BELGIAN INFORMATION NOTE

UNESCO - International Co-ordinating Council of the Man and the Biosphere (MAB) Programme, 36 rd session, Agadir-Maroc, 1-5 July 2024.
Highlights of Belgian interest and dynamics regarding engagement in the Man and the Biosphere Program.

1. First Belgian Biosphere Reserve nomination 'KempenBroek'. In the Flanders region joint efforts were made to prepare the nomination of **KempenBroek** trans-boundary BR with the Netherlands which resulting in submission of the formal application in September 2023. The nomination is supported by a multi-level and multi-sectorial stakeholder group and is, based on a transboundary Masterplan 2024-2047, gearing towards an inclusive green 'sustainable development' of the eco- and cultural diverse region. The application, the management plan and a plan with the 3 zones were developed in a participatory way.
This BR has witnessed more than 20 years of transboundary cooperation by some 40 partners. With the recognition as a BR and by realising the six ambitions in the Master Plan 2024-2047, these partners want to encourage the development of a sustainable, bio-diverse and multifunctional landscape that contributes to the local economy and the well-being of residents. Thanks to centuries of interaction between humans and nature, the proposed BR features a particularly diverse landscape. This diversity **is reflected in a rich biodiversity and the area has an important role in the conservation of habitats and species in Flanders and the Netherlands. In fact, for the conservation of certain species, the area plays an essential role.
Economically, both the Flemish and Dutch parts of the area are important agricultural centres active in food production. In recent years, the importance of tourism as part of a sustainable rural economy has been growing rapidly. For centuries, people drew boundaries on the canvas of the area, for the last time in 1839 when it became a border region between Belgium and the Netherlands. Traces of this centuries-old border past and present in the form of border posts, defence systems, etc., are visible in the landscape or are part of the common oral heritage.
After submitting the nomination, the partners started working on or realised various actions from the Master Plan and Operational Programme such as a quality boost in the hiking trails, the development of (digital) information facilities at a prehistoric burial ground, actions to promote biodiversity and the soil quality of agricultural land by increasing the organic carbon content. A science and education plan is being prepared. Via a working group the partners will consider how universities, colleges, knowledge institutions and local schools can be involved in the scientific and educational programs and activities that will be developed and what opportunities for capacity building can be offered to the partners in the partnership.

2. Although the MOU between the Belgian Federal Science Policy Office (**BELSPO)** and the MAB-secretariat came to its end, BELSPO encourages via divers calls for research or networking proposals internationally to adhere to MAB program objectives; we keep on making efforts to leverage cooperative and innovative actions on this line.

In recent bilateral cooperation calls with China and Vietnam (2023) BELSPO has encouraged for submission of proposals linked to the MAB-program (and IGGP) objectives, eg. in relation to nature based solutions. A Vietnam cooperation project on resilient mangrove ecosystems and a China cooperation project on NbS related to coastal wetlands are in the pipeline.

3.The **Royal Museum for Central Africa (RMCA)** is leading several research projects focusing on the Biospere reserves (BR) **Luki** and **Yangambi** in DRCongo. This includes studies on **carbon dynamics, biodiversity shifts, forest resilience and forest regeneration** through the establishment of a network of permanent forest inventory plots. Research plots are maintained and expanded in the context of **DGD-funded** projects such as **PilotMAB(+)**; BELSPO-funded projects such as TREE4FLUX and DAMOCO; and FWO-funded projects (CANOPI, COBARCHIVES). The scientific network is validated through **multidisciplinary** projects combining zoological and forest ecological research. Co-funding comes from partnerships with CIFOR (EC-funded 'FORETS' project) and UNESCO (DGD-funded YCE project). Along with research (published in journals *Nature* and *Science*), RMCA invests in thorough capacity building. This encompassses local infrastructure development such as Yangambi woodlab, and training experts/techniciens, PhDs, postdocs and professors, in close collaboration with UNIKIS, ERAIFT, CSB and INERA. The RMCA also invests in educating children around the Luki reserve by supporting the Kinshasa-based NGO TEXAF-BILEMBO to develop and give workshops on ecosystem services in hundreds of schools around the BR Yangambi. There is engagement in (inter)national outreach through policy briefs and stakeholder events, raise awareness and mobilizing local and global support for sustainable forest management and conservation. As such, RMCA projects strengthen the role of the Congolese MAB Reserves as living laboratories for top-notch climate change research, capacity building, environmental education and economic development.

