

# Biodiversa+ Dialogue on Transformative Change for biodiversity



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## What is Biodiversa+

Biodiversa+ is the new European co-funded biodiversity partnership supporting excellent research on biodiversity with an impact for policy and society. It was jointly developed by BiodivERSA and the European Commission (DG Research & Innovation and DG Environment) and was officially launched on 1 October 2021.

Biodiversa+ is part of the European Biodiversity Strategy for 2030 that aims to put Europe's biodiversity on a path to recovery by 2030.

The Partnership aims to connect science, policy and practice for transformative change. It currently gathers 74 research programmers and funders and environmental policy actors from 36 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.org/>

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## Executive Summary

The Biodiversa+ Dialogue Event on "transformative change & biodiversity" has brought together 31 participants, including researchers, policy-makers and stakeholders, to discuss on the way Biodiversa+, as the European Partnership on biodiversity, could support society to trigger transformative change for biodiversity. The main objectives of this dialogue event were to: better define "transformative change for biodiversity"; identify knowledge gaps and research needs on transformative change & biodiversity; identify activities that Biodiversa+ could implement on the topic of transformative change & biodiversity. On the basis of a non-exhaustive theoretical paper and three entry points identified ahead, i.e. biodiversity values for society; biodiversity governance (for socio-economic, legal and political aspects, biodiversity management); and sustainable use of nature for biodiversity, the participants have shed light on the need to strengthen interconnections with Horizon Europe projects and other European initiatives, to enhance capacity building, transdisciplinary activities and research implementation, and to consider local knowledge at the international scale. The participants also raised the need to better involve the right actors in co-designed and co-implemented research projects, and to explore the best ways to develop appropriate language to communicate with policy advisors and decision-makers. This dialogue event represents a first step toward more encompassing consultations bringing together the different actors of society to implement R&I on transformative change through the biodiversity partnership.

## List of Acronyms

CBD	Convention on Biological Diversity
EU	European Union
ESB	Enlarged Stakeholder Board (of Biodiversa+)
ILK	Indigenous and Local Knowledge
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
IPCC	Intergovernmental Panel on Climate Change
IPLC	Indigenous Peoples and Local Communities
ISSC	International Social Science Council
NBS	Nature-Based Solutions
NCPs	Nature Contributions to People
NGOs	Non-Governmental Organisation
R&I	Research and Innovation
TSU	Technical Support Unit
SRIA	Strategic Research and Innovation Agenda
WCMC	World Conservation Monitoring Centre



## Introduction

[Biodiversa+](#), the European Biodiversity Partnership launched in October 2021, carries a long-term strategic vision available in its [Strategic Research and Innovation Agenda](#) (SRIA). As part of this long-term vision, three topical themes and two cross-cutting themes align with the EU Biodiversity Strategy for 2030 to guide the activities implemented under Biodiversa+: biodiversity protection and restoration; transformative change; EU's global action; better knowledge of biodiversity and its dynamics and better knowledge for Nature-Based Solutions (NBS) in a global change context.

To address the topical theme of transformative change, Biodiversa+ will launch in September 2022 a flagship programme<sup>1</sup> on “Supporting societal transformation for the sustainable use and management of biodiversity”. In order to help framing activities under this flagship programme, Biodiversa+ organised a Dialogue Event on "transformative change & biodiversity" on the 27th of June afternoon and 28th of June morning in Paris, under the lead of the French Ministry of Ecological Transition and Territorial Cohesion.

31 participants with different backgrounds joined discussions: researchers, policy makers and other stakeholders from business or practice were invited to discuss the topic of transformative change for biodiversity. The objectives of this dialogue event were to:

1. better define “transformative change for biodiversity”
2. identify knowledge gaps and research needs on transformative change & biodiversity
3. identify activities that Biodiversa+ could implement on the topic of transformative change & biodiversity

Ahead of the dialogue event, and building on the SRIA, EU Biodiversity Strategy for 2030 and flagship programme, Biodiversa+ identified three possible entry points for this dialogue event:

- Biodiversity values for society
- Biodiversity governance (for socio-economic, legal and political aspects, biodiversity management)
- Sustainable use of nature for biodiversity.

These entry points were used to kick-off the discussions, yet the participants were encouraged to challenge and go beyond these entry points.

In addition to these entry points, a framework paper (see Annexe 2) providing a synthesis of literature available on Web of Science and presenting the three above entry points was shared with the dialogue participants. This framework paper didn't provide an all-encompassing view of the literature on transformative change and biodiversity, yet it aimed to provide some brief overview for the dialogue participants. For instance, the participants recommended adding

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<sup>1</sup> Flagship programs address a particular biodiversity issue, aligned with the themes identified in the Biodiversa+ Strategic Research and Innovation Agenda, and gathering a specific portfolio of activities relevant to the issue addressed and across the different work packages/objectives. Flagship programs thus aim at implementing a holistic set of activities. Flagship Programs can include a joint call for research proposals but some may also NOT include joint call for research proposals.

additional sources to the framework paper, such as Massarella et al. (2021)<sup>2</sup>, O'Brien et al. (2022)<sup>3</sup> and Visseren et al. (2022)<sup>4</sup> and European Commission, Directorate-General for Research and Innovation, Fritz et al. (2020)<sup>5</sup>, in order to conduct further investigations.

This dialogue event was split into several sessions (see Annexe 3): a first introduction session followed by three collaborative sessions, each collaborative session addressing one of the three objectives above-mentioned. During the first plenary introduction session, a keynote speech was given by Karen O'Brien, from the University of Oslo. This keynote speech addressed the topic of “transformative change and biodiversity: integrating the practical, political and personal spheres of transformation” and presented the “three spheres framework” to guide the discussions of the dialogue (see Fig 1).



Fig 1: Suggested frame to approach transformative change and biodiversity in Karen O'Brien's keynote speech - O'Brien and Sygna 2013<sup>6</sup>

This report, which the participants of the dialogue event have reviewed, synthesises the outcomes of the discussions. In the first part, an overview is made of the ideas, concepts and issues that could feed a flagship programme on transformative change and biodiversity. In the second part, the report presents a list of knowledge gaps and research needs at the nexus of biodiversity and transformative change. The third part lists identified ideas of activities that could be implemented by Biodiversa+ on the topic of transformative change and biodiversity. Finally, some concluding remarks are provided.

<sup>2</sup> Massarella, K. et al. (2021) Transformation beyond conservation: how critical social science can contribute to a radical new agenda in biodiversity conservation, [Volume 49](#), April 2021, Pages 79-87.

<sup>3</sup> O'Brien K. et al. (2022) Responding to Biodiversity Loss in a Changing Climate, an integrative approach to transformative change, Report commissioned by the Norwegian environment agency M-23142022.

<sup>4</sup> Visseren, Ingrid J. et al. (2022) Transforming biodiversity governance, Cambridge University Press.

<sup>5</sup> European Commission, Directorate-General for Research and Innovation, Fritz, M., Ventocilla, J., Locher Krause, K., et al., Transformative change in the global post-2020 biodiversity framework: workshop report 23-25-26 June 2020, Publications Office, 2020, <https://data.europa.eu/doi/10.2777/79493>

<sup>6</sup> O'Brien, K. and L. Sygna. (2013) Responding to Climate Change: The Three Spheres of Transformation. Proceedings of Transformation in a Changing Climate, 19-21 June 2013, Oslo, Norway. University of Oslo.



# 1. Ideas, concepts and issues that could feed a flagship programme on transformative change for biodiversity

## • Methodology

The Dialogue Event started with a first session entitled “Brainstorming on transformative change for biodiversity”. The objective was to conceptualise transformative change and establish a common framework analysis used for the next sessions.

Three subgroups were formed in preparation for the dialogue event, according to specific criteria: categories of actors, specialities, nationalities and gender equity. Within each group, a volunteer reporter was identified to ensure that the work was the result of a collaborative process.

The session was based on a pre-established framework analysis (Annexe 2), namely the three relevant entry points presented previously. The participants were given time to reflect individually on the concept of transformative change as a first step, and to exchange and share their thoughts collectively as a second step.

The questions to be addressed were:

- Reflecting on the three entry points identified, what would be the main ideas, concepts and issues to structure the Biodiversa+ flagship programme on transformative change?
- Are there relevant ideas related to transformative change for biodiversity that do not fit within the three entry points?

## • Outcomes of the subgroup discussions

All the ideas and concepts proposed within the subgroups have been combined to identify convergences and divergences, to highlight the main ideas and paths, and thus structure the framework analysis:

### • Transformative change related to biodiversity values for society

- **Social justice (participation and recognition)** related to addressing the issues below: Whose values count and should be prioritized? Who wins and who loses out from dominant processes of decision making and knowledge production? What does indigenous and local knowledge look like in the European context (e.g., Sámi)? How to explore and meaningfully incorporate alternative value systems? How to increase participation of all groups in society, especially marginalised groups? The [Territories of Life report](#) as well as the [Local Biodiversity Outlook](#) may provide an overview of indigenous and local good practices.
- **Mainstreaming values of nature** include internalising ecosystem services/nature's contributions to people (NCPs) into services for reducing consumption, and promoting

interconnection to nature and alternative ways of relating to nature (UNEP three planet visions).

