BiodivERsA & JPI Climate Strategic workshop

13 April 2021

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I. CONTEXT & OBJECTIVES

Although the link between biodiversity and climate change has been known for a long time, there have been limited exchanges or collaborations between the different research communities. In recent years, it has been demonstrated that climate change and biodiversity loss are closely interlinked and should be tackled together. Climate change has undeniable negative effects on biodiversity and ecosystems, while healthy ecosystems can support mitigation and adaptation to global change. As also increasingly recognized by the IPBES and IPCC (e.g. IPBES/IPCC co-sponsored workshop report on biodiversity and climate change, 2021), linking initiatives and research efforts around those two pressing issues is more important than ever.

This strategic workshop was jointly organised by BiodivERsA/the future European Biodiversity Partnership and JPI Climate, in the context of the BiodivClim COFUND action on Biodiversity and Climate Change. The objective was to explore future collaboration opportunities between both initiatives and identify possible modalities for collaboration on the short- and long-term. The expected outcome was to **identify common priorities at the crossroads of biodiversity and climate change and possible joint actions**, notably to inform the implementation of relevant European policies in this field, including the European Green Deal, the EU Adaptation Strategy, and the Horizon Europe Mission "A Climate Resilient Europe".

The event took place online during the afternoon of the 13th of April 2021 (see *Annex III - Programme of the workshop*). It started with a presentation of both initiatives and their strategies, as well as the new Research & Innovation and policy context in which both initiatives will work. Then, the participants were invited to discuss and identify: 1/ research priorities and needs; 2/ activities and instruments to address these needs, and 3/ possible frameworks for future collaborations during break-out group sessions.

Participants included BiodivERsA and JPI Climate Governing Board and Advisory Board members, as well as experts and stakeholders, including representatives from FACCE-JPI and from the European Commission (see *Annex IV - List of participants*).

To prepare for the discussions, BiodivERsA and JPI Climate both assembled documents analysing and comparing their respective Strategic Research and Innovation Agendas (see BiodivERsA's SRIA and JPI Climate's SRIA - versions available at the time of the meeting) as well as their past and ongoing activities in this field (see *Annex I and II - background documents*). The documents were sent to the participants one week before the workshop.

The presentations are available here: https://www.biodiversa.org/1909/download

II. OUTCOMES OF THE WORKSHOP

This second part of the report presents a summary of the discussions moderated in the three break-out groups.

The outcomes reflect the views of the participants when asked what could be (1) the most pressing research priorities and needs, (2) the most suitable actions and instruments to address these priorities and needs; (3) the most suitable frameworks to implement these actions and instruments.

The different items are not ranked according to their priority nor relative importance to each other. They correspond to the main ideas shared by the participants and have been merged whenever the concepts were identical or very similar.

They do not reflect the institutional view of one or the other initiative and do not pre-empt how BiodivERsA and JPI Climate would plan for their individual actions.

a. Research priorities and needs

Priorities and needs have been organised under broad categories to facilitate their reading and analysis.

GENERAL

- **Holistic & systemic approach:** at the intersection of climate change & biodiversity; research on trade-offs and synergies/benefits; understand the barriers, challenges, and opportunities. For example, avoid that one solution = problem for the other. Some climate measures that can have negative impacts on biodiversity. Strive for solutions with co-benefits for biodiversity and climate.

- Focus on **interlinkages between biodiversity, climate change & other global challenges** such as water and food security, and health (cf. the IPBES Thematic assessment on the interlinkages among biodiversity, water, food and health in the context of climate change, i.e. the so-called 'nexus assessment').

    - **Net zero**[1] concept as a link between biodiversity and climate change, and as a trade-off between pathways to achieve Net zero and their impacts on biodiversity loss.

[1] Net Zero = balance between the amount of GHG produced and the amount removed from the atmosphere.

- Need for a set of indicators (instead of individual indicators such as the carbon footprint) that are suitable for both climate change and biodiversity.

LAND-USE / AGRICULTURE

- **Sustainable biomass sourcing:** research on how to balance the three main drivers and issues (energy security, food security, and water security) and preserve biodiversity.

- **Land competition between renewable energies and biodiversity protection.** This also concerns cultures of substitutes for a high-carbon economy and about moving towards an extensive/low carbon agriculture. Land use regulations and measures should be designed for strategic, long-term decisions.

- Rethinking **agriculture** as an opportunity for the **restoration and enhancement of biodiversity**, and how biodiversity restoration can support climate change mitigation and adaptation through design & engineering.

- **Multifunctionality of landscapes**: landscapes allow for carbon storage, but also provide food for people & livestock. Resources and land are getting scarce and food security is in competition with renewable energies. Research should focus on multifunctional agricultural systems which provide both food and energy by selecting the right species and ensuring positive interactions with the surrounding landscape.

- Focus on the importance of **soil biodiversity**, especially for **carbon capture**. Bad soil management can be detrimental to climate and biodiversity.

- The notion of "**carbon management**" needs to be seen from an economic, land-use, technological, and social perspective.

- Research should also look at **spatial strategies**, in particular looking at the balance between resources and resilience.

ECOSYSTEMS & SPECIES

- **Improve our knowledge on** key species in biodiversity (including local specificities and risks; and optimisation – trade-offs, decision making, avoiding maladaptation).

- Focus more on **micro-organisms** and how they affect climate and biodiversity[2].

[2] https://doi.org/10.1038/s41579-019-0222-5

- Study the **'positive' impacts of climate change**, e.g. some functions of micro-organisms can emerge through climate change and can be promoted as mitigation.

- More research into **extreme events** and their impacts on biodiversity and ecosystem services.

- Focus on the **changing spectrum of invasive alien species (IAS)** and the change of behaviour and range of some species, as they interfere with the protection of other species.

- Focus on the **shift of the climate zones** on land and at sea, and on the consequences of these shifts on plant and animal communities (especially rare and endemic species).

- **Holistic marine and ocean ecosystems research** considering climate change, biodiversity, and the economic dimension.

- **Phytopathology**: how the increase of temperatures in Europe will lead to the emergence and spread of pests and diseases, which will affect both land use and natural ecosystems.

