The ERA-NET promoting European research on biodiversity and ecosystem services

BiodivERsA

GUIDE ON POLICY RELEVANCE OF RESEARCH

and on effective science/policy interfacing in research proposals

To cite this report

Photography credits

Page 2 and 78-79: F. Lemaître; others: Pixabay

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FOREWORD: WHY THIS BIODIVERSA GUIDE?

WHAT IS BIODIVERSA AND WHAT ARE ITS SCIENCE-POLICY INTERFACING ACTIVITIES?

BiodivERsA is the European network of national and local programmers and funders of research on biodiversity, ecosystem services and nature-based Solutions. It currently comprises 36 agencies, ministries and local authorities from 23 countries. BiodivERsA strengthens the cooperation between biodiversity research programmers and funders with a strong link to the European Commission, identifying and developing shared biodiversity research strategies.

The principal aim is to provide policy makers and other stakeholders with adequate knowledge, tools and solutions to conserve and restore biodiversity and ecosystems, better manage biodiversity to deliver a range of ecosystem services, and develop nature-based solutions tackling major societal challenges. An expected outcome is the development of a coherent vision of research planning and funding within the European Research Area on biodiversity, ecosystem services and nature-based solutions. To this end, BiodivERsA implements science-policy/society interfacing activities at every step of the research process (see figure 1).

Interfacing work at the level of BiodivERsA includes consultations with key stakeholders on strategic activities and topics for research to be supported by the network in the future (e.g. co-development of the Strategic Research and Innovation Agenda and implementation plan of the network); support to funded projects for the co-production of research (e.g. the present guide and the BiodivERsA Stakeholder Engagement Handbook); and knowledge brokerage activities (e.g. development of policy briefs and the feed-in of relevant funded projects' research results in the Intergovernmental Platform for Biodiversity and Ecosystem Services).
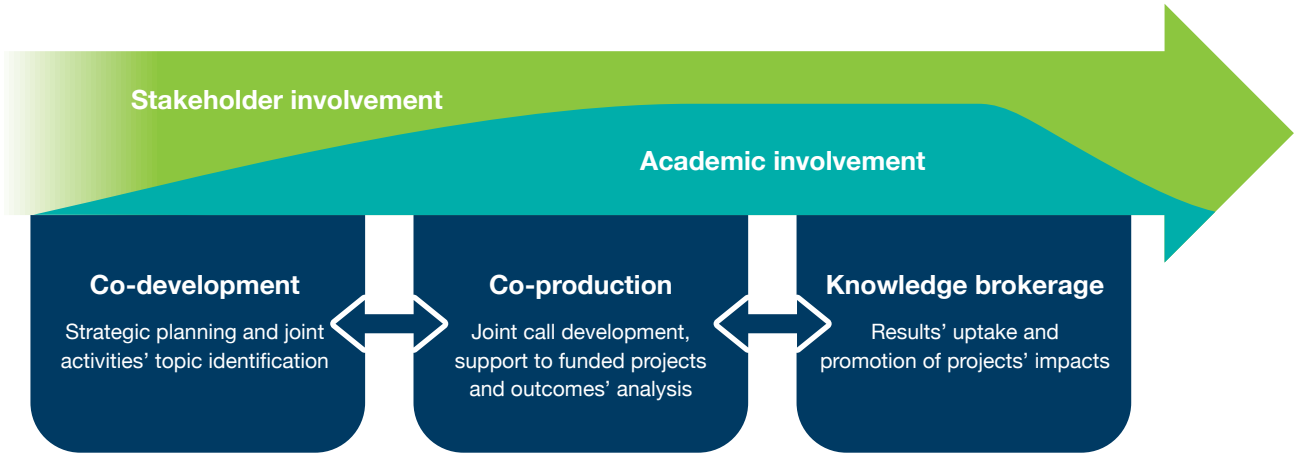

Figure 1: Science-policy interfacing in the different types of BiodivERsA activities (adapted from Mauser et al. 2013[1])

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1. Mauser W. et al. (2013) Transdisciplinary global change research: the co-creation of knowledge for sustainability. *Current Opinion in Environmental Sustainability 5*(3–4): 420-431.

WHY DID BIODIVERSA DECIDE TO DEVELOP A GUIDE ON POLICY RELEVANCE OF RESEARCH PROPOSALS?