4.Ghent University (UGent) was engaged in the development and support of the first Carbon flux tower in the Congo Basin, called 'CongoFlux'. The research infrastructure measures directly measuring greenhouse gas emission and uptake above the canopy of the Yangambi BR. CongoFlux links the Yangambi BR worldwide research networks (e.g. International Carbon Observing System, ICOS, https://www.icos-belgium.be/ESCongoFlux.php). Initial funding was guaranteed by DGD and channeled via the EC (AIDCO program). Funding for maintenance of CongoFlux and expanding the research network is ensured by UGhent (Research Fund BOF), DGD, FWO, VLIR and BELSPO. UGent and RMCA work complementary (joint multi-partner projects). UGent actually collaborates with the Japanese Agency (JICA) to build and operationalize a second flux tower, in peatlands of the Congo basin. With UNESCO, a new DGD-funded multi-

annual collaborative program, '*Lifting the Yangambi Biosphere reserve into a climate-biodiversity Centre of Excellence*' has started. It capitalizes on former work and aims at organizingsustainable integrated ecosystem functioning and of bio-socio-economical ecosystem monitoring, along with initiation of a multistakeholder governance structure of the Yangambi BR. Synergetic efforts are deployd by UNESCO, UGent, ERAIFT, the *'Centre de Surveillance de la Biodiversité'* in Kisangani, RMCA, and the CEBioS-programme of the Royal Belgian Institute of Natural Sciences. UGent is also investing in scientific data integrating in Land- and Earth System Models aiming to support policy makers (e.g. IPCC) to predict future climate change and its impact and direct for good governance and REDD+.
DRC was announced as 'country for climate change solutions' in the wake of CoP26 (Glasgow, 2021, and was invited to organise the pre-CoP27, BR Yangambi was chosen as the venue.

5.The **project 'EVAMAB (**2017-2019) managed by Royal Belgian Institute of Natural Sciences (RBINS - CEBioS unit), was focused on **'ecosystem services'**. The multi-disciplinary project, in collaboration with BR's teams in 4 African countries, aimed at the '*assessment of methodologies to evaluate the (economic) value of ecosystem services in Biosphere Reserves*, in support to the **transition to green economy** and to the reaching of several SDG's. Next to workshops, scientific publications and policy briefs, a comprehensive Manual is delivered on the rapid assessment of the value of ecosystem services in African BRs. The multi-language publication guides BR managers and stakeholders in support of evidence-based awareness about the added value of BR's and may underpin the making of the right choices fitting to the MAB long term objectives. Outreach and training initiatives were organised in 2022-2023 (IUCN World Congress in Marseille, IUCN-APAC g in Rwanda, CBD COP-15 in 2022, at the celebration of the 50th Anniversary of the MAB- Program and the 1st International MAB - Day in 2022, and last but not least at the 2nd International Conference on Biodiversity of the Congo Basin, Kisangani (March 23). Currently, the CEBioS programme, is looking for new fundings for training of the manual in African MAB-sites (any suggestion is welcome). (see https://www.unesco.org/en/articles/guidance-assessment-ecosystem-services-african-biosphere-reserves-way-forward-sustainable)

6. DGD is financing **a study to include the Rusizi National Park, Burundi, in the MAB programme.** Funding has been provided in 2022 to UNDP and work has started in 2024. RBINS is involved in PACECOR (UNDP) and RUBICOM (VLIR-UOS) projects to better understand Rusisi National Park, as a scientific base, for future inclusion to MAB.