SOCIETAL ASPECTS & ECONOMY

- Change the **narrative (and paradigm) of economic growth**. Progress is defined as GDP growth, which is considered more important than biodiversity. In addition, GDP growth often leads to biodiversity loss.

- Production & consumption:
    - recognise the **impact of European production & consumption** on climate & biodiversity changes not only in Europe, but also elsewhere in the world;
    - **supply chain governance** and the impacts on biodiversity & climate.

- **Societal aspects & just transitions:** include social actors (land managers, farmers, planners etc.) that will be involved and responsible for the transitions on the ground. Understand **how more privileged people can be engaged** in the nature and climate change transitions in a just way.

- **Role of industry** and need to engage the private sector in the research process.

- **Greening of the finance system** (how to convince banks & important investors to make green investments).

- Indirect drivers of biodiversity loss and climate change are often the same => look at the potential synergies and trade-offs and **how to achieve transformative change across both agendas.**

- **Human health, including**:

- climate action and biodiversity protection as positive contributors to human health outcomes;
- impacts of climate change and land use change on ecosystems, the spread of zoonoses, and other infectious diseases.

GOVERNANCE & POLICY

- **Governance aspects**: measures, policy, and management practices are needed to assess what is already done; what are the obstacles and motivations; demonstrate the **concrete benefits** for biodiversity and other political issues/areas.

- **Scales**: for biodiversity conservation, the local governance aspects are very important, while climate has been more generally tackled at the global or regional scales. Question on how policies at global or EU levels affect other policies at a smaller scale.

- **Institutional aspects** and global architecture around these issues, e.g. the amalgamation of the different UN conventions (CBD, UNFCCC, UNCCD)[3].

- **Integrated models & scenarios** for climate change and for biodiversity for policy action: to feed the IPBES/IPCC reports and (inter)governmental policies; mainstream **biodiversity & climate change research** results more into **IPCC science-policy cycles**.

NATURE-BASED SOLUTIONS

- **Development of urban vegetation** (e.g. parks, grass) and examine how **biodiversity in cities** provide support to climate change adaptation and mitigation.

- Study the implication of the adoption of **Nature-based solutions** (NbS) by **big multinational companies** and the impacts of these NbS.

- Make sure NbS are **not only focused on climate change** but also ensure sufficient benefits for biodiversity; map out **synergies** between the two to help with **policy implementation**.

- Study the **aggregated effects of NbS** at different system levels.

[3] CBD = Convention on Biological Diversity
UNFCCC = United Nations Framework Convention on Climate Change
UNCCD = United Nations Convention to Combat Desertification

- Need for **standards for NbS** that measure their impact and quantify the costs and benefits within other fields (e.g. health).

- Based on local/regional examples, **develop scalable guidelines and solutions** which can be applied to other similar regions.

- **Monitoring and typology** of NbS.

b. Possible actions and instruments

Some of the potential actions and instruments listed below had already been identified in the background documents developed by the European Biodiversity Partnership and JPI Climate.

The participants suggested and showed an interest in the following activities:

- In terms of research needs, summarising existing knowledge (what is already covered, knowledge gaps, priority topics) and organising joint calls/initiatives to address these needs.

- Developing Knowledge Hubs to identify gaps, connect research & policy, connect different research fields, etc. They could serve as platforms for co-creation and support the involvement of stakeholders. And they could facilitate and coordinate the development of assessment reports to inform the implementation of relevant policies on biodiversity and climate.

- In terms of policy needs, developing several tools such as co-written policy briefs, white papers, and practical guides for users (farmers, land managers).

- Organising workshops, whether strategic workshops with stakeholders or cross-cutting workshops.

- Use the possibilities of digital meetings to increase collaboration between the European Biodiversity Partnership and JPI Climate, by inviting each other to meetings.

- Finally, a cooperation between the European Biodiversity Partnership and JPI Climate with regards to the IPBES/ IPCC joint report (awareness and uptake; capacity to get engaged in these processes, etc.)

c. Potential frameworks for collaboration

ON THE SHORT-TERM

- The **BiodivClim COFUND action** with specific activities involving JPI Climate - see Annex II.

- Ad hoc opportunities arising at both sides (representation & participation in meetings; joint events; …).

TOWARDS STRATEGIC COLLABORATION

- Consultation with JPI Climate on forthcoming plans for the European Biodiversity Partnership flagship programmes (such as those starting in 2022 focusing on 'Nature-based Solutions' and on 'Societal Transformation') to increase synergies/co-design and avoid duplications. This could be followed by joint implementation of some activities, and/or active mobilisation of research communities and stakeholders (two ways) throughout programme implementation.

- The **Horizon Europe work programme** opportunities to work together in **Clusters 5** (Climate, Energy, and Mobility) **and 6** (Food, Bioeconomy, Natural Resources, Agriculture and Environment), and in relation to the **"A Climate Resilient Europe" mission** (including in the foreseen Communities of Practice).

III. NEXT STEPS

A series of possible next activities have been identified and will follow the publication of this report.

A **closed session restricted to BiodivERsA and JPI Climate representatives** could be organised at a later date. Building on the outputs of the open workshop, this closed session would aim at working on the development of a common vision for collaboration between BiodivERsA/the European Biodiversity Partnership and JPI Climate and a joint Implementation Plan for collaborative activities (including a list of activities and envisaged timing). This could also include a first joint action still to be implemented in the context of BiodivClim. This closed session could also be used to prioritise the research gaps and needs and the actions and instruments to address them that were identified during this workshop (13 April) and that are listed in the present report.

In addition, BiodivERsA and JPI Climate identified possible joint activities they could implement in the coming months, to move from an opportunity-based approach to a more strategic approach for collaboration.

- 5th and 6th May 2021: **BiodivClim Kick-off meeting & clustering workshop**. The online workshop is organised by BiodivERsA, JPI Climate was invited.
- 27 May 2021: ECCA (European Climate Change Adaptation) conference[4]: **Nature-based Solutions webinar**. Organised by JPI Climate, with inputs from BiodivERsA.
- 22 June: **ECCA (European Climate Change Adaptation) 2021 High-level event**. Organised by JPI Climate, with inputs from the Nature-based Solutions webinar.
- Sept (TBC): **IPBES/IPCC Webinar** in the context of BiodivClim (following the publication of the IPBES-IPCC report in June 2021). Possibly jointly organised by BiodivERsA, JPI Climate and European Research Executive Agency (REA).