- **Pluralism of biodiversity values** involves methods for negotiating different values and including a diversity of values in decision-making and program design, recognizing the social and cultural complexity of valuing nature (i.e., biocultural diversity), integrating indigenous peoples and local communities (IPLC<sup>7</sup>) knowledge and visions in the European context. Other issues remain, such as how to take into account disruptive events and how to switch from one value to another? How to better integrate genetic diversity into biodiversity value? How to find a common ground among the multiple paradigms, but also learn to make space for the fact that people will always disagree? How to recognise and work with relational values in the European Union?

- **Transformative change related to biodiversity governance/agency (for socio-economic, legal and political aspects, biodiversity management)**

- **Adaptive governance** involves thinking and acting flexibly in terms of knowledge governance to respond to ecosystem transformation (e.g., from a changing climate perspective).
- **Participatory and inclusive governance** includes multidisciplinary and transdisciplinary research that involve the humanities and social sciences (including psychology, philosophy, history) to co-construct research projects, and evaluate them based on their academic excellence and their impacts on biodiversity, as well as the inclusion of IPLC and the youth community. Six “[transformative cornerstones of social science research for global change](#)” have been identified in 2012 by the International Social Science Council (ISSC) and its set of illustrative questions could be used to frame upcoming Biodiversa+ activities regarding transformative change: (i) Historical and contextual complexities; (ii) Consequences of global environmental change; (iii) Conditions and visions for change; (iv) Interpretation and change making; (v) Ethics and responsibilities; (vi) Governance and decision making.
- **Implementing long-term policy** refers to the question below: given its current short-termism, how can policy/polity/politics be encouraged and supported to think long-term (e.g. according to longer term ecological processes, to future generations, to genetic diversity)?
- **Recognising and incorporating** the human rights-based approach as well as **the rights of nature** to implement better nature directives and sustainable business directives, and to question the democratic principles (e.g., see Green theory), the rule of law, and the effective international legal biodiversity framework.
- **Building capacities of decision makers (including practitioners)** to frame implementation change, by thinking differently about our relationship to nature rather than controlling it. Some issues addressed were: How to engage all the scientists? how to implement a counterpart to research and innovation?
- **Need for an agency for transformative action** involved in questioning scaling up from known systems, taking into account different scales (individual, social group, society as a whole)

<sup>7</sup> ILK: people or things of the same place, territorial designation, or name.



and social learning, building systematic approaches (such as landscape approaches based on case studies at the local, European and global levels, but also connecting e.g., land and ocean), and thinking from the global to practical level.

- **Transformative change related to sustainable use of nature for biodiversity**

- **Biodiversity loss in relation to energy and economic growth** was considered. The main question remains: what kinds of economic development are appropriate for a low energy future and how will this affect biodiversity? Economic development as currently measured by growth domestic products indicator and the political drive for unlimited growth underpinned by neoclassical economic theory and the consumptive desires of society at large are driving biodiversity loss and climate change. It will be impossible to reduce the rate of biodiversity loss or greenhouse gas emissions until the goals and indicators of economic development are changed. This provides an opportunity to consider alternative economic futures and implications for biodiversity under different energy scenarios. A study of this kind would provide policymakers with additional ways of thinking about economic development.
- **Alternative economic models, particularly degrowth/post-growth**, was considered as an important issue challenging the need for continued economic growth. There is a need to integrate ecological concepts into economic theory, such as carrying capacity due to limited/finite resources. For instance, rather than an alternative economic paradigm or the critique of the current economic system, degrowth (as a response to resource depletion which is crucial for the functioning of the economic system) recognizes that the use of available natural resources is bounded by their limited availability, and proposes measures that need to be taken to reduce growth to remain well within these limits. Therefore, there needs to be a paradigm shift in the economic thinking based on growth. This was discussed in relation to law, i.e., actions included in the law that contribute to degrowth, or other alternative economic models, (e.g., French law that incriminates programmed obsolescence, adopted by ordinance in 2016). As well as how degrowth could be included in broader biodiversity conservation discussions. Participants pointed out the need for defining sustainable use, shifting from a growth-centred vision to understanding degrowth and its different approaches (e.g., steady-state economy, conservative), as well as inherent compromises, and defining what is fair in a just transition.
- **Economic system change** involves how to properly integrate biodiversity, with respect and care, into the economy. The paths forward have been identified as: defining practices that are promoting biodiversity and the creation of value in the system; finding leverage points; defining economic principles of sustainable use; internalising the externalities (accounting practices for instance); promoting an alternative paradigm through another narrative than short-term financial profit; defining true pricing (carbon costs for example) based on political economy; confronting agency and structure; addressing the issue on who is the user of a limited resource; balancing gains and losses from sustainable use, reintroducing biodiversity into the value chain(s); clustering attempt with economy/value chains/business for society and biodiversity; creating transparency and metrics; including biodiversity and not only climate for triggering a holistic approach.

- **Other potential transformative changes**

- **Positive narratives/literacy** involve strengthening positive examples and success stories (e.g., CITES), creating narratives that can be understood by all, and amplifying alternative narratives focusing on the link between society and nature. However, it would also be necessary to learn from failures (e.g., past civilizations collapse).
- **Requesting proof of evidence** to prevent biodiversity dynamic, intensification of land use and biodiversity decline, to increase data and cases and ally new experiments. It was pointed out that evaluation and monitoring should be appropriate to the actual project to ensure accurate assessment of progress or lack of theory. Also, finding disruptive solutions from other fields (blockchains for instance), identifying ways to overcome barriers to transformative change and how to connect with existing solutions were underlined.
- **Raising awareness on transformative change** involves mobilising and supporting all the actors of society, and being responsible, while emphasising the need for cooperation, capacity building, and for a culture of care.

On one hand, the first session revealed very disparate concepts, ideas and approaches to addressing transformative change, while underlining a strong and shared consensus among all participants: the need for a holistic approach to enable transformative change for biodiversity. This means addressing the concept of transformative change through a multi-sectoral (e.g., through the Biodiversity-Climate-Nutrition Nexus) and multi-scale approaches, as well as multidisciplinary approaches (e.g. sustainability sciences). It is also important to note that among all these reflections there were few direct biodiversity issues, but rather human-to-human issues for biodiversity, from an anthropocentric and an ecosystem services perspective. While the notion of “Anthropocene” was not mentioned at all during the workshops. On the other hand, the session revealed that the concept of transformative change is emerging and is still remaining at the theoretical phase. While many examples of transformation in history and in progress today are known (e.g., the transition town movement; Campesina, etc.), others are no longer sustainable because of their dependence on fossil fuel and adverse environmental impacts (e.g. Industrial agriculture). So far, thinking about transformative change for biodiversity, involves studying systemic and global changes (e.g., the difficulty of its implementation and its dangers) with a sustainable approach. For this reason, there is a risk that the concept might remain too broad and abstract, while not be further detailed in order to guide orientation, to not impose a biased vision and to leave the free interpretation of different populations whose cultures and territories are very different (e.g. according to local populations). To better understand the emerging concept of transformative change, it might be useful to study, among others, “transformation”, “transformational adaptation” and “transition” (e.g., in the energy-climate policy context, incl. under the IPCC) depending on the different languages used at the European and international level. For instance, it would be relevant to study the transformation as it is happening in many parts of the world, i.e. to look for already existing pathways to sustainability (e.g. what people are doing, the obstacles they face and their capacity to overcome them).

To go further in the analysis, the implementation phase should be addressed. Notably, the frame mentioned previously, including all the spheres necessary for implementing change (Fig. 1), could be another way of conceptualising transformative change and will be further explored for the next consultations. Concerning levers for change, an emphasis on the practicality, and on the need for researchers and policymakers to work with the wider society, including civil society, was pointed out. Concerning the obstacles to change, three main constraints have been identified: the “business as usual” (path dependencies); the fear of / reluctance to change (e.g., vested interests); communicating the sense of urgency. The idea of a targeted call regarding challenging the “business as usual” approach was also mentioned.

## 2. Interconnectedness between research programmes and initiatives to develop knowledge on transformative change for biodiversity

### • Methodology

After a presentation of the outcomes of the conference on "transformative change for biodiversity and health" organised by Alternet on 14-17 June 2022, participants were invited to answer the following question: **what are the research needs/knowledge gaps related to biodiversity and transformative change?**

Exchanges focused first on the conclusions from Alternet conference and the possible links with Biodiversa+ work and activities, then on the place of Biodiversa+ in the table of other European initiatives on transformative change and biodiversity and European programmes for research (Horizon Europe 2021-2027). Lastly, exchanges focused on the themes of research that could be developed by Biodiversa+, but also on the needs for capacity building to be implemented in relation to the research. Activities that could be implemented by Biodiversa+ on transformative change and biodiversity that were discussed during this collaborative session are listed under part 3 of the report.

#### BOX1: Outcomes of the Alternet conference (Ghent, 14-17 June 2022)

⚠ Limits of the Alternet conference: conference divided in parallel sessions with limited space and time to discuss, and not necessarily representative participants. Limited to proposals from the research community (what the research community reflects and builds, what the priorities should be for them).

