biodiversa+
European Biodiversity Partnership

Call Specifications For A Knowledge Synthesis:

Mapping The Evidence On Soil Biodiversity Indicators In Relation To Soil Degradation Processes

Co-funded by
the European Union

Index

Article 1. Context for the desk study

A. General context

On 1 October 2021, the European co-funded Partnership on Biodiversity (hereafter referred to as the "European Biodiversity Partnership" or "Biodiversa+") was launched as part of the EU Research & Innovation Programme Horizon Europe. This Partnership builds on the work and achievements of BiodivERsA, a pan-European network of programmers and funders of biodiversity research.

B. The European Biodiversity Partnership: Biodiversa+

Biodiversa+, the European Biodiversity Partnership, is one of the key elements of Europe's strategic response to this challenge. Established under the European Green Deal and co-developed with the European Commission (DG Research & Innovation and DG Environment), Biodiversa+ is a seven-year programme (2021–2028). With a budget exceeding €800 million, including €165 million contributed by the European Commission, the partnership supports high-quality biodiversity research with direct impacts on policy and society. Its ambition is to put nature in Europe and beyond on the path to recovery by 2030 and, by 2050, to ensure that people live in harmony with nature.

Biodiversa+ unites a diverse partnership of 81 organisations from 40 countries, plus two associated countries, including research funders, national ministries (for research and the environment), research agencies, and environmental institutions. This network bridges science, policy, and practice, creating a uniquely collaborative structure to drive systemic transformation across Europe.

LIFESPAN: 1 Oct 2021- 30 Sept 2028 (7 years)

LONG TERM GOALS: Biodiversa+ is committed to the Global 2050 Vision of "Living in harmony with nature" adopted under the Convention on Biological Diversity, and the corresponding EU's vision that by 2050, biodiversity and its benefits to people will be protected, valued and restored. Long-term goals that add up to this vision include:

- Ensure no net ecosystem loss by 2030, decreasing species extinction risks and increasing abundances of threatened species and their genetic diversity
- Scale up the deployment of Nature-based Solutions (NbS) to effectively address societal needs
- Ensure that a healthy biodiversity status is fully recognised as a foundation for sustainable development and a green economy, with the EU's leadership acknowledged in this global effort.

OVERARCHING OBJECTIVES to be reached during the lifetime of Biodiversa+:

1. Improve monitoring of biodiversity and ecosystem services across Europe (status and trends), by setting up a Pan-European network of harmonised monitoring schemes;
2. Produce actionable knowledge to tackle direct and indirect drivers of biodiversity loss; and assessment of novel tools and approaches to biodiversity/ecosystem conservation and restoration
3. Enhance the evidence base, accelerate the development and wide deployment of nature-based solutions to societal challenges across Europe in a sustainable and resilient way;

4. Making the business case for the conservation and restoration of ecosystems;
5. Science-based policy support for EU, Member States and Associated Countries

ACTIVITIES: In order to reach its objectives, Biodiversa+ deploys a wide range of activities:

- Promote and support Research & Innovation programs and projects across the European Research Area
- Advance transnational biodiversity monitoring by establishing a network of harmonised monitoring schemes across countries
- Promote and support the implementation of nature-based solutions and integration of biodiversity in the private sector
- Connect R&I efforts to policy by facilitating science-policy exchange and applying research evidence to policy design and evaluation
- Foster international collaboration by engaging with non-ERA countries and aligning with global platforms (e.g., IPBES and IPCC) and frameworks (e.g., KMGBF)
- Ensure communication, outreach and the promotion of open science practices
- Facilitate across all sectors and governance levels, to ensure inclusive and collaborative implementation
- Maintain alignment and coherence across activities through a shared vision and roadmap developed by and for partners
- Ensure effective coordination and smooth operation of the Partnership.