Within its joint calls for research, BiodivERsA clearly indicates that projects should stress the societal relevance of the proposed research, inlcuding to policy, and should engage with relevant stakeholders, including policy makers. Further, the BiodivERsA evaluation panels assess the policy relevance in the proposals against a set of pre-defined criteria. These criteria are public and include (i) making a clear statement on the expected policy applications of the project, (ii) identifying policy makers to be engaged and methods to engage them, as well as (iii) presenting plans for knowledge transfer of the research results. A similar evaluation is carried out for engagement in the research projects of stakeholders from outside the policy realm.

During the evaluation of research projects submitted in the 2015 call, several evaluators who had participated in previous panels of BiodivERsA calls had noticed an overall very positive effect of the BiodivERsA Stakeholder Engagement Handbook published in 2014. The Handbook was deemed to have had a clear effect on the quality of stakeholder engagement and communication plans in numerous proposals received. However, the quality of the presentation of policy relevance in the proposals was more uneven. **Several societal impact evaluators pointed out that it could be potentially very helpful to develop a guide dedicated to policy relevance and intended for researchers**, i.e. helping researchers to reinforce their proposals in terms of the policy relevance of the research they intend to carry out, and how to proactively plan for the engagement of policy makers in research proposals.

WHY SHOULD SCIENTISTS SEE POLICY RELEVANCE OF RESEARCH PROPOSALS AS IMPORTANT?

Many researchers working on the topic are concerned about the fate of biodiversity and ecosystems, and seek a better understanding of biodiversity dynamics to build a more positive relationship between biodiversity and human society in the future. **Greater knowledge is clearly essential in achieving this change, yet it is equally essential that this knowledge is made available and usable in a policy context**. A positive example is how the policy world responded to warnings from research on alien invasive species, resulting in various policy actions at international, European and national levels.

Motivations may include the following:

✳ Cultivating relationships with policy organisations will create lasting benefits through improved understanding of the policy landscape, ways of working within these organisations, and future collaborative opportunities;

✳ The chances of research leading to meaningful change will improve significantly with clear pathways to impact;

✳ Policy organisations are sometimes also research funding bodies or can influence the agenda-setting for funders;

✳ Working with end user organisations will extend and enhance the proposal. This includes: generating additional resource; developing and disseminating project reports for policy audiences; and accessing policy fora.

This does not imply, however, that researchers are responsible for policy change or how knowledge is used by policy makers. Rather that researchers have a role to play in filling knowledge gaps that prevent or hinder policy decisions, and that they can provide policy makers with evidence-based policy options in relation to biodiversity and ecosystems. BiodivERsA's approach is precisely to provide this opportunity.

WHAT ARE THE SPECIFIC OBJECTIVES OF THE BIODIVERSA GUIDE ON POLICY RELEVANCE OF RESEARCH PROPOSALS?

The objective of the present guide is to **help researchers to:**

✳ **Better understand what is policy relevance of research,**

✳ **Be aware of what the criteria are for evaluating policy relevance of research in BiodivERsA calls,**

✳ **Be able to more efficiently identify the most relevant policies and policy making bodies** for a given research project. Such policies may directly relate to biodiversity and ecosystem services (which is the anchor of BiodivERsA calls) or indirectly, depending on the specific call topic (e.g. biodiversity and health, scenarios of biodiversity, etc.)

This guide aims to complement the BiodivERsA Stakeholder Engagement Handbook, and to help researchers increase the quality of their research proposals in terms of policy relevance. In addition, the guide will likely be helpful in the context of calls for research proposals in other fields than biodiversity, launched by initiatives having the same expectations as BiodivERsA regarding policy relevance of research.

AN INNOVATIVE TOOL DEVELOPED WITH INPUT FROM A RANGE OF EXPERTS

BiodivERsA is grateful to the co-authors who developed the present guide and shared their knowledge about the topic, as well as the BiodivERsA Partners and Advisory Board who helped in refining the concept, structure and contents of the guide. Their investment in the development of this guide is greatly appreciated, allowing BiodivERsA to offer a novel and important capacity building tool to the biodiversity research community.

Frédéric Lemaitre
BiodivERsA Officer in charge of science/society and science/policy interfacing
& Xavier Le Roux
BiodivERsA Chair & Chief Executive Officer

Part I

⚙ THE BASIS

Understand BiodivERsA's approach to promoting and evaluating policy relevance and science/policy interfacing in research proposals

Part II

🔑 KEYS AND RESOURCES

Qualify and demonstrate the policy relevance of your research proposal

Check your S.I.E.V., don't deceive!

