Annex 1: Announcement of Opportunity

The European Partners in the BiodivERsA network
have joined efforts to organise and fund a

Pan-European call on "Understanding and managing biodiversity dynamics to improve ecosystem functioning and delivery of ecosystem services in a global change context: the cases of (1) soils and sediments, and (2) land- river- and sea-scapes (habitat connectivity, green and blue infrastructures, and naturing cities)"

(1) Introduction

BiodivERsA is a network of 31 public research funding organisations from 18 European countries supporting scientific research in the field of biodiversity (www.biodiversa.org). The network is funded as an ERA-NET Co-fund project under the European Union's Horizon 2020 Framework Programme. BiodivERsA3 Partners aim to develop a durable collaboration in research funding policy and practice, thereby creating added value in high quality biodiversity research across national boundaries. One objective of BiodivERsA is to organise a Pan-European research programme on biodiversity research.

Among BiodivERsA3 Partners, 24 national/regional funding organisations from 15 countries (see the updated list on the BiodivERsA website – www.biodiversa.org) are contributing to the funding of the present BiodivERsA joint call on "Understanding and managing biodiversity dynamics to improve ecosystem functioning and delivery of ecosystem services in a global change context: the cases of (1) soils and sediments, and (2) land- river- and sea-scapes (habitat connectivity, green and blue infrastructures, and naturing cities)".

(1) Introduction to the 2015 BiodivERsA call for research proposals

Terrestrial, freshwater and marine ecosystems – with their processes, habitats and species – provide human populations with direct and indirect "ecosystem services" essential for their survival and well-being: regulating services (e.g. local climate, air and water quality, carbon sequestration, pollination, biological control, moderation of extreme events, waste-water treatment, prevention of erosion); provisioning services (e.g. food, raw materials, fresh water, medicinal resources); supporting services (e.g. habitats for species, maintenance of genetic diversity); and cultural services (e.g. human recreation and health, tourism, aesthetic appreciation and inspiration for culture, art and design, spiritual experience and sense of place).

Biodiversity underpins many services provided by ecosystems that are vital to humankind but this biodiversity is under threat. Habitats of all types, including forests, grasslands, wetlands and river systems, continue to be fragmented and degraded. For species, the trend towards greater extinction risk for several taxonomic groups shows no sign of decreasing. Where ecosystem services have been assessed, many are found to be in decline and marine ecosystems fall short of their potential to provide for human needs.

The European Union, its Member States and other signatories to the Convention on Biological Diversity made a commitment in 2010 to achieve the Aichi biodiversity targets and to take effective and urgent action to halt the loss of biodiversity in order to ensure that ecosystems are resilient and

continue to provide essential services, thereby securing the variety of life and contributing to human wellbeing. The European Union's 7th Environment Action Programme (7EAP) has a priority objective to protect, conserve and enhance the Union's natural capital. The 7EAP states that recent assessments show that biodiversity in the Union is still being lost and that most ecosystems are seriously degraded as a result of various pressures. The European Union's Biodiversity Strategy (EUBS) sets out targets and actions needed to reverse those negative trends, to halt the loss of biodiversity and the degradation of ecosystem services by 2020 and restore them as far as feasible. Member and Associate States have also developed their own national biodiversity strategies and action plans to address these issues. In addition, there is an increasing interest for the management of biodiversity and how it can allow the sustainable delivery of a range of ecosystem services.

In this co-funded Joint Call, BiodivERsA has chosen to focus on two subject areas for generating the knowledge and tools to help achieve these ambitious targets, i.e. **research for understanding and managing biodiversity dynamics in order to improve ecosystem functioning and delivery of ecosystem services in (Theme #1) soils and sediments, and (Theme #2) land-, river- and sea-scapes (habitat connectivity, green and blue infrastructures, and naturing cities).**

Research may address terrestrial, freshwater and marine ecosystems in Europe and the Outermost Regions, Overseas Countries and Territories and dependencies of EU Member States. These overseas territories may offer particular opportunities for research on these topics due to (a) their exceptional terrestrial and marine biodiversity; (b) the exposure of their environments, economy and society to impacts of climate change, natural hazards and pressures of human activities; and (c) the often fundamental role of biodiversity in their economic development and human wellbeing. Research may be limited to mainland Europe, or overseas territories, or include both.

Building the project on an already performed or initial (1st year of project) systematic review (www.environmentalevidence.org) to optimize the project's focus and tests of working hypotheses is possible, the cost of an initial systematic review being eligible for the current call.

In order to maximise the societal benefits from this research, projects should, where appropriate, interact closely with relevant stakeholders including, e.g., managers and users in the field, businesses, policy actors, local administrations, and citizens. This may include co-design of projects with stakeholders, analysing stakeholders' needs and preferences and other relevant societal (e.g. governance) aspects through social/economic science approaches as well as developing practical management tools, guidelines, knowledge bases, etc. to be directly used by or in relation with stakeholders. For this, it is highly recommended that the BiodivERsA Stakeholder Engagement Handbook is used as source of guidance (cf. http://www.biodiversa.org/702).

