SD) to work can be characterised as a search for integration: not only integration of economic, social and environmental concerns in plans, programs and policies as so often argued but also integration of national SD strategies into international ones (such as the Millenium Development Goals, the EU Göteborg strategy, etc.) and integration of departmental policies into national SD strategies.

Sustainability Impact Assessment can thus be considered above all as assessing new policy proposals or projects in terms of their integration. This is hardly something new: SIA practitioners have been from the start in search of an “integrative” conceptual and methodological framework. But, as Scrase & Sheate (2002) have shown the concept of

¹ This working paper has been written in the framework of the research project financed by the Belgian scientific policy “Methodology and feasibility of sustainability impact assessment. Case: Belgian federal policy process”. This research project is coordinate by the *Centrum voor Duurzame Ontwikkeling (Universiteit Gent)* and is implemented in collaboration *le Centre d'Etude du Développement Durable (Université Libre de Bruxelles)* and *l'Association Universitaire de Recherche sur l'Action Publique (AURAP – Université Catholique de Louvain)*.

integration can mean many different things. Building on Scrase and Sheate, Boulanger (2004) distinguishes four kinds or dimensions of integration: policy, institutional, cognitive and normative. Most conceptual and methodological frameworks address only one or at best two of them. For instance, the well-known DPSIR (Drive-Pressure-States-Impact-Response) scheme helps in identifying the causal connections between variables pertaining to different ontological and/or policy domains. As such, it is quite successful in cognitive and (partial) policy integration (especially in environmental issues). However, it doesn't fully provide for complete policy integration or for normative integration insofar as it doesn't take into account the existing hierarchy of policy objectives and commitments. Indeed, policies intervene in DPSIR only as "responses" to the identified problems. Therefore, they are assessed against criteria of relevance and efficacy, as the "best" response to a specific well-identified issue. Albeit, what is totally lacking is the look for coherence between this particular response and all the existing other "responses" that constitute the whole apparatus of ongoing plans, programs and policies. It is not surprising knowing that the PSR and DPSIR frameworks have been designed not for policy analysis but for problem analysis.

System theory or system dynamics while being a very interesting and powerful (but ancillary) tool in policy design and analysis for providing a scientific "meta-theory" for integrating statements and information from different disciplines (Boulanger & Bréchet, 2005) has also important shortcomings as an integrating framework for SIA. For instance, it is highly sophisticated (or, if not, totally trivial) making integration of stakeholders difficult. Most of all, it is unsuited to the representation of interactions between a plurality of actors and groups which however constitute the very subject matter of policy analysis and prediction.

So, what we are looking for is a framework that could altogether:

- Describe the assessed policy, program or plan in terms understandable and relevant for the different actors and stakeholders involved;
- Help identifying direct and indirect, short term and long term, desired and undesired impacts of the assessed policy;
- Organise the check for vertical integration of the new policy by integrating both its own objective and the already taken one at higher (or the same) institutional level.

This means that the framework should be stated directly in the language of policy, or of practical reasoning, that is in terms of objectives, measures or actions, and their consequences for actors.

The framework we propose hereafter consists in an adaptation of the well-known "means-end" model widely used in consumer research. After a very short description of the original model, we will show how it can be helpful in policy assessment by analysing a real policy proposal on the promotion of biomass fuels uses in transportation. We will then enlarge the discussion to sustainability impact assessment.

2. The means-end or attributes-consequences-values framework

The means-end structure was proposed by Gutman (1982) to analyse consumers' choice. The central hypothesis was that consumers choose products on basis of the correspondence they see between product's attributes and their own values. More precisely, some practical social or functional consequences are attached to the different attributes and these are connected to what the consumer value.

The means-end or attributes-consequences-values chain can be pictured as a network, or more formally, as an acyclical graph with attributes at the bottom, values at the top and

consequences in-between. Attributes, consequences and values are the graph's nodes linked by edges expressing the relations between attributes and consequences and between consequences and values. Figure 1 shows an imaginary example of means-end analysis of a consumer's perception of a freezer.²

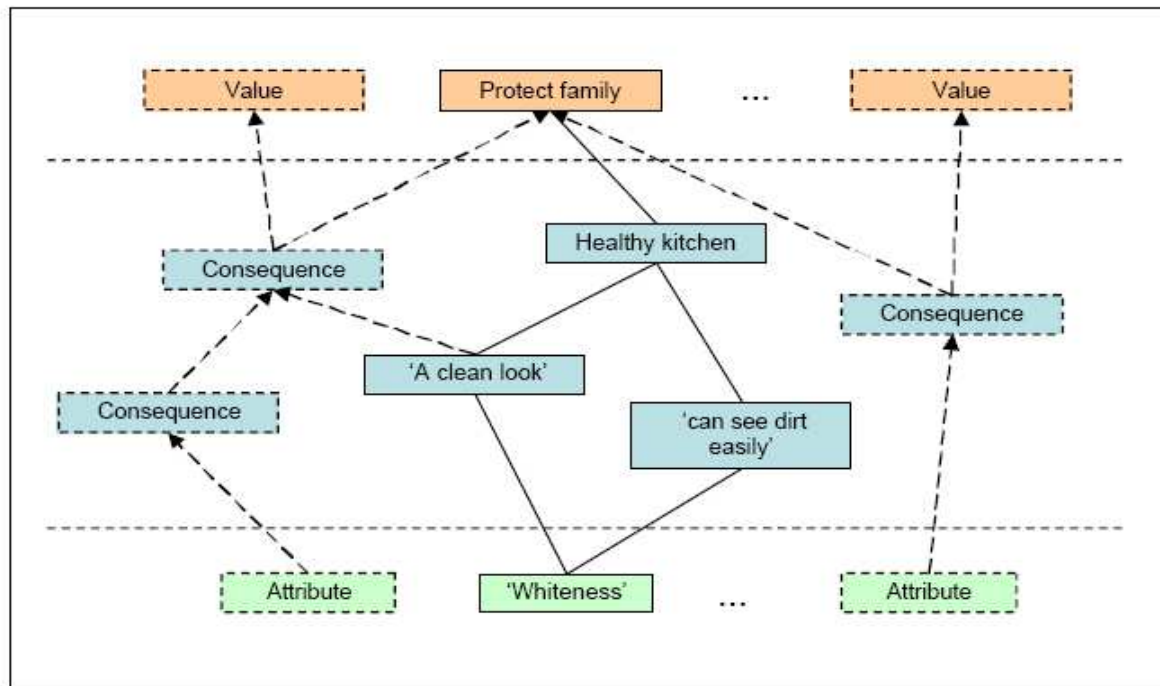


Fig 1. Example of a means-end analysis of consumer perception.

Means-ends networks look very like other graphical model of causal or cognitive maps. However, most causal and cognitive maps are cyclical. In other words, they admit feedbacks between nodes, contrary to means-ends graph, which are acyclical. Thus, if cognitive maps are best suited to dynamical process or system representation, means-ends chains are best fit to static “reasoning systems” (Montibeller, Belton, Ackerman, Esslin 2005), that is practical reasoning of agents about ways to achieve some goals in a given context.

Hitherto, as far as we know, the attributes-consequences-values structure hasn't been applied to public policies. However, with only a few minor changes, it can be useful in describing and analysing them. Indeed, it suffice to replace “attributes” with “actions”(or measures) and “values” with “objectives” or “ends”, in other words, to mutate the “Attributes-Consequences-Values” (ACV) model into a “Actions-Consequences-Objectives” (ACO) one.

Look for instance at figure 2. It is an ACO description of a policy proposal at the national level - for an EU country- to promote biofuels' use in transportation. Actually, the policy has several objectives:

- To reduce greenhouse gases emissions from transport;
- To enhance energetic independence of the country;

² The example comes from T. Jackson, 2005, *Motivating Sustainable Consumption*. A Report to the Sustainable Development Research Network. Centre For Environmental Strategy. University of Surrey.

- To open new opportunities for national agriculture and food industry in a context of vanishing EU subsidies on sugar and wheat production;
- To be budgetary neutral.

As for the actions, the policy consists mainly in tuning excises on fossil fuels and on biofuels in such a way as to induce replacement of some proportion of the formers with the latter. Therefore, duties on biomass fuels are to be reduced whilst duties on fossil fuels are to be augmented in due proportion. Besides a modification of duties, the policy will launch a tender to producers for a fixed amount of biofuels. Though the tender is open to companies from the whole EU, it includes some dispositions that should favour national companies. This is authorized, though within strict limits, by EU Commission for helping in the development of national biomass fuel industries.

As noted above, figure 2 just describes the policy proposal as publicised by the government. It doesn't convey any further analysis or assessment of it. This will be done later.

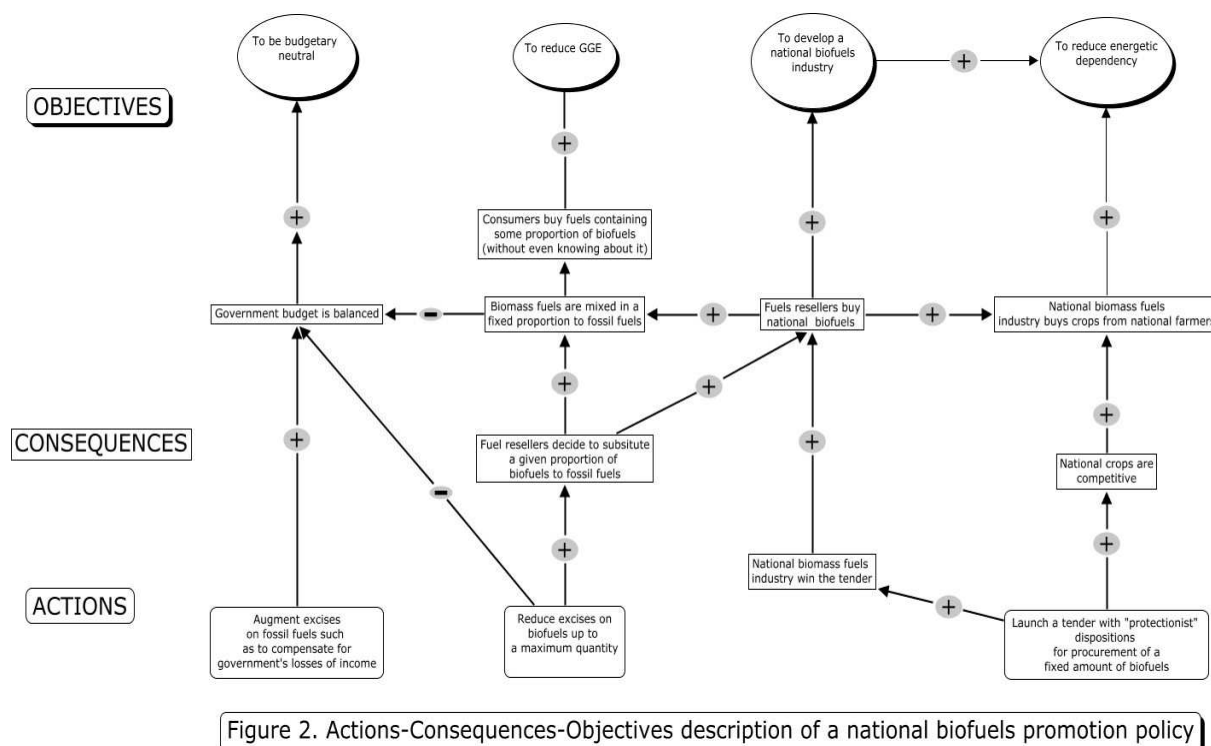


Figure 2. Actions-Consequences-Objectives description of a national biofuels promotion policy

Just like any means-ends model, the figure is made of nodes and edges. Nodes are used for describing the actions, consequences and objectives, whilst the edges describe the causal or influence relations between them.

Nodes

- **Actions** are portrayed at the bottom as rounded boxes. Sentences that express them are at the imperative mode: “Reduce excises...”, “Launch a tender”, etc.
- **Consequences** are portrayed as rectangular boxes. Sentences that describe them are at the present mode: ”Resellers want to substitute...”, “National producers win the tender,” etc. They are also expressed in terms of the actors or systems concerned in order to help identifying them.

- **Objectives** are portrayed at the top as circles. Sentences describing them are at the infinitive mode and begin with the preposition ‘to’: “To reduce GGE”, “To open new opportunities”, etc.

Edges

There are four kinds of relationships in the figure 2:

1. Relationships between actions and consequences;
2. Relationships between consequences;
3. Relationships between consequences and objectives;
4. Relationships between objectives themselves.

Indeed, first order consequences can entail second order consequences (intended or not, as we will see later) and so on. The more comprehensive and detailed the description, the more it is likely to decompose the path between actions and objectives in several ladders of cascading consequences.

Likewise, some objectives can be valuable in themselves whilst being instrumental for other objectives. For example, in figure 2, “To develop a national biomass fuels industry” is considered by the promoters of the policy as an end in itself whilst being necessary to bring about the objective of fostering energetic independence. Thus, it is also possible to take into account a whole laddering of objectives, as will be the case in figure 5.

Although means-ends graph are usually not signed (positive or negative), it can be useful in policy analysis to distinguish between negative and positive influences. For instance, in the policy proposal for fostering the use of biomass fuels, some fiscal measure such as the reduction of excises on biomass fuels will threaten public finances’ balance. Therefore, the link between the action-node “Reduce excises on biofuels...” and the consequence-node “Government budget is balanced” is negative. However, this will come true only if another relations holds, namely between the consequence-node “Some biofuels are consumed instead of fossil fuels” and the other consequence-node “Government budget is balanced”. Conjunctive relations such as these could also be expressed by first making the different converge towards an intermediary multiplicative node (with the symbol “*”) this one being then tied to the consequent node. Figure 4, below, shows a disjunctive pattern with edges diverging from an intermediary node in order to express likely alternative consequences of an action. The conjunctive pattern would be the converse of such figure.