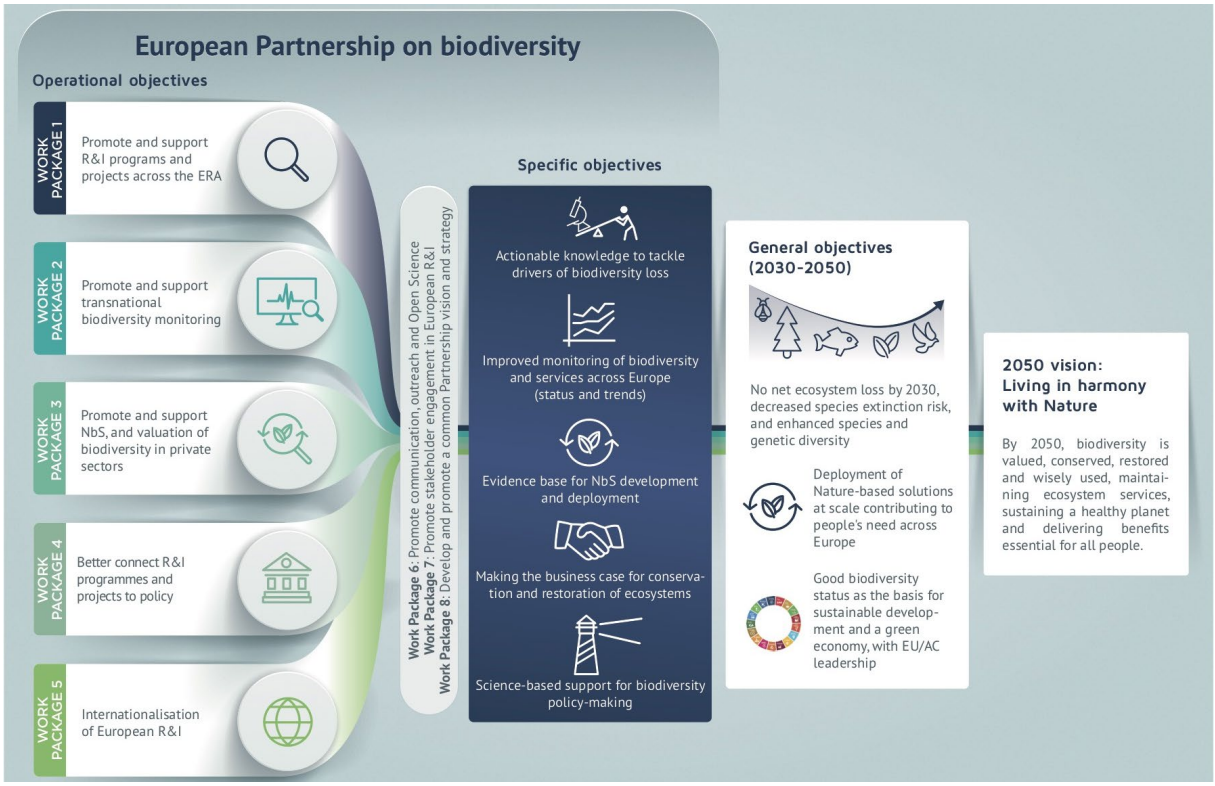

Figure 1: summary of the Partnership's vision, objectives and activities

C. Biodiversa+ Flagship Programmes

Biodiversa+ has a long-term strategic vision that guides its activities over the coming years. This strategic vision is described in the Biodiversa+ Strategic Research and Innovation Agenda

(SRIA) and was prepared by the Biodiversa+ Coordination team and all Biodiversa+ Partners, in close consultation with the European Commission.
The Biodiversa+ SRIA will concretely be implemented through multi-annual Flagship Programmes that are launched every one or two year to tackle thematic issues, mobilising the wide portfolio of Biodiversa+ activities. Flagship Programmes can hold a joint call for research proposals but this is not a requirement. Having different duration, several flagship Programmes will run in parallel and synergies amongst Flagship Programmes are encouraged to better understand and highlight interlinkages between biodiversity and other challenges.

Four flagship programmes launched in the first two years of Biodiversa+ (2021-2023):

- Supporting biodiversity and ecosystem protection across land and sea (launched in October 2021)
- Better transnational monitoring of biodiversity to better characterise, understand and report on biodiversity dynamics and trends (launched in October 2021)
- Better knowledge to develop, deploy and assess Nature-Based Solutions (launched in October 2022)
- Supporting societal transformation for the sustainable use and management of biodiversity (launched in October 2022).

