

Belgium's submission for the intergovernmental consultation following up on the UNEA Resolution 5/5 (UNEP/EA.5/Res.5) on Nature-based Solutions in reply to the co-chairs' invitation to provide input in relation to the overall aim of the intergovernmental consultations and the three specific tasks for the consultations specified in the resolution.

1) Overall aim of the intergovernmental consultations

As stated in the UNEA Resolution 5/5 this intergovernmental consultation is “to further support the implementation of nature-based solutions, as defined in the present resolution”. It is not to renegotiate the framing or the multilaterally agreed definition on nature-based solutions included in resolution. There are many ways to support the implementation of nature-based solutions including through communication, education, awareness raising, networking and building partnerships, through exchanging knowledge and best practice and through synergistic approaches and the identification of financial resources and how to access them. Both regional and global consultations should be inclusive and draw on available knowledge from examples on all levels and scales inter alia to examine the evidence for successful governance, business, finance and public participation schemes for the implementation of nature-based solutions.

In order to ensure implementation of nature-based solutions that is in line with the multilaterally agreed definition of NbS, intergovernmental consultations should also aim at agreeing on international standards and operational principles/guidelines for NbS implementation, as well as an assessment tool with criteria and indicators.

2) Three specific tasks for the consultations specified in the resolution

(a) Compile examples of best practice in nature-based solutions, based on the best available science;

Nature-based Solutions (NbS) aim at addressing the triple planetary crisis of climate change, pollution and biodiversity loss, while positively affecting human health and societal well-being. Belgium, through its [Biodiversity Platform](#) has been active in promoting and clarifying this concept. This platform serves as the National Focal Point for the International Union for the Conservation of Nature (IUCN) that puts deployment of NbS at the heart of its approach. The platform closely collaborates with and actively contributes to the European Partnership on Biodiversity [BIODIVERSA+](#) and EU's [EKLIPSE](#)¹ mechanism in order to ensure that NbS is kept as a concept encompassing benefits for biodiversity, for climate, for society and for the economy. For example, the Belgian Biodiversity Platform co-wrote a [publication on NbS](#) providing an overview of the different views related to the concept and how they can be reconciled. It was also active in the organisation of a EU Foresight workshop on Social Innovation and NbS of which the [report is available online](#).

In 2019, Belgium signed the [Nature-Based Solutions for Climate Manifesto](#) launched by China and New Zealand. Through the signing of this manifesto, a commitment is made to put more effort into "nature-based solutions" in policy and climate and environmental action.

In the framework of its Presidency of the Council of the European Union from 1 January to 30 June 2024 that has made of “Adaptation and Resilience” one of its [key priority themes](#), Belgium will promote nature-based solutions highlighting co-benefits and making their use more systematic.

Case studies:

The Belgian Science Policy Office ([BELSPO](#)) supports research programmes on nature-based solutions through its financial contribution to BIODIVERSA+ projects and its Belgian Research Action through Interdisciplinary Networks's programme. The [MixForChanges](#) project assesses and promotes the potential of **mixed tree plantations as nature-based solution** to mitigate (C sequestration) and adapt (drought and herbivory

¹ EKLIPSE is a EU Horizon2020 funded project that aims to develop an innovative and self-sustainable EU support mechanism for evidence-based and evidence-informed policy on biodiversity and ecosystem services

resilience) to climate change by providing science-based recommendations and guidelines endorsed by forest owners, managers and policy-makers. The project includes an [experiment](#) in Belgium.

NbS are also high on the agenda of several Federal, Flemish and local governmental authorities and departments. Because of its mandate to protect the coastline, the coastal division of the Flemish agency for Maritime Services and Coast (MDK) has been looking into the use of NbS mainly for climate adaptation. MDK was and is a partner in several coastal protection projects focussing on NbS: [CREST](#) project and the Interreg [2seas projects Building with Nature](#) and [SARCC](#). NbS have been incorporated into coastal protection projects and used along the coastline where possible ([installing green dykes/dunes in front of the dyke, foreshore beach nourishment, managed realignment of Zwin](#)). The principle of the Flemish coastal division is “soft where possible, hard where necessary” and therefore hybrid solutions are often used. Also, the Department of Maritime transport and in specific [Flanders Hydraulic Research](#) are studying the natural coastal processes for the use of NbS as coastal protection measures. De [Vlaamse Waterweg nv](#) is responsible for the execution of the Sigmaplan in cooperation with the agency for Nature and Forest (ANB).