Alternet approach: group process, community building (e.g., summer school, foresight events, horizon scanning).

The Alternet conference did not explicitly identify a set of knowledge needs, but rather orientations / positioning / advice to be taken into account in the framework of the research projects launched on transformative change for biodiversity and health.

#### Identified priorities:

- Better track and learn by analysing transformative change processes and outcomes
- Sociology of prevention (science-society interface) & getting the messages and stories for change in the systems
- Reinforcing positive environmental attitudes via citizen sciences, education, construction of environmental citizenship
- Incentivise inclusiveness and co-creation for researchers and citizens: capacity building, good practices, proper funding, gender balance...
- Nature-based Solutions for community wealth-building/nature positive economies

### BOX1: Outcomes of the Alternet conference (Ghent, 14-17 June 2022)

- Transdisciplinary analysis and research in an integrated and systematic way
- Analysis of cascading risks at all levels of system boundaries and governance
- Climate change x Biodiversity loss impacts in zoonotic diseases emergence

#### Other topics identified:

- Addressing complex system change by leveraging public's nature caring/connectedness
- Involvement of stakeholders: leveraging and including their voices and knowledge, changing power balance in research
- Youth and women empowerment and leadership for sustainable pathways
- Exploring:
  - 1) the role of bottom-up initiatives in shaping science and policy
  - 2) people's behaviour in caring about nature
  - 3) impact of science on society to reshape scientific institutions

## • Outcomes of the discussions

### **A - Organisation and interconnection between Biodiversa+ and other European or international initiatives related to research on biodiversity and transformative change**

#### A.1 - Links between Biodiversa+ and other European initiatives working on biodiversity and transformative change (e.g., Alternet, EKLIPSE, etc.)

Participants explored potential for coordination with other European initiatives working on biodiversity and transformative change, such as Alternet which is organising capacity building, recruitment, and knowledge of solutions based on examples of projects, as well as with the IPBES assessment on transformative change.

For instance, the One Health aspects highlighted in the Alternet conference (priorities and other topics) could contribute to framing a Biodiversa+ call on the One Health approach, build upon the legacy of BiodivERsA projects (see 2018-2019 joint call), or conversely include a One-Health topic in a Biodiversa+ call on transformative change.



Biodiversa+ could also include some outputs of e.g. the EKLIPSE workshop on pandemics and biodiversity in May 2021 addressing the critical interlinkages between relevant sectors needed to make future actions more effective<sup>8</sup>.

Collaboration between Biodiversa+ and initiative such as Alternet could be an ongoing process of talking to each other, and seeing how to connect to improve the science-policy interface and capacity building.

EKLIPSE's report in 2020 for the Convention of Biological Diversity (CBD) on transformative changes for biodiversity proposed a framework to generate an agenda for transformative action on biodiversity. This working group aimed to integrate transformative change into the global biodiversity framework, but the project was not pursued.

- > Biodiversa+ has a major role to play in the translation/integration of research results into policies.
- > Biodiversa+ could identify the right actors to develop activities according to the target audience: Biodiversa in itself, or through other initiatives such as NetworkNature, EKLIPSE, or Alternet for instance. Alternet ... or Biodiversa+.

#### A.2 - Place of Biodiversa+ compared to the panel of research projects directly supported through Horizon Europe (2021-2027) on transformative change

Research is very important for the European Commission and limited capacities fail to ensure that the whole research landscape is well-covered. It is important for the Commission to have access to a summary/synthesis of the knowledge that is out there to get a good overview, and to have scientific evidence to base their proposals on. However, it is necessary to bridge the gap between science and policy makers. Furthermore, good communication requires good knowledge of the target audience, as there are different types of policy makers:

- Different services of the Commission from which the policy proposals come,
- European Parliament, Council of the European Union, Commission, national and sub-national policy makers.

The language used by scientists may differ from the one used by policy makers and/or politicians, so it is important to “translate” research results according to the target audience. The way in which policy makers get information (mainstream, conflicts...) and understand scientific knowledge provided to them will be decisive in the decision-making process. Moreover, it is necessary to have a good mapping of the decision-makers in order to define the type of communication that can be addressed to them so that the scientific knowledge acquired can reach them.

**Transformative change** also requires research funded by Biodiversa+, not only through the Horizon Europe work programme, especially conflicts that are core issues of transformative

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<sup>8</sup> EKLIPSE report (2021). Biodiversity in Post-Covid Cross-Sectorial Challenges. Available at: [https://eklipse.eu/wp-content/uploads/website\\_db/Request/Biodiversity\\_pandemics/Workshop\\_report\\_Biodiversity-in-post-covid-cross-sectorial-challenges\\_final\\_correct.pdf](https://eklipse.eu/wp-content/uploads/website_db/Request/Biodiversity_pandemics/Workshop_report_Biodiversity-in-post-covid-cross-sectorial-challenges_final_correct.pdf)





change and must be addressed through research (examples of conflicts: land sharing/ land sparing, and opposition for raising barriers to transformative change).

**BOX 2: Examples of research Projects launched through Horizon Europe on transformative change in 2022 (call 2021 HEU Cluster 6) \*:**

**BioValues project** (Maria Partidario, University of Lisbon): 3 years project.

Core issue: How are conflicts addressed?

Aims: Creating value with biodiversity instruments; biodiversity improves the value of space. Crossing relationships between spatial planning (ecosystem services, NBS, green infrastructure, etc.), environmental assessment and economic instruments. Promoting the value of territories – Aiming to research how to do networking, communication; local stakeholders and local levels (landscape, etc.) involved. Conflicts should be a central issue that should be addressed in political strategies.

Instrument: living labs. Existing experience, relationship. Better conciliate instruments.

**BIONEXT Project** (Soile Oinonen, Finnish Environment Institute). 3 years project.

Contribution to the IPBES Nexus (biodiversity-health-water-food) and transformative change assessments (confidential so far).

Understand the policy needs of decision-makers at different levels. Needs for systematic review or knowledge synthesis, especially in a participatory manner. Involve policy-advisors: get their inputs in decision making processes (noted that it could be sometimes difficult for them to understand so many new concepts; key lessons learnt: time consuming ++). Understand what type of reviews, communication (policy briefs...) are needed for policy makers.

*\*: two other projects from HORIZON-CL6-2021-BIODIV-01-15: Quantify impacts of the trade in raw and processed biomass on ecosystems, for offering new leverage points for biodiversity conservation, along supply chains, to reduce leakage effects (CLEVER and BAMBOO) were also invited to this Biodiversa+ Dialogue-Event, but could not come. Other projects of Horizon 2021 Cluster 6 Call of relevance for this topic are the following: HORIZON-CL6-2022-BIODIV-01-08: Assessing the nexus of extraction, production, consumption, trade and behaviour patterns and of climate change action on biodiversity in the context of transformative change. Project proposals in agreement phase; HORIZON-CL6-2022-BIODIV-01-09: Understanding the role of behaviour, gender specifics, lifestyle, religious and cultural values, and addressing the role of enabling players (civil society, policy makers, financing and business leaders, retailers) in decision making. Project proposals in agreement phase.*

*Other projects will also come from 2022, 2023 or 2024 calls.*

Complementarities between Biodiversa+ and other Horizon Europe projects on transformative change remain a priority to ensure efficiency and avoid duplication.

There is a lot of knowledge but there are also many areas either difficult to capture or with knowledge gaps that are difficult to identify without a systematic review of existing knowledge.

Moreover, sound knowledge of the research done or in progress seems necessary in order to avoid duplication.

The Biodiversa+ Partnership mobilises a large and very good network of environment and research policy makers that should be able to benefit Horizon Europe Projects on transformative change, building on the assets of Biodiversa+ and the legacy of BiodivERsA.

A European Partnership as broad as Biodiversa+ can provide a strong structure to promote dialogue to enable the emergence and identification of interdisciplinary research questions, develop a cross-border perspective, and promote the idea of connectivity. A partnership can also follow up on how to create incentives for these research questions and identify rapid ways to provide knowledge synthesis with the help of researchers.

Biodiversa+ can also help to monitor the current research agenda on the themes (including transformative change for biodiversity) covered by the partnership by the different Work Programmes of Horizon Europe clusters, other European Partnerships, Missions,...: list and monitor existing, ongoing or future projects.

This would allow more interconnectedness, more transparency and inclusive science service processes with the rest of Europe and other disciplines.

- > Biodiversa+ could make the link with these Horizon Europe projects, as well as the other projects that will be launched within the framework of Horizon Europe on transformative change and biodiversity.
- > Biodiversa+ could look at knowledge gaps and how to fill these knowledge gaps for calls on transformative change for biodiversity.
- > Biodiversa+ could be a support of networking for knowledge transfer and connecting biodiversity, climate and health approaches would make sense at the European and international level.
- > Biodiversa+ could also support the link between science and policy at the national and subnational level.

### A.3 - Potential synergies and leverages between Biodiversa+ and IPBES regarding the ongoing assessment on transformative change

According to the participants, a comprehensive synthesis of existing knowledge on transformative change would be necessary before launching any call for proposals for either Biodiversa+ or future Horizon Europe work programmes 2025-27, such as the IPBES assessment on transformative change currently undertaken (see following section of this report).