D. Biodiversa+ and the production of desk studies

As part of its Work Package 4 "*Connecting R&I programs, results and experts to policy*" (cf. figure 1), Biodiversa+ aims to improve information exchanges between science, policy and other stakeholders, both upstream and downstream. This will help to improve both the relevance and uptake of funded research in various societal and policy processes. More specifically, through a diversity of science-policy interface activities, the objectives are:

- Ensure a tighter collaboration than currently observed between national/local and European-level policy makers dealing with biodiversity and related issues, environmental agencies, R&I policy makers and R&I programme funders.
- Reinforce the knowledge base on important policy issues and consequently propose policy options and guide policy development and implementation at global, European and national/local levels.

E. Context of the call for tender : Biodiversa+ 4.1.2.

In the context described above, the Biodiversa+ sub-task 4.1.2 "*Desk studies and production of knowledge syntheses*" led by the French Foundation for Research on Biodiversity (FRB) will subcontract a service provider to undertake a knowledge synthesis on the subject of **soil biodiversity indicators and soil degradation**.

Soil microbiodversity, and more broadly meso- and macro-biodversity, are fundamental to the maintenance of ecosystems and life on earth (Wagg et al. 2014)[1]. Indeed, these organisms are central to providing various benefits for human societies. They hold great economic value (Pulleman et al. 2012)[2], in large part due to their huge diversity in form and function : for

[1] Wagg, C., Bender, S.F., Widmer, F., van der Heijden, M.G.A., 2014. Soil biodiversity and soil community composition determine ecosystem multifunctionality. Proceedings of the National Academy of Sciences 111, 5266–5270. https://doi.org/10.1073/pnas.1320054111

[2] Pulleman, M., Creamer, R., Hamer, U., Helder, J., Pelosi, C., Pérès, G., Rutgers, M., 2012. Soil biodiversity, biological indicators and soil ecosystem services—an overview of European approaches. Current

instance, they can cycle nutrients required for plant productivity e.g. nitrogen, phosphorus[1]. They can lower the risk of disease (Cárceles et al. 2022)[3], and are intimately associated with plant growth and productivity[1]. Different types produce and consume the major greenhouse gases e.g. carbon dioxide, methane, nitrogen[4]. Equally, they adapt to, and purify the environment, especially water (Kibblewhite et al. 2007)[5].

However, the intensification of human activities has caused rapid and widespread changes in terrestrial ecosystems, altering both their structure and functioning (Millennium Ecosystem Assessment 2005[6]). Although soil biota play a crucial role in many processes that benefit humanity, soil degradation remains a persistent problem (Pulleman et al. 2012). In this context, assessing ecosystem quality - both in terms of biological patrimony and functioning - has become increasingly important (Karimi et al. 2017). Sustainable soil management, therefore, requires careful monitoring, particularly of biological indicators, to link land use and management practices with soil functioning and to safeguard the health and services of soils on which humanity depends (Pulleman et al. 2012).

To address this, literature reviews can be powerful tools to provide objective, systematic and meaningful summaries of large bodies of research on complex topics. As healthy soils are essential for many realms of human life, a state of the art knowledge synthesis will help deliver a framework towards protecting and restoring soils.

Accordingly, the Review should succeed in contributing to Biodiversa+ flagships such as "Better transnational monitoring of biodiversity to better characterise, understand and report on biodiversity dynamics and trends" (cf. Article 1C), while also providing a useful literature overview for the EU Soil Monitoring Law, which aims to address the loss of soil biodiversity due to various human pressures in the EU.

Article 2. Description of expectations for the desk study

A. Objectives of the desk study

The Review should focus on soil biodiversity, including at a minimum fungi and bacteria and, where possible, meso- and macro-biodiversity, and examine the ecological impacts of human pressures driving soil degradation (e.g., but not restricted to, soil erosion, pollution, loss of carbon, and soil compaction).