S.	I.	E.	V.
State	**Identify**	**Engage**	**Value**
State clearly and demonstrate the policy relevance of your research proposal	Identify which policy stakeholders you engage and/or target in your research proposal	Engage with policy stakeholders and promote science/policy interfacing within your research proposal	Value the European and international policy implications of your transnational research proposal

Part III

🔍 DOS AND DON'TS

Case-studies for scientists to increase the policy relevance and effectiveness of science/policy interfacing in their research projects

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BOX #1
METHODOLOGY USED AND CONTRIBUTING AUTHORS

This guide was developed to help researchers develop the policy relevance of their research proposal when responding to BiodivERsA calls. It builds on the following methodology:

USE OF LITERATURE

An analysis of existing principles relating to policy relevance of research and science-policy interfacing was performed to develop the theoretical foundations of this guide. The literature considered was selected through a desk study, as well as during reviews by the BiodivERsA Advisory Board, Coordination Team and General Assembly. Selected literature includes scientific, peer-reviewed articles as well as grey literature, e.g. guidance publications and reports from science-policy and purely policy organisations.

ANALYSIS OF BIODIVERSA PROJECTS THAT SCORED HIGHLY IN TERMS OF POLICY RELEVANCE

A review of successful proposals submitted to BiodivERsA calls over 2008-2017 and that scored highly for policy relevance was conducted in order to develop concrete examples and be able to derive the key elements for promoting policy relevance in a research proposal. The resulting material allowed presenting detailed case-studies that exemplify the best practices identified by the authors of this guide.

CONTRIBUTIONS AND EXPERTISE FROM THE BIODIVERSA ADVISORY BOARD

The BiodivERsA Advisory Board was solicited in March 2018 to review an early version of the guide. Board members provided key inputs in terms of literature, policy instruments to be cited, etc. They also made key recommendations on the guide's structure, concepts and methods.

EXPERTISE OF THE GUIDE'S CONTRIBUTING AUTHORS

A working group was organised for the development of this guide. The group was composed of scientific and policy experts who have been involved as evaluators in previous BiodivERsA calls, plus the science-society/policy interfacing Officer of BiodivERsA, the BiodivERsA Chair and CEO, and the vice-Chair, with the following backgrounds and expertise:

Name	BRIDGEWATER Peter
Organisation	Australian National University; Global Garden Consulting
Position	Visiting fellow; Consultant
Expertise	• Extensive experience in science-policy interfacing at national, EU and international scales, e.g. as Secretary of UNESCO's Man and the Biosphere Programme and Director of its Division of Ecological Sciences, and Secretary General of the Ramsar Convention; • Involved in several BiodivERsA call evaluation panels, incl. as Chair of the panel assessing policy relevance.

Name	EGGERMONT Hilde
Organisation	Royal Belgian Institute for Natural Sciences (RBINS)
Position	Coordinator of the Belgian Biodiversity Platform and BiodivERsA Vice-Chair
Expertise	• Biologist by training, interested in freshwater (paleo)ecology and global change research • Broad-ranging expertise linked to science-policy interfacing, science communication and research programming as vice-Chair of BiodivERsA • Belgian Focal Point for the IPBES • Belgian Focal Point, and Regional Councillor West-Europe for the International Union for the Conservation of Nature (IUCN)

Name	GARDNER Simon
Organisation	NERC (UK)
Position	Joint Head of Innovation
Expertise	• Bringing together expertise from the policy, business and research communities to develop innovative approaches to meeting environmental challenges • Involved in several BiodivERsA call evaluation panels, incl. as Chair of the panel assessing policy relevance

Name	HUESO Katia
Organisation	Universidad Pontificia de Comillas; Association of Friends of Inland Salinas (Spain)
Position	Adjunct professor, Association Co-founder and Director
Expertise	• Landscape ecology; Protected area management planning; Socioeconomic research in protected/rural areas; Public use of protected areas; • Involved as policy relevance evaluator for several BiodivERsA calls

Name	LE ROUX Xavier
Organisation	French Institute for Agronomic Research (France); French Foundation for Research on Biodiversity
Position	Senior Scientist, BiodivERsA Chair and CEO
Expertise	• Ecologist, bringing expertise on Science-Policy interfacing and research programming as former Director of the French Foundation for Research on Biodiversity, expert for IPBES, expert for the Sutherland's annual Horizon Scanning exercise, leader of a national expertise for the French Ministries of Agriculture and of Environment, and Coordinator of BiodivERsA since 2008

Name	LEMAITRE Frederic
Organisation	French Foundation for Research on Biodiversity
Position	BiodivERsA Science-Society/Policy Interfacing Officer
Expertise	• Economist by training, bringing expertise in EU and international biodiversity policy and approaches to science-policy interfacing as Officer in charge of science-policy/society interfacing in BiodivERsA.