Biodiversa+ programmes could uptake research gaps identified by IPBES (downstream), but also provide an input to IPBES assessments (upstream) by producing a knowledge synthesis for the IPBES Transformative Change Assessment due in 2024, but also by participating in its organisation, as it has been done for the ongoing Nexus assessment.

Biodiversa+ could further inform the IPBES assessment on Transformative Change through its work. For example, produce knowledge synthesis on transformative change to contribute to the IPBES assessment, be involved in the review process of this IPBES assessment.

Biodiversa+ could further pursue its involvement in the IPBES Knowledge and data technical support unit (TSU)

Biodiversa+ could help the results of the assessment, translating it to stakeholders, exploring policy options....

## **B - Research needs and knowledge gaps identified on transformative change for biodiversity**

A widely shared idea among the Dialogue Participants is that there is already significant knowledge on transformative change to be implemented for biodiversity, but it is now necessary to identify how to move from the question "What would it take?" to "How can we do it?".

Rather than a top-down approach (from research to commitment), it is encouraged for research funding to be more oriented towards a real demand for commitment. To achieve this goal, it is of high importance for research projects to engage in co-implementation, or at least allow a rapid transition from co-design to co-implementation (swift from co-design to co-implementation). Research projects must integrate stakeholders from policy and private sectors within an incremental process. As such, the Biodiversa approach to programme and support research with an impact for policy and society is particularly helpful.

Participants also recommended taking into account the overall activity from biodiversity from a broader perspective (mainstreaming), by not staying on a very focused framework with a limited value of biodiversity for itself or for ecosystemic services, and by also considering the socio-economic value of biodiversity. Addressing how to bring all the biodiversity values back to the biodiversity community view's (i.e, researchers, deciders and other stakeholders): "*Stay within the planetary boundaries, but move out of the biodiversity boundaries*".

Participants highlighted the need to emphasise system-wide transformation, promoting an integrated whole-of-society approach and move beyond typical tools (innovative tools) by addressing social justice, political economy research needs, amongst others, to provide support to identify the pathways of change. The research of innovative technical solutions must be done in the context of the system in which the problem arises and take into account the multiple systemic casualties that created the problem (e.g. human population dynamic, cultural practices, industrial practices and local ecological consequences...).

The group also advised raising the issue more broadly and looking at international interconnections, to question the consequences of these large-scale interactions (for example: harmful and persistent subsidies identified as the most important thing to stop).

### **B.1 - Research needs and knowledge gaps are still an issue**

Additional knowledge is still needed regarding the inter-connection between biodiversity and political economy and financial markets, including how they drive biodiversity damage and may

act as barriers to transformative change, and on how to get traction with policy-makers and economic decision-makers.

Definitions of transformative change often focus on changing the dominant economic system. There is an obvious lack of transparency in the financial markets, proxy rights, etc. which allows the system to finance what it wants. However, it was mentioned during the dialogue event that the financial system could be a leverage point for transformative change, unlike industries, because it is much more difficult to regulate the industry than it is to regulate financial systems. Transformative change in economic systems will not be sufficient in itself if there is no change in financial systems, as financial systems can have strong political consequences for economic structures (e.g., session on procurement). Also the political influence (lobbying) of large economic groups due to the actual or potential consequences of transformative change on the financial sector for these groups should not be neglected. It is necessary to involve these stakeholders in research projects on transformative change, and to mobilise them (Chief Executive Officer, Chief Financial Officer, etc.) as spokespersons or people as advocacy, and to take into account and use the reduced risk perspective in a group (include all types of risk: economic, reputational...) to put forward the interest of transformative change.

- Need for **more research on the economic system and financial markets for transformative change on biodiversity**. The participants emphasised that there is a need to map people with power (political and economic drivers) so that these drivers can be targeted and transformative change better implemented. Financial markets and their influence on society and biodiversity need to be studied, as well as political economy.

The influence of the financial market on society and biodiversity should be emphasised. How money is made and what are the links to biodiversity across countries/continents? How decisions are taken in the financial sphere and which social groups are included/excluded (e.g., youth, diaspora, etc.)?

There is a worrying trend of willingness to maintain the *status quo*, and this is not only due to research gaps but also based on pushbacks, indeed an orchestrated effort to ignore science. The problem itself is the way the economic system works; the way money is made. The blockages in implementing transformative change are not random, but rather very strategic.

First way will consist of further studying how money is really created in the financial system, including with Central Banks, and how public policy could reduce the feedback loops (borrowing, lending, investing) that contribute to biodiversity decline. The second way will be to question how the short-term profit oriented view drives the financial markets and economy.

It is needed to know and decide at which level to act in order to start having an impact. In terms of access, working with big companies and making them understand the challenges will be impactful.

- Study **how human activities affect biodiversity at the international level** to better understand global processes in the long-term rather than only European processes (e.g., imported deforestation). Some participants mentioned that it is needed to work with countries in the Global South by establishing partnerships and promoting dialogue and co-construction/co-design.

- Research must be able to **explain the implementation deficit of transformative change**: how to change systems and cultures? How to deal with negative reactions, what strategies are used to prevent change? Is there a lack of knowledge and analysis of what blocks/prevents

transformative change? Whose values of nature are taken into account and why? What practices are being implemented but are not healthy? Why is transformation not happening when the need to change is so clear? How can resistance be managed, and what are the means used to make transformative change for biodiversity possible? How do we tackle the pushback, what are the strategies to help change happen?

- Need of **research on how to better network and communicate** i.e, to develop research on procedural matters regarding effective communication, including specific research topics on the way to translate and communicate in the science-policy interface. Notably, ways to better integrate/uptake research results in societal/political actions could be explored. Translating what is out there in research results addressing policies, mapping who are the users of the knowledge (reviews, databases on research...) and who are the decision makers.

- The study of **agency, empowerment and its impacts** are essential, both for biodiversity and for different groups in society, particularly women, disadvantaged groups and age groups (e.g., young people). But also, global connections enable to transform the way of acting in **collaborative** action, for example between the South and the North, as well as South-South and North-North. Funding could be used as a way to better engaging with actors in the Global South, but also apply transformative change in society and institutions in the North that will contribute to develop transformative change in the South (e.g., changes in North consumption models, carbon taxes, European strategy against imported deforestation...). It is needed to work both with formal and informal institutions.

- Necessary to build more **capacity, autonomy, and self-sufficiency** to reduce the pressure and direct biodiversity **conflicts**. For example, areas prone to fires in Portugal due to bad management of the forests as part of forest wood production. However, from the local communities' point of view, it is better to have productive forests. This kind of conflict needs to be analysed by a research project combining human and social sciences and environmental sciences and involving all representatives of civil society, local populations (forest managers, environmental association, citizens...) and policy-makers.

- Another key factor in conflict resolution is how we move from scientific language to political language and how we translate from scientific to policy language to avoid misunderstanding (to have a shared language)? This language transfer must be studied/analysed to adapt the communication to different audiences of policy-makers and decision-makers.

## B.2 - Involving the right actors in research projects is crucial and transforms the way to act

- **Critical reflection on processes of decision-making related to transformative change:** There is a need to engage with a wider range of people (e.g., women, youth, local populations, diaspora, marginalised groups, etc.), but above all targeted the right people. Few young people, activists and diaspora are involved in the discussion (under-represented social groups), as well as large industrial and economic groups. Define and identify transdisciplinary ways/methods

ensuring that all social groups and decision makers are involved in the reflection/discussion to challenge the status quo and then develop concrete actions at all levels.

- Extend our audience regarding **communication**: e.g., involve journalists. Find out different ways to communicate and work on **practical and concrete examples** (promote positive and success stories).

- Identify the right stakeholders (e.g., specific organisations). Integration of research results into the public domain could catalyse transformative change. For this to happen, it is necessary/indispensable to strengthen communication capacities and to collaborate more with **policy advisors** (and not only with policy-makers). It would also be necessary to identify and involve a range of stakeholders in projects after having determined the levels to be targeted (e.g., health organisations to establish climate-biodiversity-health strategy).

### B.3 - Addressing transformative change for the sustainable use of biodiversity from R&I programmatic perspective

In line with other consultations conducted on the topic, Biodiversa+ could include transformative change as a broader topic partly cross-cutting with all calls/flagships of the Partnership.

Transformative change could be addressed as a Flagship programme itself and also coordinate work on this theme within the multiple other Biodiversa+ Flagship programmes, not only in relation to the calls of proposals but also other activities (e.g., foresight, agenda-setting, capacity building, biodiversity monitoring, science-policy-society interface or internationalisation).

In this respect, it could be relevant to include at least one sub theme on transformative change in each Biodiversa+ flagship or call.

- > Biodiversa+ could include a theme on transformative change in all future calls of the partnership flagship programmes (monitoring, NBS, One-Health, restoration...) and seek to address the other facets (e.g. financial markets, international connections...) of transformative change as part of dedicated call within the flagship programme "Supporting societal transformation for the sustainable use and management of biodiversity".

### B.4 - Needs of capacity building for research on transformative change

During this second collaborative session of the dialogue events, the participants strongly emphasised that there is a need for capacity building (*see section 3 for more details*).

