biodiversa+
European Biodiversity Partnership

EUROPEAN PARTNERSHIP

Strategy on international collaboration and internationalisation of the Biodiversa+ Partnership

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What is Biodiversa+

The European Biodiversity Partnership, Biodiversa+, supports excellent research on biodiversity with an impact for policy and society. Connecting science, policy and practise for transformative change, Biodiversa+ is part of the European Biodiversity Strategy for 2030 that aims to put Europe's biodiversity on a path to recovery by 2030. Co-funded by the European Commission, Biodiversa+ gathers 81 partners from research funding, programming and environmental policy actors in 40 European and associated countries to work on 5 main objectives:

1. Plan and support research and innovation on biodiversity through a shared strategy, annual joint calls for research projects and capacity building activities
2. Set up a network of harmonised schemes to improve monitoring of biodiversity and ecosystem services across Europe
3. Contribute to high-end knowledge for deploying Nature-based Solutions and valuation of biodiversity in the private sector
4. Ensure efficient science-based support for policy-making and implementation in Europe
5. Strengthen the relevance and impact of pan-European research on biodiversity in a global context.

More information at: https://www.biodiversa.eu/

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The Biodiversa+ partners (July 2024)

1. NASRI, National Agency for Scientific Research and Innovation, Albania
2. MTE_AL, Ministry of Tourism and Environment , Albania
3. NAPA, National Agency of Protected Areas, Albania
4. BMBWF, Federal Ministry of Education, Science and Research, Austria
5. FWF, Austrian Science Fund, Austria
6. EAA, Umweltbundesamt, Austria
7. BelSPO, Belgian Science Policy Office, Belgium
8. F.R.S.-FNRS, Fonds De La Recherche Scientifique, Belgium
9. FWO, The Research Foundation - Flanders, Belgium
10. SPW-ARNE, Service public de Wallonie (Agriculture-Ressources naturelles-Environnement), Belgium
11. VLO, Vlaams gewest / Flemish region, Belgium
12. BNSF, Bulgarian National Science Fund, Bulgaria
13. ExEA, Executive Environment Agency, Bulgaria
14. MoeW, Ministry of Environment and Water, Bulgaria
15. MESD, Ministry of Economy and Sustainable Development, Croatia
16. MOECSY, Unit for Education for the Environment and Sustainable Development (EESD), Cyprus Ministry of Education, Culture, Sports and Youth, Cyprus
17. MoE CR, Ministry of the Environment, Czech Republic
18. NCA CZ, Nature Conservation Agency of the Czech Republic, Czech Republic
19. TA CR, Technologicka Agentura Ceske Republiky, Czech Republic
20. IFD, Innovation Fund Denmark, Denmark
21. MoE of DK, Ministry of Environment of Denmark, Denmark
22. ETAg, Estonian Research Council, Estonia
23. MEM, Ministry of Rural Affairs of the Republic of Estonia, Estonia
24. MoE_EE, Estonian Ministry of the Environment, Estonia
25. Faroese RC, The Faroese Research Council, Faroe Islands
26. AKA, Suomen Akatemia, Finland
27. MoE_FI, Ministry of the Environment, Finland
28. ANR, Agence Nationale de la Recherche, France
29. FRB, Fondation pour la Recherche sur la Biodiversité, France
30. MTECT, Ministère de la Transition Ecologique et de la Cohésion des Territoires, France
31. OFB, Office Français de la Biodiversité, France
32. MEPA, The Ministry of Environmental Protection and Agriculture of Georgia, Georgia
33. SRNSFG, Shota Rustaveli National Science Foundation of Georgia, Georgia
34. BfN, Federal Agency for Nature Conservation, Germany
35. BMBF, Bundesministerium für Bildung und Forschung, Germany
36. BMUV, Bundesministerium für Umwelt, Naturschutz, Nukleare Sicherheit und Verbraucherschutz, Germany
37. DFG, Deutsche Forschungsgemeinschaft e.V. (German Research Foundation), Germany
38. DLR, Deutsches Zentrum für Luft- und Raumfahrt e.V., Germany
39. VDI/VDE-IT, VDI/VDE Innovation + Technology GmbH, Germany
40. GSRI, General Secretariat for Research and Innovation, Greece
41. NKFIH, Nemzeti Kutatási, Fejlesztési és Innovációs Hivatal, Hungary
42. Rannis, Icelandic Centre for Research, Iceland
43. DHLGH, Department of Housing, Local Government and Heritage, Ireland
44. EPA, Environmental Protection Agency of Ireland, Ireland
45. MOEP, Ministry of Environmental Protection, Israel
46. MASE, Ministry of Environment and Energy Security, Italy
47. MUR, Ministry of Universities and Research, Italy
48. PROV BOZ, Autonomous Province of Bolzano/Bozen South Tyrol, Italy
49. RKS, Environmental Protection Agency, Kosovo
50. LCS, Latvian Council of Science, Latvia
51. MoES, Ministry of Education and Science, Latvia
52. LMT, Lietuvos mokslo taryba, Lithuania
53. MECSD, Ministry for Environment, Luxembourg
54. NARD, Agentia Nationala Pentru Cercetare Si Dezvoltare, Moldova
55. EPA_M, Environment Protection Agency , Montenegro
56. MENFPESRS, Ministry of National Education, Vocational Training, Higher Education and Scientific Research, Morocco
57. LNV, Ministry of Agriculture, Nature and Food quality, The Netherlands

58. NWO, The Dutch Research Council, The Netherlands
59. NEA, Norwegian Environment Agency, Norway
60. RCN, Research Council of Norway, Norway
61. NCN, Narodowe Centrum Nauki, Poland
62. FCT, Fundação para a Ciência e a Tecnologia, I.P., Portugal
63. FRCT, Fundo Regional para a Ciência e Tecnologia, Portugal
64. UEFISCDI, Executive Agency for Higher Education, Research, Development and Innovation Funding, Romania
65. MoER SR, Ministry of Environment of the Slovak Republic, Slovakia
66. SAS, Slovak Academy of Sciences, Slovakia
67. SNC SR, State Nature Conservancy of the Slovak Republic, Slovakia
68. MIZS, Ministry of Education, Science and Sport, Slovenia
69. DSI, Department of Science and Innovation, South Africa
70. AEI, Agencia Estatal de Investigación, Spain
71. CDTI, Centro para el Desarrollo Tecnológico y la Innovación, E.P.E.,Spain
72. DACC, Departament d'Acció Climàtica, Alimentació i Agenda Rural, Spain
73. FECYT, Fundación Española para la Ciencia y Tecnología F.S.P., Spain
74. FB, Fundación Biodiversidad, Spain
75. Formas, Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning, Sweden
76. SEPA, Swedish Environmental Protection Agency, Sweden
77. SwAM, Swedish Agency for Marine and Water Management, Sweden
78. SNSA, Swedish National Space Agency, Sweden
79. SNSF, Swiss National Science Foundation, Switzerland
80. MHESRS, Ministry of Higher Education and Scientific Research, Tunisia
81. TAGEM, Ministry of Agriculture and Forestry/ General Directorate of Agricultural Research and Policies, Turkey
82. TUBITAK, Scientific and Technological Research Council of Turkey, Turkey
83. NERC, Natural Environment Research Council, United Kingdom

List of acronyms

AB - Biodiversa+ Advisory Board
AHTEG - Ad-hoc Technical Expert Group of the CBD
ASEAN - Association of Southeast Asian Nations
AWP - Annual Work Plan (of the Biodiversa+ Partnership)
B4Life - EU 'Biodiversity for Life' flagship initiative
BIOFIN – EU-UNDP Biodiversity Financing Initiative
BSPIN - Biodiversity Science-Policy Interfaces Network for Early Career Scientists
CBD - Convention on Biological Diversity
CITES - Convention on International Trade in Endangered Species
CMS - Bonn Convention on Migratory Species
CO-OP4CBD - Horizon Europe project "Co-operation for the Convention on Biological Diversity"
DCI - EU Development Cooperation Instrument
DG INTPA - Directorate-General for International Partnerships of the European Commission
ECA Network - The Europe & Central Asia Network of organisations engaging in IPBES
EDF - European Development Fund
EGNOS - European Geostationary Navigation Overlay Service
ENPI - European Neighbourhood and Partnership Instrument
ERA - European Research Area
ESB - Biodiversa+ Enlarged Stakeholder Board
EU - European Union
FAO - Food and Agriculture Organization of the United Nations
GEOSS - Global Earth Observation System of Systems
GEOBON - Group on Earth Observations Biodiversity Observation Network
GBF - Kunming-Montreal Global Biodiversity Framework
GBIF - Global Biodiversity Information Facility
GERI - Global Ecosystem Research Infrastructure
GPCC - EU 'Global Public Goods and Challenges' thematic programme
ILK - Indigenous and local knowledge
ILTER - International Long-term Ecological Research Network
IPBES - Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
IPCC - Intergovernmental Panel on Climate Change
ISC - International Science Council