The [Sigma Plan](#), a large scale nature-restoration project that provide maximal safety against storm tides in the Scheldt estuary, while also maximizing biodiversity and ecosystem services. The plan protects approximately 20,000 hectares of land in Belgium bordering the Scheldt River and its tributaries such as the Rupel, the Nete and the Durme Rivers. In order to achieve adequate protection, the plan combines ‘grey’ infrastructure measures, mainly strengthened dike protection, and **‘green’ measures in the form of a network of controlled flood areas**. As of 2015, the Sigma Plan consisted of 1200 hectares of designated natural flood zones.

The University of Antwerp (UA) is cooperating in the implementation and evaluation of the Sigma plan and leads several [research projects](#) on nature-based solutions. The University of Antwerp’s programme on NbS also focuses on the development of new techniques that can support natural ecosystems services, e.g. through the **development of [nature-based carbon sequestration techniques](#)** in both coastal and terrestrial ecosystems.

The [OVAM](#), the Public Waste Agency in the region of Flanders (Belgium), coordinates two projects to develop **nature-based solutions for soil remediation**. In the [Interreg Resanat](#) project phytoremediation and biostimulation techniques for PAHs and other oil-derived contaminants are experimented. In the [LIFE Narmena](#) project nature-based solutions for metal-contaminated river sediment and floodplains in nature reserves are developed with constructed wetlands and increasing inundation and water storage.

On the Belgian coast, the [“Duin voor Dijk”](#) (Dune for Dike) project uses the natural environment (sand dunes, grass and row wood hedges) to **protect beaches from erosion and to prevent sea water from reaching the inhabited zones**. Sea level rise and increasing risks of storms due to climate change are indeed a serious threat for the Belgian coast and a large part of Flanders region. In Oostende Oosteroever, six large plots of four hundred square meters each were planted with different patterns and densities of marram grass without rowwood. In Raversijde-Mariakerke, a seven hundred and fifty meter long coastal zone has been created with sections of one hundred square meters of marram grass. The great variation in density and pattern of the marram grass and osier provides a unique large-scale study area. In Westende, a so-called grass dike is being constructed. The KU Leuven (Catholic University in Leuven) [monitors](#) these pilot projects that all use different patterns and densities of plants so as to find out which planting retains the sand the best and thus stimulates the spontaneous formation of dunes the most. The results of the research will provide advice for a **scientifically based and natural approach to seawalls**.

The [Coastbusters project](#), a **public-private innovation partnership** (funded by VLAIO) also uses an **ecosystem-based flood defense solution for coastal zone management**. Biogenic reefs with biobuilders can protect the coast and can counter coastal erosion by stabilising sediments around and under the reef. The project initially screened the viability of three different naturally occurring sediment-stabilizing reef biobuilders off the Belgian coast: seagrass/seaweed, blue mussel and sand mason worm. In a follow-up project – [Coastbusters](#) – bivalve

reef (VLAIO funded), the use of a mussel reef is further studied and pilot tests executed in front of the Flemish coastline.

A **similar cooperation between industrial and research partners** is the [Bankbusters](#) project. A VLAIO funded project studying the beneficial re-use of dredged material for the restoration of eroded tidal zones and help improve our local ecosystem services.

More information on NbS projects for coastal protection in Flanders can be found in [the chapter on coastal flooding of the Compendium for Coast and Sea](#). A thorough overview of the potential of Flemish ecosystems as blue carbon sinks has recently been described in [Dauwe et al. 2022](#). Mangroves, a very important blue carbon ecosystem is not naturally occurring in Flanders. However the VUB/ULB and UA are running multiple projects and have extensive expertise concerning research into the understanding, conservation and restoration of mangroves ([UA](#) – Prof. S. Temmerman, [VUB/ULB](#)- Prof. T. Van der stocken and Prof. F. Dahdouh-Guebas).

In the framework of the Horizon2020 [MERLIN project](#) The Province of East Flanders in collaboration with Ghent University is [restoring the Zwalm Catchment](#). After degradation of the river due to straightening, bank enforcements, navigational use and intensive agricultural land use along its banks, the Zwalm river basin project aims at restoring the river to a healthy and functioning ecosystem while still allowing navigational use. More concretely, it consists in the installation waste water treatment plant (WWTP) and sewer systems, the removal of fish migration barriers, species reintroduction programs and habitat restoration (restoration of spawning beds, water buffer basins, buffer strips) and tailor-made agreements with farmers. The benefits are riparian and habitat restoration, flow connectivity, fish passes, biodiversity enhancement, reduction of erosion improvement of ecological and water quality.