Identifying concerned stakeholders and systems

As a by-product of making all expected consequences clear, the ACO model helps also at identifying stakeholders. In the example discussed here the stakeholders are: the government, the fuel resellers, the consumers, the biomass fuels industry, and the farmers. They are all named explicitly in the figure. Because it is useful to express all the consequences in a very concrete way, we recommended to name explicitly in each consequence’s box the actor or the system concerned. Indeed, policy actions can target systems (natural, institutional, legal) as well as human actors. This, even if while targeting a system, the measure aims actually at modifying actors’ behaviours by acting on their decisional environment.

It is precisely a strength of ACO models compared to system dynamics models, for instance, to be able to take into account actors as well as systems in the same framework. In fact, for ACO model it doesn’t matter if the actions change something to the state of systems

or to the behaviour of actors. What matter is only to what extent consequences result from the planned actions and contribute to the achievement of the policy's purposes.

In short, ACO models allow communicating easily on the principal elements of any policy:

- Its objectives;
- The instruments put to work (actions, measures);
- The actors (stakeholders) and systems involved;
- The hypotheses concerning the relation between actions and their effects (consequences), and between effects and objectives or values.

Clearly, so far, no policy proposal comes formulated as a "Actions-Consequences-Objectives" network³. The model consists in a reshaping build upon the different legal documents exposing it and, in some cases, interviews with the different authors of the proposal. It follows that knowledge acquisition techniques used in marketing research⁴ – such as 'laddering', for instance- for building out attributes-consequences-values can also be helpful in the policy context.

3. ACO models as Sustainability Impact Assessment tools

Hitherto, we have considered the ACO model as a simple description, as objective and neutral as possible of the policy. As such, it still goes further than most policy's formulations insofar as it makes explicit the underlying logic of action, the assumptions concerning the causal links between the planned actions and measures, the expected changes in the state of the targets systems (i.e. consequences) and the subsequent achievement of its objectives. Indeed, every policy, plan, program or project is based, explicitly or not, on a causal model that links together the policy and its expected outcomes and impacts. Moreover, the policy derives from a pre-existent mental model of the causes of what is seen as the collective problem in need of a political solution (Stone, 2002). However, it is rarely the case that this causal model is made explicit in the policy-making process. Most often it remains implicit, pre-reflexive and, therefore, possibly incomplete and/or inconsistent. Therefore, a formulation of a policy in terms of actions, consequences and objectives can be considered as more than a simple description. It is a first step towards a more reflexive analysis and critical *ex-ante* assessment of the proposal. But, by making explicit the underlying "theory" of the proposal, it opens the way to a critic of its assumptions and to a possible confrontation with alternative theories.

Indeed:

- Many links between actions and consequences and therefore between actions and objectives are mere conjectures or hypothesis, and, as such, just more or less plausible. One could very well can attribute different values to their likelihood (probabilities of occurrence)
- Usually, promoters of a policy or projects have a tendency to omit its shortcomings and drawbacks. Therefore, some direct or indirect undesirable consequences can have been overlooked.

³ However, it is not totally unimaginable that as part of a full institutionalisation of SIA, policy proposals would have to be cast in a similar layout.

⁴ Also in strategic management.

The core business of *ex-ante* impact assessment consists precisely in looking for possible unanticipated, direct or indirect, close or remote, impacts of a proposed policy, trying to estimate their magnitude and significance and, if necessary, in suggesting more advantageous ways to reach the same objectives or accompanying measures for mitigating the possible harmful consequences of the policy.

We will argue that ACO models can be a helpful and inexpensive way to do so, or at least, an important part of the task. The ACO model of figure 3, whose purpose is to help in assessing the policy proposal described in Figure 2 from a sustainable development point of view, illustrate this. If one compares Figure 2 and Figure 3, one sees several differences:

- First of all, while consequences and objectives are undifferentiated in Figure 2, they are classified as economical, social or environmental in Figure 3. This is a concession to the most common and widespread conception of sustainable development as a kind of balance between social, economic and environmental requirements. It is usually called the “Triple-Bottom-Line” or the “Three-pillars” model of sustainable development (SD). Indeed, even if one believes that SD cannot be reduced to such a definition, there is something true in the need for any policy to care about its possible economic, social and environmental impacts. However, there is also a widespread belief that the three-pillars or T-B-L model, is, at best, incomplete and that a fourth pillar or bottom line should be added, namely the political-institutional dimension. This is what we have done here. In Figure 3, political, economic, social and environmental consequences and objectives are identified by the colour of the outline of the different nodes. It is yellow for political consequences or objectives, blue for economic, orange for social and green (of course) for environmental ones.
- Second, edges can be either black or red. If red, it means that a causal or influence relation is acting against the very objective of the policy. For example, an increase in cultivated land attributable to a raising demand for fuel crops entail additional greenhouses gases emissions from agriculture, which is contradictory with the policy’s environmental objective.
- Third, the model considers not only anticipated, expected consequences but also possible unanticipated, unexpected or just concealed, ones. They can be identified by the use of an italic font. For examples: “*Food prices increase*” or “*More local pollution, eutrophication, less biodiversity, etc.*”
- Fourth, edges can be positive and negative as in Figure 2 but also indeterminate. This is signalled by a “?” along their line drawing.
- Fifth, the relation between an action and its consequence can be disjunctive. As mentioned above, causal or influence links between action and consequences or between consequences and objectives are often pure conjectures. What policy’s promoters present as automatic and non-controversial can be sometimes quite disputable. Therefore, one has to take into account the possibility that the action fails to bring about the expected consequence but, on the contrary, has unintended and possibly harmful effects.

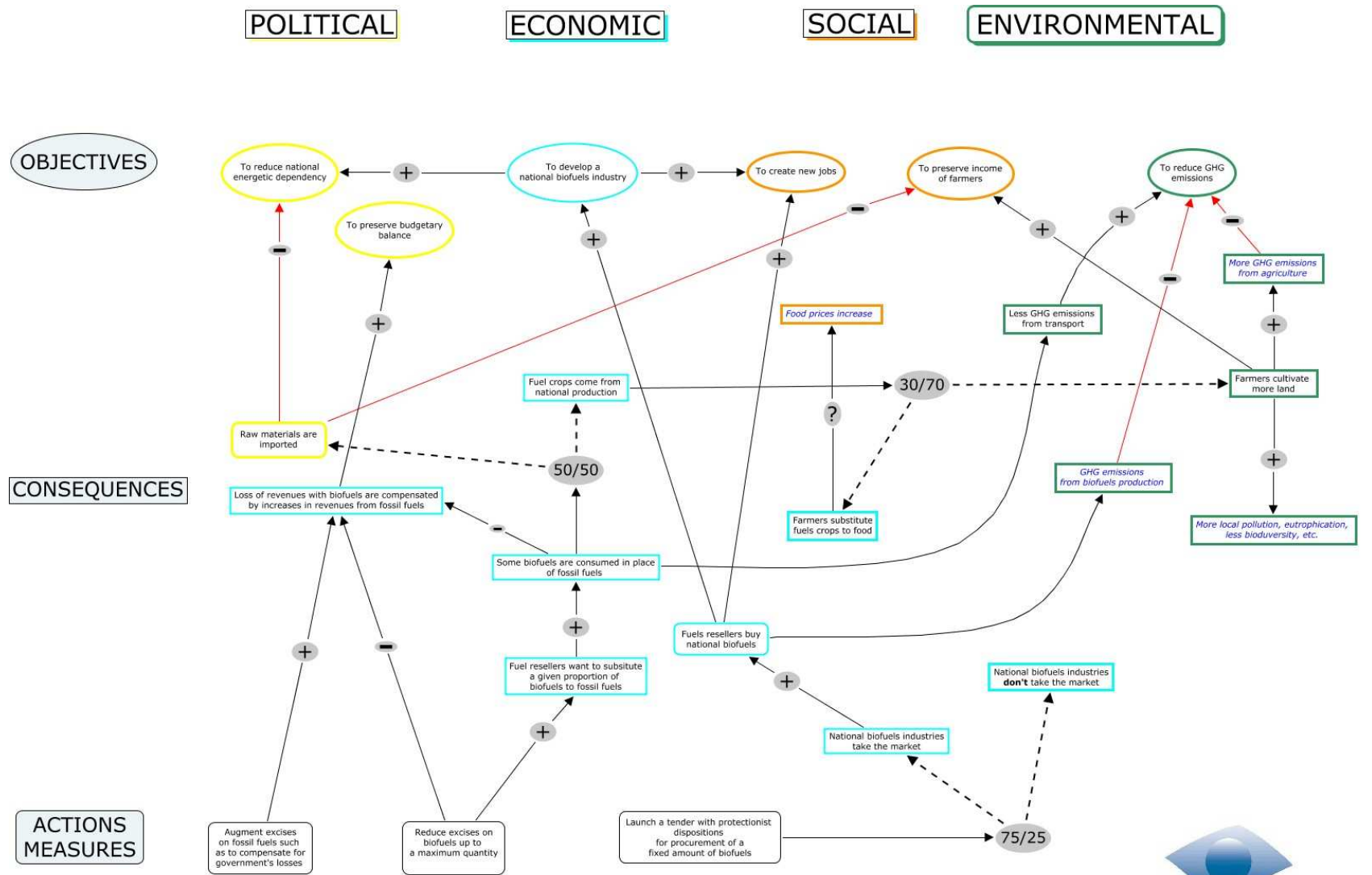


Figure 3. Sustainability Impact Assessment of a biofuels' promotion policy (1)
An Actions-Consequence-Objectives Analysis

More generally, a political measure can have very different – perhaps even opposite - consequences that the ones anticipated by the promoter. A careful assessment must take this into account. This is expressed in Figure 3 with patterns such as the one in Figure 4 below.

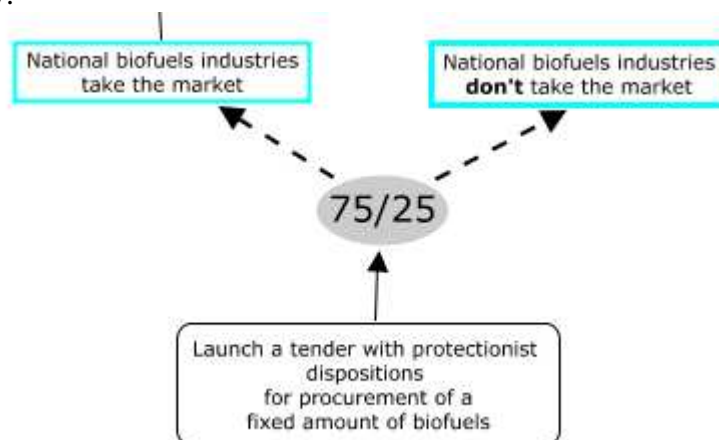


Figure 4. Example of disjunctive pattern

What figure 4 means is that the relations between the action “Launch a tender” and its possible consequences are probabilistic. It is not at all evident that national biofuels industries will take the market. Different obstacles could prevent them from benefiting from the tender: cancellation of the tender by the EU Commission because of illegal dispositions, unpreparedness of the embryonic national companies, etc. In such cases, an assessment should try to assign probabilities to the different logical alternatives and scrutinize the likely consequences of each of them. In the example here, the expected outcome of the measure (“Launch a tender with protectionist dispositions...”) has been assigned a probability of 0.75. This leaves $\frac{1}{4}$ chance to its alternative with as consequence that neither the objective of energetic independence neither the one of preserving farmers’ income would be attained.

Note that these probabilities will affect the whole path starting from the concerned node to the final objectives. In the example of figure 3, it means that we estimate the objective of reducing energetic dependency has having at most 75% chances of being achieved with the intended measure.

More precisely, the expected degree of realisation of any objective will depend on the net effect of the various positive and negative influences that affect it. For instance, in Figure 3, the goal of reducing greenhouse gases emissions will be attained if and only if the reduction of emissions from transport times its probability is greater than the increase of emissions from agriculture and from biofuels industry times their probability. Therefore, to have an (even rough) estimate of the net effect on an end-value of the different paths that influence it, we must give them at least an ordinal value.

There are many ways to add numbers to graphical model and to perform mathematical or logical operations on them. Amongst the best known methods⁵, one can cite Interpretive Structural Modelling (Warfield, 1976), Fuzzy cognitive maps (Kosko, 1986, 1992), Qualitative reasoning (Kuipers 1992), etc. The first and the second take advantage of the formal equivalence between digraphs and matrices to make use of matrix manipulation

⁵ Some of them are discussed in Boulanger, P.-M, 2005, “Integration in sustainability Impact Management: Meanings, Patterns and Tools”, IDD-Ottignies, Ref: <http://www.iddweb.be>.

techniques to analyse or simulate the underlying model. The latter doesn't resort to matrix mathematics but to a qualitative equivalent of differential calculus. Fuzzy Cognitive Maps and Qualitative Reasoning are less relevant here because they concentrate on the dynamic properties (induced by the feedback relations) of the underlying model more than on its logical or arithmetic one. Interpretive Structural Modelling while concentrating on the logical properties of the graph is not very helpful here insofar as it aims at uncovering the causal and hierarchical structure of the maps, structure which is obvious in ACO models of policies plans and proposals.

The most recent and promising way to add numbers to ACO and manipulate them in order to help decision-making comes from Montibeller, Belton, Ackermann and Ensslin (2005).

Computing partial and total influences in reasoning maps

The method worked out by Montibeller & al. (2005) is geared at comparing alternative ways to reach the same final ends on basis of different performance of the various alternatives in terms of common attributes. Actually, contrary to what we are trying to do here, their contribution takes place in a classical "Attribute-Consequence-Value" framework, not in the "Actions-Consequences-Objectives" discussed here. The difference of context will make necessary some small adaptations to the method. They will be discussed later.