IUBS - International Union of Biological Sciences
IUCN - International Union for Conservation of Nature
MEA - Multilateral Environmental Agreement
NGO - Non-governmental organisation
OCT - Overseas Countries and Territories of the European Union
ODA - Official development assistance
OECD - Organisation for Economic Co-operation and Development
OR - Outermost Regions of the European Union
R&I - Research and innovation
Ramsar - The Ramsar Convention on Wetlands
RESPIN - Horizon Europe project "REinforcing Science-Policy INterfaces for integrated biodiversity and climate knowledge and policies"
SBSTTA - Subsidiary Body for Scientific, Technical and Technological Advice of the CBD
SDG - Sustainable Development Goals
SMEs - Small and medium enterprises
SRIA - Strategic Research and Innovation Agenda
UN - United Nations
UNCCD - United Nations Convention to Combat Desertification
UNDP - United Nations Development Programme
UNEP - United Nations Environment Programme
UNEP-WCMC - UN Environment Programme World Conservation Monitoring Centre
UNESCO - United Nations Educational, Scientific and Cultural Organisation
UNFCCC - United Nations Framework Convention on Climate Change
WCS - Wildlife Conservation Society
WHC - UNESCO World Heritage Convention
WP - Work package (within Biodiversa+)
WPIEI - EU Council's Working Party on International Environment Issues
YESS - Young Ecosystem Services Specialists network

Executive Summary

The loss of biodiversity and degradation of ecosystems is global and requires science-based measures. The EU commitment for biodiversity therefore goes far beyond Europe, through international conventions, multilateral collaborations, and investments. This is also mirrored in EU's support to international R&I partnerships, opening up to non-EU countries. Biodiversa+ is contributing to international efforts, especially with regards to policy processes and knowledge generation, as presented in this document.

The Biodiversa+ Internationalisation Strategy aims to:

- strengthen the internationalisation of national and EU biodiversity R&I, by opening up to OCT and OR as well as non-EU countries, stimulating collaboration with international infrastructures and research facilities (incl. earth observation programmes), promoting the development and implementation of NBS
- contribute to multilateral environmental agreements, with emphasis on IPBES
- better connect Biodiversa+ outcomes with international processes
- reach out to a larger audience and develop synergies with biodiversity-related organisations for communication and dissemination purposes
- develop capacity-building activities to facilitate the involvement of stakeholders in international research and policy processes
- set up sustainable collaborations to better address the biodiversity issues and enhancing the uptake and use of generated knowledge by policy and society

To reach the above-mentioned objectives, 3 main areas for international cooperation have been identified:

Joint programming and funding of research: this includes activities such as a mapping to identify key actors and priorities; dialogues to engage research funders, R&I policy makers and other actors from EU and beyond; strengthened collaboration with development aid funders; inclusion of international partners' priorities in Biodiversa+ Flagship programmes and enhancing their participation in research activities; extension of the European biodiversity monitoring network beyond EU.

Global science-policy interface: this includes a stronger contribution to global R&I policy processes and initiatives (e.g. CBD, SBSTTA, CMS) with the organisation of side-events and capacity-building activities; renewed collaboration with IPBES by the uptake of research outcomes in IPBES deliverables or by supporting Biodiversa+ partners' participation in IPBES; support the implementation of the GBF, by developing and coordinating inputs from the Partnership activities in the Framework.

Reinforcement of the collaboration with global biodiversity research infrastructures: this includes a mapping effort to identify relevant infrastructures and analyse the opportunities and barriers to their use and how Biodiversa+ can help overcome such barriers. Cooperation with these infrastructures will be included in Biodiversa+ activities, especially for research calls and biodiversity monitoring.

To implement these actions, Biodiversa+ needs to engage with international actors listed in this document: national funding agencies and/or ministries, public and private funding organisations, development aid funders, stakeholder organisations, scientific collaboration networks, intergovernmental organisations, etc. These actors will be targeted based on five main criteria: relevance/funding capacity, localization in global regions of interest, trust and previous collaborations, established research connections and risk assessment, fit to EU and global policies on biodiversity.

The Biodiversa+ Internationalisation Strategy will be implemented through the annual work plans across Biodiversa+ Work Packages. It will be reviewed by the regular coordination between the European Commission and Biodiversa+ and by the annual monitoring report on Biodiversa+ progress.

1. International collaboration for life on Earth – the policy landscape for biodiversity and sustainable development

Nature and nature's contribution to people are deteriorating worldwide [1]. Biodiversity and ecosystem functions and services are vital for human existence and good quality of life. The biosphere, upon which humanity as a whole depends and which humanity is a part of, is being altered to an unparalleled degree across all spatial scales. Direct and indirect drivers of change in nature have accelerated during the past 50 years. The direct drivers with the largest global impact have been: changes in land and sea use; direct exploitation of organisms; climate change; pollution; and invasion of alien species. These direct drivers result from underlying causes (indirect drivers) underpinned by societal values and behaviours, and which include production and consumption patterns; human population dynamics and trends; trade; technological innovations; and local through global governance. The rate of change in the direct and indirect drivers differs globally among regions and countries.

Environmental and socioeconomic interactions between distant regions of the world (telecoupling) are dramatically increasing [2; 3]. Global trade including illegal and unsustainable wildlife trade as well as trade agreements play a critical role in global biodiversity change. Strengthening biodiversity conservation across the globe, in both developing and developed countries, is of immense importance to avoid irreversible losses and the related increased impact on human welfare. However, despite such a transboundary aspect, international law regarding biodiversity is shaped by a fundamental principle: State sovereignty over its own biological resources.

The European Union (EU) contributes to halting the global loss of biodiversity and degradation of ecosystems through conservation efforts within its own territory as well as at the global level [4; 5; 6]. European diplomacy for biodiversity is shaped by the promotion of multilateralism over bi- and unilateralism. Moreover, the "adoption of measures based on scientific evidence" is also considered a key principle of EU diplomacy on biodiversity [7]. The eighth EU Environment Action Programme (EAP, 2022) defines research as an enabling condition to its implementation: *"ensuring that environmental policies at Union, national, regional and local level are based on the best available scientific knowledge […] and strengthening the environmental knowledge base, including indigenous and local knowledge, and its uptake, including through research […], training"* [8]. The EU Biodiversity Strategy for 2030 [9] forms the basis for its global action, committing it to combat the biodiversity crisis by minimising the EU's global biodiversity footprint, i.e. minimising impacts of EU's internal policies and consumption patterns on biodiversity loss outside the EU, and by addressing biodiversity concerns as an integral part of the EU external environmental governance. The Biodiversity Strategy aims to build the EU societies' resilience to future threats such as climate change impacts, forest fires, food insecurity or disease outbreaks, including by protecting wildlife and fighting illegal wildlife trade. In practice, the EU pursues these objectives through a framework of instruments, including international dialogues and negotiations, trade restrictions and incentives, dedicated legislative acts, such as EU regulations on illegal timber and wildlife trade, and capacity building. However, the impacts of the EU's external biodiversity policy remain less studied [7].

The European Union is a Party to the United Nations Convention on Biological Diversity (CBD) of 1992 [10] that seeks to ensure the conservation and the sustainable use of biodiversity on the planet as well as the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources. The EU

is also Party to the two CBD protocols, i.e., the Cartagena as well as the Nagoya protocols. This commitment is reflected in the EU Biodiversity Strategy. Work is underway to ensure that EU level targets, under the Biodiversity Strategy and other legislation, meet the requirements of the Kunming-Montreal Global Biodiversity Framework. The EU also implements a broad range of other biodiversity-related international agreements such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) [11], the Bonn Convention on Migratory Species (CMS) [12], the Bern Convention on the Conservation of European Wildlife and Natural Habitats [13], the Ramsar Convention on Wetlands [14], the UNESCO World Heritage Convention [15], and the Agreement on international humane trapping standards [16], as well as biodiversity-related aspects in the other two Rio conventions, the United Nations Framework Convention on Climate Change (UNFCCC) [17] and the United Nations Convention to Combat Desertification (UNCCD) [18].