Opinion in Environmental Sustainability, Terrestrial systems 4, 529–538. https://doi.org/10.1016/j.cosust.2012.10.009

[3] Cárceles Rodríguez, B., Durán-Zuazo, V.H., Soriano Rodríguez, M., García-Tejero, I.F., Gálvez Ruiz, B., Cuadros Tavira, S., 2022. Conservation Agriculture as a Sustainable System for Soil Health: A Review. Soil Systems 6, 87. https://doi.org/10.3390/soilsystems6040087

[4] Karimi, B., Maron, P.A., Chemidlin-Prevost Boure, N., Bernard, N., Gilbert, D., Ranjard, L., 2017. Microbial diversity and ecological networks as indicators of environmental quality. Environ Chem Lett 15, 265–281. https://doi.org/10.1007/s10311-017-0614-6

[5] Kibblewhite, M.G., Ritz, K., Swift, M.J., 2007. Soil health in agricultural systems. Philos Trans R Soc Lond B Biol Sci 363, 685–701. https://doi.org/10.1098/rstb.2007.2178

[6] Millennium Ecosystem Assessment [WWW Document], n.d. URL https://www.millenniumassessment.org/en/index.html (accessed 11.25.22).

Primary question:

- **What evidence exists on the use of indicators to monitor and assess soil degradation across terrestrial ecosystems?**

Possible secondary questions:

- Which indicators are used to identify human pressures (e.g. contamination, compaction, soil erosion *etc.*)?
- Which organism groups or biodiversity metrics (e.g. abundance, diversity, community composition) are most commonly used?
- In which ecosystems or land-use types are indicators applied?
- What thresholds for soil biodiversity indicators have been proposed or used to assess 'soil health'?
- Are thresholds defined for specific soil organism groups (e.g. microbes, nematodes), and if so, how (comparing to reference conditions, use of expert judgement, or statistical approaches)?

The service provider must ensure that this desk study will:

- feed into the Biodiversa+ flagship "Improved transnational monitoring of biodiversity to better characterise, understand and report on biodiversity dynamics and trends".
- feed into the Biodiversa+ flagship "Supporting protection and restoration of biodiversity and ecosystems across land and sea".
- provide a state of knowledge that will help address key soil threats in the EU and guide policy action on soil monitoring, which is essential for providing a legal framework to help achieve **healthy soils by 2050**[7].

B. Expected use of methods

It is expected that the methods employed to produce such a synthesis are inspired by **systematic maps** (James et al., 2016[8]; Frampton et al., 2017[9]; Livoreil et al., 2017[10]). Additionally, "scoping reviews" and/or "rapid evidence assessments" (Dicks et al., 2018)[11] may be relevant if volume of primary literature is too great. Indeed, the use of a structured, stepwise methodology − which may follow an *a priori* protocol − in order to collate and synthesise existing relevant evidence (scientific and/or grey literature) is expected (cf. James et al 2016; Livoreil et al 2017). However, components of the process may be simplified or omitted – depending on volume of literature – to produce the synthesis in the given period of time.

[7] Soil Monitoring Law: https://environment.ec.europa.eu/topics/soil-health/soil-monitoring-law_en

[8] James, K.L., Randall, N.P., Haddaway, N.R., 2016. A methodology for systematic mapping in environmental sciences. Environ. Evid. 5, 7.

[9] Frampton, G.K., Livoreil, B., Petrokofsky, G., 2017. Eligibility screening in evidence synthesis of environmental management topics. Environ. Evid. 6, 27.

[10] Livoreil, B., Glanville, J., Haddaway, N.R., Bayliss, H., Bethel, A., de Lachapelle, F.F., Robalino, S., Savilaakso, S., Zhou, W., Petrokofsky, G., Frampton, G., 2017. Systematic searching for environmental evidence using multiple tools and sources. Environ. Evid. 6, 23.

[11] Dicks LV, Haddaway N, Hernández-Morcillo M, Mattsson B, Randall N, Failler P, Ferretti J, Livoreil B, Saarikoski H, Santamaria L, Rodela R, Velizarova E, and Wittmer H. (2017). Knowledge synthesis for environmental decisions: an evaluation of existing methods, and guidance for their selection, use and development – a report from the EKLIPSE project.