Basically, its consist in:

- Associating to each concept in the map a variable or indicator - which may be quantitatively or qualitatively defined - that reflects the performance of each alternative according to the notion implied by the concept. For instance, associate the variable "Percentage of reduction of GHG emissions" to the concept "Reduce GHG emissions from transport"
- Assigning to each indicator an ordinal scale defined in linguistic terms such as "very weak, weak, moderate, strong, very strong".
- When possible, associating a "descriptor" to the variable that maps each term of the linguistic variable with an interval of real or integer numbers. For instance, the descriptor for "Percentage of reduction of GHG emissions" will match the "very weak" linguistic term with the following value "less than 2%".
- Attributing a direction (positive or negative) to each link.
- Assigning to each link a weight or strength of (perceived) influence. The strength of relation between a concept C_1 and its indicator V_1 and a concept C_2 (also with its indicator V_2) is obtained by asking the decision-maker how much variation in the value of V_2 results from variation in V_1 . Example of such a question: "How much does a variation in V_1 from "very weak" to "very strong" influences your perception of V_2 ?"
- Computing for each alternative, partial effects of each attribute on end concepts (that is, aggregate along each path from bottom to top).
- Computing the performance of each alternative as its total effect for every end-concept (i.e. aggregate at the top level all the incoming partial effects).

This method is specifically suited to the multi-criteria decision-making context where the problem is to identify the best amongst several competing alternative ways to achieve some predefined objective. This means that every alternative is assessed against the same set of criteria or attributes. For example, in order to select one car amongst a half-dozen of

candidates, one will assess their respective performance in terms of criteria (or attributes) such as price, energy consumption, security, reliability, comfort, etc. and select the one that performs the best on the average. However, the policy-making context is slightly different from this one. Indeed, public policies – even when designed to address the same problem – will differ not only on the actions and measures they would set to work but even on the objectives themselves. As Richardson (2002) argued convincingly, even the translation by administrative agencies of objectives given by the legislature cannot be reduced to reasoning about means only. At the administrative level also there is room for a democratic deliberation on ends. As an illustration of this, Richardson discusses the example of the Biaggi amendment to the Urban Mass Transit Act (UMTA) adopted by the US House of Representatives in 1970. The amendment stated that elderly and disabled persons had the same right to mobility as anyone else and therefore that special efforts were to be made to design transportation system to make them accessible to such persons. For the agency in charge of the implementation of this amendment, the Department of Transportation (DOT), the most cost-effective way to provide transportation for the elderly and the disabled was to work out special services, especially targeted to these people instead of retrofitting all existing mass transportation vehicles. If representative of the elderly liked the idea of door-to-door bus services, advocates of the disabled argued that special services would discriminate them and that disabled persons should be able to use ordinary modes of transportation. Besides, three years later (1973), another piece of legislation was to be adopted which ruled out discrimination against the disabled (Section 504 of the Rehabilitation Act).

Eventually, almost ten years later, the DOT issued a set of regulations adopting the mainstreaming approach, whatever its relative cost.

“What went on in this process of reasoning was that two vague ends, making transportation systems accessible to the disabled and avoiding discrimination against the disabled, were combined in such a way as to give rise to a new end, that of mainstreaming the disabled into existing transportation systems...What we see in the course of this official reasoning is the rational establishment of a new end on the basis of its fit and coherence with other ends and commitments...One way that reasoning can establish new ends, then, is by locating new ones at the intersection of ends to which we are already committed.” (Richardson, pp. 108-109).

What the example of the Biaggi amendment shows is that two vague, imprecise aims can, when combined, give way to something precise and workable. Likewise, as a set of – however vague – ends to which we are already committed, sustainable development can play an important role in helping redefining new ends in many domains of public intervention.

4. Reasoning about ends with ACO models

It is reasoning about means and consequences that motivate the building of Figure 3. The emphasis is on the likelihood of occurrence of the expected, anticipated consequences and on the risks of unwanted, counterproductive impacts and side effects. In short, the assessment was mainly concerned with the effectiveness and the efficiency of the planned strategy. With the analysis behind Figure 5, the emphasis is on the consistency between the objectives of the proposal and other higher-level commitments.

Let us suppose the country has already adopted a SD strategy, which, amongst other, set overarching goals and second order objectives in several domains such as:

- Transportation policy:
 - o To increase supply of mass transportation systems;
 - o To promote less polluting vehicles;

- To promote another model of mobility than the “all car model”
- Poverty and exclusion:
 - To foster the creation of high quality jobs;
 - To promote entrepreneurship and sustain small business and farmers;
 - To protect consumers
- Climate policy and natural resources uses:
 - To reduce greenhouse gases emissions;
 - To foster renewable energies;
 - To use less natural resources;
 - To protect biodiversity;
 - To work out a sustainable development label.

Figure 5 is almost identical to Figure 3 except that these objectives have been added at the top and that, for readability, the bottom section with actions have been remote. Likewise, some relations between actions, consequences and objectives have been simplified or just removed. On the other hand, other relations have been added, namely between consequences and SD strategy objectives.

For instance, as figure 6 illustrates, whilst the biomass fuels promotion policy aims at reducing greenhouse gases emissions in transportation, it is patent that the policy takes no account of the SD strategy's goals regarding transportation in general. Indeed, just substituting a limited amount of biomass fuels to fossil fuels, while certainly contributing to the SD objectives regarding climate change and natural resources uses, will have no impact - and if any, possibly adverse one - on the supply of mass transportation system, the promotion of more efficient and less polluting vehicles and the shift to another model of mobility. Especially concerning the latter, it could be even argued that the proposal will more probably hinder it. The same could be said off promoting less polluting cars. Burning biomass fuels instead of fossil fuels could dampen motivations to buy hybrid vehicles...

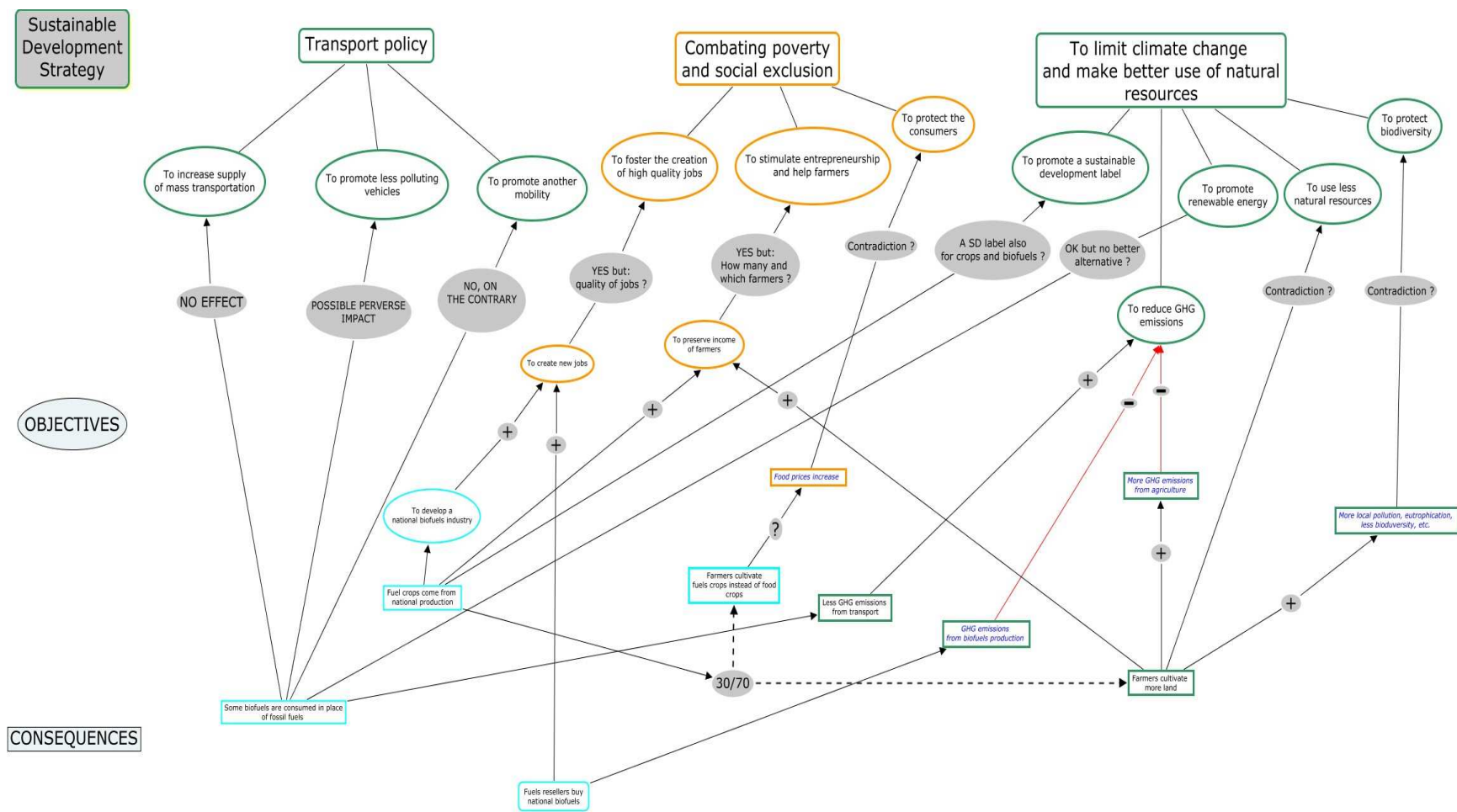


Figure 5. Sustainability Impact Assessment of a biofuels' promotion policy (2)
An Actions-Consequences-Objectives-SD Strategy analysis

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Thus, taking SD strategy about transportation into account would certainly entail a thorough revision of the proposal, for instance in targeting public transportation systems (buses, taxis) more than private cars.

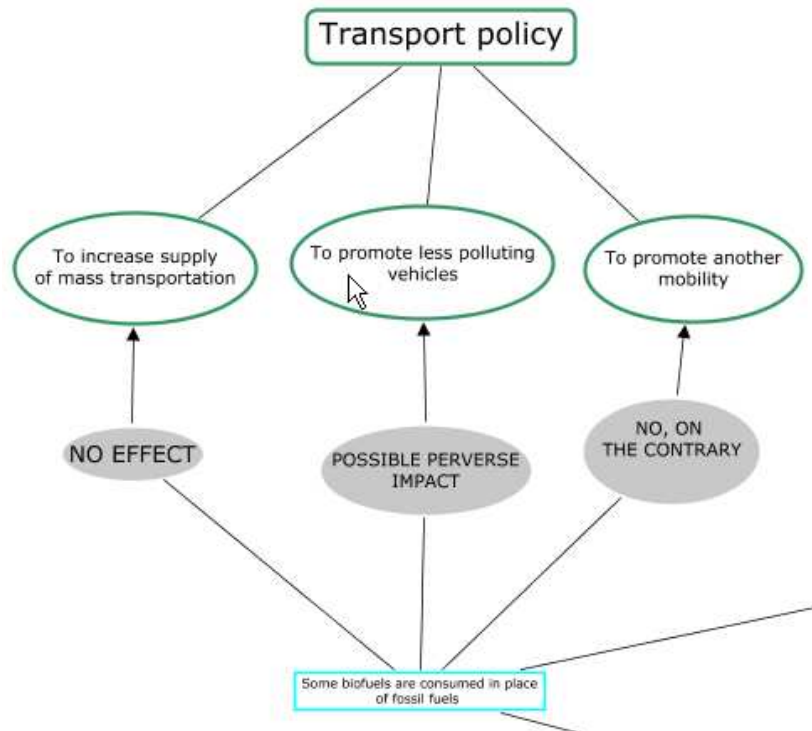


Figure 6. Confrontation of policy proposal for promoting biomass fuels with higher-order commitments to sustainable development in transportation policy.

The situation is similar with other SD objectives. For example, it doesn't suffice to create new jobs. The SD strategy on fighting poverty and exclusions asks for "high quality" jobs. It doesn't seem that the policy proposal cares about quality of jobs. Besides, if the policy is rightly concerned with farmers' income, we can wonder if it cares with the right farmers? That is, are the producers of sugar beet, wheat or colza (rape) the most in need of support amongst the farmers or could we suspect that they just have more bargaining power or more effective lobbying? Whilst it is certainly with SD strategy's environmental goals that the proposed policy is the more in line, it is perhaps possible to be still more efficient. For instance, if one can fear that raising more crops for biomass fuels will lead to more local pollution of waters, soils and air and less biodiversity, why not create a SD label for crops and/or biomass fuels and include in the tender's disposition the possibility to give a preference to SD labelled products?

We believe that such interrogations and suggestions would have less chance to be raised where it not for the convenient representation and communication provided by the ACO framework.

As mentioned here above, the main difference between the multi-criteria decision context and the policy assessment lies in the lacking in the latter case of a common set of attribute against which to rank the different alternatives. Indeed, policy proposals can differ both on the actions they plan to put to work and on the set of goals they consider. In the example discussed by Richardson, the same objective of giving transportation facilities to the disabled could have been reached by different alternative policies which would have differ not just on the various means put at work but, more fundamentally, on the additional objectives taken into account.

It follows that alternative policies may very well be incommensurable. Although this can be true in general, it should not be the case for most SD policies. Returning to our biomass fuels promotion policy, we have seen that while contributing to some of the objectives of the national SD strategy, it was defective on other related important objectives, notably in the transportation sector. Therefore, any alternative proposal as effective in promoting biofuels' use in transportation and in providing market opportunities for agriculture products but enabling to reach one additional objective of the SD strategy would necessarily be preferable. In other words, the very existence of overall SD strategies at different institutional level, enables a lexicographic ordering of partial policies in terms of number (and intensities) of objectives to which they contribute. This means that a more synergetic –defined as the number of the objectives in helps in attaining- policy should always be preferred, other thing being equal, to less synergetic ones. Of course, it would be silly to te into account

If sustainable development translates in cascading hierarchical commitments from the most universal one like the Millenium Development Goals to the narrowest one like a local Agenda 21 strategy with, in-between, regional and national SD strategies, then, except for the highest in the hierarchy, every policy proposal can in principle be assessed against immediately higher commitments: local against national, national against regional, regional against global.

Conclusions

There is no such thing as a silver bullet and the ACO framework doesn't claim to be one. Yet, compared to other integrating framework in SIA, it has certainly something to commend for. It is, for example, more appropriate than the Drive-Pressure-State-Impacts-Response model for analysing policies, plans and projects. If DPSIR models are without doubt very useful in analysing causes (remote as well as proximate) and symptoms of environmental damages and for organising systems of environmental indicators, they do not translate easily in public action policies or program, mainly because public action cannot be conceived as a simple “reverse engineering” of the circumstances and causes of public (environmental, social or economic) problems.