Furthermore, the EU has also supported and contributed to the development of the United Nations 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs) [19]. The SDGs include two objectives that are particularly relevant for biodiversity:
Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development;
Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.
Many other SDGs, however, also depend on biodiversity to a greater or lesser degree.

As many developing countries host a rich biodiversity and are often so-called 'hotspots of biodiversity'[1], the EU has invested more than €2.5 billion since 2007 in biodiversity-related projects through international development cooperation [20][2]. Activities herein are mainly via two types of financial instruments: (1) *geographical instruments*, such as the European Development Fund (EDF), the Development Cooperation Instrument (DCI) or the European Neighbourhood and Partnership Instrument (ENPI) to implement the biodiversity strategy at national and regional level; (2) the *thematic programme 'Global Public Goods and Challenges'* (GPGC), which addresses issues that are not priorities under geographical instruments or issues common to groups of countries not belonging to a single region.

The largest share of the EU's international investments in biodiversity is used to support protected and conserved areas [20]. These funds are provided through bilateral cooperation with partner countries or through grants to international and local non-governmental organisations (NGOs) that manage protected and conserved areas. For the past 30 years, the EU has focused on enabling partner countries to create, manage and maintain key protected areas because well-managed protected areas bring many benefits, including:

- reduced rates of habitat loss and maintained levels of species populations;
- preservation of key ecosystem services and fostering of sustainable livelihoods;

[1] Biodiversity hotspots are defined as biogeographic regions with significant levels of biodiversity that are threatened by human habitation, e.g. [21].
[2] One example of a thematic funded instrument is the EU 'Biodiversity for Life' (B4Life) flagship initiative, launched in 2014 and led by DG INTPA, which integrates biodiversity and ecosystem conservation with socioeconomic development and poverty eradication, through an innovative cross-cutting approach [18]. B4Life operates in 3 priority areas: (1) good governance for a sustainable management of natural resources; (2) ecosystem conservation for food security and sustainable rural development; (3) ecosystem-based solutions towards a green economy. B4Life also specifically addresses the wildlife crises linked to increasing illegal trafficking. Moreover, the EU funds biodiversity projects carried out in partnership with the UNDP such as the Biodiversity Financing Initiative (BIOFIN).

- sustainable economic benefits through tourism and innovative small and medium enterprises (SMEs);
- wildlife protection in fragile countries affected by illegal trafficking;
- increased pool of plants and resources for potentially new medicines;
- mitigation effects on climate change and consequently less risks of natural disasters.

Protection and conservation of natural areas requires sustained political commitment and financial support. In countries where government capacities are limited, public-private partnerships have proven to be a successful alternative.

However, several implementation challenges remain, most notably, that the current level of integration of biodiversity objectives is limited, both within the EU's trade agreements and in the development cooperation with non-EU countries [4]. While frameworks for screening for possible negative impacts of trade and development cooperation investment on the environment exist, they still need to be improved and applied in a more systematic and vigorous manner in the area of biodiversity. Moreover, the "lack of control and monitoring on the results obtained with the different instruments" is considered the "Achilles heel" of the EU external biodiversity action [7].

The EU strategy for supporting international research and innovation partnerships can be found in "Global Approach to Research and Innovation – Europe's strategy for international cooperation in a changing world" [27]. This "Global Approach" is based on three pillars:

1. Cooperation with leading scientists, researchers, innovators and knowledge-intensive companies around the world in order to pool investments and resources, access knowledge, expertise and markets outside the EU, and share research infrastructures and costs;
2. International R&I cooperation to address global challenges (e.g., the biodiversity and climate crises) and to deliver on the common global commitments (e.g., the Sustainable Development Goals);
3. Co-creation of global R&I with international partner countries; in order to implement identified solutions in the EU and partner countries, and to promote science-based decision-making in global policies.

This strategy is mainly implemented through Horizon Europe, the EU's research and innovation framework programme 2021-2027, and encourages engaging with non-EU countries, including industrialised non-EU countries and emerging economies, other European and neighbouring countries, as well as countries from Africa, Latin America and the Caribbean, and the ASEAN region.

In order to reverse biodiversity loss, societal actors, including policymakers, businesses and citizens, need to know how to change their policies and behaviours. Science can provide essential evidentiary support by increasing knowledge on biodiversity dynamics, strengthening biodiversity monitoring and developing nature-based solutions.

Biodiversa+ generates such new knowledge and tools to address the causes of biodiversity loss through its R&I funding and other activities. It aims to provide the evidence to support decision-making and inform

international policies and initiatives and to develop cutting-edge approaches for conserving, restoring and sustainably managing biodiversity globally.

Biodiversa+ thus contributes to the implementation of the EU Biodiversity Strategy, the goals and targets of the Kunming-Montreal Global Biodiversity Framework of the Convention on Biological Diversity (CBD), the United Nations Sustainable Development Goals (SDGs), the Paris Climate Agreement, the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES), and the EU's Global Approach to Research and Innovation.

2. Objectives and aims of the Biodiversa+ Internationalisation Strategy

Overall, the Biodiversa+ Internationalisation Strategy aims to contribute to the implementation of the EU Biodiversity Strategy for 2030, to support the European Union's "Global Approach" for biodiversity through R&I cooperation, as well as to contribute to the implementation of Kunming-Montreal Global Biodiversity Framework (GBF). To this specific end Biodiversa+ is publishing a plan for supporting the implementation of the GBF in November 2024, closely linked to the present document. The internationalisation strategy will be implemented across the whole range of activities carried out by Biodiversa+, so not only within its Work Package 5 dedicated to internationalisation. More specifically, the strategy aims at the following four main objectives:

1. Address international aspects of biodiversity research and related policies
2. Ensure visibility of Biodiversa+ and European biodiversity research
3. Organise international capacity building activities
4. Set up mutually beneficial collaborations

These four objectives are elaborated in the sections below.

2.1. Address international aspects of biodiversity research and related policies

Biological diversity – the variety of life on Earth and the natural patterns it forms[3] – as well as its deterioration due to direct and indirect drivers of change are global phenomena. The characteristics of biodiversity, its functions and the services it delivers to people, therefore, have to be described and scientifically investigated on a global level. The same holds for the conservation and restoration of biodiversity, the sustainable use of its components and the sharing of its benefits for human well-being.

[3] The UN Convention on Biological Diversity [10] defines biodiversity in Article 2 as "the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems".

European biodiversity research therefore has to address the global aspects of biodiversity as well as the related international policies and science-policy interfaces.

The Biodiversa+ Internationalisation Strategy, therefore, aims at strengthening the internationalisation of national and European biodiversity R&I. Biodiversity research in Europe has to expand its focus to include regions outside the European mainland, e.g. the European Union's Overseas Countries and Territories (OCT) and Outermost Regions (OR), countries with high biodiversity, key biodiversity areas and/or global hotspots of biodiversity, like tropical rainforests, mountains, islands, tropical coral reefs etc. It should also properly address global direct and indirect drivers of change, as well as global environmental and socio-economic interactions and telecoupling phenomena, including impacts by global trade and financial value chains, climate change, land and sea use change, pollution, invasive alien species, etc. European research therefore has to reinforce its collaboration with researchers and scientific institutions, stakeholders and societal actors in countries beyond Europe, including indigenous peoples and local communities, civil society, local authorities and the private sector. Collaboration with international biodiversity observation infrastructures and research facilities, e.g., laboratories, ecotrons, biological collections, data management facilities, has to be stimulated. The development and implementation of Nature-based Solutions, nature conservation and restoration activities, as well as biodiversity-based sustainable development activities should also be promoted globally.

Through Biodiversa+, European R&I is expected to contribute to global policy processes and initiatives by providing scientific knowledge and research outcomes, by building mutually beneficial collaborations and by improving the engagement of countries represented in Biodiversa+ in these processes.[4] Generally, any joint programming should align with the requirements of the UN Sustainable Development Goals and the Kunming-Montreal Global Biodiversity Framework of the Convention on Biological Diversity (CBD).