The participants emphasised during this collaborative session that there is a lot of knowledge but not enough communication and application of this knowledge; while there are many solutions, these are not widely known/understood in society. It is therefore essential to rethink





and improve communication, as people do not perceive and believe that they should be involved (local communities, indigenous peoples, farmers, foresters, producers ...).

As a Partnership, Biodiversa+ can help to better involve stakeholders, create interconnection between different levels of actors and transdisciplinary between themes, by improving communication means, further expanding its Enlarged Stakeholder Board (ESB), linking existing initiatives and further developing the science-policy interface.

- > To address this need, Biodiversa+ has created an ESB, builds on inputs from the Biodiversa+ Advisory Board, involves the ESB in Biodiversa+ activities (such as for this Dialogue Event). Biodiversa+ could encourage the ESB members to develop transformative change on their own activities that could be integrated and valued in Biodiversa+ flagship programme.

### 3. Activities to be implemented by Biodiversa+

- **Methodology**

As in the previous collaborative session, the subgroups remain the same. The aim was to come up with a list of possible activities that could be implemented by Biodiversa+ flagship programme on Biodiversa+ transformative change and biodiversity.

During these collaborative sessions, the participants were reminded about the existing Biodiversa portfolio of activities that fall under 4 workstreams:

- Foresight/ Agenda setting
- Support to research and innovation (R&I) (including biodiversity monitoring)
- Capacity building and transdisciplinary dialogue
- Internationalisation



Fig 2. Biodiversa+ portfolio of activities

The participants were then invited to brainstorm individually on the activities of most relevance that could be implemented by Biodiversa+. After a 10 min brainstorming time, the participants were invited to share their ideas with the group, group similar activities and at a later stage prioritise the activities of most importance.



- **Outcomes of the subgroup discussions**

Several types of activities were suggested in the three subgroups fitting under the workstreams of activities of Biodiversa+. Due to the nature of transformative change, it was stressed that these activities should, when relevant, interconnect and that one activity can lay the way for another. To ensure that an activity reaches its targets, it is also important to consider its scale (local, national, European, international).

The discussions in subgroups led to a slight adjustment of the workstreams and their order. Group 1 emphasised that capacity building and transdisciplinary dialogue should come first to better address transformative change and biodiversity. Group 3 suggested that capacity building and transdisciplinary dialogue could be split into two workstreams of activities. Building on these activities, Group 1 then suggested having foresight/ agenda setting activities, then supporting R&I (including biodiversity monitoring), Group 3 also suggested creating a workstream of activity on the support of research on the implementation of transformative change and finally internationalisation (see Fig 3).

Looking at the “support to research & implementation” suggested activities, it is important to highlight that Biodiversa+ will not fund implementation projects as this is not part of its portfolio of activities. Other programmes (eg. INTERREG, Life...) already cover this aspect.

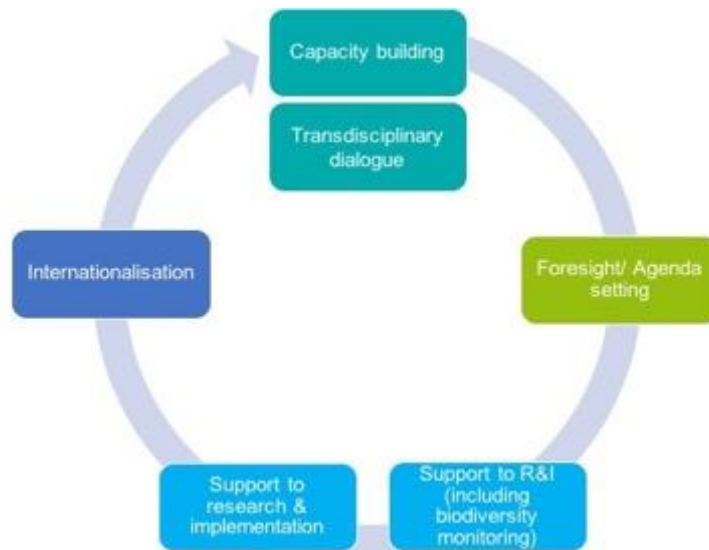


Fig 3: Suggestions made by the Participants on workstreams of activities that could be implemented by Biodiversa+ and their succession to address the topic of biodiversity and transformative change

Overall, **capacity building** and **transdisciplinary activities** received the highest number of activity suggestions for all the subgroups.

For **capacity building** several groups can be targeted:

- **Researchers:** for the researchers it was suggested to organise workshops or develop tools to help them know political agendas, especially on the topic of transformative change & biodiversity. This would help researchers communicate in a timely manner and feed the decision-making process. Developing a toolkit on science-policy specific to transformative change & biodiversity would also help. For this suggested activity, an EU-funded project addresses the science-policy interface on transformative change. Synergies with this project can also be explored. Building research communities' capacities for the transdisciplinary dialogues and multi-disciplinary research called for under transformative change would also be of high relevance.
- **Policy makers (regional, national and European)** to make them aware about transformative change. Workshops to mainstream indigenous / local practices to decision makers to encourage a bottom-up transformative change rather than a change that usually comes in a top-down way. It is of utter importance to also **target policy advisors**.
- **Both researchers and policy makers.** Reinforcing the links and understanding of policy makers and researchers would allow for more transparency. A systematic approach to channel scientific outcomes to policy makers could be developed. The Biodiversa+ research projects (and this could be a possibility for all types of research projects and not just the ones dealing with transformative change) could welcome co-PIs, one PI being a policy maker and another one being a researcher.
- **Economic and financial actors** (decision-makers in the broad sense). Such capacity building efforts (e.g., demo projects) would help bring ecological thinking and, among others, could build on the [Dasgupta review](#) (mainstream economics). Capacity building could also help make trade more transparent to facilitate the choices of the citizens.
- **Agriculture actors:** create a space for discussion to improve return on investment in the agricultural sector on transformative change and biodiversity, including a reflection on payment for ecosystem services and Agri-environmental and climate methods in the Common agricultural policy.
- **Local communities:** Transfer learning by involving local communities. Way of co-management sustainable use.
- **Citizens:** Better involving citizens appeared to be key. To reach this objective, Biodiversa+ can develop 20min podcasts (inspiring stories) or online videos on transformative change and biodiversity, develop courses (online or physical) or a hackathon on biodiversity and transformative change. The Partnership could also encourage those responsible for the funded projects to foster citizen/participatory sciences.

More generally, Biodiversa+ could:

- Be a **collaborator in new capacity building / learning platforms** encouraging transformative learning. The [Panorama IUCN database](#) was mentioned as an example, alongside existing engagements of Biodiversa+ (e.g., [NetworkNature platform](#)).
- Organise or contribute to **training courses on transformative change & biodiversity** and provide case-based examples of transformative change in biodiversity. **Success stories** can

be developed as part of a training course, showcasing examples of successful transformative change in biodiversity. A training could address the topic of nature values.

For **transdisciplinary activities**, the following activities could be implemented:

- Round tables gathering policy makers and stakeholders to better implement the EU Restoration Law could be organised.
- Due to the broad nature of transformative change, it is important to engage in the relevant activities, people from broad sectors: artists, novelists, journalists, influencers, NGOs, workers, chief executive officers of industries, knowledge brokers, policy makers, local communities. Through cross-sectoral dialogues, each sector will get a better understanding of the other sectors on the matter of biodiversity and transformative change. Such dialogue will also allow Biodiversa+ to identify inter/transdisciplinary research questions.
- A transdisciplinary dialogue is needed to understand what are the barriers to transformative change (in relation to biodiversity). Understanding why transformative change so far has failed to be achieved would then allow Biodiversa+ to develop more specific foresight and agenda setting activities. It would be relevant to broaden the scope and study how transformative change is happening for other “wicked problems”, such as the climate crisis.
- Build a research community on transformative change interacting with universities and curricula, create dialogues.

**Foresight and agenda setting** activities listed by the dialogue participants are the following ones:

- It was suggested that Biodiversa+ could launch a **research call** on transformative change and biodiversity. Elements that could fit under this research call could be: the status quo conundrum (how to challenge the status quo), understanding how indigenous peoples and local communities’ knowledge can catalyse transformative change, how to better understand pathways to transformative change from the perspectives of different groups of people, including young people and women, understanding with a historical approach what led to the current biodiversity situation, better understanding the risks that will arise with no transformative change, better understanding the divergences of interests between individuals and stakeholders with regards to transformative change & biodiversity or develop scenarios to outline pathways to desired futures (those might be model-based and data-driven, or part of the “future’s literacy”). Joint calls for research projects could also address the research needs and knowledge gaps identified during the second dialogue session (*see session 2 of this report*).
- Another activity could be the development of a **common vision on nature rights and future generation rights**.
- Encouraging alternatives to the use of the gross domestic product to better acknowledge biodiversity.