What ACO offers is a cheap but effective way to:

- Integrate in the same visual frame social, environmental and economic consequences (effects and impacts) of policies;
- Check for the consistency of these consequences with higher-levels objectives or commitments such as SD ones,
- Make apparent the uncertainties surrounding some relations between actions and consequences and consequences and objectives,
- Help in identifying unwanted impacts and possible mitigating actions in order to control them,

- Compare alternative policies with respect to a common set of overarching objectives.

It must be conceived as no more and no less than a participative tool for designing and qualitatively assessing SD strategies and policies against criteria such as relevance (do they contribute to SD?), effectiveness (what is the likelihood of the outcomes taking uncertainties into account) and consistency (are the objectives consistent with high level values and commitments? Are unanticipated and unexpected impacts consistent with policy's objectives?). What is clearly lacking in the proposed framework is the efficiency dimension, the cost/effectiveness evaluation. It is undoubtedly a very important criterion for selecting the most appropriate way to address a social problem. But unlike relevance, effectiveness and consistency, efficiency is a relative matter. While it is always possible to assess the relevance, effectiveness and consistency of any proposal in isolation, this is meaningless when coming to efficiency on which only comparisons can be meaningful. Therefore, the ACO framework can only be one component of the evaluator's toolbox. It will not substitute itself to economic or multi-criteria evaluation methods such as CBA or multi-criteria analysis. We just believe that it can help in structuring the preliminary stages of the SIA process of proposal description, screening and scoping, impacts identification and prediction.

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Sustainability Impact Assessment at federal level: An overview of (provisional) conclusions, policy implications and scenarios for implementation

20 January 2006

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This paper summarises the main insights obtained in the project “Methodology and Feasibility of Sustainability Impact Assessment. Case: Federal Policy-making Processes”. The project started in July 2004 and ends in February 2006. The research team consisted of researchers from UGent (CDO, CMR), ULB (CEDD), IDD and UCL (AURAP).

The paper is meant as a preparatory document for participants to the expert seminar of 26 January 2006. It summarises the main conclusions from the research and sketches possible policy implications and scenarios for introducing SIA at federal level. The paper is not meant as an introduction to SIA and SIA experiences in general (such as experiences with (S)IA in other countries or at EU level, methodological challenges, the intricacies of screening and scoping, participation in SIA, results of case studies etc.) For detailed discussions of these kind of aspects of SIA we refer to the final report and the different working papers.

With this paper and the seminar, the research team wants to present the findings and lessons learned and wants to discuss the main problems which remain unresolved and the choices which have to be made before SIA can be introduced at federal level.

Literature references are kept to a minimum.

PART 1: CONCLUSIONS AND POLICY IMPLICATIONS

Chapter 1. Searching for the value added of SIA

1.1. *What SIA is supposed to be*

SIA has developed out of sectoral or project-level assessments such as Environmental Impact Assessment (EIA), Strategic Environmental Assessment (SEA) and policy assessments such as Regulatory Impact Assessment (RIA)¹. SIA is still in an early, developing phase and a commonly accepted definition of SIA does not exist. The main characteristics which are usually attributed to SIA include:

- An ex ante assessment: SIA is undertaken during the early stages of policy formulation, before a final decision on the policy concerned has been taken
- An integrated assessment: the traditional sectoral analysis is expanded by considering the broad social, environmental and economic impact of policies and weighing them against each other
- A participative assessment: input into policy-making is broadened from politicians and civil servants to stakeholders and civil society

The common ground between SIA and other forms of assessment is their objective or function: they aim at the evaluation of a policy proposal or project at a more or less early stage in the decision-making process, by considering different policy options (or alternatives) in order to strengthen the positive outcomes of the proposed policy, diminish the negative (side-)impacts of the policy and determine the necessary mitigation or compensation mechanisms that will allow rendering a positive overall impact of the policy. A distinctive characteristic of SIA is that it does not take a policy goal as given, but assesses whether the policy contributes to sustainable development. This characteristic distinguishes SIA from e.g. RIA, where the policy goal as such is not discussed. The main objective of SIA can then be described as follows:

- SIA assesses whether a proposed policy contributes to sustainable development...: SIA does not evaluate a proposed policy against its own goals but assesses whether it contributes to sustainable development.
- ...by informing about impacts and policy options...: SIA moves beyond simple identification of potential negative consequences of particular policies and instead promotes the articulation and development of policy alternatives and supportive accompanying measures, which seek to emphasize and promote policy benefits while mitigating potential negative impacts.
- ... in a systematic and rationalised way: SIA follows well-defined methodologies and institutional procedures in order to make the process transparent and create a learning environment.

SIA is part of a learning process during which information is fed back into the political decision-making system in a systematised way. In the long term this only works well when evaluation does not stop after the ex ante assessment, but when evaluation also happens during the implementation of the policy and ex post. This makes it possible to check whether

¹ Other comparable assessment methods include Social Impact Assessment, Health Impact Assessment, Business Impact Assessment

what was predicted ex ante actually materialises and it opens the door for improvement to methodologies and institutional structures.

Theoretically, the value added of SIA can then be caught under terms such as: coordination of policies towards sustainable development, better governance, evidence-based decision-making, enhancement of the quality of the decision-making process, creation of public support for sustainable development policies.

However, what is theoretically desirable has to be realised in a concrete, operationalised form of SIA. Operationalising SIA demands seeking solutions to numerous problems, where an ‘ultimate’ solution does not exist. A typical problem with which SIA is confronted, is how to assess whether a policy proposal contributes to sustainable development, and thus how sustainable development is defined. Other problems which have to be solved include the methodological framework chosen for SIA and the institutional structure within which SIA has to function.

One of the main challenges for any SIA will be to seek solutions for these problems and, taking into account the particular policy context and institutional characteristics within which it has to function, design and implement SIA in such a way that it approaches its theoretical value added.

1.2. SIA as a methodological toolbox vs. SIA as a deliberative process

The way SIA is shaped and implemented depends on the overall characteristics of the policymaking process in which it has to take place.

Basically, one can distinguish two competing conceptions of policy-making:

1. Policymaking as rational problem solving;
2. Policymaking as discursive practices

The first conception has dominated policy analysis and policy science for more than decades. It is deeply rooted in social choice theory and in neoclassical welfare economics. It sees policymaking as a kind of problem-solving where clearly defined and agreed upon objectives can be optimized with respect to budgetary and informational constraints.

The rational model of policy-making “rests on three pillars: a model of reasoning, a model of society, and a model of policy-making”² (Stone, 2001, 8).

As a model of reasoning it sees decision-making as a succession of stages consisting off:

- identifying objectives ;
- identifying alternative ways of achieving objectives ;
- predicting the likely consequences of each alternative ;
- evaluating them ;
- selecting the alternative that maximizes the attainment of objectives or that offers the best cost-effectiveness ratio

As a model of policy-making it conveys a conception of government as a firm producing a special kind of commodity, namely decisions, responding to demands coming from outside (civil society).

² Stone, D., 2001. Policy Paradox. *The Art of Political Decision Making*. W.W. Norton, New York, London.

This conception has recently been fiercely criticized by many scholars³ as unrealistic and even deceptive. On the contrary, they see policy-making more as a struggle between social discourses and practices and as the construction, through deliberation, of a common discourse on values, ends and means. In such a process, metaphors, analogies and rhetoric are more relevant and effective than logical reasoning and calculus.

These two different visions of policy-making have also very different conception of the nature and the role of knowledge in the whole process. For the rational model, knowledge is above all about facts. It can be value free and politically neutral and of use in identifying and predicting impacts of alternative policies. Values have their place in the decision making process but only at the end when evaluating and selecting alternatives. On the contrary, advocates of the discursive model see knowledge as deeply framed in values and the role of data as more than neutral, objective information about the possible consequences of alternative actions. Actually, it denies that facts and values can ever be separated.

As stated above, the two models have very different implications for SIA. In a rational problem-solving perspective, SIA consists in a new kind of *tool*, a package of concepts, methods and techniques helping in dealing with long-term and global impacts, uncertainties, multidisciplinary, etc. What makes this tool specific is its emphasis on integration: integration of concepts, methods and models.

In the discursive perspective, SIA is to be seen as a framework for a collective deliberative *process* in which all actors learn to integrate sustainable development in the way they consider and frame problems, solutions, decisions and actions.

In other words whilst SIA in a rational decision-making perspective is above all outcome oriented (what matters is the outcome), in a discursive perspective, it is the process itself that matters. The differences between an outcome-oriented and a process-oriented SIA are numerous and far ranging. For instance, criteria such as effectiveness, efficiency, fairness will mean very different things. The following table summarizes the main difference between the two models.

Policy-making conception	Discursive – deliberative. Politics as	Rational problem solving. Policy as calculus
SIA	SIA as framing a process of deliberation on ends and means	SIA as a toolbox for selecting the best alternative (means) from a SD point of view
What matters	Values	Facts
Kind of rationality	Procedural	Substantive
What is maximized	Participation	Rigor, exactness, accuracy
Leading actors	MP Stakeholders Citizens Facilitators	Government Civil officers Experts Academics
Effective if....	The decision is collectively endorsed, i.e. a political community (a public) has been created around an issue. Some people have changed their mind.	The “optimal” alternative has been identified.

³ Amongst many, one can cite F. Fisher, J. Forester, D.A. Schön, D. Stone

Efficient if	A consensus (or an agreement) has been reached within a reasonable delay.	Technological efficiency: the most efficient tools have been used.
Fair if....	Every standpoint has been heard. Nobody feels deprived or powerless.	No relevant alternative, hypothesis or information has been left aside without justification
Methods and tools	Collaborative decision making tools (including multi-criteria methods) Participative methods (citizens ‘juries, deliberative polls, etc.)	Scientific models Cost-benefit analysis
SWO(R)T analysis from a SD point of view		
Strengths	SD has a chance to become a collective concern	Accuracy, precision, rigor
Weakness	No guarantee that “need of strangers” will be taken into account	Data and expertise requirements
Opportunities	Existing participation mechanisms (but see threads)	Existing know-how at Federal Plan Bureau Universities.... More or less BAU
Risks	New corporatism Demagogy Unrealism	Technocracy (SD as a technical matter to be left to those who know) Bureaucracy
Threads	Not much experience with methods and tools Existing participation mechanisms Bad will of politicians	Bad will of civil officers and government experts

Table 1. Two different visions of policy-making

Of course, these are pure “ideal-typical” models. However, as such, they can help in stating the problem we are facing. Are we going to favor more a discursive kind of SIA or a scientific-rational one? Clearly, the choice is not between an idealistic pushed-too-far deliberative SIA and an idealistic pushed-too-far scientific-rational one. It is between a realistic well-balanced deliberative model and a well-balanced scientific-rational one. But we should just be conscious that both would more or less exhibits – albeit in a smoothed way – the characteristics of the pure model from which it inherits. However, in order to choose adequately we must first consider reality as it goes and make a thorough analysis of the existing policy context and institutional settings. Indeed, unless one is ready to re-engineer the whole federal policy-making process, it is clear that we should opt for the model which is best fit to actual policymaking practices. Conclusions of the analysis will be presented in chapter 3, while chapter 4 describes possible models for SIA and their implications.

Chapter 2. Designing a methodological framework for SIA

2.1. The general structure of SIA

As will have become clear, the ultimate form of SIA does not exist. This is also true for the methodological framework which is underlying SIA. Most SIAs follow a general, similar structure which has been adapted from existing assessments such as RIA, EIA and SEA. But the scope, depth and methodological applications within this structure can differ widely. Depending on the kind of policy proposal assessed, an appropriate construction and methodology will have to be chosen. At the same time, it has to be admitted that experiences with SIA are still very limited. Most examples of SIA rely primarily on qualitative descriptions, informed by data and research which were not particularly ordered for the SIA concerned.

A more detailed look at SIAs teaches that usually the following steps are recommended.

Normally, the first step is a *screening* exercise that helps to decide whether a policy proposal should undergo SIA. Second is the *scoping* phase, which is meant to decide how the assessment will be done. In the following paragraph 2.2., the importance of the screening and scoping phase is discussed in some detail.

Third, the policy proposals which are selected, undergo an *assessment*. The phase of assessment usually comprises several parts:

- A description of the *problem* the policy wants to address, the causes of the problem, the people or fields affected.
- An explicit formulation of the *objectives* the policy wants to reach, qualitatively and quantitatively described.
- A formulation of different *policy options* which exist for reaching the objectives: an important step since it is these different options that will be assessed and weighted against each other.
- An *analysis* of the impacts the different policy options will have: this step is at the heart of SIA. It usually follows a structure in which the important environmental, economic and social impacts of the different policy options are identified and then qualitatively and/or quantitatively assessed. Who is affected and in what way is also described.
- A *comparison* of the different policy options on the basis of the impact analysis: positive and negative impacts of the options are listed and compared. Often a form of multi-criteria analysis is followed where impacts are expressed in different units. Usually, SIA compares options but does not taken a decision on which option is preferred. This is left to the political debate. However, sometimes a ranking of options occurs.

Some of the methodological issues which surface during the assessment phase, are further discussed in paragraph 2.3.

Fourth, after the assessment has been done, a *report* has to be drawn up, explaining the results of the different steps and the procedures followed (e.g. the way in which information was gathered, stakeholders participated etc.).

Finally, the report enters into the decision-making process, where the *follow-up* to the assessment is decided and where it is usually made public.

2.2. On the importance of screening and the necessity of scoping

Obviously, evaluating each and every policy proposal developed by public authorities would be a time-consuming and resource-intensive exercise. Simultaneously, overlooking policy proposals that bear potential strong negative impacts on sustainable development could have undesirable consequences that could have been anticipated and avoided with a proper evaluation. Hence, the importance attached to a first selection process, called *screening*. The screening stage is generally the first phase in an Impact Assessment. It acts as a process, where policy proposals are rapidly assessed for their potential impacts. It provides a systematic way of structuring information, which should help deciding whether a more thorough and extended impact assessment could usefully be undertaken, highlighting the need for further investigation on the proposed policy.