BOX #1 - CONTINUED

METHODOLOGY USED AND CONTRIBUTING AUTHORS

Name	PEREIRA MARTINS Ivone
Organisation	European Environment Agency
Position	Urban Sustainability Strategic Coordinator
Expertise	• European science and policy interfacing, biodiversity and ecosystems, sustainable urbanisation, 10-year experience as head of biodiversity group at EEA, and experienced in integrated environmental assessments; • Involved as policy relevance evaluator on several BiodivERsA calls

Name	NIEMELÄ Jari
Organisation	University of Helsinki (Finland)
Position	Rector of the University of Helsinki
Expertise	• Professor in urban ecology, use of the ecosystem services concept in urban land use planning, multidisciplinary approaches integrating ecology and social sciences • Chair of the Finnish National IPBES Committee • Involved in BiodivERsA calls as Chair of the panel assessing scientific excellence, Chair of the BiodivERsA Advisory Board.

Name	PALONIEMI Riikka
Organisation	Finnish Environment Institute SYKE (Finland), Environmental Policy Centre
Position	Head of unit for behavioral change
Expertise	• Assessment of economic and policy instruments for biological conservation, securing the conservation of biodiversity across administrative levels, spatial, temporal and ecological scales; • Involved in the European Commission SCALES and EKLIPSE science-policy projects; • Involved as policy relevance evaluator on BiodivERsA calls.

Name	THORNTON Ann
Organisation	Joint Nature Conservation Committee (JNCC)
Position	Biodiversity and Ecosystem Service Adviser
Expertise	• Ecologist and modeller with experience of providing science-policy engagement with natural capital and ecosystem services. Research projects include quantifying the impact of environmental stressors on tropical and temperate estuarine ecosystems.

The authors of the guide iteratively worked for refining its concept and scope, contributing relevant literature and knowledge of (science-)policy processes, and recommending those research proposals that exemplified best practices and could be used as case-studies in part III.

Part I

The basis

Understand BiodivERsA's approach to promoting and evaluating policy relevance of research proposals

■ I.1 – REMINDER OF THE EVALUATION CRITERIA GENERALLY USED TO SELECT RESEARCH PROPOSALS IN BIODIVERSA CALLS

BiodivERsA has developed an overall approach to evaluating research proposals it receives based on the assessment of three major aspects:

✳ scientific excellence,

✳ (expected) societal impact, and

✳ quality of implementation (see figure 2)[2].

These three broad criteria allow BiodivERsA to select high quality proposals for top-level research that advance current knowledge on biodiversity and propose innovative solutions to pressing societal issues linked to the conservation, management and use of biodiversity, ecosystem services and nature-based solutions.

While the network focuses on supporting such transdisciplinary research, it also recognises that building and implementing research proposals that seek to achieve both academic and non-academic impacts can be a challenge. This exercise calls

for the development specific skills in the scientific community. This is why BiodivERsA has invested in the development of tools and methods to allow for successful interactions between BiodivERsA-funded projects and society, including policy. As presented in figure 2, two key publications have been made available so far to BiodivERsA applicants preparing and subsequently implementing a research project fit for BiodivERsA calls.

✳ The **BiodivERsA Stakeholder Engagement Handbook** is a cornerstone publication to help plan and manage the engagement of non-academic stakeholders in a research project in general.

✳ The present **BiodivERsA Guide on Policy Relevance** is specifically designed to support researchers in assessing and demonstrating the policy relevance of their proposed research and building credible and effective science-policy interfacing activities in their research proposals.

Figure 2: The three main evaluation criteria generally used in BiodivERsA calls, and the tools produced by BiodivERsA to support applicants regarding the societal and policy impact aspects.

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2. Note that the precise criteria are subject to changes from one call to another

I.2 – OVERALL EXPECTATIONS OF BIODIVERSA REGARDING POLICY RELEVANCE OF RESEARCH AND SCIENCE-POLICY INTERFACING IN RESEARCH PROPOSALS

BiodivERsA expects applicants to clarify to what extent their research proposal is policy relevant, indicate the kind of policy impact they aim for, and detail the activities and resources (including specific stakeholders to engage) that will help reach this goal.

For researchers, this requires a minimum knowledge of policy making processes, of related challenges, and of the European and international policy landscape for biodiversity and ecosystem services. Public policies are dealing with increasing complexity when it comes to the relationship between human activities and the environment. Evidence-based policies increasingly need science-based assessments of the status of biodiversity and ecosystem services, their short and long-term evolution and, most importantly, the effect that different policy options[3] have on their status.