LIST OF ANNEXES

Annex I: Background analysis JPI Climate

Annex II: Background analysis BiodivERsA

Annex III: Programme of the workshop

Annex IV: Distribution of participants

Annex V: Outcomes of break-out groups

[4] http://www.jpi-climate.eu/ecca2021

BACKGROUND DOCUMENT TO THE WORKSHOP

Identifying existing activities & actions and priorities & needs

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Joint Programming Initiative "Connecting Climate Knowledge for Europe" (JPI Climate)

I What has your initiative/organisation done so far to cover the interlinkages between biodiversity and climate change?

For example:

- What type of actions have you been implementing (ERA-net COFUND actions, Coordination Support Actions…) that could be relevant in the context of JPI Climate/BiodivERsA (EU Biodiversity Partnership) collaborations?
- Do you have funded research projects specifically focusing on biodiversity and climate change interlinkages?

Actions:

To date, JPI Climate has implemented the following actions, which are relevant in the context of a JPI Climate/BiodivERsA collaboration:

- Joint Call on Enabling Societal Transformation in the Face of Climate Change (SOLSTICE) (transnational joint call, 2019)
- Joint Call on Next Generation Climate Science in Europe for Oceans (transnational joint call with JPI Oceans, 2019)
- Joint Call on Climate Impact Research, Economic Assessment and Pathways to Sustainability (AXIS ERA-net COFUND, 2018)
- Strengthening International Cooperation on Climate Change Research (SINCERE) (Coordination and Support Action, 2018)
- Joint Call on Researching and Advancing Climate Services Development (ERA4CS ERA-net COFUND, 2016)
- Collaborative Research Action on Climate Predictability and Inter-Regional Linkages (transnational joint call with the Belmont Forum, 2015)
- Joint Call for Transnational Collaborative Research Projects (transnational joint call, 2013)
    - Topic 1: Societal Transformation in the Face of Climate Change
    - Topic 2: Russian Arctic & Boreal Systems

Funded projects:

The following JPI Climate funded projects focus specifically on biodiversity and climate change interlinkages:

- Social-Ecological Transformations: HUMan-ANimal Relations Under Climate Change in NORthern Eurasia (**HUMANOR** – *2013 call*)
- Improving PREdictability of circumboREAL forest fire activity and its ecological and socio-economic impacts through multi-proxy data comparisons (**PREREAL** – *2015 call*)
- Integrated services and approaches for assessing effects of climate change and extreme events for fire and post fire risk prevention (**SERV-FORFIRE** – *ERA4CS call*)
- Co-development of CLimate services for adaptation to changing Marine Ecosystems (**CoCLiME** – *ERA4CS call*)
- Multisectoral analysis of climate and land use change impacts on pollinators, plant diversity and crops yields (**MAPPY** – *AXIS call*)
- Environmental justice analysis to advance rural landscape transformations in the face of climate change (**Just-Scapes** – *SOLSTICE call*)

II Do you have any actions or activities in the pipeline that could be of relevance to the topic?

The following actions and activities are currently being developed (or explored) by JPI Climate and can be of relevance to the topic of biodiversity and climate change:

- Knowledge Hub (KH) on Sea Level Rise (in collaboration with JPI Oceans)
- KH on Climate Neutrality
- Joint Call on Greenhouse Gas (GHG) inventories (in collaboration with FACCE-JPI)
- European Facility for Climate Change (EFCC)
- Potential KH on Integrated Scenarios for Climate Change Research and Assessment

III What could be common priorities and needs identified in your Strategic Research & Innovation Agenda?

For example:

- Biodiversity related issues recognised by JPI Climate SRIA
- Climate Change issues recognised by the EU Biodiversity Partnership SRIA

Biodiversity issues recognised by the JPI Climate SRIA:

The following biodiversity related issues are directly addressed in the JPI Climate Strategic Research Agenda (SRA, 2011):

- A comprehensive European climate modelling and analysis system for seasonal and decadal timescales (as well as centennial scales) should be "seamlessly" extended to applications in domains other than climate change, such as food security, water resources availability, **biodiversity** or sustainable energy
- Social, economic and environmental sciences will play a key role in exploring the indirect effects of climate change, including interactions with other drivers of global change such as **biodiversity** loss, human interference with the nitrogen cycle or soil degradation.
- Key research problems: Trade-offs and synergies among climate change policies and other global change policies (e.g. **biodiversity** and arable land, demographics, digitalisation of society, urbanisation).

Biodiversity is not explicitly mentioned in the JPI Climate Strategic Research and Innovation Agenda (SRIA) 2016-2025, but it is considered under the three overarching challenges set out in the SRIA:

- Understanding the processes and consequences of climate change
- Improving knowledge on climate-related decision-making processes and measures
- Researching sustainable societal transformation in the context of climate change

Research priorities and needs in biodiversity and climate change:

The following research priorities and needs have been identified by the JPI Climate Transdisciplinary Advisory Board (TAB) Working Group (WG) on Biodiversity and Climate Change:

- Just and effective policies and measures to address the link between climate change and biodiversity at global, European, national and local levels;
- Understanding the underlying drivers and pressures of climate change and biodiversity loss;
- Using strategic spatial, social and environmental impact assessment as a precautionary tool;
- North-South biodiversity and climate change related issues;
- Limits and potential of market-based regulations for biodiversity loss and climate change;
- Net-zero pathways and their impacts on biodiversity loss and climate justice
    - A better definition of "net-zero" is needed, also in the context of climate justice (e.g. the impacts of net-zero in the developed world for vulnerable communities in the developing world - indigenous people, for example);
    - Net-zero is important as it will provide holistic accounting, including nature services uptake as well as emissions, and sum this with anthropogenic activities and, hence, push for better balance (mitigation and recirculation).
- Indirect drivers of biodiversity loss and climate change (e.g. consumption, production, etc.);
- Governance systems for biodiversity and climate change;
    - There is a lot of focus on new interventions, but less on existing forms of management and governance, and how these may already provide good systems or need to be changed to cope with both climate and biodiversity challenges, also raising issues of who wins/loses, ideas about "just transitions", etc.
- International dimensions of biodiversity and climate change;
    - There is a need to better understand how decisions in one part of the world affect biodiversity and climate in other parts of the world.
- The role of carbon management in biodiversity and climate change (consider both rural and urban perspectives);
- The impact of land management (especially forest management) on carbon fluxes and biodiversity;
    - How are decisions being made about land use, and with which goals in mind? What are the synergies and trade-offs? This also of course raises the question of "wilding" and the advocacy of some environmental groups that 30% of global land use needs to be set aside for nature.
- Land competition between renewable energy and nature conservation;
    - The International Union for Conservation of Nature (IUCN) is working in this topic, with a roundtable on biodiversity and renewables[1].
- Biodiversity and climate as drivers of human health outcomes;
- Systemic perspectives on sustainability gaps at the European level;
- Tensions between resource efficiency and resilience;
- Understanding the climate and biodiversity drivers in shorter time scales (next 10 years);
    - This focus on the next decade is in line with both the EU and the Convention on Biological