The time available to produce the study will be **18 months**. We strongly encourage the service provider to consider appropriate methods (no. of academic sources of literature, grey literature sources, the need to simplify the search strategy if required…), in order to deliver the study on time (September 2027 – see Article 3).

Question structure:
In order to answer the primary question, a *P-E-C-O* (i.e. Population, Exposure, Outcomes) formula may be particularly useful (see Frampton et al., 2017; Livoreil et al., 2017). Indeed, what **indicators to detect and assess soil degradation are used** to assess the exposure to various human pressures e.g. contamination, compaction, acidification etc.
For example, *Population* could equate to microbiodiversity; *Exposure* should equate to human pressures. *Outcomes* should demonstrate to how the *Exposure* element has an impact of the *Population* element.

C. Expected types of output

The knowledge synthesis (i.e. a written report), should identify knowledge gaps/knowledge clusters, along with a database of existing evidence (hereafter referred to as the "Evidence base", and the list of included publications).

The synthesis should aim to summarize, analyse, and translate evidence to policymakers, practitioners, researchers, in a way that is understandable and actionable. A concise overview of the evidence, key takeaways, and implications are required.

D. Project sponsor

Biodiversa+, through the French Foundation for Research on Biodiversity (who is a Biodiversa+ partner) is the project sponsor. Therefore, the project will be monitored by the **French Foundation for Research on Biodiversity** together with the active Partners of the Biodiversa+ subtask 4.1.2 (cf. Article 1D), ensuring alignment with the overall needs and strategy of Biodiversa+.

Article 3. Organisation of the delivery

A. Schedule

- Publication of the call for tenders (**Wednesday, 18 February 2026**).
- Deadline for submission (**Friday, 3 April 2026 – midnight**).
- Contract notification (**Monday, 13 April 2026**). An initial coordination meeting will be held with the selected contractor no later than two weeks after the selection. The work is expected to start around mid-April 2026.
- Monthly progress meetings are planned between the contractor and Biodiversa+.
- Submission of a first preliminary version of the desk study (**September 2027**).
- Submission of the final version of the theoretical study (**October 2027**).

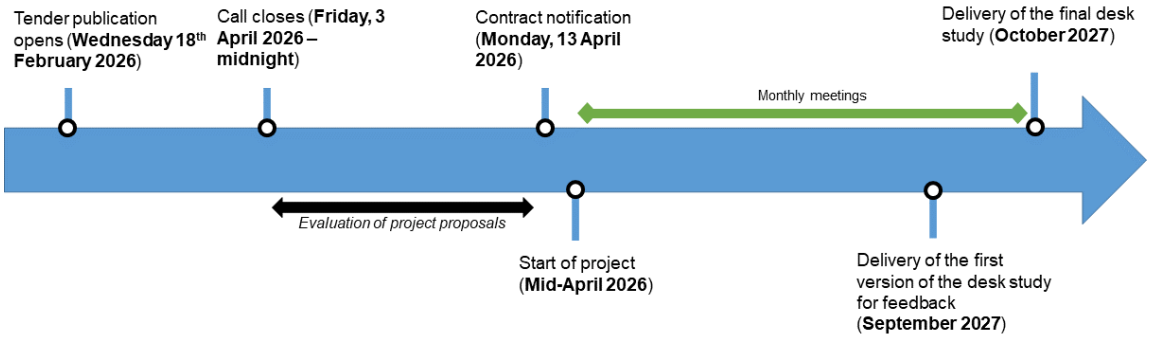

Figure 2: timeline of main milestones

B. Organisation and completion deadline

The service provider will comply with the implementation schedule which will be confirmed upon notification of the contract, taking into account the deadlines imposed in the call specifications. The implementation schedule, duly signed by the service provider, will become a contractual document.
The service provider will appoint before the start of the work a contact person for the duration of the project.

C. Modification of the offer

No change to the selected offer can be made during execution without the written authorisation to Biodiversa+ and the validation of the project officers.
Any request by the service provider to change the chosen offer must be in writing and specified as well as the performance gains or losses compared to the initial offer.
The costs resulting from changes and consequences not validated by Biodiversa+ as well as any additional work carried out without the written authorisation of the Biodiversa+ representative will be borne by the service provider.