7. Meise Botanic Garden (MeiseBG) coordinates rehabilitation efforts for botanical collections and research infrastructure, primarily in Yangambi and Luki. Funded by the Belgian Federal Government, European Union, Mellon Foundation, and Sud Experts Plantes, projects include digitization, curation, a training of local staff in collection management, taxonomy, and fieldwork. MeiseBG engages in inventorying and studying the flora of Central Africa, particularly in the 2 BR's. By digitizing and making collections available online, valuable information on the region's flora is unlocked. Digitization projects, with divers seed funding, have been upscaled and completed with support from the Flemish Government.

In Yangambi, MeiseBG focuses on edible fungi and coffee. Activities include assessing economic value, conserving genetic resources, and creating infrastructure for fungi cultivation to enhance food security. In collaboration with local partners and community , efforts concern inventory, study, evaluation of wild and cultivated coffee genetic resources.

In the study of climate change effects on plants and ecosystems, MeiseBG digitizes its herbarium collections and historical data, making them available online. Collaborative research projects, also with UNIKIS and RMCA, focus on past and future impacts of climate change on trees in Yangambi and Luki. Pilot studies include developing a system to monitor water quality using diatoms, crucial for river health assessment in tropical Africa in general.

MeiseBG also contributes to environmental education and landscape restoration in Virunga National Park (EU funding). The Flemish Government supports reforestation projects in and around Virunga NP, contributing to climate adaptation and mitigation efforts.

8. The Government of Flanders agreed in December 2019, in the context of the **Flanders UNESCO Trust Fund for Sciences ('FUST'),** to support a project on **BR's as observatories for climate change Adaptation in Southern Africa (Be-Resilient)**.
https://core.unesco.org/en/project/513RAF2022

The project reached its completion at the end of 2023. Over the 2020-2023 course of the project, a strong collaboration has emerged with the Biosphere Reserves in the regfion, which has allowed the foreseen implementation of the project. The success of the project has directly contributed to the development of a wider Be Resilient programme with parallel initiatives in several countries. The thematic area of 'Environment' was included in the UNESCO-SADC plan of action for 2022-2025 for the first time, with a commitment to collaborate with the SADC Transfrontier Conservation Area (TFCA) programme. In 2022, an internal review was conducted in conjunction with the 'spin-off' portfolio that has been developed from this project: Be Resilient South Africa (see below 10.) and Be Resilient Chimanimani (Zimbabwe) that started in 2021, and Be Resilient BuPuSa (Zimbabwe-Mozambique). As one of the concluding activities, a multi-stakeholder "Be Resilient Forum" was organised in Cape Town, South Africa on 1-3 November 2023 (https://www.unesco.org/en/articles/be-resilient-regional-forum-co-generation-implementation-climate-resilience-biosphere-reserves)

9. In 2021, application of the structured methodology of Climate Risk Informed Decision Analysis (**CRIDA)** was kick-started. Upon request from the Biosphere Reserves (BR), the process was started with the development of Stakeholder Engagement Guidelines for the first three steps of CRIDA and shared and discussed among project partners. The guidelines are seen as a 'living document' that will be updated along the project and will capture case studies and examples from the Biosphere Reserves moving forward. The Guidelines helped prepare the Biosphere Reserves to plan and implement the first Stakeholder Engagement workshops. These were held in November 2021 in Kruger to Canyons BR and Cape Winelands BR, and participants from Vhembe and Marico were invited as observers to plan their **Stakeholder Engagement workshops** in early 2022. A pilot version of the South Africa Flood and Drought Monitor (**SAF-FDM)** was developed for testing purposes, accompanied

by a technical report and a users' guide. Meetings were held with the Biosphere Reserves on the development of local projects to raise awareness, increase outreach and community involvement on water issues through Citizen Science. (https://en.unesco.org/be-resilient).

10. Furthermore, in 2020 the Government of Flanders approved an additional contribution of 1.5 million EUR for **a major climate adaptation project by UNESCO in South Africa**, as part of the bilateral development cooperation between Flanders and South Africa. This major project in South Africa, addresses climate risks and builds adaptive capacity **in five of the country's biosphere reserves**. This should improve both sustainable water and ecosystem management. It will be also in line with the Be-Resilient project implemented across the Southern African region.