(2) Themes of the call

Submitted proposals will identify which of the 2 themes and the corresponding sub-theme(s) they address.

Theme #1 : Understanding and managing the biodiversity dynamics of soils and sediments to improve ecosystem functioning and delivery of ecosystem services

Rationales

Studying biodiversity and proposing ways to manage it in soils and sediments is increasingly needed since the organisms in those habitats contribute to ecosystem functioning and a broad range of ecosystem services (Lavelle et al. 2006, Dominati et al. 2010), and can support addressing global challenges like food, water and energy security, and climate change adaptation. The ecosystem services provided include many regulating and supporting services and different provisioning services (Haygarth and Ritz, 2009).

However the extent and functional role of this biodiversity remain largely unknown. Indeed, it is mostly composed of very small organisms that are difficult to identify (Jeffery et al. 2010) and which live in an opaque and heterogeneous medium. In particular, deciphering the diversity of soil and

sediment microorganisms -viruses, bacteria and fungi- requires modern molecular tools for describing their genetic, phenotypic and functional diversity, and such tools are still in development. Furthermore, it is increasingly acknowledged that species richness is not necessarily the best variable to infer ecosystem functioning (Ritz et al. 2009, Fridley and Grime 2010, Kotowska et al. 2010). Multiple relevant dimensions (taxonomic, genotypic, phenotypic and functional) of biodiversity should be taken into account to better characterise biodiversity and understand its role for soil and sediment functioning and service delivery. For all these reasons, proposing and selecting relevant and useful indicators for biodiversity in soils and sediments as well as indicators of ecosystem health based on soil/sediment biodiversity remains a challenge.

Bridging the gap between processes and biodiversity in belowground and aboveground compartments in terrestrial systems, and between benthic and pelagic compartments in aquatic systems presents an additional challenge if we wish to account for potential cascading effects across trophic levels (Yang et al. 2009, Wardle et al. 2004 & 2005). Though the ecological mechanisms involved have been identified in short term experiments under controlled conditions, it is so far difficult to test in the field and predict their consequences on larger temporal and spatial scales because of scale-dependencies in processes and the greater heterogeneity and environmental variability in natural systems (Raffaelli and White 2013). Research on biodiversity-ecosystem services relationships should also help identification of thresholds, possible management interventions and trade-offs between services (Fornara and Tilman 2009, Milcu et al. 2010).

The biodiversity in soils and sediments and associated functioning and services should be studied in the light of global change factors. Indeed, such biodiversity is directly impacted by anthropogenic activities (Mäder et al. 2002), including the rise in the atmospheric CO_2 concentration and climate change (Wolters et al. 2000) and the conversion of the majority of the Earth's cultivable land surfaces (Ellis et al, 2010). Many of the mechanisms involved have been identified, but interacting effects between different global change factors, existence of thresholds and amplitude of feedbacks remain challenges to be tackled by the scientific community. For instance, changes in biodiversity and particularly in micro-organisms (Bardgett et al. 2008) are likely to impact the dynamics of organic matter and biogeochemical cycles which can in turn feedback on climate change through the emission of greenhouse gases or carbon sequestration. Functioning of soils and sediments and changes in biological communities and activities is now one of the major black boxes that must be opened to improve predictions on climate change.

The importance of the biodiversity of soils and sediments for the delivery of ecosystem services is increasingly recognized. However, the current management of terrestrial, freshwater and marine ecosystems largely ignores explicit management of soil or sediment biodiversity and the regulatory processes it may foster (Kiers et al. 2007, Noguera et al. 2011). Thus, we critically need to explore and test innovative interventions (from innovative extensive or intensive practices to permaculture and restoration practices) that aim at directly or indirectly manipulating and managing key components of soil and sediment biodiversity, in order to enhance the sustainable delivery of individual or multiple ecosystem services to human societies. Research should provide knowledge and support the design of tools that would enable better use of soil and sediment biodiversity in agricultural, forested, coastal, flooded and urban/peri-urban systems, including the remediation and restoration of degraded and spoiled soils and sediments.

Main issues to be addressed

The projects may address one or more of the following: soils, freshwater sediments, and/or marine sediments.

The projects will have to address at least one of the three following sub-themes:

T1.1) Relationships between changes in soil and sediment biodiversity and ecosystem functioning and services. Projects should focus on knowledge gaps about the links between relevant facets of this biodiversity, and ecosystem functioning and services. They could:

- Focus on poorly known mechanisms, novel techniques and approaches.
- Integrate predictions on the dynamics of soil and sediment biodiversity and the consequences in terms of ecosystem services.
- When relevant, study interactions between the dynamics of belowground and aboveground, or benthic and pelagic, biodiversity, and the outcome of feedbacks between these compartments.