More concretely, Biodiversa+ expects R&I actors to contribute to several frameworks:
Multilateral Environmental Agreements (MEAs) in the biodiversity domain, namely the CITES Convention, the Bonn Convention on Migratory Species (CMS), the Bern Convention on the Conservation of European Wildlife and Natural Habitats, the United Nations Framework Convention on Climate Change (UNFCCC) and the United Nations Convention to Combat Desertification (UNCCD). In order to enhance the uptake of research results across these international policies, the secretariats of MEAs should be encouraged to become partners in Biodiversa+ funded projects.

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES): scientists, policymakers and other stakeholders, should better engage with IPBES and its overall objectives (cf. section 3.2.2). R&I should contribute to the four basic functions of IPBES, capacity building, assessing existing knowledge, strengthening knowledge foundations and policy support. For example, by supporting IPBES with knowledge and other research outcomes generated by Biodiversa+ projects, Biodiversa+ can help fill knowledge gaps identified by IPBES, feed future IPBES assessments, support capacity building of stakeholders and give input to relevant policies on the global level. Conversely, IPBES can inform about relevant knowledge gaps that Biodiversa can address through its research funding.

[4] Cf. Hallosserie, A., Le Delliou, C. (2022). Concept note: Proposed collaboration approach with IPBES and Multilateral Environmental Agreements (MEAs). Biodiversa+ Deliverable D5.1. 24 p. [23]

European R&I should also make better use, and contribute more to, *global research infrastructures and Earth Observation Programmes* that are instrumental to evaluate policy implementation, to identify long-term ecological processes and/or to collect and store global biodiversity data, such as the Global Biodiversity Information Facility (GBIF), GEOSS/GEOBON, amongst others.

2.2. Ensure visibility of Biodiversa+ and European biodiversity research

The Biodiversa+ Internationalisation Strategy looks to increase the global visibility of the Partnership and its activities: R&I funding, biodiversity monitoring and other. Biodiversa+ and European biodiversity research, its scientific excellence and valuable research outcomes should be better connected to the global level so that research findings are included in IPBES assessments and in international policy processes. Better visibility of European R&I should also contribute to better connections with research communities at the global level.

To reach a wider, global audience, Biodiversa+ research and activities can be disseminated through the standard communication materials that result from the Biodiversa+ communication and dissemination strategy, e.g. newsflashes, leaflets, animated videos, press releases, policy briefs, social media campaigns, infographics, data visualisation etc.

In addition, dedicated events have to be organised by Biodiversa+ and/or jointly with other international and European partner organisations, such as Biodiversa+ conferences, press conferences around IPBES plenaries, workshops, webinars, as well as contributions to external scientific conferences, side events at CBD Conferences of the Parties etc.

Synergies should be sought with major biodiversity-related organisations that have their secretariats in the European Union (CITES, CMS, WHC, Ramsar and IPBES) and regularly hold their meetings there (e.g., Ocean Conference in 2025 in France).

2.3. Organise international capacity building activities

The international biodiversity research and policy landscape is complex, and its structures and processes are diverse and often confusing for outsiders. Research communities, decision-makers and stakeholders therefore require specific knowledge and skills when they are to engage with international biodiversity policy processes like CBD and other MEAs, as well as IPBES and its processes. Therefore, capacity building that focuses on international biodiversity policies and science-policy interfaces is needed.

The Biodiversa+ Internationalisation Strategy aims at capacity building on international policies and processes for research communities, decision-makers and stakeholders. Biodiversa+ will therefore organise a series of activities such as dedicated workshops, webinars and/or training. These activities should inform scientists on international biodiversity policy, CBD and other MEAs processes, as well as

IPBES and its processes. The aim is to maximise scientific input to feed into these processes, thereby creating more impact for Biodiversa+ research.

In the case of CBD, such activities should be organised in collaboration with the Horizon Europe project CO-OP4CBD[5] which aims to enhance coordination within the EU on advancing the implementation of the CBD by harnessing the knowledge of EU experts more effectively.

Biodiversa+ capacity building activities focus on improving skills and awareness of both researchers and decision-makers to better participate in IPBES processes. Examples are webinars and resources for researchers on how to become an author or a reviewer in the assessments and introductory presentations of IPBES to European countries that are not yet members of the panel alongside with IPBES national focal points.[6] With regards to IPBES and its functions and processes, capacity building can use the existing work from the ECA Network[7]. This network aims to connect the national platforms in Europe and Central Asia to contribute to the development of a European-wide network working on IPBES-related topics and provide a common space for sharing knowledge, resources, opinions, and lessons learned regarding IPBES.

2.4. Set up mutually beneficial collaborations

In order to create lasting and sustainable international research and policy cooperation in the biodiversity sector, long-term and mutually beneficial collaborations are required.

On an organisational level, the Biodiversa+ Internationalisation Strategy aims to promote mutually beneficial, long-term, collaborations between Biodiversa+ and several international key collaborators (cf. section 3.1) and selected individual partners. This will be beneficial to better address global biodiversity issues in research and implementation, to create better visibility of R&I outcomes and to ensure its uptake and use by policy and other societal actors.

Within the Biodiversa+ activities, especially WP1 (Joint calls) and WP2 (Biodiversity monitoring), scientists, stakeholders and decision-makers from ERA and non-ERA countries have to collaborate to conduct joint R&I and monitoring projects, to generate knowledge on biodiversity and ecosystems, and to develop solutions for conservation and restoration. By collaborating with societal partners and policy-makers these research outputs can be implemented as science-based solutions to conserve and restore biodiversity and natural ecosystems, as well as to promote sustainable development, reduce poverty and further human well-being based on the sustainable use of biodiversity.

3. Areas for international cooperation

[5] Co-operation for the Convention on Biological Diversity (https://www.syke.fi/en-US/Research__development/Research_and_development_projects/Projects/Cooperation_for_the_Convention_on_Biological_Diversity_COOP4CBD)

[6] These capacity building activities will be organised in collaboration with the new Horizon Europe project HORIZON-CL6-2022-BIODIV-01-10, if granted.

[7] The Europe & Central Asia Network of organisations engaging in IPBES (http://www.eca-ipbesnetwork.org/)

Based on the four main objectives presented above, three focus areas for international cooperation are defined for the Biodiversa+ Partnership:

1. Joint programming and funding of research to strengthen international R&I collaboration between ERA and non-ERA countries
2. Improving the global science-policy interface:
    a. Increased contribution of European R&I to global policy processes and initiatives
    b. Better engagement of European R&I actors on biodiversity with IPBES
3. Reinforcement of the collaboration with global biodiversity research infrastructures.

3.1. Joint programming and funding of research

This focus area for international cooperation aims to reinforce international collaboration on R&I funding, with the goal of improving the scientific excellence and the international visibility of European biodiversity R&I. Actors in the domain of biodiversity R&I in the European Research Area (ERA), e.g. scientists, scientific organisations, policy actors, administration, NGO's, interested citizens/citizen scientists as well as other stakeholders, are encouraged to collaborate with R&I actors in countries and/or regions outside the ERA. Collaboration with R&I actors in the European Union's outermost regions (ORs) and overseas countries and territories (OCTs) is specifically encouraged. Biodiversa+ will take various measures to support such scientific collaboration.

Mapping

Biodiversa+ performs extensive mappings of the existing research collaboration on biodiversity between the ERA and other regions of the world [22] in order to identify actors for international R&I cooperation across key regions/countries, as well as potential topics of common interest. The mappings are based on bibliographic analyses and studies of relevant databases encompassing existing research collaborations between ERA and non-ERA countries/ regions. The research landscape of trans-national and bi-regional collaborations is analysed by looking at the number of collaborations, evolution over time and the countries central to the collaborations. In addition, priorities for research funders to reinforce the internationalisation of research in this domain are identified by looking at the research aspects and topics covered. As an outcome of these mappings, identified actors for potential international collaboration are invited to participate in joint dialogues; potential topics of common interest serve as a basis for collaborative activities in joint R&I programming and funding, implementation of R&I outcomes, and/or biodiversity monitoring.