Decision makers are professionals responsible for making choices and acting in the interest of stakeholders whilst working with unknown, uncertain and fuzzy parameters. Among them, public decision makers have an additional challenge: their stakeholders include the general public, local to global, remote populations, future generations etc. Increasing their knowledge is therefore a key aspect of sound public governance.

Scientists are – collectively – used to present global environmental risks and make every effort to convince politicians and the general public of the reality of their discoveries; see the example of the climate change issue and efforts by scientists through the Intergovernmental Panel on Climate Change. Yet these warnings from science can sometimes be disregarded by politicians and policy makers, for instance resulting in policy decisions regarding climate change that lag behind the science-based knowledge made available. However, it is the responsibility of scientists to ensure that this knowledge is made available to the relevant policy makers, and that policy options are made explicit. For instance, the 23rd report of the Scientific, Technical and Economic Committee for Fisheries[4] called for precautions regarding the practice of electric pulse fishing. In 2016, the scientific community has again warned against the risks of electric pulse trawling[5]. These reports, together with advocacy from non-governmental organisations and possibly political considerations, were the basis for a decision taken by the European Parliament in early 2018 to vote against the extension of electric pulse fishing practice in Europe[6]. Another example: the IPBES has already produced a few assessments that can be evaluated for their impact, and the Assessment on Pollination and Pollinators has been noted in a policy decision by the Convention on Biological Diversity, leading to an expanding list of national strategies and action plans on pollinators. It also led to the FAO International Initiative on Pollination, and to the recent EU pollinator Initiative[7]. Therefore, it makes sense to try to enhance the efficiency of the process converting research investigations and their results into knowledge usable by policy makers. This is why, since its inception, the BiodivERsA network has developed and promoted an approach to reinforce the policy relevance of the research to be funded. How to ensure this approach is really efficient?

BiodivERsA's view is that only excellent science can provide good knowledge to inform policy making, but that this is often not sufficient for policy uptake.

Indeed, the excellent science might, for example, address a topic that is not immediately relevant to the issues that concern policy makers. However, for biodiversity research, one obstacle is often that the planned research activities do not include some additional steps that could strengthen the policy relevance of research and efficiently transform research results into knowledge usable by policy makers and advisors. Such additional steps may,

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3.   Scientists have a key role to play here to inform on policy alternatives by exploring a range of options and analysing their actual costs and benefits over the short, medium and long terms. For instance, see Pielke R.A. (2007) The honest broker. Making sense of science in policy and politics. Cambridge University Press. 188 pp.

4.   https://stecf.jrc.ec.europa.eu/documents/43805/99464/2006-11_23rd+report+of+the+STECF.pdf

5.   Sutherland W.J. et al. (2016). A Horizon Scan of global conservation issues for 2016. Trends Ecol. Evol. 31 : 44-53.

6.   https://www.euractiv.com/section/agriculture-food/news/eu-parliament-calls-for-ban-on-electric-pulse-fishing/

7.   http://ec.europa.eu/environment/nature/conservation/species/pollinators/index_en.htm

for example, relate to communication as researchers and policy makers use very different languages – hence the need for translation skills to bridge this gap.

> **BiodivERsA is pushing scientists a bit beyond their comfort zone, enabling them to reinforce the policy relevance of their research and their capacity to inform policy makers.**

Scientific research depends on peer review processes. However, although having research projects reviewed by scientific peers is necessary from a scientific perspective, an evaluation method solely based on peers' perspective can result in research lacking policy relevance. This is fully acceptable for research programmes aimed at supporting purely fundamental research – which are also needed. But for programmes additionally aimed at promoting science-policy interfacing, the evaluation procedure should also deal specifically with policy relevance[8]. The dedicated evaluation panels set up by BiodivERsA thus assess the submitted projects for both scientific quality and society/policy relevance. The second facet of projects' evaluation needs to be carried out by people directly involved in evidence-based policy making or knowledgeable on this issue and therefore able to assess the likely benefits of project's results for policy making. Of course, a minimum scientific background or knowledge about research projects is also necessary.

With such an evaluation process, funded projects within the BiodivERsA programme are well aligned with the needs expressed by, or even co-developed with, policy makers. This also maximises the chance that the results of excellent science is being delivered for good decisions[9].

At the same time, BiodivERsA recognises that there is a substantial difference between adequately providing the relevant evidence to the right policy makers and advisors on the one hand, and influencing and obtaining (and even further demonstrating) impacts on the other hand.