Working on the delivery of ecosystem services requires the applicants to clearly identify who are the users of these services. Projects should help the integration of soil and sediment biodiversity into a more general socio-ecological ecosystem perspective, including social and economic aspects.

T1.2) Impacts of global change and anthropogenic activities on soil and sediment biodiversity, and feedbacks on global change drivers. Projects should explicitly address (1) how global change and local/regional management affect this biodiversity, and/or (2) the role of modified soil and sediment biodiversity in ecosystem processes of particular importance for our understanding of global change. Projects should:

- Study interactive effects of multiple drivers like climate change, land-, river- or sea-use changes, pollution, urbanisation, and efforts to mitigate or reverse these pressures; and/or
- Jointly study the impacts on several types of soil and sediment organisms or the relevant dimensions of soil and sediment biodiversity, and analyse positive or negative feedbacks on services such as regulation of climate change, retention/abatment of pollutants, etc.

Successful projects are expected to address the complexity of processes driving the dynamics of biodiversity soil and sediment systems.

T1.3) The knowledge base for innovative management of soil and sediment biodiversity to enhance ecosystem functioning and service delivery. Projects should develop (hypothesis-driven, as for all projects) research on innovative interventions to manipulate biodiversity for enhancing the delivery of ecosystem services by soils and sediments and to manage trade-offs between ecosystem services. Key processes involved, relevant biodiversity dimensions, relevant scales, and possible drawbacks of the interventions should be explored.

Successful projects are expected to inform possible approaches to manipulate soil and sediment biodiversity in order to enhance the delivery of ecosystem services.

Part of the projects funded could be devoted to the development and testing of innovative ways to quantify soil and sediment biodiversity components, functions, and interactions, although they should include a clear demonstration of the added value for understanding soil and sediment functioning and ecosystem service delivery.

The knowledge obtained from the funded projects should (i) inform the development of robust and practical indicators for assessing biodiversity levels in these systems and associated functions and ecosystem services, and more generally biodiversity-based indicators of ecosystem status and health, and (ii) guide long-term monitoring schemes in the context of ecosystem management under global change.

Overlap with ongoing European and national projects on this theme should be avoided, although complementing ongoing research is possible.

Theme #2 : Understanding and managing biodiversity dynamics in land-, river- and sea-scapes (habitat connectivity, green and blue infrastructures, and naturing cities) to improve ecosystem functioning and delivery of ecosystem services

Rationales

Changes in the management and use of land and aquatic environments during the last decades have often led to a decrease and fragmentation of natural and semi-natural areas, and fragmentation of river networks and associated wetlands by building dams and rectifying rivers. In addition, more space is used by urbanisation for housing or developing economic areas, and by transport and energy infrastructures.

The effects of habitat loss and isolation and landscape homogenisation are severe on biodiversity, resulting in a decline of populations, decreased species richness, and homogenisation of biodiversity. Fragmentation of habitats is also a concern for marine biodiversity, e.g. in the growing pressure to build hard coastal defences (Firth et al., 2013), although the importance of e.g. seawater currents makes the issue of fragmentation specific in some sea-scapes. In addition, renewable energy installations can also influence marine biodiversity.

Fragmentation and urbanisation can also alter the delivery of ecosystem services dependent on biodiversity. For example, fragmentation and the decrease in semi-natural areas led to a decrease in bee species richness and abundance and associated pollination services (Tylianakis et al. 2008). Tackling increased loss and fragmentation of habitats, in particular non-intensively managed ones, requires the protection, management and restoration of habitats and bigger and better connected

green/blue spaces for wildlife and ecosystem services needed for human well-being (Rockström et al. 2009, Nilsson et al. 2011, Grahn and Stigsdotter 2010, Standish et al 2013).

In this context, the concept of green and blue infrastructures (GBIs), sometimes referred to as ecological networks, has emerged. Although different definitions can be found, GBIs are defined here as sets of ecosystems of one type, linked into a spatially coherent system through flows of organisms, and interacting with the landscape matrix in which it is embedded, which can be used to conserve and sustain or enhance biodiversity, ecosystem functions, and provide services to human populations (e.g., McMahon 2006, Opdam et al. 2006). GBIs that incorporate ecological processes and functions in their spatial configuration, structure and design are therefore likely to support biodiversity, a range of ecosystem services including enhanced human health and well being, and the adaptive capacity and resilience of species, ecosystems and society. At present, we lack the ecological and interdisciplinary knowledge and tools for identifying the critical features of GBIs, including the socio-economic aspects, and for guiding their establishment and management and evaluating their impacts.