Dialogues

In order to pave the way for future joint activities between regions, dialogue(s) on science collaboration between Europe and other world regions will be strengthened through the promotion of coordinated actions. By means of a series of dialogue meetings, workshops and discussion forums, the potentials of transnational R&I cooperation will be discussed, deepened and further elaborated. This dialogue process will support international scientific engagement and joint programming by engaging research funders, R&I policy makers and managers as well as international networks and organisations from non-ERA countries, outermost regions (ORs) and overseas countries and territories (OCTs). According to identified

common priorities, including Biodiversa+ R&I Flagship Programmes, joint R&I actions will be defined, elaborated and realised, e.g., joint research calls, scientific conferences, staff exchanges, joint publications etc.

Strengthening collaboration with development aid funders

For Biodiversa+ implementation of the outcomes of scientific R&I is a priority, whether it be in policy measures, for conservation management, restoration of ecosystems, development aid actions etc. In order to promote the implementation at international level, cooperation with development aid donors and funders will be strengthened, with the aim to advance joint activities between the ERA and non-ERA countries/regions. This includes organisations acting both on national and international level, such as the European Commission's Directorate-General for International Partnerships (DG INTPA), that designs and implements EU's international partnership and development policy, as well as other relevant organisations that support sustainable development and reduction of global poverty. The aim is to ensure adequate implementation of activities related to the European Union's global action for biodiversity (cf. Thematic Theme 3 of the Biodiversa+ Strategic Research and Innovation Agenda, SRIA). This would also include collaboration with emerging initiatives in the context of Horizon Europe that focus on European Union's global action and/or teleconnections.

Include international partners' priorities

The international partners' priorities will be reflected in the Partnership's Flagship Programmes as well as the joint funding actions (R&I calls). To take these priorities into account, a strong interaction with the preparation and implementation process of Biodiversa+ annual joint calls will be emphasised to address global aspects of biodiversity R&I. These aspects will include R&I on:

- prioritised biodiversity functions and dynamics at a global scale, e.g. in global biodiversity hotspots;
- global drivers of biodiversity, e.g., climate change, the impact of global trade on biodiversity (teleconnections), invasive alien species, plastic pollution;
- protection and restoration of biodiversity and ecosystems relevant to international partner countries;
- international policy implementation;
- sustainable use of biodiversity/ wild species, and their contribution to reach the UN SDGs;
- implementation of Nature-based Solutions to achieve SDG goals;
- use of indigenous and local knowledge (ILK) and values for transformative change;
- use of global research infrastructures;
- use of global databases to share and retrieve scientific knowledge, monitoring data, digital sequence information on genetic resources, etc.

Engaging more international funding partners in Biodiversa+ R&I calls and other activities is not only aimed at joint research and implementation per se. By increasing the number of active participants from international partner countries and regions[8] broader, long-lasting collaborations between scientists can be stimulated, joint publications produced, staff exchanges, capacity building etc. Furthermore,

[8] This may require additional efforts - regarding the fact that some partner countries/regions have not been successful in past R&I calls.

generating knowledge through collaborative research in non-European countries that are critical of concepts or approaches supported by EU diplomacy, such as Nature-based Solutions, could contribute to a better mutual understanding of (the implementation of) these concepts among diverse national decision-makers.

Biodiversity monitoring

One of the aims of Biodiversa+ is the establishment of a transnational network of national biodiversity monitoring schemes. In the first instance, the focus is across Europe, but ultimately this network should extend globally. Biodiversa+ Work Package 2 (WP2) has initiated a number of activities to further this aim: connection of national monitoring schemes, development of innovative detection methods, monitoring pilots, capacity building for data management, etc.

The internationalisation strategy aims for a strong interaction with developing the European biodiversity monitoring network and the Biodiversa+ WP2 activities. To ultimately reach the goal of a global monitoring network, more international funding partners should be engaged in biodiversity monitoring programmes, including the Biodiversa+ monitoring pilots. Cooperation with international and transnational biodiversity monitoring infrastructures, including their facilities and databases, should be strengthened. Promoting international scientific collaboration will enhance the optimal use of biodiversity research infrastructures, both by European R&I and researchers outside of the EU. Specific activities related to research infrastructures will be covered in section 3.3.

3.2. Improving the global science-policy interface

This area for international cooperation encompasses the contribution of European R&I to global policy processes and initiatives, as well as engaging in science-policy processes, including IPBES. The area builds on the outcome of Biodiversa+ Deliverable D5.1 “Concept note: Proposed collaboration approach with IPBES and Multilateral Environmental Agreements (MEAs)” [23].

3.2.1. Contribution of European R&I to global policy processes and initiatives

The main aim of this sub-area for international cooperation is to improve the connection between research communities and decision-makers involved in Multilateral Environmental Agreements (MEAs). Biodiversa+ will align its joint R&I programming with MEAs in the biodiversity domain and the requirements of the UN Sustainable Development Goals (SDG). In addition to programming, in order to create impact, it is also essential to share evidence and actively engage with policy makers involved in other international policies impacting on biodiversity and ecosystems, e.g. international trade agreements.

The sub-area therefore covers the contribution of Biodiversa+ to global policy processes and initiatives, namely to the implementation of the Kunming-Montreal Global Biodiversity Framework of the Convention on Biological Diversity (CBD) and its Subsidiary Body for Scientific, Technical and Technological Advice (SBSTTA) or relevant processes (e.g., Ad-hoc Technical Expert Groups, AHTEGs). Additional relevant MEAs in the biodiversity domain (so-called “biodiversity cluster”), include the Convention on International Trade in Endangered Species (CITES), the Bonn Convention on Migratory Species (CMS), the Bern Convention on the Conservation of European Wildlife and Natural Habitats, the Ramsar Convention on

Wetlands, the World Heritage Convention and the Agreement on international humane trapping standards. Also relevant are contributions to biodiversity aspects in the other two Rio Conventions, the United Nations Framework Convention on Climate Change (UNFCCC) and the United Nations Convention to Combat Desertification (UNCCD), as well as other United Nations bodies (UNEP[9], UNESCO[10], FAO[11]). Engagement with these MEAs is particularly significant, as the recently adopted 2022-2030 Strategic Plan is considered an "UN-wide" framework. The involvement of the EU in these fora is discussed within the "Biodiversity" Working Party on International Environment Issues (WPIEI)[12] of the EU Council.

Contributions to the processes of these MEAs include the organisation of side events to present the Partnership's activities and outcomes as a source of excellent, policy-relevant knowledge, as well as reinforcement of the knowledge base for decision making on biodiversity issues. Capacity building activities (workshops, training), as well as communication activities to inform project scientists on international biodiversity policy processes, will be conducted in order to maximise scientific input to feed in the processes. In the case of CBD, such activities will be organised in collaboration with the Horizon Europe project CO-OP4CBD. Furthermore, mutually beneficial collaborations between the Biodiversa+ partners, both research policy actors and environmental policy actors, will be supported.

The collaboration with MEAs will be mutually beneficial. Aligning Biodiversa+ programming and activities with international policy concerns will establish Biodiversa+ as a strategic hub for key policy questions on biodiversity, while strengthening the scientific basis for those policies. The increased international visibility and impact of the Partnership, as well as European research in general, will increase the diversity and relevance of researchers participating in Biodiversa+ projects and the impact of its research. It will also help to better align joint efforts, attention and funding for biodiversity research topics by European funders, programmers, decision-makers and stakeholders.

3.2.2. Engaging European biodiversity R&I actors with IPBES

The main goal of this sub-area for international cooperation is to improve the uptake of European biodiversity research outcomes at relevant levels of decision making (from sub-national to global) through their inclusion in IPBES deliverables. The main priorities are to (1) better connect European research to international processes and priorities and, (2) to increase the uptake of European research results in international policies, and (3) to improve the coordination between European and national research and policy actors to participate in international processes.

Biodiversa+ activities will include promoting the participation of Biodiversa+ partners from European and non-European countries to join IPBES and, also, supporting the set-up of national biodiversity platforms or hubs that can engage with IPBES. Furthermore, Biodiversa+ will support connecting researchers and decision-makers to prepare for upcoming IPBES meetings and will highlight relevant project outcomes for decision-makers on the IPBES agenda.