> **For BiodivERsA, researchers cannot be held accountable for the lack of impact where all appropriate means and methods to deliver evidence into policy making have been put into place, given that factors other than knowledge often influence decision-making[10].**

These factors include:

✳ the extent to which there is a trustful relationship between decision makers and researchers;

✳ the extent to which a given policy organization or individual values and relies on evidence;

✳ political pressures such as changes in government, which may affect policy making processes;

✳ the extent to which previous policy decisions are locked in.

8.   Note that stakeholder engagement and European added value are also evaluated in BiodivERsA, in addition to scientific quality and policy relevance of research projects

9.   The evaluation process is key for that purpose but is not sufficient. BiodivERsA also organises a range of additional activities to promote science-policy interfacing, including workshops, the production of policy briefs, dissemination activities, etc. BiodivERsA follows up and regularly evaluates the actual engagement of policy makers and policy advisors in funded research, and the actual transfer of knowledge to the policy arena

10.   See a comprehensive overview in BCURE (2017) Why don't decision makers use evidence, and what can be done about it? Evaluation Briefing No. 2, http://www.itad.com/wp-content/uploads/2017/01/BCURE-Briefing-Note-2-FINAL.pdf

BOX #2

BIODIVERSA PROMOTES POLICY RELEVANCE OF RESEARCH WHILE ACKNOWLEDGING THE SPECIFICITIES OF RESEARCH AND POLICY MAKING PROCESSES

There are several mismatches between research and the policy arena[1] [2]. This includes understanding each other's motives and ways of operating, information sources and ways of communicating these (e.g. providing or appraising policy options, producing clear-cut guidance rather than the need for more research, etc.). Most importantly, the timeframes in which policy and science respectively work are often very different, which can create some tensions. Balancing the need for robust evidence and appraisal of policy options with a timely delivery of knowledge in the policy arena is a challenge[3].

In addition, there are a number of pressures affecting the use of evidence in policy making, comprehensively described by the UNEP as the five S's[4].

♦ **Speed** (time-sensitivity of policy decisions),

♦ **Superficiality** (policy makers are dependent on their information sources, which can be influenced by other political motives),

♦ **Spin** (public perception can outweigh empirical evidence in policy decision-making),

♦ **Secrecy** (access to evidence limited by confidentiality), and

♦ **Scientific ignorance** (where public can have misinformed perceptions influencing policy decisions).

The time-sensitivity of policy decisions (the first "S") is potentially the most important mismatch, as policy decisions cannot wait on science, while science cannot compromise the rigour of evidence it provides for policy making. In such cases, it can be argued that half an answer may be better than no answer, and that the involvement of policy stakeholders in understanding the limitations of available knowledge is essential to evidenced-based policy making.

Nevertheless, such barriers and limitations to the use of evidence in policy making do not limit a priori the policy relevance of research as understood in the context of BiodivERsA calls.

In particular, although BiodivERsA calls for policy relevant research, it does not necessarily seek to support research whose objective is a timely response to policy queries. In fact, BiodivERsA also supports research on the "bigger picture" that seeks to guide strategic policy development or implementation in the longer-term. Supported research can also open new avenues and propose new options not currently anticipated in the policy arena.

Further, BiodivERsA distinguishes:

✳ the expected impacts of research for policy, whose appreciation is based on planned activities in a proposal, and which should be clearly presented by applicants. These expected impacts are evaluated during the evaluation process; and

✳ the actual policy impacts that a given funded research project ultimately has. Whereas BiodivERsA monitors evidence of impact on policies and policy making of each funded research project, it fully recognises that other factors can restrict policy impact despite the project conducting activities to produce and transfer policy-relevant knowledge.

1.   After Clayton H and Clushaw F (2009) Science into policy: taking part in the process, Natural Environment Research Council NERC report, 29 pp. Accessible: http://www.oceanacidification.org.uk/pdf/science-into-policy-pdf.pdf

2.   (Irish) EPA resource kit: Bridging the gap between science and policy, EPA Research Report Series No. 132 Resource 2 – BRIDGE: Good Practice Guide for science-policy communication, 37pp. Accessible: https://www.epa.ie/pubs/reports/research/spr/BRIDGE_Good_Practice_Guide.pdf

3.   Nutley S. et al. (2002), Evidence Based Policy and Practice: Cross Sector Lessons From the UK. ESRC Centre for Evidence Based Policy and Practice: Working Paper 9, 23 pp. Accessible: https://www.kcl.ac.uk/sspp/departments/politicaleconomy/research/cep/pubs/papers/assets/wp9b.pdf

4.   United Nations Environment Programme (2017) Strengthening the Science-policy Interface: A Gap Analysis. Nairobi,.See Box 3, page 69. Accessible: http://wedocs.unep.org/handle/20.500.11822/22261

I.3 – HOW TO FIT THE SPECIFIC CRITERIA USED TO ASSESS POLICY RELEVANCE AND SCIENCE-POLICY INTERFACING IN BIODIVERSA CALLS

Currently, BiodivERsA uses either a specific sub-panel of evaluators or specialized evaluators within a single panel to more specifically evaluate the research proposals in terms of society/policy relevance and stakeholder engagement.