Screening procedures can be distinguished into two broad types of approaches⁴. On the one hand, prescriptive approaches select by means of law or regulation which policy proposals should be subject to an extended Impact Assessment under which conditions. Selection is done on the basis of criteria such as the nature of the policy proposal (e.g. program, policy, plan...), the budgetary implications (e.g. budgetary threshold)... Prescriptive approaches can either materialize in inclusion lists or exclusions lists of policy types, which should or should not undergo extended assessment. On the other hand, discretionary approaches do not pre-determine those policy proposals that should undergo extended assessment by type, issue, theme, size, budget... Instead, a simplified evaluation mechanism is developed methodologically and procedurally, which has to be triggered for each policy proposal. These pre-assessments allow an insight on the necessary extension of the subsequent evaluation on the basis of the foreseeable significance of the impacts.

Both approaches are not necessarily antagonistic and can be combined. As a matter of fact, some decisions taken by public authorities are simply not suited for evaluation at all; others are not suited for SD-type evaluations. Some form of prescriptive selection seems thus unavoidable, and be it only to skim from the political agenda, issues such as nominations or errata. Practice shows that some countries exclude also from their pool of eligible policy proposals, proposals that implement European regulation on the ground that these are already assessed on the European level and that the Member States' lever to reengineer European regulation is anyway very limited in most cases. Other public authorities introduce thresholds into their prescriptive approaches, for instance a minimum amount of budgetary spending, or minimum number of citizens or firms touched by the regulation... Very rarely, and if so mainly with issues of state security and defense, public authorities exclude some policy proposals on the basis of their sector nature.

Simultaneously, evaluating potential impacts on SD solely on the basis of fixed prescriptive rules does not allow accounting sufficiently for the complexities and uncertainties of the sustainability paradigm. As a consequence, screening relies in most cases also on pre-assessment tools, such as short evaluation notes, impact matrixes, causal chain exercises...

While screening allows deciding if a policy proposal should be subject to an extended SIA, the next step in the process, called *scoping*, determines how to evaluate the policy proposal.

⁴ United Nations Environment Program - UNEP (2002). *Environmental Impact Assessment Training Resource Manual*, Second Edition.

As every policy proposal can potentially enter the SIA process, the range of policy proposals which are potentially submitted to SIA is very large. Comprehensive configuration of each SIA-exercise in accordance with the policy proposal's specific nature, form, extent... is thus crucial. More specifically in the context of SD, scoping is used to determine, notably, the depth and the integrative character of the final extended evaluation exercise: for instance, some policy proposals might not necessitate an integrated, participatory, fully fledged SIA, but would nevertheless profit from a specifically designed evaluation of their environmental impacts. *Scoping* allows setting an individual and specific evaluation framework for each policy proposal having been identified as critical during the screening process. Scoping processes structure the subsequent extended evaluation and identify those elements (e.g. economic sectors, environmental dimensions, social groups, geographical distribution...) that the extended evaluation needs to focus on. Scoping is also permitting to define the data needs and to determine the methodology selection of the extended evaluation. In short, scoping allows determining the *Terms of Reference* of the extended evaluation.

Considering the fact that scoping determines the configuration of the subsequent SIA assessment, it is thus comprehensible that scoping is understood by many actors as a crucial step in the evaluation process. To a certain extent, scoping sets the fundamental boundaries of the evaluation, deciding who will take part when in what moment to the assessment process, but also defining which evaluative questions and elements are most important to be taken into account during the evaluation. Above all scoping is also the phase of the SIA-process to trade-off between the desirable and the feasible in terms of evaluation. Issues that are considered during the scoping phase include matters of *proportionality* between the evaluation's depth and impact and the policy proposal's importance, as well as *allocative* matters such as the intelligent distribution of means and capacities between the different parallel SIA-evaluations, and matters of technical *feasibility* (for example in terms of data needs) of the evaluation.

While being largely technical, it has nevertheless been repetitively requested that scoping phases are opened to the participation of stakeholders and/or non-administrative public institutions (e.g. parliament or senate). Obviously, scoping is identified by all stakeholders alike as the crucial moment of defining the evaluation questions and the technical SIA-configuration. Understandably, they request to intervene in these discussions.

2.3. *What integration, which methodology ?*

As has been said, impact assessment – whatever its domain – is classically described as a sequential process consisting of the stages visualized in figure 1. Briefly, screening consists in selecting amongst the many policy proposals those that, for one reason or another, should undergo an impact assessment. Scoping is the definition of the scope, range and depth of the required assessment. Impacts prediction is just what it says: to predict the magnitude, direction and scale of the likely direct and indirect, expected and unexpected impacts of the project. Then comes evaluation, which consists in assessing the significance and the desirability of the impacts.

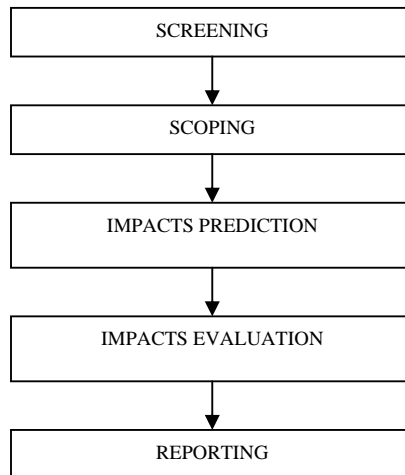


Figure 1. The Impact assessment process

Except for scoping and reporting, decisions are to be taken about the different methods and techniques that will be used for each stage of the process. As for screening, for example, except if it is done on a purely prescriptive basis, one will have to choose between simple checklist or more precise but more demanding methods such as cross-impact matrices, with or without weighting, etc. In this research project, we decided to experiment with a cross-impact matrix for screening case studies with some positive and some less positive results...

However, the options are still much more numerous for impact prediction, ranging from “quick- and-dirty” qualitative methods to “several-hundred-equations” models of which they exist many different kind. The situation is a bit simpler with evaluation methods where one has to choose between aggregative or non-aggregative (Multi-criteria or deliberative) models and if aggregative, between monetary (Cost-Benefit Analysis) or non-monetary one (Cost-Effectiveness Analysis, Analytical Hierarchy Process, Multi-Attribute Value Theory).

Of course one can very well decide not to choose beforehand but to leave all options open, deciding afterwards on a case-by-case basis, depending on the nature of the problem, the availability of data, etc. On the contrary, one could argue that in order to reach rapidly a satisfying level of effectiveness and efficiency, we should select from the start a portfolio of prediction and evaluation methods with which the people in charge of the SIA could become as time goes by more and more comfortable.

Obviously, these questions are subordinated to the more fundamental one of what kind of SIA we want to promote as framed it in part 1.2 of this paper. If the choice is for SIA as a toolbox, it is likely that we will have to prepare ourselves to invest important resources in technical in-house capacity-building or, if not, in subcontracting. If, on the contrary, we favor a more discursive brand, we will be satisfied with less accurate but more manageable methods such as AHP, for example.

	SIA	
	<i>Process-oriented</i>	<i>Outcome oriented</i>
FACTS	Soft, qualitative methods	Quantitative modeling + Cost-Benefit Analysis
VALUES	-Analytical Hierarchy Process - Participative mechanisms	Multi-criteria methods

Table 2. Methodologies for different conceptions of SIA

Normally, a process-oriented vision of SIA will put more emphasis on values than on facts. Therefore, more will have to be invested in participative mechanisms and/or on methods focusing mainly on non-monetary aggregated values such as the AHP. Conversely, a more outcome-oriented conception of SIA will probably focus more on facts and therefore on quantitative modeling.

Chapter 3. The institutional context of SIA

As has been remarked above, one of the main challenges is to design and implement SIA in such a way that it approaches its theoretical value added. The utility and relevance of SIA will be enhanced when the particular policy context and institutional characteristics within which it has to function, is taken into account. This chapter presents the main findings of the research on the political and institutional context for the Belgian federal level. In 3.1. and 3.2. some general characteristics of this context are discussed. Paragraphs 3.3. till 3.9. focus on some important questions that still have to be answered from an institutional perspective before SIA can become operational.

3.1. *The influence of the policy context within which SIA functions*

The effectiveness of SIA will be enhanced or weakened by the policy context in which it functions. This can simply be demonstrated by analysing some of the characteristics of SIA and comparing them with the characteristics of the political and institutional context.

Since SIA is meant to help orienting policies towards sustainable development, its acceptability and utility will be greatly enhanced when all or most federal policies are framed within a sustainable development discourse and guidelines. This is clearly not the case at federal level. Sustainable development policy is a minor ‘branch’ of policy, almost unconnected to other policy fields, weakly institutionalised, badly financed etc. The recent Report of the Belgian Court of Audit on “The Coordination of the Federal Policy on Sustainable Development” addressed to the Federal Parliament (June 2005)⁵ articulates the major obstacles for attaining the Belgian federal objectives concerning sustainable development, such as a lack of financial resources, enforcement mechanisms, structured cooperation between the actors concerned, etc: “*The actors and the procedures are situated in the margin of the decision process of the State.*” (Court of Audit 2005, 3)

⁵ http://www.courdescomptes.be/docs/Reports/2005/2005_14_Duurzame_Ontwikkeling.pdf

A second point is that sustainable development in general depends on integration of policies and that assessment mechanisms such as SIA depend on integrated assessment. But what is true for most modern states is also true for the Belgian federal level: policy-making structures are developed along the lines of policy domains and function largely independent from each other. Integration of policies is the exception rather than the rule. Still, for SIA to function well, an integrated assessment – almost certainly involving civil servants with different backgrounds – is necessary.

Thirdly, while the previous point is sometimes called ‘horizontal integration’, it will also be necessary to think about ‘vertical integration’ when developing SIA. For a lot of policies it will be difficult to avoid talking about influences on and competences of other levels (local, regional, federal, European, international). The habit in Belgian federal politics of not being able or willing to speak about competences other than the federal ones, are not favourable for SIA.

Fourthly, systematic evaluation of policies and in particular systematic ex ante evaluation such as is necessary for SIA, is lacking almost completely in the current policy-making procedures. The limited experience which exists does not follow a strict methodological framework, nor can it rely on a formal evaluation process. Closely related to this problem is the openness and willingness needed during policy preparation to formulate, compare and weigh policy alternatives. Interviews during the research taught that the very politicized policy-making processes in Belgium are not fertilizing the ground for evaluations which would engage further liability of political actors. Recurrent budgetary cuts in most policy sectors diminish the availability of resources for evaluation, with civil servants concentrating on implementation of policies (not preparation or ex ante evaluation) and ministerial cabinets taking the role of developer of policies.

Finally, SIA also relies on open processes of decision-making. The opinions of stakeholders are actively looked for and normally SIA results are made public. Stakeholder involvement, in particular for the traditional social partners (employers, trade unions), is not unusual at federal level, but systematic involvement of other actors during policy preparation and openness about the results of consultations is unfamiliar.

In general, the conclusion can be drawn that the policy context is not favourable for introducing SIA and turning it into an effective tool for guiding federal policy towards sustainable development. At first sight, it appears as if in many ways SIA implies a rupture with the customary way of policy formulation at federal level. However, over the past years different institutions have been introduced which form a layer on which sustainable development policies can build. Besides, some form of ex ante evaluation has been introduced with the Kafka test. In this sense SIA can also be interpreted as a next step, albeit a step which demands a lot of new capacity building, suited institutions and a clear will to orient policies towards integration and sustainable development.

3.2. Existing institutional and legal building blocks for SIA at federal level

Although in general the policy context is not favourable, several institutional building blocks are in place that can serve as a point of departure for the newly to be developed SIA.

The Act of May 5th 1997 regarding the coordination of the federal policy in Sustainable Development lays the foundation of the federal SD-policy. The law introduces 2 instruments – the federal Plan on Sustainable Development (FPSD) and the Federal Report on Sustainable Development (FRSD) – and three actors – the Federal Planning Bureau (FPB), the Federal Council on Sustainable Development (FCSD) and the Interdepartmental Commission on Sustainable Development (ICSD) to coordinate all federal policy initiatives on Sustainable Development.

In addition to these basic coordinating structures, a new Programmatic Public Service on Sustainable Development has been established by the Royal Decree of February 25th 2002. This PPS-SD has three main tasks: the preparation of the policy on Sustainable Development, the coordination of the execution of this policy and the provision of the required expertise, all within the context of the law of May 5th 1997.

The most recent policy initiative shaping the current institutional framework is the Royal Decree of 22 September 2004 creating the Cells for Sustainable Development within the Federal Public Services, the Programmatic Public Services and the Ministry of Defence. The cells have to promote the implementation and follow-up of the current FPSD in all Public Services.

It is within this general institutional background of the federal policy on sustainable development that a potential SIA-procedure needs to be situated. The idea of introducing SIA in the Belgian federal policy context has been maturing for some years now. SIA was explicitly mentioned for the first time in the Federal Coalition Agreement of 1999. The development of an SIA methodology has also been extensively referred to in the first Federal Plan on Sustainable Development (2000 – 2004), including an action plan with strategic objectives for introducing SIA and the measures needed for the realization of its implementation. Also the second Federal Plan on SD has rephrased this issue. Furthermore the need for a SIA-practice has been repeated in the Federal Coalition Agreement of July 2003, stating that “all important Governmental decisions” will be assessed on their effects concerning Sustainable Development, but without creating “extra delays in the policymaking process”.

The most important legal document on which the implementation of SIA can currently be based, is the Royal Decree of 22 September 2004 creating the Cells for Sustainable Development. However, this is a very weak basis for implementation. It only stipulates that the PPS-SD is responsible for making the SIA methodology operational, for inserting it into the Public Services and for the quality monitoring of its implementation. The Cells for Sustainable Development are assigned the responsibility of indicating in their yearly action plan on which types of decisions SIA will be executed. They are also responsible for executing or coordinating the execution of SIA.

If SIA is taken seriously, a stronger institutional foundation will have to be provided. A lot of questions still have to be answered and decisions have to be made, concrete responsibilities and tasks have to be assigned and appropriate resources have to be provided for. The most

important ones which have been identified in the research are discussed in the following paragraphs.