Biodiversa+ will continue to contribute to the IPBES processes by providing knowledge. To support this aspect, Biodiversa+ has been hosting the IPBES technical support unit (TSU) on catalysing new

[9] United Nations Environment Programme (https://www.unep.org/)
[10] United Nations Educational, Scientific and Cultural Organisation (https://www.unesco.org/)
[11] Food and Agriculture Organization of the United Nations (https://www.fao.org)
[12] Working Party on International Environment Issues (https://www.consilium.europa.eu/en/council-eu/preparatory-bodies/working-party-international-environment-issues/)

knowledge until 2023. And Biodiversa+ aims to apply to continue to host the TSU also in the future. Main functions of the TSU have been to support the authors of IPBES assessments in identifying knowledge gaps based on their work; to facilitate dialogue around those knowledge gaps with research programmers and funders; and to monitor the impact of IPBES in catalysing the generation of new knowledge.

Biodiversa+ aims for a mutually beneficial relationship with IPBES. European biodiversity research, including the projects funded via Biodiversa+, can inform IPBES assessments. The assessments, in turn, can help direct European biodiversity research to the most relevant knowledge gaps. Therefore, Biodiversa+ will enhance the uptake of IPBES knowledge gaps in its joint programming and research funding.

The uptake of Biodiversa+ research outcomes will be facilitated through the synthesis activities of project results and/or factsheets on topics that are relevant for an IPBES assessment. Policy briefs will be developed, summarising Biodiversa+ outcomes related to specific IPBES agenda items and/or new and emerging issues. Biodiversa+ will also support the involvement of experts in the preparation of IPBES assessments. As underlined throughout the Biodiversa+ Strategic Research and Innovation Agenda, addressing biodiversity loss and climate change simultaneously is critical in research and policies. Therefore, activities supporting knowledge assessment of biodiversity research could be connected to the processes of the Intergovernmental Panel on Climate Change (IPCC) where relevant.

Biodiversa+ capacity-building activities span across all its work packages, for audiences as diverse as research communities, decision-makers and stakeholders. This is well aligned with IPBES capacity-building activities that can both inspire Biodiversa+ and benefit from Biodiversa+ work. Biodiversa+ will build capacities of both researchers and decision-makers to better participate in those processes. It will build on existing work from the ECA Network on IPBES and collaborate with the Horizon Europe project RESPIN[13] on IPBES and IPCC. Biodiversa+ will also build on the BiodivClim Cofund Action, whose knowledge hub brings together researchers from the climate and the biodiversity field and organises capacity-building activities for experts to engage with IPBES and the IPCC. All those activities could be extended to strategic partner countries and global regions, such as Africa.

Furthermore, Biodiversa+ will support experts in applying, and decision-makers in nominating experts to participate in IPBES expert groups, e.g. assessment authors, or task forces. The activities will be focused on experts involved in past or current Biodiversa projects by opening up new opportunities for them to work at the international level, while supporting promotion of the use of European research outcomes in IPBES work.

Finally, Biodiversa+ will also support the participation of experts in external reviews of IPBES deliverables. National and regional experiences at the European level showed that review workshops support a broader engagement of expert reviewers, as seen in the Europe and Central Asia network of organisations engaging in IPBES (ECA-Network). This activity will be implemented by the Partnership in collaboration with the ECA-Network when possible, with a focus on countries with lower mobilisation capacity.

[13] REinforcing Science-Policy INterfaces for integrated biodiversity and climate knowledge and policies (https://respin-project.eu/)

3.3. Reinforcement of the collaboration with global biodiversity research infrastructures

With this area for international cooperation, the Partnership aims at an optimal use of biodiversity research infrastructures through R&I. Promoting international scientific collaboration will address the use of relevant research infrastructures outside the ERA by European R&I.
This area includes the following main activities:

Mapping

A comprehensive mapping of biodiversity-related research infrastructures will be performed, based on a survey of the use of European and global research infrastructures and Earth Observation Programmes by biodiversity scientists in the ERA. The mapping will identify relevant research infrastructures, opportunities and barriers to their use, and analyse which measures the Partnership can apply to help overcome these barriers.

Relevant global research infrastructures and Earth Observation Programmes include, but are not limited to, the Global Biodiversity Information Facility (GBIF, https://www.gbif.org), the International Long-term Ecological Research Network (ILTER, https://www.ilter.network), the Group on Earth Observations Biodiversity Observation Network (GEOSS/GEOBON, https://geobon.org/), the European Union's Earth observation programme Copernicus (https://www.copernicus.eu/en), Europe's satellite navigation system Galileo and the European Geostationary Navigation Overlay Service (EGNOS, https://www.esa.int/), the Global Ecosystem Research Infrastructure (GERI). Biodiversa+ will coordinate with European and global biodiversity research infrastructures and Earth Observation Programmes to ensure co-design of Biodiversa+ Flagship Programmes and relevant activities. Building on this input, activities to promote the use of European and global research infrastructures and Earth Observation Programmes by biodiversity R&I will be developed. Concrete measures will include, among others, inclusion of cooperation with research infrastructures in R&I calls and biodiversity monitoring actions and/or pilots, the use of global databases in research and monitoring and training of scientists through capacity building workshops.

4. Types and modalities of collaborations with Biodiversa+

4.1. Collaborators and call associates

Effective internationalisation in the Partnership's activities relies upon collaboration with other organisations, both funders and societal stakeholders. Potential collaborators in the context of this strategy are international actors, like transnational organisations, networks, initiatives, as well as national actors based in countries outside the European Research Area. These actors should be dedicated to funding biodiversity research and/or science-based implementation activities. They should have a promising potential for collaboration with Biodiversa+ activities, mainly funding of research, capacity building, and/or implementation of research results.

Call associates are organisations that participate as funders in a joint research call, without being members of the Partnership as such. They have equal rights regarding all aspects of the joint call in question, but are not part of the Partnership's governance. In addition, some organisations will be identified as Key collaborators, where the engagement is agreed to be recurring and of specified intensity. All types of collaborators can, in parallel, be members of the Biodiversa+ Advisory Board (AB), its Enlarged Stakeholder Board (ESB) or the wider Biodiversa+ community (the so-called Biodiversa+ Biome).

These collaborators can comprise actors from the following categories:

1. National funding agencies and/or ministries (of research, environment etc.) in countries outside the EU mainland, located in regions of specific interest (cf. [22]).

- European Union's Overseas Countries and Territories (OCT) and Outermost Regions (OR). Some OCTs/ORs are members of the EU-funded network MOVE/MOVE-ON[14] which is of high relevance for international collaboration on biodiversity.
- countries with high biodiversity, located in global hotspots of biodiversity, e.g. tropical rainforests, mountains, islands, tropical coral reefs etc., and/or countries with threatened biodiversity/nature in decline due to telecoupling effects
- countries hosting biodiversity observation infrastructures and/or research facilities/ infrastructures of global interest, e.g., laboratories, ecotrons, biological collections, data management facilities
- countries associated to Horizon Europe, e.g. involved in initiatives like the EULAC Forum[15] or the Africa-EU Partnership[16], and countries being pioneers for implementing Nature-based Solutions, nature conservation activities, biodiversity-based sustainable development actions etc.

2. International public and private funding organisations, development aid donors and networks of funding agencies in the biodiversity sector.

   These organisations and their partners represent excellent opportunities for synergies on joint research funding, capacity building, and implementation of research results at the global level. For example, the Belmont Forum gathers around 30 funding organisations worldwide to support and promote international transdisciplinary research on global environmental change, including ecosystems and biodiversity. The main objective for Official Development Assistance (ODA), which is provided by government donors, is to promote economic development and welfare [24, 25]. Similarly, in response to the UN 2030 Agenda for Sustainable Development and its Sustainable Development Goals, the European Unions' ODA is mainly targeted towards achieving the long-term sustainable development goals (e.g., poverty reduction). The protection

[14] Pilot project "Mapping and Assessment of Ecosystems and their Services (MAES) in Europe's Outermost Regions and Overseas Countries and Territories" (https://moveon-project.eu/)
[15] https://international-partnerships.ec.europa.eu/eu-latin-america-and-caribbean-forum-partners-change_en
[16] https://international-partnerships.ec.europa.eu/policies/africa-eu-partnership_en

and sustainable management of natural resources, in particular support for biodiversity, water and climate change are, however, also among the key areas for development support identified in the European Consensus on Development [26].