**Support to R&I (including biodiversity monitoring)** activities listed by the participants dialogue were the following:

- **Identify and map research projects on transformative change.** This mapping can list past, ongoing and future projects to help researchers get a complete overview of existing knowledge. This mapping can also help researchers connect with these projects and avoid overlaps.
- **Identify science-policy gaps on transformative change & biodiversity** (evidence exists but there isn't always an uptake from decision makers).
- Produce a **knowledge synthesis** on transformative change and biodiversity. Such synthesis could contain grey literature and data from NGOs and the private sector. Data reuse on biodiversity and transformative change should be promoted (here a connection with transdisciplinary dialogue activities could be made). This synthesis could also look at previous solutions implemented in the past on biodiversity (or other closely related wicked problems such as climate change) and transformative change to better understand these solutions and their impact.
- **Communicate on R&I (including from industries and private companies)** on transformative change and biodiversity through workshops, policy briefs, website, social media, conferences, events.
- Develop or support tools developed by humanity or social sciences research to overcome the barriers that hinder the progress of transformative change. How to develop these tools need to be clarified and further explored.
- Interact with knowledge gaps/ research needs from the **IPBES** Transformative Change Assessment which is ongoing, incorporate Biodiversa+ outcomes in IPBES context, assessments and workshop reports (e.g., on values, transformative change, nexus) as well as e.g., the World Ocean Assessments: uptake of research gaps, input in the assessment process, science-policy interfaces. It was stressed that such activity is also related to the internationalisation workstream of Biodiversa+.

Support **research implementation** on transformative change for biodiversity appeared to be of high importance for the participants. As such it was recommended to:

- **Close implementation gaps by testing and validating research results in practice (action research).** This can be done through a similar mechanism as [ERC Proof of concept](#) which is a call for funding for already funded projects to allow these projects to further expand and develop their models, and activities on biodiversity. This mechanism is similar to development funding. Biodiversa+ could launch additional calls, similar to this one, for its funded projects or could advertise such types of funding.
- **Business cases and case-based studies** can be developed based on the outcomes of research projects on transformative change & biodiversity.



- **Go further than policy briefs and get commitments** to use research results.

Finally, for **internationalisation**, it was suggested to:

- Foster development of innovative research methodologies to better understand drivers of biodiversity loss (e.g., analysing the impacts of economic European activities on the rest of the world, developing biodiversity footprints frameworks, etc.) and then create tools (e.g., metrics, labels, twin protected areas/local authorities, etc.). However, this would require better upstream identification of the real causes of biodiversity loss, and the impacts of economic systems on both European and other Regions' biodiversity.
- Build Partnerships and dialogues with networks in the Global South to share understanding and ideas on transformative change. Transformative change is essential globally, as changes in the growth economies of industrial societies can lead to changes in the pressure on biodiversity in the Global South. Yet, it is important to note that transformative change cannot and should not be directed by European actors in the Global South, even if industrial societies and their economies are the primary drivers of biodiversity loss in the Global South. According to alternative approaches that are already being practised in the global south, transformation must be a collaborative and respectful process of mutual learning and change (for further researches see below Kothari et al. (2019))<sup>9</sup>.
- Bring research knowledge on biodiversity & transformative change to international sectors that impact biodiversity (international trade, agriculture...)
- Adapt language to better understand and be understood by non-European communities and hence allow transformative change. Specially to communicate the outcomes of research, it is important, on an international scale, to work on the language.

Lots of activities were suggested by the dialogue participants to feed the Biodiversa+ flagship programme. If a strong need for capacity building & transdisciplinary dialogue came first in the mind of the dialogue Participants, activities feeding other work streams were also suggested. Hearing the discussions, it appeared that not only is there a need for transformative change & biodiversity to be further explained, synthesised and discussed among a broader range of actors and sectors but it is also a topic that requires support to get further implemented. Transformative change is a concept on which more and more knowledge exists and others would still be needed, yet this knowledge hasn't fully entered institutions (political, economic, financial...) and hasn't fully been adopted by society and individuals. For all the elements, Biodiversa+ could provide support through its portfolio of activities and engage with other initiatives while doing so to support transformative change.

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<sup>9</sup> Kothari, Ashish, Ariel Salleh, Arturo Escobar, Federico Demaria, and Alberto Acosta, eds. (2019) *Pluriverse: A post-development dictionary*. New Delhi: Tulika Books and Authorsupfront.

## Concluding remarks

The Dialogue Event allowed holding in-depth discussions on the way Biodiversa+, the European Biodiversity Partnership, could support society to trigger transformative change for biodiversity. The theoretical paper, based on a non-exhaustive scientific literature review, key concepts from humanities and social sciences, was used to provide a basis for participants' reflections. This basis underlined key factors and socio-political instruments to use for enabling profound societal changes. The aim of the Dialogue Event was to respond to the following questions: What does transformative change for biodiversity mean and involve? Which knowledge gaps and research needs on transformative change for biodiversity Biodiversa+ can address? Which activities could be implemented as part of the Biodiversa+ flagship programme "Supporting societal transformation for the sustainable use of biodiversity"?

Participants underlined the need for radical changes to address the biodiversity crisis with a strong environmental, social and justice dimension. As a number of ideas for activities have been developed, it is now a matter of pursuing this dialogue for their implementation in the Biodiversa+ context as relevant, in accordance with the Biodiversa+ long-term strategic vision and the EU Biodiversity Strategy for 2030. The latest IPBES assessment reports on (1) *Sustainable uses of wild species* and on (2) *Multiple values of nature and its benefits, including biodiversity and ecosystem functions and services* underlined the importance of wild species to limit biodiversity loss and the inadequacy of the predominant value attributed to biodiversity, i.e. its market value, to reflect its overall contributions to humanity. The Platform calls for redefining the notions of development and good quality of life, and for a broad reform of institutions, both locally and internationally. It seems clear that the conditions to achieve a more sustainable and just system will require significant transformations of established norms and legal rules that currently promote a narrow set of values associated with short-term economic profit and political gain. For this reason, Biodiversa+, at the interface between research and public policy, has a significant role to play alongside all societal actors and contributions to be made for transforming society. While more consultations on transformative change for biodiversity are needed, the Dialogue Event shed light on the need to strengthen interconnections with Horizon Europe's projects and other European initiatives, to enhance capacity building, transdisciplinary activities and research implementation, and to consider local knowledge at the international scale.

This Dialogue Event represented a first step toward more encompassing consultations bringing together the different actors of society to implement R&I on transformative change for biodiversity. The Dialogue Event will likely lead to further consultations over 2022-2023, in accordance with the delivery of the next activities. Based on the dialogue, several possible avenues for future work were identified and could possibly be combined such as: a Delphi process consultation, a broad consultation on the basis of surveys, virtual thematic workshops:

- A consultation could be engaged after this dialogue event through a Delphi process consultation, including surveys aligned with the proposals and recommendations made in each session, to all the participants already solicited for the Biodiversa+ Dialogue Event.



Based on the Delphi process methodology, the Dialogue Event would provide outcomes and basis for the following surveys and workshops. The objective would be to encourage the participants to reconsider and re-appropriate the previous outcomes, to complete and refocusing the proposals already done during this dialogue event and thus narrow the issues on the topic of transformative change for biodiversity.

- A broad consultation could be launched, on the basis of two surveys targeting different audiences. A first consultation could be launched for external participants (e.g., including actors from Horizon Europe's projects and from other European initiatives related to transformative change, all others experts contacted for the dialogue-event which could not participate, chair of others Horizon Europe partnership and Missions,...) to obtain wider views and to ensure the participation of all societal actors. At the same time, a second consultation could be launched for Biodiversa+ partners to refine the previous reflections during the Dialogue Event in accordance with the Biodiversa+ objectives. Both consultations would aim to evaluate the first results of the Dialogue Event (i.e the proposals available in this report) and to select the topical and cross cutting themes, as well the activities that seem the most relevant and feasible to be carried out by Biodiversa+ in the near future through its Flagship programme "Supporting societal transformation for the sustainable use and management of biodiversity".
- Biodiversa+ could organise virtual thematic workshops. These could cover refocused themes which have been identified as most critical issues for transformative change and biodiversity loss (e.g., themes on the economic and financial system; business and supply chains; empowerment and its impacts; international/global connections). In this case, external participants recognised as experts on these specific themes would be identified to enable further in-depth study on the thematic of transformative change for biodiversity.

As suggested during the dialogue event, Biodiversa+ could also contribute to the knowledge review needed for the IPBES thematic assessment<sup>10</sup> of the underlying causes of biodiversity loss, determinants of transformative change and options for achieving the 2050 vision for biodiversity, e.g., by mobilising the outcomes of its desk studies and production of knowledge syntheses workstream of activities.

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<sup>10</sup> <https://ipbes.net/transformative-change>

## Annexe 1: Co-contributors and participants in the Workshop

Participants in the Biodiversa+ Dialogue event on transformative change and biodiversity:

### Invited Participants:

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Hélène Leriche, RespectOcean  
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Cécile Mandon, French Foundation for Research on Biodiversity - Biodiversa+ Operational Team

Biodiversa+ warmly thanks all the Participants for contributing to this dialogue event!





## Annexe 2: Framework paper

### Framework paper for the Dialogue Event on “Transformative change & Biodiversity” - Common basis for the 1<sup>st</sup> consultation -

Main question: How can the European Biodiversity Partnership (Biodiversa+) respond to the ambitions of the EU and IPBES on transformative change for biodiversity?