11. In addition, the Government of Flanders agreed in July 2021 to support under FUST a new MAB project **'Mangrove restoration as a nature-based solution in Latin American Biosphere Reserves'**. Considering the importance of mangrove ecosystems and the social, environmental and economic impact their destruction could potentially have, the 3-year project aims to evaluate and restore mangroves in Biosphere Reserves in **Colombia, Cuba, Ecuador, Mexico, Panama and Per**u. With the support of Spain, El Salvador has also joined this project. In 2021-22, preparatory meetings, and a full-scale project kick-off meeting was held with the support of the Government of Mexico in Tapachula (Chiapas, Mexico) in August 2022, with a final session in Ciudad de Mexico on 2 September, attended online by many researchers from the Region and from Flanders. A dialogue on specific scientific support for mangrove restauration interventions in the biosphere reserves is continuing. Scientific cooperation activities were scoped at a workshop in San Andrès (Colombia) on 18-21 July 2023, mobilizing scientists and experts from the LAC region and from further afield, including experts from Flanders**.**

The activities are carried out in collaboration with local management committees of the BR areas and concerned communities including indigenous people, afro-descendants and other population groups. Education for sustainable development will also be a strong part of the project, in particular by involving young people in supporting local implementation with their communities, and by strengthening grassroots networks as a means of raising awareness and building capacity for collective and joint action.

12. The Wallonie-Bruxelles International (WBI) informs that in Senegal, the NGO ULB Coopération and the Senegalese association Nébéday are developing a project to restore Sérère cultural sites , a UNESCO World Heritage site in the 'Sine Saloum' region, threatened by rising water levels. The project also focuses on the preservation and resilience of the Sine Salouw biosphere reserve.

With the diverse supportive actions, Belgium is eager to highlight the crucial role that Biosphere Reserves play worldwide **as learning hubs and living labs for reaching the Sustainable Development Goals** and implementing the 2030 Agenda as well as for creation of new jobs (sustainable tourism, green and blue economy, nature bases solutions,

etc .) and enhanced prosperity, wellbeing and resilience for current and future generations. We underline the holistic multi-disciplinary collaborative approaches and the broad stakeholder involvement and **'community empowerment'**, as well as the **ecosystem services and 'People with and for Nature'** approaches. We align with goals for halting and reversing the loss of biodiversity and ecosystem services and promoting green development and resilience building, to the overall benefit of Nature, People and a sustainable Economy. We foster synergetic approaches for environment, climate and health and action-oriented initiatives in support of targets under the **post-2020 Global Biodiversity Framework**.

We **use Research and Innovation and SDG supportive opportunities** offered by the European Research Programs, or other relevant channels (e.g. European Environment Action Plan, Habitat directives, EC-DG INTPA programs, 'Future Earth Program') to **further propel the important and unique inspiring and connecting 'hub' role of BR's worldwide**, as well as of GEOparks.

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** **KempenBroek** : A low-lying, gently undulating cover sand landscape is intersected by shallow stream valleys in which various watercourses flow from the upper Kempen Plateau in the west to the lower Meuse Valley in the east. Some of the lowest areas feature marshes, remnants of what were once very extensive wetlands that were drained and converted to farmland primarily from the 19th century on. Today they consist of ponds, open marsh and (alder) bog forests. The higher and drier lands are mainly occupied by agriculture, with pastures and fields. In the far north are vast areas of moorland and inland dunes: an ancient cultural landscape where interesting prehistoric sites have been preserved. The forests on the drier soils consist mainly of oak-birch forest and Scots pine forests (planted since the 19th century for use in the mining industry). The villages and several towns are also scattered in or on the outskirts of the area, on the higher ground, and today are home to around 75,000 inhabitants in total.

BELSPO: Belgian Federal Science Policy Office

DGD: Directorate general for Development cooperaton (Federal, Belgium)