Dispersal and other movements of individuals are recognized as key processes for the survival of small isolated populations, meta-populations and meta-communities in a landscape or seascape. The shrinking of semi-natural areas is assumed to be partially mitigated by increasing connectivity between habitat patches. Implementation or conservation of GBIs thus seems to be a mean for biodiversity maintenance and restoration. These ideas are well-established in biodiversity conservation, protected areas management and landscape planning. However, critical scientific validation of to what extent the existing or planned GBIs are functional or not, and meet the assumptions of providing the necessary habitat connectivity and habitat amount to maintain and strengthen biodiversity and ecosystem services, is still scarce. More also needs to be known about the critical features of GBIs that determine their ecological functioning and actual impact on biodiversity, including possible drawbacks, is still scarce. Identification of connectivity is often based on a structural approach, e.g. using remote sensing maps which become more and more precise with the development of new sensors. A challenge is to identify the ecological and evolutionary consequences of the measured geometrical features and the key processes determining the functioning of GBIs, since connectivity is dependent on the type of land/river/seascapes and species involved (Kindlmann & Burel, 2008). In this context, methods to assess whether or not gene flow and dispersal occurs, and the spatio-temporal scales of dispersal in land/river/seascapes, still need to be critically evaluated (Manel & Holderer, 2013).

The relationships between ecosystem services and GBIs have barely been studied, though ecological networks are expected to enhance or maintain biodiversity levels required to enhance or maintain key services (but see Elmqvist et al. 2013). For instance, in agricultural landscapes, hedgerows and grassy strips have been studied as parts of networks increasing connectivity on the one hand, and as refuge for a wealth of species providing services (pollinators, predators for pest biocontrol etc.). The restoration of buffers along rivers for stream protection may constitute a network but it has not been studied as such, though it may function as a corridor, including for invasive species. However, the critical features of GBIs in maintaining and enhancing a range of ecosystem services often remain unknown. Research should also focus on the collaboration among actors and sectors that is needed for management and governance of GBIs in land-, river- and sea-scapes.

Identification, design, management and assessment of GBIs today should consider and account for predicted global change. For instance, during the next decades, climate change will impact biodiversity and the distribution of many species may change in response to new climatic conditions. To what extent and how this can or should be facilitated by measures to increase connectivity at the land/river/seascape and regional scales, and what can be costs, benefits and drawbacks of GBIs in a global change context, remains to be evaluated.

Another major challenge for the future is to design and manage GBIs in cities and other areas with important ‘grey’ infrastructures (roads, railways, canals, renewable energy infrastructures, etc.), including some marine areas (e.g. with renewable energy infrastructures). Ecological functioning is in some aspects specific in these areas: many elements are not permeable, fragmentation can be very high, and people-nature interactions are more intense. Human attitudes, values and behaviour are important considerations, with many residents/users taking part in nature management, enjoying and valuing ‘natural’ areas (Svendsen and Campbell 2008). This may require further research on the relationships between biodiversity and multiple ecosystem services. For instance, the extent to which biodiversity is necessary for the delivery of ecological services such as water regulation and quality or heat mitigation in urban areas (Gomez-Baggethun et al. 2013). Further research is required to better understand how urban biodiversity and green areas in cities contribute to human psychological well-being through access to green spaces, either physically or mentally (Fuller et al. 2007). The valuation

of ecosystem services is a particular research challenge due to the high spatial heterogeneity, multi-functionality and multiple use of BGI in urban areas (Gómez-Baggethun and Barton, 2013). Connectivity between marine protected areas and effects on marine biodiversity conservation and ecosystem services like resources for fisheries and tourism also remain to be addressed. In addition, understanding how the development of hybrid (blue/green plus 'grey') structures can conserve and enhance biodiversity and the delivery of key services to human societies, and how management of such infrastructures can help to deliver multiple services, remain challenges for the scientific community. For instance, the management of linear infrastructure networks may provide freer movement for species and may create managed corridors. Communication routes may also constitute networks of more or less semi-natural vegetation that would act as corridors for small mammals, pollinators, or invasive species.

Identification, design and management of ecological networks of blue and green infrastructure in the Overseas Countries and Territories present particular challenges. Such networks often exist in isolated situations, with high levels of endemism, and vulnerability to natural hazards, invasive alien species, global environmental change and human pressures. There may also be strong links with tourism and between the livelihoods and wellbeing of local communities and biodiversity and ecosystem services.

Main issues to be addressed

The projects may address terrestrial, freshwater, and/or marine environments.