#### I. Definitions of « Transformative change » for biodiversity

The definitions of transformative change are quoted from European Union, IPBES and Biodiversa+ resource papers.

Resource papers:

Authors	Year	Title	Type of study	Scale of review	Focus
European Union	2020	<i>Biodiversity Strategy for 2030</i>	Ecological sciences	Europe	Bringing nature back into our lives
IPBES	2020	<i>Scoping report for transformative change assessment.</i>	Ecological sciences	Worldwide	Transformative change
Biodiversa +	2021 (unpublished)	<i>Flagship programme: Supporting societal transformation for the sustainable use and management of biodiversity, p.22.</i>	Ecological sciences	Europe	Societal transformation
Biodiversa +	2021	<i>Strategic Research &amp; Innovation Agenda: Topical theme 2 Actionable knowledge for transformative change to halt biodiversity decline, p.43-50.</i>	Ecological sciences	Europe	Transformative change
Horizon Europe	2021	<i>Work Programme 2021-2022: 9. Food, Bio-economy, Natural Resources, Agriculture and Environment.</i>	Ecological sciences	Europe	Societal transformation
Horizon Europe	In progress	<i>Work Programme 2023-2024: 9. Food, Bio-economy, Natural Resources, Agriculture and Environment.</i>  <i>(still confidential)</i>	Ecological sciences	Europe	Societal transformation

- **The European Union**

The EU doesn't provide any definition of transformative change. The EU needs to frame the concept by using ones from IPBES or Biodiversa+ for example.

- **IPBES**

According to IPBES, the definition is broad and refers to a profound societal transformation. Transformative change is referred to in the singular, but involves many types of changes. It is defined as fundamental, system-wide reorganisation across technological, economic and social factors, including paradigms, goals and values<sup>11</sup>.

- **Biodiversa+**

According to Biodiversa+, the definition mainly focuses on the economic sector. Transformative change means shifting away from 'business as usual' through nature conservation and restoration, deployment of Nature-based Solutions and tackling the drivers of biodiversity loss. It is managed through an integrated whole-of-society approach, including taking into account the multiple values of nature, environmental-economic accounting, reinforcing biodiversity governance, promoting sustainable supply chains and greening trade.

## II. Potential Topics based on knowledge gaps and existing themes

These topics were identified through a primary analysis based on the six resource papers listed above.

- **Societal values of biodiversity**

According to IPBES, this topic refers to knowledge on policy-making in relation to societal values and conceptualization of biodiversity, including those of indigenous peoples and local communities (IPBES, 2020).

- **Biodiversity governance**

According to IPBES, this topic questions the relation between transformation and transitional change, to the challenges and opportunities of spatial and temporal scales, historical conditions, and levels of human organisation (IPBES, 2020).

- **Sustainable use of biodiversity**

According to the EU, this topic calls for promoting and applying alternative models of consumption and lifestyles (EU, 2020).

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<sup>11</sup> IPBES (2019) Summary for Policymakers of the Global Assessment Report on Biodiversity and Ecosystem Services, Bonn, Germany, 2019. [Included in the scoping report for transformative change assessment].



- **Management of biodiversity**

According to Biodiversa+, this topic calls for assessing various mitigation measures, mostly developed by practitioners, and upscaling those measures to support more broadly policy-makers and stakeholders in selected sectors (Biodiversa+, 2021-unpublished).

- **Digital transformation**

According to the EU, this topic calls for adapting digitalisation to the transition process (Horizon Europe, in progress).

- **Biodiversity and climate change**

According to the EU, this topic calls for adopting a transversal and multi-sectoral approach which links biodiversity and climate issues (Horizon Europe, in progress).

### Relevant Entry Points for Biodiversa+ Dialogue Event:

These three relevant entry points for Biodiversa+ are interrelated and transversal, intrinsically linked to other ecological crises such as climate change.

1. **Biodiversity values for society**
2. **Biodiversity governance** (for socio economic, legal and political aspects, biodiversity management)
3. **Sustainable use of nature for biodiversity**

### III. Short Review Analysis based on the three relevant entry points

The Analysis is based on 14 selected article reviews out of 24 coming from a Web of Science request. The request was performed on the basis of keywords ('biodiversity governance' & 'transformative change\*'; 'biodiversity values' & 'transformative change\*'; 'sustainable use' & 'biodiversity' & 'transformative change\*') corresponding to the three relevant entry points for Biodiversa+. Two additional papers related to transformative change for biodiversity were included in the analysis (IPBES values methodological assessment; CBD side-event for transformative action).

Sub-question: How the entry points on transformative change for biodiversity are addressed in scientific literature?

Main facets:

These main facets were identified through the Short Review Analysis and the three interrelated entry points. In accordance with these facets and based on the scientific literature mentioned above, recommendations

for both policy-makers and researchers on how to trigger transformative change for biodiversity were identified in the scientific literature mentioned above.

1. **Bringing about change of paradigm for biodiversity**
2. **Learning from indigenous' knowledge systems**
3. **Incorporating human and non-human values in policy-making**
4. **Reforming direct and indirect drivers of biodiversity loss<sup>12</sup>** (for the agricultural sector, the governance framework, the economic system)

### 1. Bringing about change of paradigm for biodiversity

#### Recommendations for policy-makers

- Establishing a post-anthropocentric governance frame, namely the “One Nature” governance frame (Ozdemir, 2020).
- Promoting an alternative paradigm through another narrative than short-term financial profit. Admitting the existence of a diversity of values, notably inclusion and empathy (CDB, 2022).
- Moving away from business as usual, and fostering both incremental and deep transformative change. Existing environmental policy instruments can be used (IPBES, 2022).
- Triggering systemic change through a reconsideration of values and politics. The values and politics informing our choices should be deeply reconsidered (Foggin et al., 2021).

#### Recommendations for researchers

- Focusing on truly transformative research which connect research to the practical needs of decision-makers, to the pro-poor and pro-restoration values associated with the strongest definitions of sustainable development, and to radical rather than incremental approaches (Belt et al., 2016).

### 2. Learning from indigenous' knowledge systems

#### Recommendations for policy-makers

- Including IPLCs communities in conservation and resource management initiatives (Belt et al., 2016).
- Better understanding and appreciating relational values enable us to embrace more sustainable living practices (Ibid).
- Recognizing people's values and worldviews to inform morality and ethics and nurture the just transformations needed for nature conservation and sustainability at all scales (Foggin et al., 2021).

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<sup>12</sup> *Direct drivers: land and sea use, overexploitation, climate change, pollution, invasive species. Indirect drivers: e.g. demographic and socio-cultural, economic, technological, institutional and governance factors*



### Recommendations for researchers

- Being educated to research ethics to ensure that Indigenous knowledge is treated as an equivalent system of knowledge and theory” (Turner et al., 2022).
- Exploring and researching about indigenous value systems provide inspiration for transformative agendas (Ibid).

## 3. Incorporating human and non-human values in policy-making

### Recommendations for both policy-makers and researchers

- Adopting broad and inclusive definitions of stakeholders that recognise the intrinsic value of biodiversity as other interests that give people to take in a decision (Belt et al., 2016).
- Adopting key principles for conservations, notably democracy, justice and redistribution, subsidiarity principle, global connections and power relations (Ibid).
- Applying monetary, social and biophysical valuation within decision context (Ibid).
- Adopting ecological justice perspective to advance the understanding of NBS (Pineda-Pinto et al., 2021).
- Mainstreaming and promoting multiple values of nature and sustainability-aligned values in policy decisions by enabling social learning, implementing policies with potential for transformative change, addressing key knowledge and operationalization gaps, building capacities of all actors across scales and sectors, and promoting synergistic concerted actions (Ibid).

## 4. Reforming direct and indirect drivers of biodiversity loss

### 4.1 Reforming direct and indirect drivers of biodiversity loss for the agricultural sector

#### Recommendations for both policy-makers and researchers

- Complying structural changes with organic farming’s principles and values, namely the principles of health, ecology, fairness, care (Darnhofer et al., 2021).
- Recognizing social equity as sustainability and critical for food system transformation (Kremen, 2020).
- Promoting transformative capability via the management of Animal Production System diversity (Dumont et al., 2020).
- Promoting transformative interventions with positive synergies with SDGs and NCPs (McElwee et al., 2020).
- Promoting well integrated, diversified crop systems to benefit local biodiversity and system sustainability (Lanetta et al., 2021).