In Brussels, as part of the European applied-research project [COOLSCHOOLS](#), scientists of the Free University of Brussels (VUB) examine the implications of **nature-based climate solutions in and around elementary schools in terms of accessibility and equity**. They are looking at the [Opération Ré-création](#) project which transform schoolyards into recreational green, mixed-use, quality play and resourcing spaces that are shared with local residents outside school hours. This initiative is undertaken in response to Brussel's environmental strategies focusing on soil permeability, water management, reduction of heat island effect, reinforcement of the green network (creation of semi-natural habitats), nature awareness & education, well-being of citizens and children.

The Free Universities of Brussels (ULB and VUB)'s [Co-Nature project](#) has produced scenarios for **inclusive nature-based urban design and regeneration** in a participative manner. The project has three objectives: preparing an inventory, classification and suitability mapping of Nature-Based Solutions for urban regeneration; understanding of urban green space use and valuation from the perspective of cultural ecosystem services; co-producing alternative scenarios through participatory research-by-design workshops for developing Nature based Urban Design and policy guidelines. As highlight in this [presentation](#), the project pays particular attention to **ecological justice** and how nature-based solutions can be better developed with and for poor urban population. The applied-research project focuses and analyzes two plans developed by the Government of the Brussels-Capital Region: [Plan Nature](#) that aims at reconciling the development of the city with nature, and [Plan Canal](#) that aims to stimulate city centre economic activity and local job creation, to create housing to keep up with population growth, and to build public space to serve as a platform for engagement and unification.

In Wallonia in the Southern part of Belgium, as part of the Walloon sustainable development program, [agri-environmental and climatic methods \(MAEC\)](#) are designed to encourage farmers to implement practices that

conserve and improve the environment, over and above those required by law. These practices, which are subject to a voluntary 5-year commitment, give rise to remuneration to cover the loss of income and costs associated with their implementation. MAEC program includes a wide range of specific actions adapted to each situation (a catalog of more than 120 actions, which is not a closed list, is used). Examples of actions: flood meadow' located in runoff transfer zone, hedges and wooded strips, grassy headlands, environmentally-friendly crops, etc.

In Wallonia, the project [“Yes We Plant”](#) subsidizes citizens, farmers, associations, companies, schools and public organizations the planting of hedges, linear coppices and tree lines to conserve biodiversity and fight against climate change.

In the framework of the [Natural Capital Financing Facility](#), the European Investment Bank and the European Commission fund [nature-based solutions for wastewater treatment](#) with the objective of achieving a very good status of water bodies and to promote the return of the pearl mussel and the thick mullet, as well as their host fish species on the Walloon territory. It also finances measures to protect the basins at the outlet of wastewater treatment plants and thus protect the water quality of rivers and associated ecosystems. It consists of measures such as, actions to protect water catchments in order to reduce the harmful contribution of nitrates, ecological management of the ecological management of pastures, the creation of meadows particularly rich in biodiversity or the development of basins or or the creation of natural basins or lagoons to reduce water overflows.

As part of its recovery plan, the Walloon region has launched [Project 99 for Biodiversity and Climate Resilience](#) to support and fund **nature-based solutions for flood control** that have, at the same time, a positive impact on the water cycle, the quality of surface and groundwater and the water supply (purification, run-off, infiltration). The solutions include the renaturation of riverbanks and watercourses, re-maintenance, restoration of wetlands and the creation of temporary immersion areas, whether natural (also known as flood expansion areas) or engineered.

(b) Assess existing and discuss potential new proposals, criteria, standards and guidelines to address divergences, with a view to achieving a common understanding among Member States for the implementation of nature-based solutions, including to support Member States in designing, implementing and evaluating nature-based solutions, building on existing work, initiatives and platforms, as appropriate, and without prejudice to existing efforts and initiatives of and new proposals from individual Member States;

The Research Institute Nature and Forest (INBO) is preparing an [Atlas of Nature-Based Solutions](#) in Flanders, Belgium. The goal is to provide an overview and network around nature-based solutions (NBS) in Flanders for cities and towns to consult and be inspired by existing NBS projects. In addition, a database of projects (with corresponding ecosystem services provided) that aim to create (urban) NBS on a local scale is a useful starting point for research and allows the **performance of these projects to be evaluated and lessons to be learned**. This atlas will better connect policy, management and research on NBS.