The projects will have to address at least one of the three following sub-themes:

T2.1) Critical features of green and blue infrastructures (GBIs) that determine their ability to support biodiversity and ecosystem functions and services. Going beyond simple spatial mapping, projects should measure and analyse the underlying processes and context-specific features that contribute to the multiple outcomes of GBIs.
Projects focusing on the effects of GBIs on species could:
- Measure and analyse the features of GBIs and the key processes, including gene flows, that make them functional or not in providing connectivity between (meta-) populations of one or more species.
- Evaluate the influence of GBIs on a range of species according to their biological features.
- Study the influence of the landscape, management, policy and socio-cultural contexts on the outcomes of GBIs.
Projects focusing on the effects of GBIs on biological communities, ecosystem functions and services could:
- Examine the effects of GBIs for connectivity of relevant (meta-)communities and functional groups.
- Analyse the effects of GBIs on the delivery of ecosystem services, and how the design and development of GBIs could be an important aspect of biodiversity management to enhance service delivery at relevant scales.
Overall, the projects should provide a basis to evaluate whether GBIs can work well to conserve and manage biodiversity and ecosystem services in a range of land-, river- and sea-scapes. They could include an analysis of the spatial configuration of policy mixes – a.k.a. policy scapes – required to achieve efficient GBIs. Outcomes of research could be the definition of (i) critical thresholds for some elements of GBIs and associated biodiversity needed to maximize/secure ecosystem service delivery, and/or (ii) novel approaches and tools to characterize and develop GBIs in the future. Interdisciplinarity is required to not only decipher ecological networks from physical, biophysical or biological data, but also to understand the role of human actions, as driven by techniques, policies, and social networks, in the making, management and use of those networks.

T2.2) Incorporation of global change drivers when designing green and blue infrastructures to preserve and sustainably manage biodiversity and ecosystem functions and services. Projects should study how global change factors, including climate change and land/sea-use and management changes and their combined effects, can influence the effects of GBIs on biodiversity and ecosystem services. Projects could:
- Understand the effects of global change factors on GBIs and the consequences for the conservation and adaptive management of biodiversity and ecosystem services. How will new

conditions affect the function of GBIs, and how can this knowledge be used to design, develop and manage more resilient GBIs?
- Assess the short-, medium- and long-term effects of GBIs on biodiversity and ecosystem services as a result of global change drivers, especially land-use and climate changes.
The projects should help to evaluate the opportunities provided by and the drawbacks of GBIs in a global change context.

T2.3) Effects of green and blue infrastructures in intensively managed sea-/land-scapes, and interactions with "grey" infrastructures. Research should provide knowledge to better understand the roles of GBIs on biodiversity and a range of ecosystem services in urban and other intensively managed land-/river-/sea-scapes, accounting for the specificities of these areas, which includes the roles of other human-engineered, "grey", infrastructures, the people living in these areas, and the benefits they derive from ecosystem services. The projects could:
- Analyse to what extent and how greening cities and GBIs in urban areas can promote the conservation and management of biodiversity and ecosystem functions and services and contribute to human well-being. This includes the analysis of functional continuities, disentangling the effects of spatial structure and habitat quality of sites of 'nature' (parks, vegetated walls and roofs, private gardens).
- Analyse the interactive effects of GBIs and "grey" infrastructures on biodiversity and ecosystem functions and services in intensively managed areas, e.g. cities, landscapes with important linear "grey" infrastructures, marine areas with renewable energy installations, etc.
Research should address how complexity and heterogeneity may interact to secure and strengthen biodiversity and ecosystem services. Overall, the projects should help designing, managing and assessing GBIs in urban and other heavily managed areas, including "hybrid engineered" systems containing 'grey' and 'blue and green' components. Interdisciplinary research is necessary to properly include human practices, humans' motivations, the way people interact with biodiversity, and the benefits they derive from ecosystem services, especially in highly managed and populated areas.

For this theme, the focus will be on the scientific knowledge base needed to support the conservation, restoration and development of green and blue infrastructures for securing a resilient future for people and other biological species in human-dominated landscapes and seascapes.

Each project will have to make explicit the relevant temporal and spatial scales considered and processes which underpin the effect of green and blue infrastructures.

Part of the projects funded could benefit from existing green and blue infrastructures, and could generate guidelines to better implement them, assess their efficiency, and propose interventions to improve and/or safe-guard GBIs effectiveness.

Overlap with ongoing European and national projects on this theme should be avoided, although complementing ongoing research is possible.

(3) Expected European added value

The European Commission may produce a European Communication on Soils and their protection (EU, 2012[1]). This project clearly point at the importance of the issues at stake and the necessity to protect soil health and biodiversity. Implementing more research projects on soil and sediment biodiversity at the European scale would thus help to inform discussion on further policy development in this area. More generally, the Food and Agriculture Organisation has recently pointed at the necessity to develop more researches on soils because of the current high rates of soil degradation and soil biodiversity losses. Implementing European research projects on soil diversity would thus help fulfil this need.