[1] https://portals.iucn.org/library/node/49283

Diversity's (CBD)[2] goals for nature, as well as with the UN Decade on Ecosystem Restoration[3].

- The knowledge cycle from research programmes to implementation programmes (e. g. European Structural Funds, European, national, and regional strategies) is still very long. There is a need to fill in this gap between research and implementation.

IV Could you preliminary identify possible joint actions (and the respective instruments) to address these priorities and needs?

Potential joint actions and instruments to address the priorities and needs identified above:

The following joint actions and instruments have been identified by the JPI Climate TAB WG on Biodiversity and Climate Change:

Foresight activity on key indirect drivers that shape climate and biodiversity:

- What are these key drivers?
- What do we know about these drivers over the short-term?
- What are the key challenges with these drivers in the next 5-10 years?
- Potential outcome: Report *"The 10 "must know" drivers of biodiversity loss and climate change in the next decade (2021 - 2030)"*

White Paper (or other written output) bringing together what is known so far on how addressing biodiversity and climate together will contribute to better human health outcomes (both physical and mental health). This exercise could also include the identification of policy approaches/interventions that are being used to deliver these outcomes.

JPI Climate/BiodivERsA **joint workshop** to discuss and further explore the key messages from the IPBES/IPCC report on biodiversity and climate change and how a collaboration between both initiatives (JPI Climate and BiodivERsA) can address some of these key messages.

Report (or other written output) with the 10 most relevant messages from science to inform the implementation of policy programmes (EU, national and regional) - ready to be circulated to practitioners and institutions involved in the design of these programmes.

The JPI Climate **Knowledge Hub (KH) on Climate Neutrality** can be used to address some of the priorities and needs identified above.

- The Climate Neutrality Forum[4], which will take place on 8-10 September 2021, and is supported by JPI Climate, may be a relevant event in this context.

The potential JPI Climate **KH on Integrated Scenarios for Climate Change Research and Assessment** can be used to address some of the priorities and needs identified above.

- There is a likely strong overlap of needs for scenario development that is relevant to both climate change and biodiversity. There is currently a proposal to develop a JPI Climate KH on scenario development, including an exploratory workshop to discuss this. The IPBES undertook a methodological assessment of scenario needs for biodiversity, and links to climate-related scenarios have been raised as a crucial interface in future development of global scenarios. Therefore, it would be quite natural to encompass a biodiversity dimension to any initiative on scenario development. This also relates to the poor knowledge of indirect

[2] https://www.cbd.int/

[3] https://www.decadeonrestoration.org/

[4] http://www.jpi-climate.eu/news-events/news/10903336/SAVE-THE-DATES-Climate-Neutrality-Forum-8-10-September-2021-Berlin-Milan-and-Oxford

drivers of change, which is a comparable weakness of climate change scenarios with many common elements (from global to local). Land use is another issue, especially at regional scale. In this context, a contribution on biodiversity scenarios could be included in the proposed workshop on scenarios, currently being developed in the frame of this potential KH.

The instruments used to address the priorities and needs identified above should be considered in the context of a **long-term vision for collaboration** between JPI Climate and BiodivERsA. Therefore, it is recommended to use a set of suitable instruments (foresight activities, development of White Papers, etc.), rather than "single-use" instruments (webinars, workshops).

BACKGROUND DOCUMENT TO THE WORKSHOP

Identifying existing activities & actions and priorities & needs

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BiodivERsA / the European Biodiversity Partnership

I What has your initiative/organisation done so far to cover the interlinkages between biodiversity and climate change?

For example:

- What type of actions have you been implementing (ERA-net COFUND actions, Coordination Support Actions…) that could be relevant in the context of JPI Climate/BiodivERsA (EU Biodiversity Partnership) collaborations?
- Do you have funded research projects specifically focusing on biodiversity and climate change interlinkages?

BiodivERsA is currently implementing the BiodivClim COFUND ACTION (2019 – 2024)

BiodivClim: 2019-2020 Joint COFUND Call with the European Commission on "**Biodiversity and Climate Change**" interlinkages. 21 projects funded, covering four non-exclusive themes:

- Consequences of climate change on biodiversity and nature's contributions to people
- Climate-biodiversity feedback processes
- Potential of nature-based solutions for mitigating and adapting to climate change
- Synergies and trade-offs between policies on biodiversity, climate and other relevant sectors, and the role of agents of change.

https://www.biodiversa.org/1785. **These projects are starting in 2021**.

The BiodivClim COFUND action does not only include a co-funded joint call, but also a series of activities to advance joint programming, science-based policy support, stakeholder engagement, and internationalisation of R&I. This includes:

- Mapping of transnational collaborations for research on biodiversity & climate change, which could guide priorities for research funders to reinforce the internationalisation of research in this domain. It could also pave the way to future joint activities between regions.
- Maximizing the impact of biodiversity & climate change research, by promoting networking between researchers and relevant stakeholders from public and private sector. This will allow (i) different groups to learn from each other's needs and opportunities and (ii) researchers to further develop their research in response to major societal issues linked to biodiversity and climate change as well as business needs.
- Promoting knowledge transfer on biodiversity and climate change research towards policy makers (production of policy briefs).
- Promoting synergies and clustering of projects on biodiversity and climate change at EU level.