3.3. How to select policy proposals for SIA and who could be commissioned to do so?

As mentioned above, one of the first challenges for an operational SIA-process is to develop a selection (i.e. screening) and configuration (i.e. scoping) mechanism, which allows to allocate efficiently existing resources and capacities for evaluating policy proposals by identifying those proposals which would best undergo a more extended assessment, and by configuring individually the assessment. Such a selection is necessarily a matter of trade-off between the evaluability of the policy proposal, the means and capacities available, the potential (positive or negative) impacts of the policy proposal, the lever to adapt the policy proposal, the will to open and re-engineer policy, the awaited benefits from inter-service consultation and stakeholder dialogue, the flexibility of the policy agenda's timing...

Some of these factors, such as the potential future impacts of a policy proposal, can be explored in a sufficiently objective way on the basis of robust methodologies and tested assessment tools (e.g. such as impact matrixes, quick scan tools...). However, many of these factors are a matter of judgment and of will of the authors and supporters of the policy proposal at hand. The selection of policy proposals for extended SIA is thus also - and maybe primarily - a matter of perceived political opportunities⁶, which should however be informed as much as possible by the results of the use of objective screening tools and procedures.

Many of the above-mentioned factors cannot be set on an absolute scale, but remain a matter of relative weighting and comparing between a number of policy proposals on a number of factors. This, however, calls for a relatively precise positioning of the screening and scoping moments into an operational and existing policy-making agenda (e.g. such as it is the case with the annual working program at the level of the European Commission) in order to have at hand a sufficient pool of policy proposals for comparison and choice. Currently, this necessary condition for a performing SIA is far from met at federal level in Belgium, as there exists neither a clear policy calendar, nor a very far-reaching obligation for information on the government's future policy intentions. Both the screening and the scoping moments of SIA call however inevitably for the existence of what is called a regulatory agenda.

As for the operationalization of a screening instrument (such as for instance the impact matrix developed and tested during the project), it appears⁷ that it remains (especially within the current federal policy making process) necessary to rely on the mutual collaboration of civil servants and representatives of the policy proposals' initiator (e.g. members of ministerial cabinets). The most evident argument for this being of course, that if the aim is to let SIA deploy the maximum of its impact and usefulness, then it needs to be initialized at an early moment in the policy-formulation and policy-making process, implying that still relatively

⁶ This is not to say that the motivations - political or not - behind such selection processes should remain in the dark. Quite opposite: whatever the motivations for the selection are, these need to be rendered transparent. The success and impact of tools such as SIA - which are widely executed as internal administrative evaluation mechanisms, but where the resulting societal implication and coordination are of foremost importance - are largely dependent on the credibility raised with the tool in the midst of stakeholders, civil society, but also civil servants and politicians themselves.

⁷ See notably the testing phase of the screening matrix, which was performed during the SIA-project.

few detailed information on the policy proposal exists, except for those information which have been used by the policy initiator to configure the proposal. Hence, the necessity to involve in any cases the policy initiator, which in the current federal setting is often a member of the relevant ministerial cabinet, sometimes a civil servant.

As a consequence, the process of selecting policy proposals to undergo SIA could evolve around 2 basic principles.

First, the selection should rely on a triple procedural structure comprising a prescriptive exclusion of some types of policy proposals (e.g. with a negative list of policy types, which are deemed not relevant in any case for SIA) followed by a discretionary phase which filters policy proposals on the basis of their expected impacts on sustainable development (e.g. with a standardized impact determination- and impact reporting-tool such as the tested combination *impact matrix / argumentative form*). The final selection of the policy proposals to undergo an extended SIA could be performed by political actors on the basis of information generated during the discretionary phase while considering political opportunities as well as evaluative capacity within administration.

Second, SIA is not only about avoiding and mitigating negative, unsustainable impacts of policies. Many authors and institutions⁸ rather prioritize the enhancement of ‘secondary’ effects of SIA, for instance in terms of strengthening policy learning, bottom-up integration of the principles of sustainable development into administrative and political culture, administrative networking, policy coherence... However, some preconditions have to be fulfilled in order to make these effects develop in the mid term. At the level of the selection of policy proposals for SIA, the most important characteristic⁹ to realize is to ensure a high degree of transparency. The inevitable trade-offs with selecting proposals for SIA need to be explained and made accessible to the wider public. This condition ideally includes opening the selection process to the consultation of stakeholders (e.g. consultative forums, parliamentary debates, public or expert hearings...).

SIA is a flexible evaluation mechanism, which develops its qualities also on the basis of adapting the evaluation process to the policy proposal at hand. Scoping, i.e. setting the *Terms of Reference*, of the evaluation should thus allow determining the most opportune and important aspects specifically for each policy proposal. This should automatically lead in the longer run to a range of “types” of SIA, some being deliberately more environmental (i.e. variety on the prioritized dimension), some more participative (i.e. variety on the objective), others strictly expert-driven (i.e. variety on the executioner), and still others stressing impact prediction (i.e. variety on the prioritized methodologies). This flexibility needs to be actively promoted, especially in the light of the uncertainties and interpretations that are attached to evaluations in the realms of sustainable development.

How policy proposals can be selected has now been discussed, another question is *who* has the power and capacity to decide which proposals will eventually be subject to SIA. The Royal Decree on the Cells stipulates that the Cells make up a list of proposals which should

⁸ This recurrent insight is widely shared by international institutions, academics, practitioners and NGOs alike, largely on the basis of sometimes long experience with parent evaluation mechanisms such as Environmental Impact Assessment, Strategic Environmental Assessment, Social Impact Assessment, health Impact Assessment...

⁹ Other conditions to fulfil are: assure quality control, invest into central steering capacities, develop specific information tools, promote for capacity-building within administration...

be subjected to SIA. In this view, it is primarily on the level of individual FPSs and PPSs that proposals are selected (although a member of the cabinet is member of the Cells). It is essential that the Cells concerned have a good overview of policy initiatives which are going to be developed (thus the necessity to develop a regulatory agenda as discussed above).

However, typical for the way the Belgian policy-making system has evolved, is that in political practice new policy proposals are drafted at two different levels. The important and/or urgent dossiers are drafted at the level of Ministerial Cabinets, the more technical and less urgent ones are drafted at the level of FPSs and PPSs. This has important implications for the selection of SIAs, because it means that the Cells, being part of the administration, may not be aware of certain proposals being developed or are not allowed to interfere in the process of policy preparation. In this view, it becomes necessary that the Council of Ministers is somehow involved in the selection of policy proposals (in complement to the Cells), otherwise it becomes extremely difficult to have a more or less complete coverage of proposals, in particular of important ones. Other setups are imaginable as well. Based on experiences in other countries, one could think of an internal, coordinating institution which is responsible for collecting policy proposals and formulating advice on which proposals should be further assessed.

As already mentioned above (section 2.2), many stakeholders and institutional actors (not only in Belgium) emphasize the necessity to be involved during screening and/or scoping. Understandably so, because deciding which policy proposals will be evaluated and how the evaluation shall be configured, is a matter of deciding the impact of SIA. Most stakeholders (i.e. NGOs, lobbying actors...), being confronted with limited capacities and means, appear to prefer to situate their participation at the level of scoping, whereas they recognize that for screening it might suffice to care for sufficient transparency.

3.4. Who does what in executing SIA?

Executing SIAs is a discipline in itself. Currently, the Royal Decree on the Cells only stipulates that the PPS-SD is responsible for making a methodology operational, while the Cells execute or coordinate the execution of SIAs. In the case of coordination, an additional question is whether the execution will be done internally, or whether it will be (partially) outsourced. The advantage of keeping it internal is clearly that capacity building becomes possible. However, it has already been referred to above that the expertise available in the administration on ex ante evaluation for sustainable development is momentarily almost non-existent. But neither is it easily available from institutions outside of government.

If the ambition is to make SIA a permanent feature of federal policy, it seems logical to start building internal expertise. This will require amongst others profiling of the capacities needed to perform SIAs, development of reference manuals, study and development of methodologies, training materials and training sessions. The potential role of specialised institutions such as the Federal Planning Bureau or the Financial Inspection will also have to be discussed in capacity building and executing SIAs.

Another aspect in executing SIA's, is that it would be counterproductive to develop this kind of expertise in different departments independent of each other. There will be a need for coordination, exchange of experiences and good and bad practices, mutual learning, and this as well on the level of individual departments as on the interdepartmental level. On the

departmental level it is probably necessary to have one or more specifically trained SIA coordinators. On interdepartmental level, the PPS-SD is an obvious candidate for taking on a coordinating role, since the Royal Decree of 22 September 2004 already assigns to it the task of quality monitoring of SIA in the different FPSs. Another possible candidate is the ICSD. Whether one of these or yet another institution takes on the coordinating role, it will almost certainly be necessary to strengthen the institution concerned and give it a clear mandate and enough resources (bearing in mind e.g. the remarks made by the Court of Audit on the different existing institutions).

SIA is not meant to be an exercise completely internal to the administration. Depending on the scenario introduced for SIA (see chapter 4 and 5), outside actors such as experts or stakeholders from civil society will be informed, consulted and/or demanded to participate actively. Besides, some form of external follow-up on products delivered and process followed is desirable (see 3.5. and 3.6.).

3.5. How to interpret the public nature of SIA?

The need for participation of stakeholders in decision-making is enshrined in both international obligations and national laws concerned with sustainable development. Given the broadly acknowledged significance of public involvement, the participation aspect is a crucial institutional theme to be considered when developing a framework for Sustainability Impact Assessment in Belgium. After all, the degree and intensity of public involvement can vary from one end to the other on a scale of influence on the decision making process. Contrary to the theoretical importance of participation, in most existing frameworks for integrated impact assessments the involvement of public or stakeholders is only vaguely defined. Consequently an enormous variety can be found as regards the issues concerned, the objectives, the participants, scope, time-lines and degree of linkage into formal decision-making.

Engaging a participation process potentially entails significant benefits. Involving stakeholders and/or citizens in a SIA-process will broaden public support and strengthen the legitimacy and democratic content of government's decisions by securing greater transparency and accountability. Integrating new perspectives and expertise furthermore broadens the knowledge base on which policy is build. However participation processes also involve considerable costs for those who seek participation as well as for the participants (resources, time, know-how, ...). Therefore, a participation process should only be initiated if participation is taken seriously. The decision-maker should have real participatory objectives, being prepared to actually involve the stakeholders in the decision-making process. No participation process should be preferred above a failed one, since a badly managed participation process might generate resentment and aversion instead of a broader public support for the policy-making process. A serious participation process therefore requires the engagement of sufficient resources and institutional capital.

When analyzing the SIA-process in light of the participation procedure, a distinction was made between the meta-level and the process-level. The *meta-level* includes the processes of defining SIA, determining its different components, formulating criteria for evaluation, formulating procedures, and – once SIA is established – evaluating this SIA process at regular moments. For making a Belgian SIA effectively work, it is very important that there is broad political and public support for this tool. The decisions made at meta-level concerning what,

how, why and who of a federal SIA-process are crucial for the future credibility and assimilation of the tool. Therefore participation of stakeholders during this first phase is important. Consulting institutionalized advisory bodies such as the FCSD is probably the most appropriate option for realizing public involvement during this meta-phase.

On the *process-level*, the connotation of the ‘public nature’-concept and the importance of participation can vary according to the objectives of the SIA-process (cfr. 1.2). Participation of stakeholders will be maximized in the discursive perspective, in which SIA is considered a framework for a collective learning process. In the rational perspective SIA is rather interpreted as a tool and not as much a process. This requires a maximization of objective information input from experts, where the importance of stakeholder participation will be minimized. Accordingly, the different plausible scenarios for a federal SIA scheme maximizing particular SIA-features (cfr. Part 2), have different consequences for the involvement of public and stakeholders.

However irrespective of the interpretation chosen for the development of a Belgian federal SIA-practice, for each stage of the SIA process (screening, scoping, impact analysis, impact evaluation, reporting) participation issues have to be considered. Firstly the desirability and feasibility of participation in the different stages has to be decided upon. This should be considered during the meta-phase. If participation is considered relevant for the stage under consideration, decisions have to be made about the organization of the specific participation process.

Our research has shown that it might be very difficult for practical reasons to organize an extensive participation process during the *screening* phase. However, transparency of the screening phase can be assured by introducing an easy accessible website on which all screening actions are published, giving a clear overview of the screening process in general and the state of the art at the moment of consulting. Consequently, all interested parties are able to follow which proposals have been screened, which have been rejected and selected, and for what reasons.

For the *scoping* phase, it could be considered to organize public involvement by creating a system of working groups. These could consist of the responsible political and/or administrative actors for the policy proposal under consideration, possibly extended with a limited selection of directly involved stakeholders. These working groups can be assigned the task to define the terms of reference for the specific SIA and also the experts and stakeholders to be involved during the rest of the process (according to the general objectives chosen for SIA). Experts and stakeholders can play a role in the *identification of the impacts* and can offer input for the *evaluation of the policy options*. However, the depth of participation and the concrete way of organizing it should be judged on a case-by-case base. Specific circumstances (for example extreme uncertainties, insurmountable trade-offs, ...) need specific participation methods (for example citizens jury, workshops, ...).

Finally, the public nature of the SIA-reports is a crucial aspect. One of the main objectives of introducing a SIA procedure in the decision-making context is to increase the transparency of the policy-making. In the Federal Plan for Sustainable Development it is mentioned that SIA will always be public. Possible options to ensure the public accessibility of SIA-reports is by inserting them in the Regulative Dossier or publicizing them in the FPS’ Annual Reports; integrating them in the ICSD Reports. However these options mainly ensure the availability of completed SIAs for political and administrative actors, while also other stakeholders should

be able to consult the completed SIAs. Therefore the idea of introducing a website specifically dedicated to the Belgian SIA-process might be relevant. The idea of a website has already been mentioned for the screening phase. This possibility could be extended towards the SIA-process as a whole, publicizing all interim and final documents of the individual SIA-exercises.