Below we indicate the criteria used to assess policy relevance of projects, which applicants to a BiodivERsA call need to address, and the guidelines for evaluators mobilised by BiodivERsA. A companion BiodivERsA Handbook[11] details how to engage stakeholders in research projects and the way to promote and evaluate it: both applicants and evaluators are invited to also consult this report.

A WORD ON THE CRITERIA

The criteria presented are the ones generally applied. Yet, these may evolve from one call to another depending on the specificities of the call topic. Applicants to BiodivERsA calls are invited to account for evaluation criteria detailed in each call text.

To demonstrate policy relevance, project proposals submitted to BiodivERsA should contain the following 'S.I.E.V.' elements:

CHECK THAT YOU ADDRESS THE FOUR S.I.E.V. ELEMENTS IN YOUR PROPOSALS

✓ **S. - State** clearly and demonstrate the policy relevance of your research proposal

✓ **I. - Identify** which policy stakeholders you engage and/or target in your research proposal

✓ **E. - Engage** with policy stakeholders and science/policy interfacing within your research proposal

✓ **V. - Value** the European and international policy implications of your transnational research proposal

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11. Durham E., et al. (2014) The BiodivERsA Stakeholder Engagement Handbook. BiodivERsA publication, Paris, 108 pp. https://www.biodiversa.org/706/download

A. **STATE** CLEARLY AND DEMONSTRATE THE POLICY RELEVANCE OF YOUR RESEARCH PROPOSAL

Any proposal intending to be policy relevant must contain details identifying the need for, or contributions of, the proposed research in the context of policy instruments and current legislations. It should also highlight the importance of this work for solving pressing policy issues related to the details of the joint call. This information is essential in demonstrating the science-policy credentials of any funding application. Policy relevance of the proposed research needs to be explicit. Although evaluators may be able to discern implicit policy relevance within applications, it may be challenging to decipher the applicants' thought process underlying the proposal's science-policy interfacing.

In particular, applications should include references to key conventions, agreements, policies and/or policy tools. Relevant international, EU, national and regional policies, legislative frameworks and management plans are further detailed under part II.2.B and figure 5[12]. These include:

✳ **Global instruments and conventions**, e.g. the Convention on Biological Diversity (CBD), the Ramsar Convention, the Convention on International Trade of Endangered Species and Wild Fauna and Flora (CITES), the Convention on the Conservation of Migratory Species of Wild Animals (CMS), the United Nations Framework Convention on Climate Change (UNFCCC), etc.

✳ **Global policy-relevant processes and programmes**, including:

♦ Global assessments, e.g. the Global Biodiversity Outlook,

♦ Global science-policy platforms, e.g. the Intergovernmental Platform for Biodiversity and Ecosystem Services,

♦ UN international agreements, such as the Paris Climate Agreement; and the 2030 Agenda for Sustainable Development, including related targets such as the UN Sustainable Development Goals,

♦ UN specialized agency programmes such as the UNESCO's Man and Biosphere programme (UNESCO/MAB), International Hydrological Programme (UNESCO/IHP) and International Oceanographic Commission (UNESCO/IOC), the Biodiversity and Ecosystem Services Network (BES-Net) of the United Nations Development Programme, etc.

✳ **European Union instruments**, especially the EU Biodiversity strategy and connected instruments, including:

♦ Directives directly related to biodiversity, such as the EU Nature Directives (Habitats and Birds Directives), Water Framework Directives, Marine Strategy Framework Directive and Floods Directive,

♦ Regulations, such as the Regulation on Alien Invasive Species,

♦ National or regional legislative instruments implementing EU Directives, such as Natura2000,

♦ Other policies indirectly relating to biodiversity, such as the Common Agricultural Policy, and Directives indirectly linked to biodiversity, such as the Nitrates Directive.

✳ **Multilateral regional instruments**, e.g. the OSPAR Convention on protecting and conserving the North-East Atlantic and its resources, or the Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas (ASCOBANS).

✳ **National or regional plans implementing international conventions**, such as the "National Biodiversity Strategies and Action Plans" (NBSAP) implementing the CBD.

More generally speaking, specific national and/or local policies or plans that will benefit from application of the research results should be identified in each country included in the proposal.