3. Stakeholder organisations, scientific collaboration networks, intergovernmental organisations and other relevant networks supporting the implementation of biodiversity research outcomes i.e. actors ensuring the implementation of activities related to the European Union's global action for biodiversity as defined in the EU Biodiversity Strategy for 2030 [9]. To achieve societal impact at the global level, it is important for Biodiversa+ to also collaborate with organisations and networks that gather researchers, civil society, citizen scientists, science-policy boundary organisations, intergovernmental institutions, etc., that work to advance knowledge and support transformations to global sustainability in the realm of biodiversity. Some examples are the International Science Council (ISC), the International Union of Biological Sciences (IUBS), Future Earth, the International Union for Conservation of Nature (IUCN), the UNEP World Conservation Monitoring Centre (UNEP-WCMC; for specific information cf. box below), as well as the ECA Network and CO-OP4CBD and RESPIN projects.

Box: Some identified organisations and networks for international collaboration with the Biodiversa+ Partnership

The International Science Council (ISC, https://council.science/) is an international non-governmental organisation that unites scientific bodies at various levels across the social and natural sciences. The Council convenes and mobilises the international scientific community on issues of major scientific and public importance. Activities cover the following fields of work: Stimulate and support international scientific research and scholarship, and communicate science relevant to international policy issues; promote the ability of science to contribute to major issues; defend the free and responsible practice of science. The ISC is involved in co-sponsorship of a number of international research programmes, networks and committees. Guided by a multiannual Action Plan, the ISC's activities are based on the selection of projects and programmes that are relevant to all scientific fields and all parts of the world.

One of the ISC's founding members is the International Union of Biological Sciences (IUBS, https://iubs.org/), which is a non-governmental non-profit organisation promoting the biological sciences internationally. The IUBS comprises 44 national members (national science academies, research and scientific organisations) and 80 scientific members (including international scientific associations, societies or commissions of the various biological disciplines) which identify promising areas of biological science and promote IUBS programs in their own country to stimulate research projects.

The Belmont Forum (https://belmontforum.org/) is a partnership of funding organisations, international science councils, and regional consortia committed to the advancement of transdisciplinary science. Forum operations are guided by the encouragement of international transdisciplinary research providing knowledge for understanding, mitigating and adapting to global environmental change.

Forum members and partner organisations work collaboratively to meet this challenge by issuing international calls for proposals, committing to best practices for open data access, and providing transdisciplinary training. Since 2009, the Forum has successfully led 19 calls for proposals, supporting 134 projects and more than 1,000 scientists and stakeholders, representing over 90 countries. Themes addressed by Collaborative Research Actions (CRAs) have included, amongst others, Freshwater Security, Coastal Vulnerability, Food Security and Land Use Change, Climate Predictability and Inter-Regional Linkages, Biodiversity and Ecosystem Services, Arctic Observing and Science for Sustainability, and Mountains as Sentinels of Change.

Future Earth (https://futureearth.org/) is a global network of scientists, researchers, and innovators collaborating to advance research in support of transformations to global sustainability. Future Earth convenes researchers and scholars from all parts of the world, across different societal and academic sectors, and across the natural, social, and human sciences. Future Earth initiates and supports international collaboration between researchers and stakeholders to identify and generate the integrated knowledge needed for successful transformations towards societies that provide good and fair lives for all within a stable and resilient Earth system. Future Earth uses a rigorous transdisciplinary research and systems-thinking approach throughout its work. Basic and applied research are combined to generate actionable, solution-oriented knowledge to inform and guide decisions by policy makers and practitioners at all levels of governance. Scientific research and synthesis in Future Earth is carried out by a number of international networks, known as 'global research projects', many of which were launched under the umbrella of the existing four global environmental change programmes, DIVERSITAS, the International Geosphere-Biosphere Programme (IGBP), the International Human Dimensions Programme (IHDP) and the World Climate Research Programme (WCRP). Further projects arose out of the Earth System Science Partnership (ESSP). Some examples of these projects are the Global Land Project, the Global Mountain Biodiversity Assessment, and bioDISCOVERY (drafting documents to support CBD negotiations).

The International Union for Conservation of Nature (IUCN, https://www.iucn.org/) is an international organisation working in the field of nature conservation and sustainable use of natural resources. It is involved in data gathering and analysis, research, field projects, advocacy, and education. IUCN's mission is to "influence, encourage and assist societies throughout the world to conserve nature and to ensure that any use of natural resources is equitable and ecologically sustainable". Over the past decades, IUCN has widened its focus beyond conservation ecology and now incorporates issues related to sustainable development in its projects. IUCN does not itself aim to mobilise the public in support of nature conservation. It tries to influence the actions of governments, business and other stakeholders by providing information and advice and through building partnerships, e.g., through its resolutions as well as congresses. The organisation is best known to the wider public for compiling and publishing the IUCN Red List of Threatened Species, which assesses the conservation status of species worldwide. The Union is also recognised by policy-makers and practitioners for its Protected Areas Categories, and for its role as an advisory body on natural heritage under the World Heritage Convention. IUCN has a membership of over 1,400 governmental and non-governmental

organisations. Some 16,000 scientists and experts participate in the work of IUCN commissions on a voluntary basis. It employs over 900 full-time staff in more than 50 countries.

The Wildlife Conservation Society (WCS; https://www.wcs.org/) is a major non-governmental organization headquartered at the Bronx Zoo in New York City, and aiming to conserve wildlife and the world's largest wild places in 14 priority regions through science, conservation action, education, and inspiring people to value nature. WCS manages four New York City wildlife parks in addition to the Bronx Zoo: the Central Park Zoo, New York Aquarium, Prospect Park Zoo and Queens Zoo.

The UN Environment Programme World Conservation Monitoring Centre (UNEP-WCMC, https://www.unep-wcmc.org/) is a collaboration centre of UN Environment Programme, based in Cambridge in the United Kingdom. UNEP-WCMC has been part of UN Environment Programme since 2000, and has responsibility for biodiversity assessment and support to policy development and implementation. The activities of UNEP-WCMC include biodiversity assessment, support to international conventions such as the Convention on Biological Diversity (CBD) and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), capacity building and management of both non-spatial and spatial data on species and habitats of conservation concern. UNEP-WCMC has a mandate to facilitate the delivery of the global indicators under the CBD's 2010 Biodiversity Target on the rate of loss of biological diversity, and works alongside the CITES Secretariat producing a range of reports and databases. It also manages the World Database of Protected Areas in collaboration with the IUCN World Commission on Protected Areas. UNEP-WCMC has expertise across six thematic areas: Mainstreaming biodiversity into sustainable development; Strengthening natural capital in private sector decision-making; Planning for places; Securing a sustainable future for wildlife; Supporting the transition to a healthy ocean; Supporting intergovernmental agreements on biodiversity and ecosystem services.

4.2. Criteria for engaging with international actors

In order to identify relevant actors for successful international collaboration, these actors must meet a set of specific criteria for engagement[17].

1. Relevance/funding capacity

   For each country/region Biodiversa+ should engage with the major players in terms of funding biodiversity research and/or relevant implementation activities. Funded research should be of high quality, and implementation actions should have a high positive impact on biodiversity. The funding capacity for specific actions, e.g. calls for proposals, should complement Biodiversa+ and the available funding budget, in case of a national funder, should reflect the expected level of participation.

[17] Cf. also criteria for the identification of strategic countries and zones in MTECT international strategy, p. 42: https://www.ecologie.gouv.fr/sites/default/files/documents/SEI_MTECT_MTE_SEM_vsignee.pdf

2. Localisation in global regions of interest

Actors for international collaboration should be based in global regions and/or countries of specific interest for joint collaboration activities (cf. 4.1) and/or be capable of covering relevant activities in these areas. It would be beneficial if potential actors for collaboration could also host and/or be able to fund biodiversity observation infrastructures and/or research facilities/ infrastructures of global interest. Furthermore, it would be beneficial if the country of origin was associated with Horizon Europe and if it was a pioneer for implementing Nature-based Solutions, nature conservation activities, biodiversity-based sustainable development actions etc.

3. Building trust/ previous collaborations

International collaboration in funding research and implementation is based on mutual trust. If international actors have previously established collaboration activities with Biodiversa, for instance in previous BiodivERsA/ Biodiversa+ joint calls for proposals, and/or with its individual partners (e.g., in bilateral funding activities[18]), this would strengthen mutual trust in joint cooperation. Political ties or connections, as well as common priorities, would promote successful cooperation.