- Promoting synergies with key institutes and initiatives in the ERA at the crossroad between biodiversity & climate change (JPI FACCE, JPI Climate, JRC/LIFE).
- Support global science-policy efforts (link with IPBES/IPCC; CBD/UNFCCC).
- Preparing & implementing one additional non-co-funded call, or another alignment activity.
- Foresight: identifying priorities for future research on Biodiversity & Climate Change.

Over the last couple of years, BiodivERsA has funded several Pan-European projects that have a main or partial focus on climate change:

- 2008 Joint Call on **Global change & biodiversity dynamics; ecosystem functioning; ecosystem services** (https://www.biodiversa.org/76) - **finished**
=> 8 projects (BeFoFu, Climigrate; CLIMIT; CoForChange; Ecocyles; Fireman; Linktree; PEATBOG; VITAL

- 2010-2011 Joint Call on **Biodiversity and ecosystem services and their valuation** (https://www.biodiversa.org/79) - **finished**
=> 1 project (URBES)

- 2011-2012 Joint Call on **Biodiversity scenarios, tipping points and improving resilience** (https://www.biodiversa.org/101) - **finished**
=> 3 projects (EC21C; FISHCON, LimnoTip; REGARDS; Signal; TIPPINGPOND; TIPTREE)

- 2012-2013 Joint Call on **Biological invasions** (https://www.biodiversa.org/367) - **finished**
=> 4 projects (Invaxen; WhoIsNext; FFII; GC-INVAMOFECT)

- 2013-2014 Joint Call on synergies & trade-offs between **food supply, biodiversity and ecosystem services**, with FACCE-JPI (https://www.biodiversa.org/578) - **finished**
=> 4 projects (EcoServe; EcoFruit; BEEHOPE; STACCATO)

- 2015-2016 Joint Call on **Biodiversity dynamics - partim soils & sediment/ partim blue & green infrastructures and naturing cities** (www.biodiversa.org/922) - **finished**
=> 10 projects (CLIMARCTIC; REPEAT; SOILCLIM; DIGGING DEEPER; MARFOR; SOILFOREUROPE; OSCAR; URBANMYCOSERVE; BIOVEINS; FunGreen)

- 2017-2018 Joint Call on **Scenarios of Biodiversity & Ecosystem services**, with the Belmont Forum (https://www.biodiversa.org/1400) - **ongoing**
=> 13 projects (ACCESS; Biodiv-support; ARCTIC-BIODIVER; BONDS; FATE; Future Birdscenarios; FUTUREWEB; GLOBAM; InvasiBES; OBServ; Land2Sea; LimnoScenES; REEF-FUTURES; SOMBEE)

- 2019-2020 Joint Call on **Biodiversity & Climate Change** (www.biodiversa.org/1785) – **projects will start soon**
=> 21 projects (ACORN, ASICS, CLAMBIO, EPICC, FeedBaCks, FutureArcticLives, GRADCATCH, ICROSERVICES, MixForChange, NordSalt, PlantCline, PRINCESS, RangeX, SUSTAIN-COCOA, GenClim, EASMO, BaltVib, FUNPOTENTIAL, RESTORE, NAPERDIV, BIOFAIR)

- 2020-2021 Joint Call on **Conservation & Restoration of degraded ecosystems**, with JPI Water – **call still ongoing** (projects are currently being selected)

Among the 125 BiodivERsA-funded projects projects, 26 of them (~20%) have the terms "climate" or "climatic" as part of their titles.

For more details on the projects, see spreadsheet in annex. Projects are organised in 3 categories (A, B, C – column G), according to the level of importance of the climate component.

BiodivERsA Policy briefs related to aspects of climate change, based on some of the projects mentioned above:

"Adaptation of trees and forests to climate change: the importance of genetic variability" (LINKTREE project)
https://www.biodiversa.org/691/download

"European gradients of resilience in the face of climate extremes" (SIGNAL project)
https://www.biodiversa.org/1123/download

"Nitrogen pollution and climate change reduce carbon storage and biodiversity of peatlands" (PEATBOG project)
https://www.biodiversa.org/689/download

"Conservation of small mammals and associated ecosystems: the importance of European policies and actions" (ECOCYCLES project)
https://www.biodiversa.org/666/download

"Conservation of threatened insects in Europe" (CLIMIT project)
https://www.biodiversa.org/556/download

"Action on invasive alien species should better anticipate climate change effects on biological invasions in Europe" (WhoIsNext, INVAXEN, Resipath projects)
https://www.biodiversa.org/1309/download

"How natural forest expansion in Europe can offer cost-effective benefits to people" (SPONFOREST project)
https://www.biodiversa.org/1844/download

II Do you have any actions or activities in the pipeline that could be of relevance to the topic?

Most importantly:

ONGOING: BiodivClim COFUND ACTION on biodiversity & climate change (2019-2024)

This does not only include a co-funded joint call (projects starting in 2021), but also a series of activities to advance joint programming, science-based policy support, stakeholder engagement and internationalisation of R&I – see above.

PLANNED: BiodivERsA is also preparing for a "European co-funded Biodiversity Partnership" under Horizon Europe, co-designed by DG R&I and DG ENV

In a nutshell:

The European partnership on Biodiversity "Rescuing Biodiversity to Safeguard Life on Earth" (2022-2028) is one of the actions included in the EU Biodiversity Strategy for 2030. It will coordinate research programmes between EU and its Member States and Associated Countries and trigger combined action, mobilising for the first time environmental authorities as key partners for implementing biodiversity research and innovation, along with ministries of research, funding agencies, and environmental protection agencies (for now, we have over 60 organisations from 30+ countries expressing interest to join this Partnership). The Partnership's co-created strategic research and innovation agenda for seven years will include calls for research projects, biodiversity- and ecosystems monitoring and science-based policy advising activities to tackle the drivers of biodiversity loss

(including climate change) and help make the planet and societies more resilient in the face of climate change.