The [report “Ecosystem services and building with nature on our sandy coast”](#) provides a comprehensive **evaluation framework, and a robust set of criteria and methodology** to assess impacts of nature-based solutions on coast defense systems and their potential to realize additional benefits, for example, biodiversity, water purification and a diverse natural environment for recreation. The advantages and possible bottlenecks of NbS were evaluated with a model study on coastal safety, ecosystem services analysis, and dialogue with local authorities. This is illustrated by 6 scenarios with NbS compared to a reference scenario with a hard solution (dike heightening/storm wall). For each scenario, a series of ecological and cultural benefits were considered (ecosystem services analysis) besides coastal safety. Knowledge from national and international

model projects (Netherlands, UK) was consulted. This approach provides a framework to make ecological and social aspects explicit in addition to the technical evaluation (coastal safety requirement).

The [evaluation report on “Green-Blue networks”](#) in Flanders tests the **six building blocks of green-blue networks** (GBN) –institutional context, multistakeholder process, multifunctionality, system approach, resources and feasibility, and sustainable management– in practice. GBNs in Flanders aim at connecting or developing different green spaces in the city (e.g. parks, gardens, green roofs, etc.) and in open space (e.g. urban fringe forests, rows of trees, wooded borders, etc.), to create a coherent, functional network in response to various societal challenges. The cases and case-studies examined in the report make it clear that for the successful development and implementation of GBN it is important to work on various aspects at the same time: Collaboration across sectoral boundaries (intersectoral) and stakeholder boundaries (transdisciplinary); setting up a high quality participation process; gaining insight into the multifunctionality and the socio-ecological functioning of the GBN system; design of GBN based on biophysical capabilities of the area, the current and desired functions of the GBN, and the capabilities to deliver these functions through nature-based solutions.

The [“Blue Deal Monitoring Practical Guide”](#) has been developed with the help of the University of Antwerp. The practical guide serves as a valuable tool for implementing and enhancing water management measures. It is based on in-depth studies of on-site measures supported by the Blue Deal and offers insights into their impact on the water system. The guide includes guidance on selecting monitoring techniques and their application to common on-site measures. It encourages active engagement with the guide, implementation of its ideas and suggestions, and learning from the impact of these measures. It is work in progress and feedback, improvement proposals, and additional practical experiences are welcomed to further strengthen future versions of the guide. The practical guide aims to support stakeholders in making informed decisions and effectively investing in the water system, ultimately contributing to the positive impact of the Blue Deal.

At European level, the Knowledge & Learning Mechanism on Biodiversity and Ecosystem Services (EKLIPSE) has produced an [impact evaluation framework](#) to support planning and evaluation of nature-based solutions projects in Europe. It explores the **multiple dimensions of impact that nature-based solutions projects** may have when implemented at different scales, from building to regional. To meet this objective, an impact assessment framework was formulated, which is intended to be used to guide an assessment of the effectiveness of nature-based solutions projects.

The [IUCN Global Standard for NbS](#) should feed discussions around criteria and indicators for the implementation of NbS. It is a self-assessment that consists of eight criteria and associated indicators, which address the pillars of sustainable development (biodiversity, economy and society) and resilient project management. It aims to equip users with a robust framework for designing and verifying NbS that yield the outcomes desired, in solving one or several societal challenge(s). The Standard provides a systematic learning framework so that lessons can improve and evolve the applications, leading to greater confidence in NbS among decision makers. The Standard also provides an opportunity to create a global user community that helps guide implementation on the ground, accelerate policy development, and create conservation science on NbS.

Finally, as studies by [Cousins \(2021\)](#) and [Huerta & Geneletti \(2022\)](#) highlight, criteria and indicators for nature-based solutions should **include equity and justice principles** to ensure co-benefits for all and to promote their uptake and implementation.

(c) Identify options for supporting sustainable investment in nature-based solutions and share information on bilateral and multilateral sources of finance to enable developing countries to develop and deploy nature-based solutions;

[InnoFiNS project](#) at the University of Antwerp (Belgium) studies the utilization potential of innovative financing models in the Flemish context by developing real life business cases of NBS, using new instruments such as impact financing, value capturing and ICO-crowd funding. This strategic research studies how new financial instruments impact planning and design, governance arrangements, valuation methods, legal institutions and instruments as well as social justice. InnoFiNS prepared a [presentation](#) in which they focus on three new financial instruments: Land Value Capturing, Social Impact Bonds and Initial Coin Offering (ICO).