D. Information and project progress meetings

A launch meeting will be organised in which the service provider will participate. The objective of this meeting will be to present the proposed orientations and methods to be used during the work. It will also be an opportunity for the service provider to propose improvement to the desk study, based on its experience.

The service provider is required to be represented at this meeting at least by the project manager, or someone able to take decisions / implement the requests made by Biodiversa+.

Following each project meeting, the service provider will inform the Biodiversa+ representatives about the progress and choices on a fortnightly basis (where relevant). The Biodiversa+ representatives, *via* a dedicated "working group" (see article 1D) whose role will be to follow/accompany the service provider, will have the possibility to comment on the choices made and propose modifications to the choices if they do not correspond to the decisions taken during the initial meeting and in the specifications.

In their offer, the service provider will explain in the concept document how Biodiversa+ reference people to be involved in the process to develop this desk study. At the launch meeting, the service provider will present a draft planning showing the key milestones of the production

of this desk study and discuss with Biodiversa+ to agree how it will be involved in the process (be informed and/ or be invited to provide feedback).

E. Reference person

The project will be monitored (cf. Article 2D) by the French Foundation for Biodiversity Research (FRB), in collaboration with the partners of sub-task 4.1.2 of Biodiversa+. Thus, within Biodiversa+, the person responsible for monitoring the project is **Mr Joseph Langridge (FRB)**.
We would like to ensure that we can regularly discuss with the service provider's project manager by phone or video call to ensure smooth collaboration (typically once a month).

Contact of the Biodiversa+ project manager:
Joseph LANGRIDGE
Mail: joseph.langridge@fondationbiodiversite.fr
Phone: +33 1 80 05 89 54

Applications should be sent to Joseph LANGRIDGE by email before the closing of the receipt with Marlies LAETHEM (Marlies.laethem@belspo.be) in cc.

F. Final delivery

The final product (desk study) will align with the Biodiversa+ graphic charter available in annexe 4. A project template will be provide. The desk study should be written in British English.

Article 4. Applications

A. Elements composing the application file

Each service provider will have to provide the following information, using the attached application template:

- **GENERAL INFORMATION**: concerning the applicant, presence of a dedicated project manager directly in contact with the project's sponsor. This should also include information on prior experiences **related** to the topic area of the desk study. Including examples of a knowledge synthesis *per se* demonstrating experience in using these methods (but not mandatorily related to the subject of the current topic).
- **THE PROJECT'S APPROACH**: A presentation of the approach envisaged to develop the Biodiversa+ desk study, the coherence with Biodiversa+, and a schedule for the undertaking of the desk study.
- **HIGHLIGHTED ANTICIPATED RESULTS**: an indication of what results should be expected thanks to the proposed approach.
- **INFORMATION RELATED TO AN EXPERT GROUP:** when possible, provide information concerning the number of employees/experts involved in the desk study.
- **THE QUOTE:** information concerning the use of the budget, see section C below.

Please refer to, and use, the proposal form. N.B., any application not conformant to the proposal form will not be considered for funding.

B. Evaluation criteria

The following criteria will be used to evaluate the applications received:

- **1/ RELEVANCE TO CALL CRITERIA**: the tender will have shown a clear understanding by proposing an evidence synthesis which addresses a clearly focused question(s) and provides a statement of the objective(s)? Compliance with specifications, understanding of the needs and objectives of the desk study will be explicit.
- **2/ CONTENT AWARENESS AND EXPERIENCE:** the applicant will show that it is up-to-date on the topic in question, this will be demonstrated by relevant high-quality work from previous engagements.
- **3/ METHODS EXCELLENCE**:
    - **3a/** The applicant suggests the use of relevant and clear methods for the desk study.
    - **3b/** The planned data extraction and synthesis methods are well-described.
    - **3c/** The feasibility of the working program is appropriate; the planned work schedule appears achievable in the 1-year time frame?
- **4/ QUOTE:** the given quote is detailed and coherent.