### 4.2 Reforming direct and indirect drivers of biodiversity loss for the governance framework

##### Recommendations for both policy-makers and researchers

- Establishing more inclusive conservation beyond economic valuations of nature and protected areas to include more holistic models of governance that are premised on relationally-oriented value systems (Ibid).
- Enabling transformative conservation through place-based bio-cultural practices (Ibid).
- Guiding NBS practice through science and systems-thinking (Ibid).
- Raising awareness of all agents to conservation, preservation and sharing of biodiversity (CBD, 2022).
- Mainstreaming ecosystem services into economic and development decision-making. Transitioning to scale-appropriate planning and integrated decision-making, accompanying law reform with a whole-of government approach, a bio-centric mind-set, innovative governance (indigenous-led conservation) (Ray et al., 2021).
- Applying participatory action research and the scientific method to changing power relations, norms, and institutions through participation, negotiation, experimentation and communication (Foggin et al., 2021; Fougère et al., 2020).
- Addressing research gaps in the welfare and value of future generations, ecological thresholds, how to design and plan NBS in a non-anthropocentric manner, how stakeholders involved in conservation view novel ecosystem and ecosystem transformation across cultural, legal, and ecological context (Belt et al., 2016; Pineda-Pinto et al., 2021; Clement et al., 2017).
- Adopting an interdisciplinary approach in research and practice to foster connections between ecological research on technical aspects of ecosystem transformation and governance research on leverage points for reform (Clement et al., 2017).
- Enabling connections between researchers in the fields of governance, ecology, conservation (Ibid).
- Thinking in terms of knowledge governance by responding to ecosystem transformation, through adaptive governance (Ibid).

#### 4.3 Reforming direct and indirect drivers of biodiversity loss for the economic system

##### Recommendations for both policy-makers and researchers

- Allying climate-biodiversity-nutritional nexus with more-concerted policy action to ensure that the knowledge networks are established, there is unhindered information flow, and new transformative value-chain capacities and business models are established (Lanetta et al., 2021).
- Developing strategies for 'doing economy' differently, where the economy is diverse and heterogeneous rather than fixed in form (Foggin et al., 2021).
- Emerging financial mechanisms and prioritising conservation including evidence-based conservation, land conservation risk assessment management quality assessment (Ibid).
- Improving economic analyses of natural capital, ecosystem functioning and services to proceed in the context of socio-political decisions about desirable ends, to be rooted in understanding of ecosystem functioning (Ibid).



## Appendix

### Article reviews and additional papers<sup>13</sup>:

Authors	Year	Title	Type of study	Scale of review	Focus
Turner et al.	2022	<i>Well-grounded Indigenous Peoples' knowledge, ethnobiology and sustainability</i>	Environmental studies	Not specified	Indigenous' knowledge
Lannetta et al.	2021	<i>A Multifunctional Solution for Wicked Problems: Value-Chain Wide Facilitation of Legumes Cultivated at Bioregional Scales Is Necessary to Address the Climate Biodiversity Nutrition Nexus</i>	Ecological sciences	Worldwide	The climate biodiversity nutrition nexus
Darnhofer et al.	2010	<i>Conventionalisation of organic farming practices from structural criteria towards an assessment based on organic principles</i>	Life sciences	Not specified	Organic principles
Kremen	2020	<i>Ecological intensification and diversification approaches to maintain biodiversity, ecosystem services and food production in a changing world</i>	Life sciences	Not specified	Ecological intensification and diversification approaches
Dumont et al.	2020	<i>Incorporating diversity into animal production system can increase their performance and strengthen their resilience</i>	Life sciences	Not specified	Diversity and animal production
Clement et al.	2017	<i>Novel ecosystems: governance and conservation in the age of the Anthropocene</i>	Environmental sciences	Not specified	Novel ecosystems
Ozdemir	2020	<i>One Nature: a new vocabulary and frame for governance innovation in Post-Covid 19 planetary health</i>	Biology	Worldwide	Governance innovation
Ray et al.	2021	<i>The biodiversity crisis in Canada: failures and challenges of federal and sub-national strategic and legal frameworks</i>	Political science, and environment	Canada	Strategic and legal frameworks
McElwee et al.	2020	<i>The impact of interventions in the global land and agri-food sectors on Nature's Contributions to</i>	Biology	Worldwide	Agri-food sectors

<sup>13</sup> To be noted: The article reviews and additional papers are less focused on the entry point 3. Sustainable use of biodiversity, and more focused on the facet 4.1 Reforming direct and indirect drivers of biodiversity loss for the governance framework.

#### D4.1 Report on the Biodiversa+ Dialogue Event on Transformative Change and Biodiversity

Authors	Year	Title	Type of study	Scale of review	Focus
		<i>People and the UN Sustainable Development Goals</i>			
Pineda-Pinto et al.	2021	<i>The potential of nature-based solutions to deliver ecologically just cities Lessons for research and urban planning from a systematic literature review</i>	Ecological sciences	Not specified	Nature-based solutions
Tessnow-von Wysocki et al.	2020	<i>The voice of science on marine biodiversity negotiations : a systematic literature review</i>	Marine science	Worldwide	Marine biodiversity negotiations
Foggin et al.	2021	<i>Thinking like a mountain: exploring the potential of relational approaches for transformative nature conservation</i>	Political science and environment	Not specified	Relational approaches and nature conservation
Belt et al.	2016	<i>Transformative agenda, or in lost in the translation? A review of top-cited articles in the first four years of Ecosystem Services</i>	Ecological sciences	Not specified	Ecosystem services
Fougère et al.	2020	<i>Transformative conservation in social-ecological systems</i>	Ecological sciences	Worldwide	Socio-ecological systems
IPBES	2022	<i>Values methodological assessment IPBES-9: Report for policy-makers (pre-report not yet available – not validated)</i>	Ecological sciences	Worldwide	Transformative changes
CDB	2022	<i>The pathways for transformative action on the global biodiversity framework and its implementation</i>	Ecological sciences	Worldwide	Transformative action





## Annexe 3: Agenda of the Dialogue Event

### Agenda Biodiversa+ Dialogue Event

#### Transformative changes & Biodiversity

**Meeting time:** 27<sup>th</sup> of June afternoon (12.00 to 18.00pm CEST) and 28th June (8.45am to 12.30pm CEST).

**Meeting venue day 1:** La Grande Arche, Ministry of Ecological Transition in Paris, La Défense), France.

**Meeting venue day 2:** Séquoia Tower, Ministry of Ecological Transition in Paris, La Défense), France.

Please make sure to come at least 15min before the meeting starts as you will need a bit of time to reach the meeting venues.

### Agenda

#### 27 June 2022

*Registration desk (Entrance Hall of Grande Arche): Possibility to get in from 12.00pm to 13.30 CEST.*

Lunch planned in the Foyer Ségur of the Grande Arche at 12.30am CEST

#### PLENARY SESSION (Room Ségur - Grande Arche)

13.45 - 14.00: **Welcome words**

14.00 - 14.40: **Keynote speech**

By Karen O'Brien

14.40 - 14.55: **Presentation of the Biodiversa+ Partnership**

*By Rainer Sodtke, DLR, Biodiversa+ Vice Chair*

14.55 - 15.10: **Introduction to the upcoming flagship programme "Supporting societal transformation for the sustainable use and management of biodiversity"**

*By Rainer Sodtke, DLR, Biodiversa+ Vice Chair*

15.10 - 15.25: **Presentation of the framework paper**

*By Julie Cointement, MTE\_FR*

15.25 - 15.30: **Introduction to the first brainstorming session**

By Catherine Julliot, MTE\_FR

15.30 - 15.45 Coffee break

### SUG-GROUP SESSION

15:45 - 16:45: **Collective Brainstorming on Transformative changes for Biodiversity**

Questions to be addressed:

1. Reflecting on the three entry points identified to lead the Biodiversa+ strategy, what would be the main elements/pillars to structure the Biodiversa+ programmes on transformative change?
2. Are there important elements related to transformative change and biodiversity that don't fit in these three entry points?

16.45 - 17.00 Break

### PLENARY SESSION

17:00 - 17.15: **Presentations of the outcomes of the sub-group discussions**

*5 min per rapporteur*

17:15 - 17.55: **Agree on a common framework/ definition for transformative changes for biodiversity**

17.55 - 18.00: **Conclusion of the meeting**

18.00 END OF FIRST DAY

Dinner at 19.00pm at the Pullman Hotel

## 28th June 2022

Registration desk (Entrance Hall, Sequoia Tower), possible to get in between 8.00am and 8.30am CEST.

PLENARY SESSION (Room 32A - Tour Séquoia)



8.30 - 8.45: Opening of the room, please make sure to come a bit in advance to reach the room on time.

8.45 - 9.00: **Start of the meeting, reminder of the first day discussions and introduction to new sessions**

*By Catherine Julliot, MTE\_FR*

9.00 – 9.10 Short break to move the chairs

9.10- 10.00 – **Second collaborative session on the research needs and knowledge gaps related to biodiversity and transformative change.**

Question to be addressed: What are the research needs/knowledge gaps related to biodiversity and transformative change?

10.00-10.05 - **Presentation of the next steps**

10.05 - 10.25 – BREAK and move to subgroups

10.25 - 11.40: **Third collaborative session - Biodiversa+ potential activities addressing the topic of the Flagship programme “Supporting societal transformation for the sustainable use and management of biodiversity”**

Questions to be addressed: what activities could be implemented in Biodiversa+ on the topic of transformative change?

11.40 - 11.55 - Break and going back to plenary session

PLENARY SESSION (Room 32A)

11.55 - 12.15: **Plenary Restitution Session**

12:15 - 12:30: **Conclusion of the meeting**

*By Rainer Sodtke, Biodiversa+ Vice Chair, DLR and Catherine Julliot, MTE\_FR*

**12.30 – End of the meeting**