4. Established research connections and risk assessment

Established research connections, stemming from successful collaborations within Biodiversa and others, could also help to build trust between actors. In this respect, the Biodiversa+ mapping of international collaboration between scientists of the ERA and other regions [22] as well as future thematic mappings will be helpful to identify successful collaborations between countries and institutions. Mapping of successes and/or failures of previous collaboration experiences related to specific actors and/or countries could also help to minimise potential risks for future collaboration, in terms of reliability, funding capabilities, diverging priorities for research and implementation etc.

5. Fitting EU and global policy on biodiversity

Actors for international collaboration should be committed to supporting the United Nations Convention on Biological Diversity (CBD) and its Kunming-Montreal Global Biodiversity Framework (GBF), as well as the implementation of the UN Sustainable Development Goals (SDG). Besides international funding organisations and national funders of biodiversity research, other potential collaborators partners could be international nature conservation organisations and development aid donors, like development banks, funders for international cooperation/ development aid, private foundations/ trusts.

4.3. Pathways for international collaboration

There are various pathways and activities for international partners to collaborate with Biodiversa+.

1. Joint funding of research

[18] Confer e.g. the international African science service centres WASCAL (https://wascal.org/) and SASSCAL (https://www.sasscal.org/), and/or the German-international climate initiative IKI (https://www.international-climate-initiative.com/)

An important pathway for collaboration with international partners is joint or coordinated funding of research activities. International funding organisations, networks of funding agencies (e.g., the Belmont Forum, MOVE-ON), but also funding agencies from individual countries could participate as call associates for joint calls for research proposals. Per call, the individual partners can decide if they want to participate in the whole call, or in a specific sub-topic, and what financial budget they are willing to commit to a specific call.

2. Common interests related to research infrastructures and open research

International cooperation partners might have similar interests in setting-up and operating research infrastructures for similar research aims as the partners of Biodiversa+. They might therefore be interested to jointly coordinate the use of these infrastructures with Biodiversa+ partners. Potential fields of application of such coordinated research infrastructures are biodiversity monitoring (coordinated biodiversity observation networks, e.g., the International Long-term Ecological Research ILTER [19]; the Group on Earth Observations Biodiversity Observation Network GEOBON[20]; the GEO initiative on a Global Ecosystems Atlas[21]); ecosystem research (e.g., the Global Ecosystem Research Infrastructure GERI); data management (biodiversity data and information, e.g., the Global Biodiversity Information Facility GBIF[22]; digital sequence information on genetic resources, e.g., the Global Genome Biodiversity Network [23]); Earth Observation Programmes (e.g., the EU Earth observation programme Copernicus[24]) and others. Biodiversa+ could facilitate dialogues between European and global biodiversity research infrastructures and Earth Observation Programmes to ensure the co-design of Biodiversa+ Flagship Programmes. Biodiversa+ could further develop activities to promote the use of European and global research infrastructures, Earth Observation Programmes and global databases by biodiversity research and monitoring, through its R&I calls, biodiversity monitoring pilots, training of scientists through capacity building workshops etc.

3. Capacity building on research and on policy/management

Scientists, stakeholders and other interested groups from countries outside the ERA might need access to specific information, assets, and training, to promote international collaboration. Biodiversa+ and international collaboration partners could therefore organise a range of training and capacity building activities (including summer schools, staff exchanges) to enhance the skills of interested individuals. These activities include (a) workshops for information on possibilities and requirements to participate in specific joint international R&I actions; (b) capacity building and training workshops/webinars for R&I actors and decision-makers to engage with IPBES (e.g., through engagement with the ECA Network and/or the open-ended network of stakeholders engaging with IPBES[25]); (c) capacity building activities with scientists and decision-makers to inform on CBD, SBSTTA, and other MEA-related processes and issues in order to feed these

[19] https://www.ilter.network
[20] https://geobon.org/
[21] https://earthobservations.org/atlas/
[22] https://www.gbif.org/
[23] https://wiki.ggbn.org/
[24] https://www.copernicus.eu/en
[25] Open-ended network of stakeholders engaging with IPBES (https://onet.ipbes.net/)

processes and to integrate knowledge in negotiations (e.g., in collaboration with CO-OP4CBD); and (d) capacity building workshops to facilitate dialogues with and promote the use of global research infrastructures, global databases and Earth Observation Programmes. Specific capacity building/ training events could focus on young scientists involved in the joint calls, in collaboration with the Biodiversity Science-Policy Interfaces Network for Early Career Scientists BSPIN, and/or the Young Ecosystem Services Specialists network (YESS) or similar.

4. Implementation of research results for sustainable development, nature conservation and restoration

Joint collaboration activities in this pathway will focus on the implementation of research outcomes in global target regions/ countries, with international collaboration partners in development cooperation, nature conservation and restoration, Nature-based Solutions and other sectors, not limited to development aid donors; foundations; sustainable development organisations; international associations in nature conservation. Implementation activities will be closely linked to Biodiversa+ flagship programmes, joint calls, and/or specific pilot funding measures. They will be targeted to protect, sustainably manage and restore biodiversity and ecosystems to support the achievement of the UN Sustainable Development Goals (e.g., poverty reduction) and to strengthen the role of indigenous peoples and local communities. These international implementation activities could cover, for instance:

- promotion of sustainable agricultural and fisheries
- protection and restoration of forests, natural ecosystems and other biodiverse areas with high ecosystem services and climate mitigation potential
- restoration of degraded lands
- efforts to reduce wildlife trade and consumption
- activities to improve the One Health approach and to strengthen the resilience to future diseases and pandemics.

Additional activities might focus on capacity building activities, stakeholder engagement, as well as communication and dissemination of knowledge.

5. Outlook

As outlined above, the Biodiversa+ Internationalisation Strategy aims to contribute to the implementation of the EU Biodiversity Strategy for 2030, to support the European Union's global action for biodiversity through R&I cooperation, as well as to contribute to the implementation of Kunming-Montreal Global Biodiversity Framework. By no means, however, does Biodiversa+ wish to preempt any official EU position or prescribe how the EU's international work should be used in its context. The outcomes of the Partnership's work on international policies are purely intended as a recommendation. In order to check whether there is a difference between any official EU position or communication and the Partnership's

external communication, a lean and effective mechanism for regular review is envisaged. This review will be carried out in the framework of the regular coordination between the EU Commission and the Partnership, where its outcomes will be discussed and, if necessary, used to adjust the Partnership's communication.

The Biodiversa+ Internationalisation Strategy defines different elements for the internationalisation and international collaboration of the Partnership: objectives, areas for international cooperation, collaborating actors, criteria for engagement, and pathways for international collaboration. To translate the strategy into actions, these elements need to be combined and transferred into concrete activities, e.g., the organisation of workshops with non-European funders to define priorities for joint research funding and/or side-events at CBD or other MEA conferences. Short-term and longer-term activities need to be identified and inserted into a roadmap for implementation over time. In Biodiversa+, Annual Work Plans (AWPs) are developed on a regular basis defining activities to be carried out in the Partnership's work packages (WPs). Hence, activities for international collaboration planned in a specific year are included in the AWP and, if appropriate, combined with activities planned in other work packages. For example, research funding activities jointly with international partners (WP5) can be incorporated into activities for the implementation of the partnership's flagship programmes, annual joint R&I calls and/or biodiversity monitoring pilots (carried out in WP1 or WP2). As another example, capacity-building activities on the processes of multilateral agreements and/or IPBES assessments (WP5), etc. can be linked with planned training events and/or science-policy workshops for interested scientists and other stakeholders (WP4, WP7). All activities in the AWP will be coordinated with the partners and the EU Commission and carried out within the framework of the tasks in WP5 and/or other work packages as appropriate. The progress of these activities will be reported regularly and will be used to determine follow-up activities or to demonstrate progress in the implementation of the strategy.

The Partnership's internationalisation activities, in particular the involvement of further non-European partners in Biodiversa+ research funding and/or biodiversity monitoring activities, will stimulate the interest of these partners in joining the Partnership and thus increase the number of non-European partners in Biodiversa+. This in turn will inevitably lead to international or global aspects becoming increasingly important in the partnership's objectives, priorities and activities. As a long-term vision, a successful implementation of this internationalisation strategy could therefore pave the way for a future 'Global biodiversity partnership' bringing together partners from all over the world collaborating on the implementation of the Kunming Montreal Global Biodiversity Framework and beyond.

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