3.6. How will the quality of SIA be ensured?

Undoubtedly, introducing SIA in the federal policy-making process given the political and institutional constraints with which it will have to wrestle, will prove to be a long and difficult learning process. From the start it will be necessary to reach a satisfactory level of credibility of results. Several supporting initiatives to ensure quality of SIA are possible. Some of these possibilities have already been hinted at: an SIA manual, training courses for responsible civil servants, efforts to enhance data collection and accessibility. It will be necessary to get an overview of which expertise is needed and to create an internal and external experts pool. In particular for internal experts, it will be necessary to network with experts and initiatives on other levels and in different countries.

Stimulating openness and controllability of results can also be enhanced by e.g. a website that makes it possible for internal and external users to follow the process closely. Such a website can contain the list of policy proposals which are being screened, the proposals retained after screening, the SIAs which are in the process of discussion, the reports of the SIAs finished.

An important part of quality control are forms of evaluation. Timely evaluations along the road will be necessary, where several points of entry are possible. It is remarkable though, that a lot of countries or institutions who work with forms of impact assessment, have no or only an informal evaluation system. Certainly during the starting phase of impact assessment, nobody is eager to install a strict sanctioning system towards the executing civil servants or responsible Directors/Ministers. Concerns are more with creating goodwill, know-how and experience among those involved, rather than threatening them with sanctioning mechanisms, which might neutralise all goodwill. In fact, evaluation can be thought of on different levels: first the level of methodologies used and results reached, second the processes and procedures followed. An important question is of course who will be responsible for evaluation. An internal evaluation will probably be necessary, certainly during the first years. According to the Royal Decree of 22 September 2004, the PPS-SD is responsible for the quality monitoring of the implementation of SIA in the FPS. Other potential internal actors in evaluation are the Taskforce Sustainable Development of the Federal Planning Bureau (it already has this task for the sustainable development policy), the Court of Audit or even the Financial Inspection. For an external evaluation, one can of course think of external consultancy, but there might also be a role for the Federal Council on Sustainable Development. Keeping in mind the remarks about creating goodwill and building capacity, these kind of evaluations should be considered part of a learning process.

3.7. Which relation between SIA and other evaluation initiatives?

Investigating the role of SIA vis-à-vis related initiatives on federal level or on other policy levels, was not a subject of the research project. Still, it is clear that a federal SIA process will have to position itself at least on two aspects: the role of SIA versus other methodologies, and

the role of impact assessment at federal level versus other policy levels (and combination of the two).

At federal level, an obvious candidate for seeking some kind of arrangement with is the Kafka test. It might also be necessary to think about the relation with the Financial Inspection. Assessments on other levels which might be taken into account are the RIA on Flemish level and the Impact assessment from the European Commission.

3.8. How will SIA be phased in?

Part 2 of this paper discusses several ‘end scenarios’ for SIA, i.e. ways that SIA at federal level might eventually look like. But meanwhile, a lot of decisions still have to be taken, starting from which overall orientation a federal SIA scheme will take (see part 2), over which structures are best suited to implement this scheme, which capacity building and resources are needed, which juridical form SIA will eventually take (will it be mandatory for some kind of policies? Will it be introduced by law?...etcetera. These kind of decisions can be called ‘meta decisions’ since they trace out the whole scenario for SIA. How these decisions have to be taken, based on what kind of input and from whom, will have to be discussed. Before taking a final decision, it might be a good idea to introduce a kind of trial period during which several in-depth case studies are performed and procedures are formally tested. However, a trial period would probably yield the best learning experiences and best results when it is clear which general direction SIA will finally take. In such a situation, the necessary case studies during the trial period are best directed towards the final orientation a federal SIA scheme will take.

PART 2 : Plausible orientations for a federal SIA scheme

Chapter 4. A range of options for a SIA-scheme

Selecting, sequencing and adapting an adequate SIA-scheme is definitely a matter of interpreting which objectives SIA should pursue, from the more process- and network-enhancing interpretations of SIA to a more substantive and evaluative SIA-scheme. From the above (see section 1.1.2) described fundamental interpretations of SIA, it is possible to construct a range of different schemes for a SIA. Apart from the fundamental distinction “discursive – substantive”, the configuration of a SIA-scheme follows several other sets of criteria or objectives:

- Targeted value added (see section 1.1.1): ‘creation of public support for SD-policies’, ‘coordination of policies towards SD’, ‘better governance’, ‘evidence-based decision-making’, ‘enhancement of the quality of the decision-making process’.
- Nature of integration (see relevant working paper): ‘policy integration’, ‘institutional integration’, ‘cognitive integration’, ‘evaluative integration’.
- Lever for SD-policy change: ‘policy change guided by inter-institutional dynamics’, ‘policy change guided by intra-institutional dynamics’, ‘policy change guided by external dynamics’.
- Degree of using different perspectives: ‘transdisciplinary’, ‘multidisciplinary’, ‘interdisciplinary’.

Proposing a range of SIA-scenarios is thus not a matter, for instance, of more or less participation, but a decision on the *type* of participation deemed more effective to fulfil the main objective of SIA (itself a matter of interpretation). In the following table, we sketch different forms of SIA in terms of their *principal maximization objective*, i.e. in terms of the most important objective to achieve with the specific form of SIA. All these forms of SIA can be specifically directed towards full-filling the basic requirements of SIA, i.e. for instance to include a minimum level of participation or multi-dimensional perspectives.

<i>SIA Scenario title</i>	<i>SIA Scenario description</i>
MAX “Transparency”	SIA as an open-end process implying to consult multiple stakeholders (and citizens) on the policy orientations to pursue. The most discursive form of SIA, based on the principles of deliberative democracy and calling for a full-scale participation to the different phases of the decision-making process, including the policy formulation process. Tools to be deployed include citizens' juries, deliberative mappings...
MAX “Institutional Integration”	SIA scheme which puts emphasis on the integrative (horizontal and vertical) character of SD, by largely favouring inter-departmental and inter-institutional collaborations. The aim is to achieve in the mid-term an integration of SD-perspectives into everyday policy-making processes, much the same as is currently pursued in many countries with ‘environmental policy integration’. Mostly internal to administration and stressing interaction with and between different institutions (e.g. Parliament, Federal SD Council, ICSD...), the SIA-scheme will be kept sufficiently transparent as to allow a soft form of control of the administrations by stakeholders. Mechanisms to be installed include networking facilitation, informal collaborations, animators...
MAX “Adaptability”	SIA as an entirely flexible mechanism, where each evaluation exercise is adapted by a central controlling process (or unit) according to the challenges, threads, opportunities raised by each specific policy proposal. Meandering on a case-by-case basis between, for instance, a stakeholder-participation process and a closed expert-driven cost-benefit study. Representing a perfectly procedural SIA, it limits itself to a series of <i>meta-procedures</i> on issues such as: who and how to decide on the individual form which SIA

	takes in front of a specific policy decision.
MAX “Impact Objectivation”	SIA as a tool which allows to compare in an objectified manner a series of policy alternatives, predict their positive and negative impacts, foresee their indirect and multi-dimensional impacts, test a series of mitigation measures. Limited openness of the evaluation process is used mostly to gather non-technical knowledge, or source-knowledge from different stakeholders. Tools include to rely mostly on modelling, and expert-knowledge becomes of crucial importance.
MAX “Regulatory Performance“	SIA as a largely administrative and internal exercise. The aim is to enhance the performance of regulation by insuring the best possible ‘return’ on public decisions, as well as the highest possible degree of coherence between policies and policy levels, while minimizing negative, unwanted impacts. In the age of scarce public budgets, keywords include efficiency, effectiveness and productivity. Tools to be used are enhanced cost-benefit and cost-effectiveness analyses.

Table 3 : A range of SIA orientations for public authorities

However, while all 5 SIA-scenarios presented are desirable in terms of SIA-principles, not all of them are plausible given the constraints and configuration of policy-making at the federal level. In effect, two of the presented scenarios (“Transparency” and “Regulatory Performance”) would hurt either given conventions, or would pose serious challenge to public authorities’ traditions in decision-making, or would not correspond to the authorities current interpretation of SIA. Given the need to stick primarily to plausible scenarios, neither of these two scenarios have been further developed. All the same, but for a slightly different reason, was the “Adaptability” scenario excluded from the following in-depth analysis. Maximizing “Adaptability” of each SIA-process to the policy proposal’s specificities would necessitate for public authorities to have already a serious experience with SIA, notably in order to be able to decide on a case-by-case basis which form of SIA is best.

In order to contribute actively to the discussion on profiling SIA for the federal policy-making context, both plausible scenarios (i.e. “Institutional Integration” and “Impact Objectivation”) are further developed in some detail hereafter. First by explaining the general objective and justification of the scenario in terms of enhancing SD. Second we sketch some of the components of an SIA-scheme such as the design of screening and of scoping, or the type of participation. Finally, the scenarios are qualified in a synthesis-table regarding their “performance” in terms of credibility¹⁰, salience¹¹, legitimacy¹² and efficiency¹³.

It could be argued that any SIA-scenario should pursue a single objective namely, the “*maximization of SD*”, i.e. be an evaluation-scheme which would support the implementation of SD into policy-making and/or enable to restrict as much as possible negative effects on principles of SD. However, if this overall goal is clear, it was not that clear what would support most the SD-agenda in the federal setting: a fully participative, open, networking-based SIA-scheme? or, SIA which relies mostly the development of alternative, non-economic methodologies of impact determination? These are questions, the research team is not mandated to address and cannot reply. Political and institutional actors, as well as

¹⁰ Credibility is used here as a shortcut to qualify the perception of the actors (civil servants, stakeholders, civil society, politicians...) of the overall potential of the SIA-scheme to achieve a sufficient technical and scientific quality.

¹¹ Salience is used to qualify to degree of relevance the different actors attach to the SIA-scenario.

¹² Legitimacy is a qualifier of the perceived potential of fairness of the evaluation process.

¹³ Efficiency is used to qualify the potential of the SIA-scheme to render useable evaluation results within a given resource framework.

stakeholders, need to contribute to the operational definition of SIA. The following SIA-scenario descriptions are meant to participate to this necessary discussion.

Chapter 5. Plausible orientations for a federal Belgian SIA-scheme

5.1. Scenario 1: The Maximization of “Institutional Integration” for SD

Among the overarching and generic objectives of SIA is the integration of SD as a common referent into policy-making in a way that principles of SD are respected and promoted at the level of each policy initiative. In parallel to top-down, programmatic coordination of SD (for instance with the development of SD-strategies and plans), SIA can be configured in a way as to prioritize this integration into everyday policy-making. These vertical (i.e. programmatic) and horizontal integrations of SD are among those developments which SD-policy shares with environmental policy. “Environmental Policy Integration” has reached since some years high priority in many administrations at many different institutional levels. In the case of SD, and considering its specificities as well as some deceptions from earlier attempts to focus mainly on programmatic, vertical integration, expectations are nourished that horizontal integration might become a major pillar to promote and anchor successfully SD in the near future.

SIA, as many evaluation processes, can be oriented in a way as to participate largely to the development of such cross-sectoral, horizontal integration reflexes in public administrations. Such *institutional learning* seems to occur if (at least) 3 basic conditions are met. First, administrative actors have to perceive the usefulness and impact of their personal engagement into the evaluation process (which is in most cases adding supplementary charges to their functions). Second, the evaluative setting should allow for sufficient feedback to be generated and shared in order to let the necessary information input for the learning process develop. Third, a number of support mechanisms and coordination facilities need to be developed in parallel to the actual evaluation process.

On top of these adaptations within administrations, which will favour the development of inter-departmental evaluation culture, the current scenario participates to integrate SD further, namely by actively using inter-institutional collaborations. Federal administrations are but one specific type and level of institutions, which are concerned with SD. In the overall learning process, the current evaluation scenario would seek to involve in a privileged manner also other public (or semi-public) institutions, such as the Federal Council for SD, Parliament and/or Senate, independent institutions such as the Federal Planning Bureau or the Court of Audit. Furthermore, the spatial characteristics of SD call for the implementation of an inter-institutional dialogue across the borders of federal policy competence, notably by including systematically regional and European level institutions when required by the evaluation object.

Implementation

The eventual implementation will organize SIA as a largely internal evaluation exercise to administration and political actors. The overall aim of such an SIA is to share knowledge and to develop SD as a common referent in policy-making. The internally executed evaluation processes will thus be largely performed by inter-departmental working groups, with the

initiators of the policy proposals acting as animators of the groups. Foreign and international experience shows that these working groups should at best be composed specifically for each policy proposal's evaluation, and not be permanent working groups with permanent representatives. Permanent working groups appear to become too much specialized in the longer term, not giving access to the evaluation processes to a large number of civil servants, hence undermining the horizontal promotion of SD through evaluation processes.

Obviously, the relative inexperience and "volatility" of these working groups with SD-evaluations (and to some extent, even with evaluations) calls for the establishment of a clear reference framework that the working groups can follow. The necessary harmonization of the individual policy proposal evaluations will be attained through the accompanying measures such as the elaboration of Guidelines and Handbooks, the active support and quality-control by a central evaluation unit, the construction of common data-bases with reference data, the configuration of intranet-based billboards and places for the exchange of information, the development of a training course...

Furthermore, the integration of other types of institutions should be organized in a structural manner, for instance through the appointment of a specific parliamentary working group involved in the screening phase, and/or by the obligation to submit the screening and scoping decisions to the Federal Council for SD.

In order to enhance the perceived usefulness and impact of the SIA-experiences, SIA-reports (or their syntheses) should be made accessible to a larger public. A further measure for support is to oblige policy-makers to annex the evaluation reports to the policy proposals during the decision-process (e.g. when being submitted to the council of ministers and/or inter-cabinet meetings). Not the least, such measures allow civil servants to have a clear 'mandate', and to justify their time invested into SIA by the obligatory nature of the process.

Screening and scoping issues

The feasibility of performing an SIA-exercise internally as an inter-departmental exercise should largely guide the selection of policy proposals that will be submitted to SIA. At least in the initial and more experimental phase of the introduction of SIA, it will be necessary to focus on policy proposals which appear 'evaluable' by the actors concerned with the evaluation. Two additional criteria intervene thus strongly at this level: capacity and experience with evaluations by civil servants, and the availability of the necessary means (budgetary, temporal...) to pursue the evaluation in sufficiently satisfactory conditions. The decision to submit a policy proposal to SIA needs to be collegial and consensually supported by the entire administration.