Similarly, habitat connectivity is recognized as important at the international, regional (EU Natura 2000 network[2]) and national level. There is indeed a general anticipation that green or blue

[1] Report from the Commission to the European parliament, the Council, the European economic and social committee and the committee of the regions : The implementation of the Soil Thematic Strategy and ongoing activities. 15 pp.

[2] Atecma, RIKS, TERSYN, EEZA-SCIC, and Ecosystems. 2009. Towards a green infrastructure for Europe.Developing new concepts for integration of Natura 2000 network into a broader countryside. EC study ENV.B.2/SER/2007/0076. 192 pp.

ecological infrastructures will conserve and strengthen ecosystem services and biodiversity. For example, the EU has decided on a Green Infrastructure Strategy (http://ec.europa.eu/environment/nature/ecosystems/). The CBD's Strategic Plan for Biodiversity 2011-2020 also emphasizes the need to establish ecologically representative and well connected systems of protected areas that are integrated into wider land-, river- and sea-scapes. Avoiding fragmentation and improving connectivity is also an important issue in many national biodiversity strategies and action plans. However, still much ecological and interdisciplinary knowledge is lacking for identifying critical features of GBIs and for guiding their conservation, restoration, establishment and management, under current conditions and in a global change perspective.

Due to the diversity of soil/sediment and land-, river- and sea-scapes types and contexts and to the great diversity of factors constraining the dynamics of biodiversity and feedbacks to ecosystem services across Europe (mainland and overseas), it is important to fund research projects involving several European teams and possibly sites. When relevant, projects can include or focus on Outermost Regions and Overseas Countries and Territories. The projects will provide new knowledge, tools and approaches to support policy development and practical applications, and will fill the gaps identified at the European and international levels. They will also often require the participation of a range of scientific disciplines (ecologists, agronomists and foresters, climate scientists, chemists, a range of social scientists including economists, among others). Single European countries might not be able to develop and fund such projects.

Through the present call for proposals, the added value of BiodivERsA is therefore to:

- Consolidate excellent, but dispersed EU research in these domains
- Stimulate interdisciplinary researches required to address these issues
- Provide new knowledge and approaches to guide national and European institutions in their policies and policy implementation towards a better protection and sustainable management of biodiversity, enhancing ecosystem service delivery to human societies at a range of scales.

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(5) Procedures, eligibility and selection criteria

Submission, deadlines and time schedule

A two-step process will apply, with a mandatory submission of pre-proposals at step 1. Proposals (in English) must be submitted electronically with the Electronic Proposal Submission System (EPSS). Instructions for electronic submission will be available at www.biodiversa.org in May 2015.

Applicants have to submit pre-proposals: information (in English) on the project consortia, a 5-pages description of the project and the required budget for each partner must be submitted on the EPSS. *Submission of pre-proposals is mandatory*; it is not possible to enter the procedure at a later stage.
The information will be used to complete an eligibility check and help find appropriate reviewers for the evaluation of full proposals in the second step.

According to the number of proposals received, the Call Steering Committee reserves the right to organise an evaluation of the pre-proposals by the Evaluation Committee.
In that case, the information will also be used for this first step evaluation of pre-proposals.

For technical questions regarding submission, please contact the Call Secretariat:
Sophie Germann: sophie.germann@agencerecherche.fr
or EPSS technical helpdesk - Taavi Tiirik: biodiversa@etag.ee

For budgetary questions and other national/regional issues, the relevant Funding organisation Contact Point - who are listed on the BiodivERsA website - should be contacted. Funding organisations' rules are advertised on the BiodivERsA website and are mandatory. For any help on these, please contact the relevant Funding organisation Contact Point.

The call will go through the following processes and applicants must pay attention to the deadlines outlined below in the time schedule*:

14 May 2015:	Launch of the call
20July 2015, 17:00: (GMT + 2:00, Local time in Brussels, Copenhagen, Madrid, Paris)	Deadline for submitting pre-proposals Applications received after the deadline will not be considered.
Late September 2015:	Eligibility check completed
Between early October and late December 2015:	Invitation to submit full-proposals
Between mid-December 2015 and late February 2016:	Deadline for submitting full proposals. Applications received after the deadline will not be considered.
Between late May and late June 2016:	Recommendation for funding projects by the Call Steering Committee
October 2016:	Earliest possible start of funded projects
March 2017:	Latest possible start of funded projects

* If a very large number of proposals will be received (indicative threshold of 150 pre-proposals), the Call Steering Committee reserves the right to organise a first evaluation of pre-proposals.
According to the number of proposals received, the evaluation procedure will thus change and will consist either in an eligibility check at a first step and evaluation of full proposals at a second step, or in an eligibility check and first evaluation of pre-proposals at a first step and evaluation of full proposals at a second step. The timeline will vary according to the procedure selected.
The procedure chosen (i.e. evaluation or not of the pre-proposals) and final timeline will be available in July 2015.