The Partnership will aim to achieve five overarching objectives, to support the contribution of R&I to the EU Biodiversity Strategy to 2030 aiming to put biodiversity on a path to recovery by 2030 for the benefit of climate and people:

1. **Produce actionable knowledge to tackle direct and indirect drivers of biodiversity loss;** knowledge on biodiversity status, trends and dynamics, and for integrating drivers, pressures, impacts and responses; knowledge on trade-offs and synergies between multiple drivers of biodiversity change; **and assessment of novel tools and approaches** to biodiversity/ecosystem conservation and restoration.
2. **Enhance the evidence base, accelerate the development and wide deployment of nature-based solutions** to societal challenges across Europe in a sustainable and resilient way, hence contributing to conserve biodiversity while addressing multiple agendas such as fighting the climate crisis while also enhancing food and nutrition security, and water supply, flooding and scarcity, among other societal priorities.
3. **Making the business case for the conservation and restoration of ecosystems,** by contributing science-based methodologies to account for and possibly value ecosystem services and the natural capital, and to assess the dependency and impact of businesses on biodiversity.
4. **Improved monitoring of biodiversity and ecosystem services across Europe** (status and trends), building on existing national/regional monitoring schemes, new capacity for setting up new schemes, and promoting new efficient technologies and experience from MAES-related processes with regard to enhancing and standardizing tools for mapping and assessment.
5. **Science-based support for EU, Member States and Associated Countries policy-making,** including for strengthening environmental policies and laws and their implementation, and reinforcing horizontal synergies with the other European sectoral policies. More generally, R&I programmes should be better linked to the policy arena, allowing better informed policy-making and better assessment of policy efficiency.

The European Partnership for Biodiversity will be implemented through a joint programme of activities **(including a focus on biodiversity & climate change interlinkages)** including:

- **Activities to promote and support R&I programs and projects across the European Research Area,** including the launch of 6 ambitious joint calls (45M euro) to fund transnational R&I projects and implementing mobility schemes for example for young scientists or between academia and business.
- **Activities to build capacity of R&I actors and increase the impact of R&I programs and projects, including science-based policy support.**
- **Activities to support, harmonise and implement biodiversity monitoring.**
- **Activities to enhance the uptake, the demonstration and deployment of solutions to address the above mentioned objectives of the partnership**
- **Activities to reinforce the excellence, visibility and impact of European R&I at the international level.**
- **Activities to regularly update the Partnership vision and strategy.**

The European Biodiversity Partnership will be launched towards the end of this year (for 7 year period).

Every year, the European Biodiversity Partnership will launch 1-2 Flagships Programmes, focusing on a specific biodiversity issue and covering a broad range of the afore-mentioned activities. Possible topics for Flagship Programmes of relevance to the biodiversity & climate change interlinkages include most importantly:

- Better knowledge to develop, deploy and assess nature-based solutions (incl. in urban areas)

Other possible Flagship Programme topics, including a climate-change focus include:

- Supporting societal transformation for the sustainable use and management of biodiversity

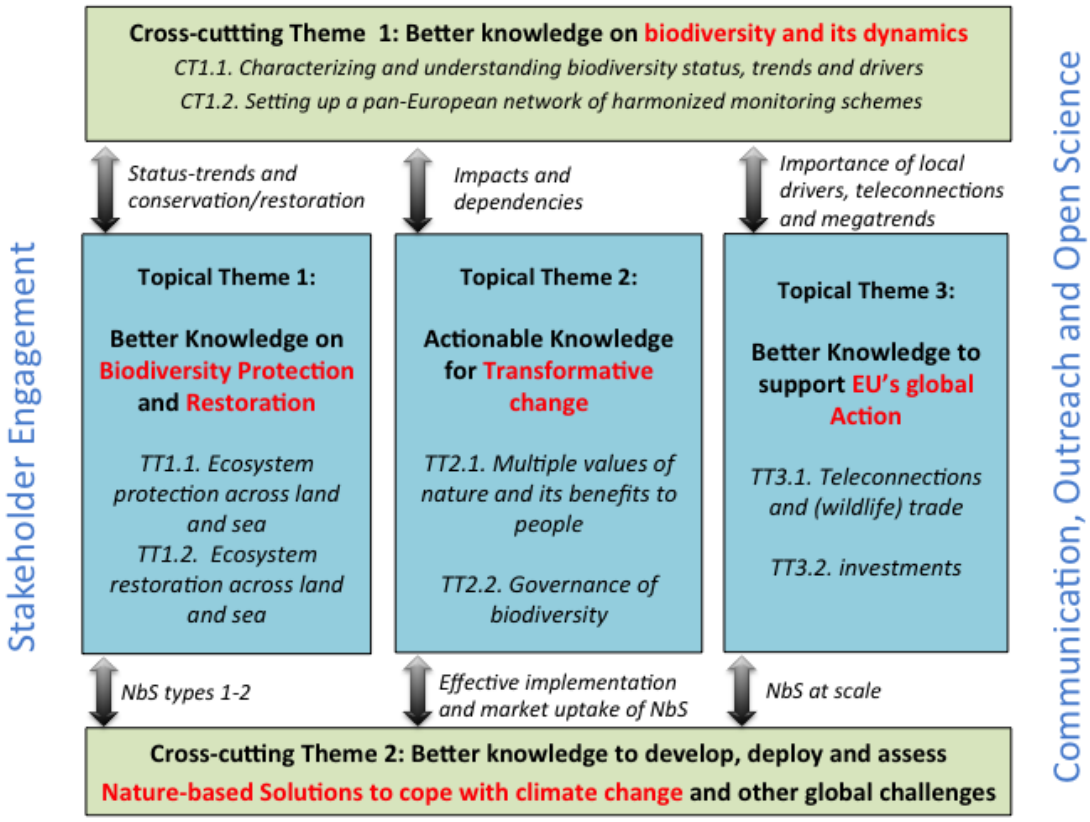
- Supporting EU's contribution to global biodiversity conservation
- Better transnational monitoring of biodiversity to better characterize, understand and report on biodiversity dynamics and trends
- Biodiversity and Ecosystem Protection across land & sea
- Biodiversity and EcoRestoration on land & sea

III What could be common priorities and needs identified in your Strategic Research & Innovation Agenda?