The largely internal configuration of the evaluation should be equilibrated with a quite high degree of transparency, and possibly of wider participation, at the level of screening and scoping. As the execution of the evaluation remains internal to administration, and can thus not directly be followed or influenced by stakeholders, the decision to engage the process and the way to perform it should be somehow opened to the wider public, and thoroughly motivated. Eventually, one could initiate a right for external actors and stakeholders to appeal against screening and scoping decisions of administration and/or, in exceptional cases, to 'force' administration to evaluate specific policy proposals. At least, and in order to favour inter-institutional dialogue, should screening and scoping decisions be submitted to stakeholder consultation, such as being operationalized within the Federal Council for SD.

‘External’, non-federal institutions should also be consulted in this scheme on the level of screening and scoping.

Participatory issues

Participation of the wider public will remain quite restricted in this scenario, and concentrate for instance, 1) on the screening and scoping phase of the process; 2) on aspects of consultation and transparency of the evaluation reports. Participation of the stakeholders to the core of the evaluation, might only be feasible for individual, specific policy proposals (for instance, for long term planning exercises). Participation (eventually even co-decision) of stakeholders, for instance via stakeholder councils, should be considered at the level of screening and scoping (see above). Furthermore, accountability of public authorities demands to organize a very active transparency policy of the evaluation process (who participates? which experts? period of evaluation?...) and of the outcome of the evaluation. Consultation of and public presentation to stakeholders and civil society of the evaluation reports should be implemented. The principle should be to have the evaluation process develop in a glasshouse, even if the actual interference of non-administrative actors to the core phases of the evaluation (i.e. impact prediction and impact evaluation) remains limited.

On the other hand, inter-departmental and inter-institutional participation is absolutely necessary and to be promoted structurally (see above for a series of measures to support inter-service working groups). Considering the current level of evaluative capacity of the federal administration, especially with SD-evaluations, it will be necessary during the first exercises to organize technical and organizational assistance through a central, horizontal unit which could also act as a moderator and source of information (i.e. as a common memory) to the ongoing SIA-exercises. Considering further the current non-existence of an experienced central support unit, it will probably be necessary to engage a pool of external experts which can be appointed to intervene on demand in order to support administrative efforts on specific evaluative questions. In this scheme of ‘on-demand’ external expertise, existing public institutions (such as the Federal Planning Bureau, the Financial Inspectorates’ corps...) with their fragmentary experience with evaluations and/or SD-type evaluations should play a large, accompanying role in the processes. The existing regional capacities in evaluation (i.e. IWEPS¹⁴, viWTA¹⁵, Kenniscel Wetmatiging...) should be included into this ‘on-demand’ institutional expertise.

Methodological issues

The methodological expertise and culture existing within administration should be exploited as far as possible, and be actively improved to engage progressively into the use of more innovative and adequate methodologies. Currently, methodological experience with ex ante evaluations and with multi-dimensional evaluations, as well as with participatory processes, is rather limited within federal authorities. SD-evaluations remain all over the world extremely innovative enterprises. However, the rather strong inexperience per se with ex ante evaluations within federal administrations, and the logically large number of civil servants being appointed temporarily as ‘evaluators’ if this SIA-scenario is implemented, works against a quick improvement of methodological expertise or the creation of methodological ‘hot-spots’ within federal administrations. This vulnerability should be considered as a serious flaw of this SIA-scenario, as it might well induce the production over a rather long period of

¹⁴ Institut Wallon de l’Evaluation, de Prospective et de la Statistique.

¹⁵ Vlaams Instituut voor Wetenschappelijk en Technologisch Aspectenonderzoek.

time of rather unskilled and low-quality evaluation reports, unless strong periodical support is ensured from external expertise.

Initially, rather ‘traditional’, qualitative and intuitively comprehensible evaluation methodologies should be used for SIA, including methodologies such as multi-criteria mapping, cognitive mapping, causal-chain analyses, cross impact matrixes... The rather central place attributed to a support unit could favour to develop in the mid-term some centralized data-warehouse, eventually supported by a common modelling effort, and products such as Input-Output matrixes and Social Accounting Matrixes. The latter could then be used ‘on-demand’ for the evaluative efforts within SIA by the different working groups. Further development and use of more adequate (because more integrative) evaluation methodologies will need however structural support during the development phase, notably by financing further research in SD-methodologies or by financing the adaptation of existing tools (for instance, some of the accounting and modelling efforts of the Federal Planning Bureau).

Scenario 1 : Maximization of Institutional Integration		
<i>Credibility</i> (perceived technical, scientific quality)	-/+	Low in the beginning (considering the state of existing SD-evaluation culture), but steadily raising with gained experience.
<i>Saliency</i> (perceived relevance of the assessment)	+	Potentially high, but restricted to internal integration and promotion of SD into policy-making
<i>Legitimacy</i> (perceived fairness of the evaluation)	-	Potentially low, as SIA will be perceived essentially as an internal mechanism. Stakeholders might accuse SIA to pursue mainly a goal of <i>ad hoc</i> legitimating of already appointed policy choices. Hence, strong pressure to develop active communication and transparency, as well as participation on the level of screening and/or scoping.
<i>Efficiency</i>	++	Potentially very high. Costly and time-consuming external participation is restricted to the minimum. In the beginning however, the needed external expertise might use considerable financial and coordination resources.

Table 4. Scores of scenario 1 on different criteria

5.2. Scenario 2 : Maximization of “Impact Objectivation”

In the foreground, SIA is all about the prediction and evaluation of impacts of policy proposals. Whether positive, negative, unwanted, indirect or collateral effects, SIA should perform the identification and assessment of such policy impacts on a number of different sectors, dimensions, critical resources and vulnerable populations. The inherent objective of SIA is the elimination of negative and/or unwanted impacts with the development of the necessary mitigating measures, as well as the strengthening of positive policy effects. This presupposes however that the evaluation process focuses on constructing and rendering a sufficiently precise image of these impacts, hence that impacts are identified, objectified and assessed as far as possible. SIA being an *ex ante* and integrated evaluation process, impact objectivation and assessment trigger the use of considerable methodological instruments and resources, which cope with uncertainties, complexities, dynamics, inter-relationships, long term...

By allowing SIA to focus on impact objectivation, SIA takes the stance of the ‘hard facts’ community: if SD wants to become a competitive societal and political objective and replace in the mid-term purely economic and traditional development objectives, then SD needs to invoke comparably robust mechanisms of policy evaluation. ‘Hard facts’ elaborated during economic evaluations need thus to be countered by ‘hard facts’ of SD-evaluation. In this SIA-scenario, major energy is thus invested in the phases of impact prediction and impact evaluation.

Implementation

The implementation of an impact objectivation SIA is not fundamentally different in nature than processes such as Environmental Impact Assessment, Social Impact Assessment... The specificity which the SD-theme imposes on the assessment scheme is not necessarily to be found on the procedural and organizational orientation, but on the level of the assessment criteria and the configuration and choice of the assessment instruments.

This SIA-scenario develops thus around the definition, production, diffusion and discussion of an evaluation report, which becomes the central outcome towards which the entire SIA-evaluation is directed. Considering the unavoidable high technicality and complexity of the evaluation report, the assessment itself (i.e. impact prediction and impact evaluation) is necessarily expert-driven, be these experts internal or external to administration. Civil servants, and the working groups which steer the SIA, are fulfilling the more classical role of an evaluation sponsor, who determine the extent of the evaluation, but leave the execution to specialists. In this setting, civil servants have an important role to play with regard to setting collaboratively, with their colleagues and the experts, the boundaries of the assessments. Inter-departmental and inter-institutional collaboration develops thus mainly on the level of determining the terms of reference of the evaluation.

Given the importance credited to the evaluators and the expertise they need to develop and assure, it should be considered to appoint a central evaluation unit which could “run” the evaluations centrally. If these evaluations were supported by the development and use of an integrated model, the central evaluation unit should have the expertise and know-how to adjust the model-runs according to the given evaluation. In this sense, the role of existing “modelers” within the federal administration (e.g. Federal Planning Bureau) becomes of importance, and their partial re-development into the central evaluation unit might be

considered. The development of such a specific in-house evaluation capacity might even be a major competitive advantage in the mid-term in terms of R&D and should be actively supported by a branch of science policy in order to allow these capacities develop in the first place, and to constantly improve and develop in the course of use.

Screening and Scoping

With this SIA-scenario, the selection of policy proposals to be assessed should consider exclusively the provisional importance of the potential policy impacts, and notably to identify mitigating measures and policy alternatives which contribute to reduce unwanted negative policy impacts. Again, the screening effort is outcome-oriented. In a later stage, once sufficient expertise is gained with SIA, it could become possible to determine “thresholds of impacts” which during screening would trigger SIA.

Scoping becomes of primary importance in this SIA-scenario: the determination of the expert-driven impact assessment, which includes the configuration of the assessment (e.g. boundary setting) and the selection of the evaluation instruments to be used, are among the main moments of influence which the inter-service working group has.

Participatory issues

As mentioned above, the nature of the assessment process implies that participation and consultation remain fairly limited in this SIA-scenario. The setting itself is not oriented towards discursively determining impacts. However, there should be a larger implication of external actors on the issues of discussing the adequate impact determination methodologies. As mentioned earlier (see section 1.1.2.), the influence of values and judgment cannot be banned in either SIA-scenario. In an outcome-oriented scenario, value judgments might be more indirectly present, but remain important factors of influence, notably on the level of methodology choice and of the manipulation of the methodology instruments (e.g. weighing of impacts; setting of conversion factors...). Furthermore, even the most quantifying evaluation methodology needs to be followed by a thorough discussion on the interpretation of the evaluation results, especially in the case of modeling efforts.

Participation should thus be organized on different levels, and with different actors. A first participative moment is to be organized during the screening phase, and especially so during to address the scoping questions. Here, apart from the obligatory inter-service group, external experts of stakeholder organizations should gain access to the decisions, notably to be able to manifest their insight into boundary setting and methodology choice. Second, a participative meeting should be organized with stakeholders (and/or ‘their’ experts) on the interpretation of the evaluation results. This discussion should be let before the evaluation report is finalized, and might not necessarily be open for the larger public. Third, a public presentation and discussion of the evaluation report should be organized for the wider public. On top of this, and considering the importance of the (eventual) central evaluation unit, a technical, independent and scientific committee could be appointed to control on a regular basis the underlying decisions made with regard to the evaluation instruments’ configuration (e.g. the development and refinement of the model).

Methodological Issues

It was stated above, that an outcome-oriented SIA could be compared to other more usual evaluation procedures such as for instance, environmental impact assessment. If this is certainly true on the level of the organizational principles, a huge difference remains until today: no evaluation methodology or instrument is currently capable of coping entirely with the many complexities which SD imposes on them. It will thus remain impossible to determine an *ad hoc* evaluation methodology and develop a single evaluation instrument to be used for any policy proposal's evaluation. Rather does an outcome-oriented SIA become a matter of choosing the right evaluation methodology according to the evaluation questions raised by the policy proposal.

Furthermore, the currently available expertise and experience with outcome-oriented SIA-evaluations remains scarce in Belgium, as in federal administration. Some institutions (such as the Federal Planning Bureau) have gained some insights into integrated evaluation instruments, but even these were mainly gained at the level of exploratory research projects, and should not be mistaken as hands-on expertise with the development or manipulation of such instruments. This scarcity of experience and expertise imposes first to develop corresponding capacity, before being able to engage into an outcome-oriented SIA. These capacity-building efforts will certainly need some time and some additional resources in the first stages of an SIA-implementation, but should not be considered insurmountable if it is accepted to rely on foreign partners. Finally, this initial research effort and R&D investments, which will inevitably be not confined to public institutions but will also touch academia, might even be largely beneficial to the larger Belgian evaluation community, while potentially burgeoning towards the development of regional and local level SIA-efforts.

Scenario 2 : Maximization of "Impact Objectivation"		
<i>Credibility</i> (perceived technical, scientific quality)	++	Potentially very high. Careful consideration should be given to the inherent difficulties, which are raised if SD is used as the evaluative referent. Credibility might suffer a lot if the impact objectivation is pushed beyond the limits of what is deemed acceptable with SD-evaluations (e.g. monetizing non-marketable goods and services).
<i>Saliency</i> (perceived relevance of the assessment)	?	Potential polarization. Depending on the perspective of the observer. For some stakeholders and actors, SD calls also for a revolution of evaluation methodologies, not only for the improvement of existing ones.
<i>Legitimacy</i> (perceived fairness of the evaluation)	?	Potential polarization. Depending on the perspective of the observer. The strong technicality and complexity of the evaluation will not necessarily be accessible to many stakeholders.
<i>Efficiency</i>	--/+	In the beginning very low, notably because of the necessary resources to finance the improvement of impact prediction and -evaluation tools. However, in the mid-term, the fine-tuning of regulation and the mitigation of negative, unwanted effects of policy proposals will help to render regulation much more efficient, hence saving public investments, hence allowing a positive return on initial R&D investments.

Table 5. Scores of Scenario 2 on different criteria

<i>Overview</i>	
<i>Maximisation of “Institutional Integration”</i>	<ul style="list-style-type: none"> - Administrative evaluation exercises performed by inter-service working groups - Enhanced collaboration between departments and institutions - Collegial and participatory screening - Enhanced transparency - Central support and assistance unit combined with a help-desk - Construction of a (procedural) reference framework (Guidelines, Handbooks...) - Pool of external experts appointed “on-demand” - Use of a wide range of qualitative and intuitive evaluation methodologies
<i>Maximisation of “Impact Objectivation”</i>	<ul style="list-style-type: none"> - Expert-driven production of evaluation report - Central evaluation unit “runs” evaluation of impacts independently - Inter-service working groups act as evaluation “sponsors” - Screening is oriented towards potential impact-mitigation - Enhanced transparency on methodological choice and discussion of evaluation results - Appointment of stakeholders’ experts and independent scientific committee - Development of a limited number of impact evaluation instruments (modeling) - Continuous R&D and science policy efforts to construct and support evaluation capacity and expertise

Table 6. Overview of main characteristics of two SIA scenarios