Eligibility of projects and research groups

The call is open to proposals and research consortia that meet the following criteria:

1. The international, scientific research projects are performed by eligible research organisations. National/regional eligibility criteria (see funding organisations' rules) apply to research organisations and for participation by the private sector (profit and non-profit)
2. The main applicant is employed by an eligible organisation in one of the countries participating to the call
3. The project proposal involves at least three Partners from at least three countries participating in the BiodivERsA call, except for proposals including research groups from outermost regions for which it suffices if the research groups come from two different countries, and the proposal concerns three different funding organisations.
4. The project duration is 3 years maximum, with no extension possible.
5. Proposals must be written in English.
6. The scope or scale of the proposed research should exceed a single country.

Funding organisation eligibility criteria and rules (e.g. eligible budget items) are mandatory; it is thus strongly recommended that applicants approach their respective Funding organisation Contact Point to make sure they respect all the eligibility criteria and rules (contact list and main Funding organisations' rules are available in the call documents published on BiodivERsA website).

Evaluation and selection

Potential applicants are advised to take careful note of the aims and scope of the call as described above and in the section "Announcement of Opportunity". Applicants are strongly advised to assess the relevance of their proposed research against the thematic priorities set forth in the scientific text of the call. Any project that does not fit within the thematic priorities described in the call will not be recommended for funding, regardless of its quality.

Emphasis will be placed on the link between scientific excellence and relevance to policy and practice.
If a very large number of proposals will be received, the Call Steering Committee reserves the right to organise a first evaluation of pre-proposals (i.e. a two step evaluation)..
In that case, proposals will be evaluated against the following criteria: fit to the scope of the call, novelty of the research and the European added value.
The full proposals will be evaluated against criteria of excellence, quality/efficiency of the implementation and impact[3].

The evaluation procedure of the first step adopted will thus depend on the number of pre-proposals received.

First step:

- If a manageable number of pre-proposals will be received, only an eligibility check of pre-proposals will be performed. Eligible pre-proposals will be invited to submit full proposals.
- If a large number of pre-proposals will be received (indicative threshold of 150 pre-proposals), an eligibility check and a first step evaluation (peer-review) of pre-proposals will be performed. Only successful pre-proposals will be invited to submit full proposals.

Second step:

The full proposals are sent for international peer review. The excellence and quality/efficiency of the implementation of the proposals will be assessed by at least 3 external reviewers (scientific experts)

[3] For the different criteria, see Annex 7

per proposal; the impact of the proposals will be assessed by at least 2 external reviewers (policy/management experts) per proposal.

The Call Evaluation Committee (EvC) is composed of scientific and policy/management experts.

If a first step evaluation of pre-proposals is performed, the EvC will rank the pre-proposals based on the set of criteria defined (i.e. fit to the scope of the call, novelty of the research, European added value). The ranking list will be communicated to the Call Steering Committee (CSC) who will agree on which proposals are invited to submit full proposals.

For the evaluation of full proposals, the EvC ranks the proposals based on the set of criteria defined (i.e. excellence, quality/efficiency of the implementation and impact).
Within the Evaluation Committee, the scientific experts moderate the assessments provided by the scientific review procedure (external review reports) and ranks the proposals according to their excellence (assessment criterion 1) and the quality/efficiency of their implementation (assessment criterion 2); the policy/management experts moderate the assessments provided by the societal impact review procedure (external review reports) and ranks the proposals according to their impact (assessment criterion 3).
The members of the Evaluation Committee (both scientific experts and policy/management experts) discuss on the proposals in order to establish the final ranking of proposals for the call.

For the selected proposals, the EvC will be asked to consider the suitability of the budgets and possibilities for budget cuts, as well as to give advice, when possible, on the importance for the entire undertaking of each tasks and/or workpackage in the collaborative projects.

The Evaluation Committee will consist of international experts in the natural and social sciences as well as professionals from the field of biodiversity policy and biodiversity conservation and management.

The Chair and the Vice-Chair of the Evaluation Committee are appointed by the Call Steering Committee (CSC) representing the funding organisations of BiodivERsA. The Chair of the EvC is a scientific expert and the Vice-Chair of the EvC is a policy/management expert.

The Evaluation Committee members are selected upon a first suggested list of experts provided by each member of the CSC.The Chair and Vice-Chair of the EvC – nominated by CSC - will select a limited number of experts (depending on the number of submitted proposals), with attention to the relevance of their expertise for this particular call and balance in the field of expertise according to the themes addressed by the submitted proposals. The final composition of the EvC has to be approved by the CSC. A particular effort in setting up the Evaluation Committees will be done to ensure the gender balance among its members. Some Committee members will/may be from countries that do not participate in the call to allow further flexibility in case of conflicting interests.