For example:

- Biodiversity related issues recognised by JPI Climate SRIA
- Climate Change issues recognised by the EU Biodiversity Partnership SRIA

Overview of the Topical and Cross-cutting themes that structure the Strategic Research & Innovation Agenda of the European Biodiversity Partnership



Topical Theme 1 – Better knowledge on Biodiversity Protection and Restoration – R&I needs linked to:

- Protection and restoration of Biodiversity and Ecosystems across land and sea, as a nature-based solution for climate change adaptation and mitigation (including in cities) – and for sustainable agriculture in the face of climate change.
- Effective habitat connectivity allowing species migration and avoiding genetic isolation, in the face of climate change.
- Spatial planning for biodiversity conservation, taking into account synergies and trade-offs with other policies

- Effectiveness of conservation and restoration approaches in the face of climate change.
- Impacts of land degradation (partly climate driven) on biodiversity and ecosystem services.
- Social and environmental consequences of interactions between land and sea degradation, poverty, culture and behaviours, climate change, and the risk of conflict and of migration.

Etc.

Topical Theme 2 – Actionable knowledge for transformative change – R&I needs linked to:

- Mainstreaming biodiversity concerns into market transactions, planning and investment decisions.
- Measures that incentivise and eliminate barriers for the take-up of nature-based solutions as these can lead to significant business and employment opportunities in various sectors while enhancing biodiversity.
- Rigorous valuation tools are needed to cope with complicated trade-offs in the context of sustainable development initiatives and relevant policies.
- Assessment of the cost-effectiveness and economic viability of nature-based solutions to meet multiple benefits (environmental, social and economic).
- Performance of different governance systems in supporting ecosystem services, resource sustainability and biodiversity.
- Addressing the relation between global processes (e.g. globalization, climate change, financial controls) and local consequences will also be needed because local governance, in many cases, will hardly grasp or respond to global pressures/threats.
- support to the development of policies and governance systems aiming at particular balances between nature protection and socio-economic development

Etc.

Topical Theme 3 – Better knowledge to support EU's global action – R&I needs linked to:

- understanding of the relationships between biodiversity loss and production/consumption patterns and thus the economic and social processes underlying environmental problems at a global scale, and exacerbating climate change.
- guidance to adjust trade agreements, to avoid negative impacts for biodiversity; as well as external policies and programs. As such, it can help to achieve different United Nations (UN) Sustainable Development Goals (SDGs) – including those related to climate change.
- Analysis of investment in climate and other solutions in partner countries, most notably: to what extent biodiversity co-benefits are already happening or being considered; and/or the extent to which there is potential for investments by donors to also result in biodiversity co-benefits.

Etc.

Cross-cutting Theme 1 - Better knowledge on biodiversity and its dynamics – R&I needs linked to:

- characterize the threats to all aspect of biodiversity, including functional diversity, in a global change context.
- knowledge is particularly needed on the effects of multiple stressors and extreme events. This includes understanding the impact of climate change in combination with context-specific drivers on biodiversity and ecosystem services, especially with respect to tipping points and planetary boundaries.
- role of adaptation in a global change context/ better characterize the sources of flexibility and transformability for species, populations, ecosystems and social-ecological systems, in the face of global change.
- better knowledge on the cascading effects of direct, indirect and emerging drivers of change, separately and in combination and interaction, on biodiversity, ecosystem function and ecosystem services (at all relevant scales); and provision of methodologies to predict such effects.
- improved biodiversity monitoring to help understanding agriculture, pollution and climate change impacts on pollinators and evaluating the effectiveness of management and adaptation options for securing pollination under future conditions.

Etc.

Cross-cutting Theme 2 - Better knowledge to develop, deploy and assess Nature-based solutions to cope with climate change and other global challenges – R&I needs linked to:

- analysis of how Nature-based solutions can offer smart alternatives to technical solutions to tackle major challenges like restoration of degraded ecosystems, climate change adaptation and mitigation, disaster risk reduction and disaster preparedness, sustainable urbanisation and agriculture, and more generally improved resilience of ecosystems, communities and societies.
- knowledge to inform the development of Nature-based solutions e.g. for enhancing the insurance value of ecosystems, restoring degraded ecosystems and re-naturalizing environments dominated by humans (e.g. cities), increasing carbon sequestration, and improving the sustainability of the food, fibre or energy production systems.
- analysis of what are the synergies and trade-offs between social, environmental and economic goals associated with Nature-based solutions.
- search of which approaches and governance systems can reinforce the capacity to innovate with Nature-based solutions, to develop and deploy them on large scales, and to overcome (some) trade-offs.
- knowledge base for the development, deployment and assessment of NbS specifically in an urban and peri-urban context

Etc.

Overall, the SRIA of the Biodiversity Partnership counts over 75+ references to climate change: climate change as driver; biodiversity-climate feedback loops; IPBES/IPCC; CBD/UNFCCC; nature-based solutions to climate change adaptation and mitigation => throughout the SRIA there is a strong call for dealing with the twin crises in a holistic manner.

IV Could you preliminary identify possible joint actions (and the respective instruments) to address these priorities and needs?

Possible joint actions/activities

- Research & Innovation workshops: maximizing the impact of biodiversity & climate change research by promoting networking between biodiversity & climate researchers and relevant stakeholders from the public and the private sector, including a possible link with Climate-KIC.
- Support global science-policy efforts (link with IPBES/IPCC; CBD/UNFCCC), for example by producing synthesized knowledge products to feed the assessments, or by organising capacity building activities for biodiversity and climate scientists to engage in these processes.
- Foresight activities: identify priorities for future research related to biodiversity & climate change interlinkages.
- Joint communication and outreach activities for policymakers and practitioners, and joint research uptake activities ("valorisation"), to increase the impact of the funded research and other types of outcomes.
- Joint knowledge hubs (i.e., European networks of researchers from both communities) to facilitate networking and coordination of already funded research activities, strengthen researchers' capacities, and promote the generation of new cross-disciplinary knowledge. This could possibly be linked to supporting global science-policy efforts.