Biodiversa+ reserves the right to negotiate the offers received.

C. Budget

To conduct this desk study, applicants may request a maximum budget of **88 000€** (taxes included). The project proposal must provide a detailed invoice following the template provided in the application form.

D. Payment modalities

- The first transfer, corresponding to 50% of the total financial contribution, taxes included, shall be made upon **receipt and signature of an invoice for this amount**;
- The second transfer, corresponding to 40% of the total financial contribution taxes included, shall be made **upon submission to the FRB of the first complete edition of the systematic map**;
- The remaining balance, corresponding to 10% of the total financial contribution, taxes included, shall be made after **receipt of the 'peer-reviewed corrections'* and validation by Biodiversa+ and the European Commission (EC) of the Project's final report**, and an **invoice for this amount**.

  * In this context, 'peer-reviewed corrections' equate to comments raised by the Biodiversa+ partners and the EC, which are expected, where possible, to be taken into account before submission of final report.

Article 5. Modalities

A. Penalties

When the contractual execution deadlines defined in the present note are exceeded, the service provider incurs, except in cases of *force majeure* or fault by Biodiversa+, a late penalty of 1000€ per month of delay.

B. Ownership

The contract holder assigns and transfers to the FRB and therefore Biodiversa+, on an exclusive basis, and for the duration of this contract, the property rights attached to the works produced under the contract for the needs of the FRB and Biodiversa+. This property clause includes in particular the right of reproduction on all media and the right of representation.

C. Insurance

Before any start of performance, the service provider must prove that he is covered by an insurance contract for civil liability appearing in articles 1382 to 1384 of the French Civil Code, as well as for his professional liability, in the event of damage caused during or as a result of the performance of the services covered by the contract.

D. Termination of the contract

If Biodiversa+ finds a failure in the performance of the services in relation to the obligations resulting from the application of the present specifications, it reports the failure to the service provider by registered letter with acknowledgement of receipt.
This letter has the value of formal notice and the service provider has 15 days to present his observations.

If Biodiversa+ finds that despite its warning, the performance of the contract is still unsatisfactory, Biodiversa+ notifies the service provider by registered letter with acknowledgement of receipt. The contract can then be terminated without further formal notice and without notice to the service provider.

The termination takes effect on the date of notification of the said decision. Upon termination of the contract by Biodiversa+, any payments made may not be reclaimed and Biodiversa+ is relieved of any remaining payments foreseen in the contract.

E. Litigation and disputes

In the event of a dispute and in the absence of an amicable agreement, any difficulties in the application of this contract will be submitted to the administrative court of Paris.

Article 6. Annexes

ANNEX 1: GENERAL RESOURCES

- Biodiversa+ website: http://www.biodiversa.eu/
- Biodiversa+ SRIA

ANNEX 2: BIODIVERSA+ SUMMARY OF THE FLAGSHIP PROGRAMME "IMPROVED TRANSNATIONAL MONITORING OF BIODIVERSITY TO BETTER CHARACTERISE, UNDERSTAND AND REPORT ON BIODIVERSITY DYNAMICS AND TRENDS"

Rationale

- Many efforts have been made to monitor components of European biodiversity, including well established networks to survey populations of common birds and butterflies that increase our understanding of their dynamics and deliver on indicators used by policy makers. However, major knowledge gaps remain for many taxonomic and functional groups, and biodiversity monitoring is largely fragmented among countries/regions, taxa/biodiversity dimensions, databases/data formats, indicators used to communicate, and information fluxes to research and decision makers, including policy makers. It is also needed to increase the coverage of biodiversity monitoring schemes (in terms of areas and biodiversity taxa and dimensions) and to make the best use of traditional and emerging/new methodologies and technologies for monitoring. This would allow establishment of a pan-European network of harmonized monitoring schemes able to measure and analyse biodiversity changes across Europe, increasing our understanding of biodiversity dynamics and efficiently informing decision makers.