The composition of the Evaluation Committee will be published on the BiodivERsA website (http://www.biodiversa.org/) after the completion of the selection process.

(6) Funding

For this call a total amount of 22.2 to 27.1 M€ has been provisionally reserved by the participating funding organisations.
The European Commission will also provide funding for the funded projects depending on the final total funding amount for research proposals by the participating funding organisations.
The indicative total budget for this call is thus of to 30.2 to 35.1M€.

Indicative budgets for each funding organisation are given below. Each participant in a funded project will be preferentially funded by his or her national/regional funding organisation(s) participating in the call. The additional funding provided by the EC for the funded project will be distributed through the national/regional funding organisations.

The consortium of participating funding organisations will strive to ensure that the maximum of top-ranked proposals are funded. The funding procedure is further described in Annex 4. Upon the final decision by the funding organisations, a list of funded projects will be published on the BiodivERsA website.

PROVISIONAL LIST OF COMMITMENTS

Country	Funding organisation	Indicative budget (low) (EURO)	Indicative budget (high) (EURO)
Belgium	BELSPO[$]	1 000 000	1 300 000
Belgium	FWO	400 000	400 000
Bulgaria	NSFB	500 000	500 000
Estonia	ETAG	100 000	100 000
France	ANR	4 000 000	4 000 000
France	ADECAL	100 000	100 000
France	GUA-REG	200 000	300 000
France	GUY-REG	300 000	300 000
France	REU-REG**	100 000	100 000
Germany	DFG	2 000 000	3 000 000
Germany	DLR	3 000 000	4 500 000
Hungary	VM	500 000	500 000
Lithuania	RCL[#]	300 000	300 000
Norway	RCN$	1 000 000	1 500 000
Poland	NCN[#, $]	500 000	500 000
Portugal	FCT[#, $]	325 000	325 000
Portugal	FRCT[$]	100 000	100 000
Romania	UEFISCDI	300 000	500 000
Spain	MINECO	1 500 000	1 500 000
Spain	CAN-REG	0	200 000
Sweden	FORMAS	3 000 000	3 600 000
Sweden	SEPA*	550 000	560 000
Switzerland	SNSF	1 640 000	1 640 000
Turkey	MFAL**	300 000	300 000

*** The funding organisations marked by "*" will not fund proposals submitted in theme 1**
**** The funding organisations marked by "**" will not fund proposals submitted in theme 2**
***** The funding organisations marked by "#" have defined maximum allowed budget per project and/or per Partner**
****** The funding organisations marked by "$" have defined specific rules (read carefully the funding organisations' rules and contact your FCP).**

(7) Programme structure and management

Programme activities

The funded projects are considered to form part of the European Research Area, an international research programme for which joint activities will be organised, such as a kick-off meeting at the beginning of the funding period and a final meeting to present and disseminate the project results at the end of the funding period. **Participants of funded projects should participate in these joint activities. The costs for attendance to joint activities should be included in the budgets of the full proposals** and must be announced in the Call.

Project management and reporting

. Funded projects will be required to submit a mid-term report on research progress and financial aspects and to submit a final report. Some funding organisations may request additional specific reports.

(8) Eligible budget items

Eligible costs and the maximum allowed requested budget per project are governed by funding organisations' rules. Specific questions should be addressed to the Funding organisation Contact Points (list available on the BiodivERsA website)

In case of a too high financial pressure on a participating country due to the high number of teams from this country in the submitted applications, the applicants may be asked to adjust downward their budget.

(9) Further information

The Call Secretariat, ensured by ANR, is responsible for organising the procedure and for all communication with applicants.

However, for national/regional funding organisation eligibility criteria, the funding organisations' rules documents must be consulted and Funding organisation Contact Points should be approached (both lists are available in the call documents published on the BiodivERsA website), in particular with regard to eligibility of research groups, eligible costs and other country-specific aspects of the call. The compliance with Funding organisations' rules is mandatory, and relevant FCPs (Funding organisation Contact Points) should be contacted to obtain further information if needed.

According to their respective rules, the funding organisations may require from the project partners selected for funding to establish a project consortium agreement. The requirement will thus apply to all the project partners, even if their respective funding organisation does not require a project consortium agreement.

We draw the attention of the applicants on the fact that if they plan to use genetic resources and traditional knowledge associated with genetic resources in their project, they will have to ascertain towards the competent authorities and focal point that these used genetic resources and traditional knowledge associated with genetic resources have been accessed in accordance with applicable access and benefit-sharing legislation or regulatory requirements, and that benefits are fairly and

equitably shared upon mutually agreed terms, in accordance with any applicable legislation or regulatory requirements.[4]

4 REGULATION (EU) No 511/2014 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on compliance measures for users from the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization in the Union and related implementing acts.


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