Existing and upcoming frameworks, to implement such activities

- **BiodivClim (short-term)**: for each of the joint actions/activities listed above, there is a short-term opportunity (planned activity) in the context of the era-net COFUND action
- **Biodiversity Partnership (long-term)**: will implement its work through multi-annual Flagship Programmes addressing a particular biodiversity issue, aligned with the themes identified in the SRIA, and gathering a specific portfolio of activities relevant to the issue addressed. These may relate to mapping

and foresight, joint call(s) for support to research (though this is not a requirement), reinforcement of the link between research and biodiversity monitoring/infrastructure, capacity building activities, stakeholder engagement and science society/policy interfacing. The following Flagship programmes will start in year 1 & 2 of the Partnership and could accommodate joint actions/activities with JPI Climate listed above:
    - Biodiversity and Ecosystem Protection Across Land & Sea (starting Year 1)
    - Better knowledge to develop, deploy and assess nature-based solutions (starting Year 2)
    - Supporting societal transformation for the sustainable use and management of biodiversity (starting Year 2)
- **Adapting to Climate Change Mission**, and possibly some other elements in the **Horizon Europe** Work programme Cluster 6 (planned CSAs, such as the one to support IPBES/IPCC process).

BiodivERSA & JPI Climate Strategic workshop

13th April 2021 / 13:30-17:15 / online meeting (Zoom)

About the workshop

The aim of the workshop is to explore future collaboration opportunities between BiodivERsA/the future European Biodiversity Partnership and JPI Climate (in the context of the BiodivClim COFUND action on Biodiversity and Climate Change).

Invited participants are BiodivERsA and JPI Climate Governing Board and Advisory Board members, as well as a few experts and stakeholders, including representatives from FACCE-JPI and from the European Commission.

The workshop will build on an initial comparison between the Strategic Research and Innovation Agendas (SRIAs) of both initiatives as well as on past and ongoing activities, thus leading to the **identification of common priorities at the cross-road of biodiversity and climate change and possible joint actions**, notably to feed the Adaptation to Climate Change mission.

After a short presentation of both initiatives and their strategies, as well as the new R&I and policy context in which both bodies will work, the participants will be invited to discuss and **identify key topics** (thematic priorities) and **possible modalities for collaboration on the short- and long-term** (break-out group session).

Expected outputs of the workshop:

Identify common needs and common priorities at the crossroad of biodiversity and climate change and activities that could be implemented to fill these needs.

This open workshop would be followed by a closed session restricted to BiodivERsA and JPI Climate representatives (to be organised at a later date). Building on the outputs of the open workshop, this closed session would aim at working on the development of a common vision for collaboration between BiodivERsA/European Partnership on Biodiversity and JPI Climate and a joint Implementation Plan for collaborative activities (including a list of activities and envisaged timing).

Concrete collaboration activities:

BiodivERsA and JPI Climate already identified possible joint activities they could implement in the coming months, using an opportunity-based approach during the breakout group session, participants will have the opportunity to propose other activities which could lead to moving from an opportunity-based approach to a more strategic approach for collaboration.

- BiodivClim Kick-off meeting & clustering workshop (5-6 May) - organised by BiodivERsA, JPI Climate invited
- ECCA NbS webinar (2nd half of May) – organised by JPI Climate, with inputs from BiodivERsA
- ECCA 2021 High-level event (7 June) – organised by JPI Climate, with inputs from the NbS webinar
- IPBES/IPCC Webinar in the context of BiodivClim (possibly jointly organised by BiodivERsA and JPI Climate)

Programme

- 13:15 - 13:30 - Technical check-in/Meeting open, participants can already join

- 13:30 - 13:40 - Welcome and introduction to the objectives of the workshop (by Hilde Eggermont, BelSPO/BiodivERsA)

- 13:40 - 14:40 - General update of the landscape
  - 13:40 - 13:55 - **Presentation of JPI Climate, including the SRIA and its priorities** (by Alexandre Fernandes, JPI Climate)
  - 13:55 - 14:10 - **Presentation of BiodivERsA/the future European Biodiversity Partnership, including the SRIA and its priorities** (by Hilde Eggermont, BelSPO/BiodivERsA)
  - 14:10 - 14:20 - **Presentation of synergies and common priorities between the Strategic Research and Innovation Agendas of BiodivERsA/European Biodiversity Partnership and JPI Climate** (by Hilde Eggermont, BelSPO/BiodivERsA & Alexandre Fernandes, JPI Climate)
  - 14:20 - 14:40 - **Update of the policy landscape, with a focus on the role of biodiversity for climate change adaptation and mitigation** (by Peter Löffler, European Commission, DG CLIMA)

- 14:40 - 14:45 - Introduction to the break-out group session & allocation to break-out groups (by Lise Goudeseune, BelSPO/BiodivERsA)

- 14:45 - 15:00 - Virtual coffee break

- 15:00 - 16:00 - Discussions in break-out groups: **A joint vision on common priorities and needs at the interface between biodiversity and climate change. How to address them?**

  Objective: Participants will discuss in break-out groups during 1h about a possible common vision underlying **future concrete collaborations** between BiodivERsA/the future European Biodiversity Partnership and JPI Climate. The discussions will focus on detailing **common priorities and needs**, and identifying **joint activities or instruments** to address the priorities and needs. Participants will also be encouraged to identify which topics / activities would be taken up preferably only by JPI Climate, or only by BiodivERsA/the future European Biodiversity Partnership, and which ones could be organised jointly.

- 16:00 - Back to plenary for **Final discussions & recommendations**
  - 16:00 - 16:15 Recommendations from the break-out groups (5 min presentation per rapporteur)
  - 16:15 - 16:35 The Mission on Adaptation to Climate Change (by Thomas Koetz, European Commission,R&I)
  - 16:35 - 17:05 Final comments from the participants towards a common vision for collaboration and possible joint implementation plan, incl. concrete actions, identification of activities and tools to address them, a possible timing, and prioritisation (moderated by Petra Manderscheid, JPI Climate)
  - 17:05 - 17:15 Closing & next steps (by Hilde Eggermont, BiodivERsA and by Alexandre Fernandes, JPI Climate)

17:15 - End of meeting

Practicalities

To register, follow this link:

https://zoom.us/meeting/register/tJUlceGrqTwqHNzUv94FfBhUttoJAxQWhsKp

For your attention:

The meeting will be recorded, for internal purposes only. The recording will not be shared nor published, and will be deleted soon after the workshop.

If you have an issue with this, please contact us before the workshop.

Annex IV: Distribution of participants