The [Nature Value Explorer](#) (NVE) that was [developed by VITO](#) (an independent Belgian research organization in the area of cleantech and sustainable development) is an online calculation tool that end users use to establish the impact that various land use scenarios will have on the **economic value of ecosystem services**. These pragmatic methods for the valuation of ecosystem services enable to help land developers, governments, nature conservation organisations or land managers. They can be used to show the value of changes in land use, the benefits of management measures or the advantages of green development projects. Companies use these methods to calculate the impact of their production process or company premises on the local green space. To summarise: the NVE quantifies green value, express it in terms of money and then make them visible.

Unblocking **private financing** will be important for the upscaling of nature-based solutions, for instance through public-private partnerships such as in the [Coastbusters project](#) funded by the Flemish Agency for Innovation and Entrepreneurship and the Blauwe Cluster and co-financed by and the private partners DEME, Jan De Nul and Sioen Industries, in cooperation with the research institutes VLIZ and ILVO. The World Resource Institute has written a [brief](#) on the **role banks can play to break down the barriers to scale NbS** and identifies specific actions that actors that actors can take to do so. Engaging other actors than the state in the upscaling of NbS is seen as a potential win-win solution, where innovation, economic gains and biodiversity protection, or climate change mitigation could go hand in hand. Yet, as identified in [EU's Naturvation report](#) it is important to emphasize that the mobilization of the private sector is risky and expensive, and can lead to forms of social exclusion and the need for the state to guarantee risk. Some of the associated risks are of 'overselling nature, or of encouraging a perception of ecosystems as entirely-substitutable by other assets used by humans. Others argue that powerful socio-economic interests are likely to dominate greening initiatives and be placed above other/social equity needs or priorities.

At European level, the **European Development Bank's report on [investing in nature-based solutions](#)** that was just published (8 June 2023) highlights the challenges involved in financing nature-based projects and draws on the European Investment Bank's experience in implementing the Natural Capital Financing Facility pilot programme in Europe and interviews with key players across the field. The analysis looks at nature-based solutions across six ecosystems and landscapes. The in-depth report also presents key recommendations on how to attract much-needed private investment, including the establishment of a range of funding and financing mechanisms, as well legislative solutions to facilitate cooperation among public entities and co-financing.

Belgium's development cooperation's priority is on the nexus climate-biodiversity. In this way, instruments for climate and biodiversity action of the Belgian Development Cooperation can also be used for nature-based solutions. **Belgium already supports UNDP [BIOFIN](#)** (Biodiversity Finance Plan) financially and in kind. For example, the Royal Belgian Institute of Natural Sciences (RBINS) has co-drafted the [proposal](#) for the development and initial implementation of a national Biodiversity Finance Plan in Niger with Niger's Executive Secretariat of the National Environment Council for Sustainable Development (CNEDD). Flanders supports

BIOFIN financially and has made a contribution of 250 000 EUR. The [Belgian Investment Company for Developing Countries \(BIO\)](#), as member of the Association of bilateral European Development Finance Institutions (EDFI), is developing its priorities on the basis of EDFI's one. The latter has made a succinct set of commitments recognizing the possibility of private sector involvement in climate adaptation, nature-based solutions and issues of just transition.

The Mangrove Project of the Flanders UNESCO Science Trust Fund ([FUST](#)), funded by the Flemish government (Department of Economy, Science and Innovation), aims to work in six UNESCO coastal biosphere reserves: Seaflower (Colombia), Península de Guanahacabibes (Cuba), La Encrucijada (Mexico), Macizo del Cajas (Ecuador), Darién (Panama) and Noroeste Amotapes-Manglares (Peru). The project pursues three main objectives: - Assess the state of mangrove ecosystems and their recovery potential - Create a recovery campaign using local knowledge - Promote education and awareness for sustainable development. UNESCO's Man and Biosphere Programme (MAB), local project partners and site managers will work jointly to share and co-produce knowledge, community-based ecological restoration initiatives in the mangrove areas, capacity development, communication, participation and awareness raising on the role of mangrove ecosystems and nature-based solutions in climate mitigation and adaptation. The FUST mangrove project draws on international expertise on mangrove management and restoration, including the mangrove knowledge network of the Free University of Brussels (VUB), an International Coordination Action (ICA) funded by the Flemish Research Foundation (FWO). The project can count on the active support of the Flemish Marine Institute (VLIZ).