ANNEX 3: BIODIVERSA+ SUMMARY OF THE FLAGSHIP PROGRAMME "SUPPORTING PROTECTION AND RESTORATION OF BIODIVERSITY AND ECOSYSTEMS ACROSS LAND AND SEA"

Rationale

- The EU Biodiversity Strategy 2030 recognizes that protected areas are important for the conservation of biodiversity, and that the existing network of protected areas is not sufficiently large to safeguard biodiversity. Evidence also shows that the Aichi biodiversity targets of 17% of land and 10% of sea covered by protected areas, are insufficient to adequately protect and restore nature (IPBES, 2019). The EU Biodiversity Strategy 2030 therefore sets an ambitious objective of establishing a truly coherent Trans-European Nature Network, to include legal protection for at least 30% of the land and 30% of the sea in the EU, of which 1/3 (10% of land and 10% of sea) to be under strict protection. These EU targets are in line with the global targets being proposed to the next Conference of the Parties (COP15) of the UN Convention on Biological Diversity. According to the Strategy, the target of 30% of the land and 30% of the sea in the EU under legal protection by 2030 should be reached by completing the Natura 2000 network and by new designations under national protection schemes. The Strategy also highlights the importance of setting up ecological corridors in order

to have a truly coherent and resilient Trans-European Nature Network, and of promoting and supporting investments in green and blue infrastructure.

- The Strategy identifies the need to concentrate, for the identification of areas to be protected, on areas of very high biodiversity or potential. The designation of additional protected and strictly protected areas, either to complete Natura 2000 or under national protection schemes, will be a responsibility of the Member States. It will be guided by a set of criteria to be agreed on by the Member States by the end of 2021, and based on significant work done in the past to identify areas based on their importance for conservation of biodiversity. This includes work done on Key Biodiversity Areas KBAs building on decades of experience in the context of identification of Important Bird Areas IBAs, Ecologically and Biologically Significant Areas EBSAs, Alliance for Zero Extinction sites AZEs and other streams of work. Although these criteria are not directly linked to a requirement for legal protection of the identified areas, they provide a good scientific basis to guide the selection of areas to be protected. For example, the KBA criteria can be applied to species and ecosystems in terrestrial, inland water and marine environments and can help identify priority sites for the establishment of Privately Protected Area (PPAs).

- The guidance to be put forward by the Commission will also indicate how other effective area-based conservation measures (OECMs[1]) and greening of cities could contribute to the above-mentioned targets.

- Importance to learn from failures and successes (assessing effectiveness of approaches); importance of exchange of best practices and capacity building;

- Importance of recognizing that different rationales and paths for biodiversity conservation exist, fundamental inputs are expected from the research and knowledge community to deepen our understanding of the drivers of biodiversity dynamics, provide science-based guidance to actions and policies aiming at biodiversity protection and restoration, and help the rigorous assessments of their outcomes;

ANNEX 4: BIODIVERSA+ SUMMARY OF THE FLAGSHIP PROGRAMME "SUPPORTING SOCIETAL TRANSFORMATION FOR THE SUSTAINABLE USE AND MANAGEMENT OF BIODIVERSITY"

Rationale

- Recent environmental assessments reveal that urgent transformative change can still turn negative biodiversity trends around. This transformative change will need to include all actors of society, including governments, citizens and businesses depending and impacting on biodiversity and nature's contributions to people. In complement to approaches already applied, new and more systemic paths must be explored and promoted acknowledging interdependencies and reinforcing the synergies between biodiversity, human societies and economies. Europe has to meet this challenge, fully recognizing that biodiversity is both a natural heritage to be conserved for future generations and a fundamental asset that provides the basis for transitioning towards a sustainable social and economic system, both in Europe and globally;

- In this context, the priority for research is not only to quantify and understand the status and trends of biodiversity and ecosystem service delivery and act as a warning device, which is crucial, but also to tackle the underlying drivers of biodiversity loss through a whole-society-approach;

- Another key element to make transformative change to halt biodiversity decline a reality is increasing the effectiveness of governance strategies that successfully address and mitigate impacts of non-sustainable human activities on biodiversity. Such approaches could help the elaboration of policies aiming at the right balance between nature conservation and socio-economic development.

ANNEX 5: BIODIVERSA+ GRAPHIC CHARTER

- Biodiversa+ graphic charter