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12.   The list of instruments and policy tools presented in this guide should not be considered exhaustive.

BOX #3

STATE – EXAMPLES FROM BIODIVERSA PROJECTS

BIOGEA – Testing BIOdiversity Gain of European Agriculture with CAP greening (*BiodivERsA 2015-2016 joint call*)

The aim of BIOGEA is to examine how Green/Blue Infrastructure (GBI) can be better managed through the Common Agriculture Policy (CAP) measures and provide the greatest benefits for biodiversity and ecosystem services. While the project's topic is highly policy relevant, the quality of its policy relevance statement stems from a clear presentation of how the proposed research relates to specific targets of key pieces of legislation. For instance, the proposal explicitly links the research to targets 2 (ecosystems and their services) and 3 (contribution of agriculture and forestry) of the EU Biodiversity Strategy 2020 as well as the achievement of the EU Water Framework Directive's objective of "good ecological status" for all EU waters. It also refers to the most recent policy reviews, at time of submission, to make the case that ecosystems under agricultural management are amongst those in the poorest condition. These include the Habitats Directive reporting; the European environment - State and Outlook 2015 (SOER); the Mid-term review of the EU Biodiversity Strategy; and the first results of the Nature Directives Fitness check. Finally, it clearly presents the policy context in which its results can be useful, citing the report on greening measures expected in the mid-term of this CAP, the review of the Multiannual Financial Framework, as well as the preparation of the next CAP reform. Particularly convincing is the fact that the BIOGEA team pin-pointed specific policy processes and discussions where they intend to transfer the projects' results, such as 2017-2018 communications and regulatory proposals from the European Commission for discussion at the European Parliament in the context of the post 2020 CAP reform.

RESERVEBENEFIT – Evaluating and managing connectivity in a network of Marine Protected Areas to maintain genetic diversity and deliver fish beyond protected limits (*BiodivERsA 2015-2016 joint call*)

This project evaluates the contribution of networks of Marine Protected Areas (MPAs) to artisanal fishery production off the coastlines of the western Mediterranean. The work planned is directly and explicitly derived from knowledge gaps for policy making. This is made clear from the start of the proposal, in the description of the project objectives and hypotheses, while the rationale for the overall policy relevance of the proposed research is presented in a dedicated section of the proposal. The relevance of different levels of policy making to the proposed research are clearly identified ; for example, at the international level with the Convention on Biological Diversity's Aichi targets (11 and 14) and at regional level with the Barcelona convention and its protocols (Protocol concerning specially protected areas and biological diversity in the mediterranean; Barcelona 1995, which is dedicated to the conservation of biodiversity by developing MPAs). The policy context at the European level is well detailed, citing the Marine Strategy Framework and indicating how it complements the Water Framework Directive, and citing the directive 2014/89/EU of the European Parliament and of the Council (JO 28.8.2014) which has established a framework for maritime spatial planning that would strongly benefit from the outcomes of the project.

B. **IDENTIFY** WHICH POLICY STAKEHOLDERS YOU ENGAGE AND/OR TARGET IN YOUR RESEARCH PROPOSAL

Proposals are expected to identify specific end users, to the level of the organisations, and, if possible, to name the individuals within these organisations who will be engaged in the planned research and/or could use the research results. Generic references to 'end users' or policy makers, which are 'in the spirit' of the research call, are not convincing, as these do not present sufficient proof that a thorough identification of relevant policy stakeholders has been carried out.

Also, applicants do not necessarily need to involve all stakeholders linked to their research in their proposals, it is sometimes preferable to focus on the involvement of a few carefully identified stakeholders. The choice to exclude some stakeholders, or to focus on a few key ones, should however be clearly explained in the proposal[13].

BOX #4

IDENTIFY – EXAMPLES FROM BIODIVERSA PROJECTS

RESIPATH – Responses of European Forests and Society to Invasive Pathogens (*BiodivERsA 2012-2013 joint call*)

The overall aim of the project RESIPATH was to study how European forests are affected by and respond to invasive pathogens, as well as to develop means to mitigate their impact. The project team carried out a thorough identification of stakeholder organisations in each case-study country. They related the specific objectives of the project (e.g. evaluate the possibility of predicting the expected adaptation of a tree species to a new invader) to the interests of specific policy makers and government agencies in the case-study countries, citing individual contacts within ministries related to agriculture, forestry and environment, forest agencies, etc. These are clearly summarised in a separate table.

PERCEBES – Tools for the transition to spatial management of coastal resources: the stalked barnacle fishery in SW Europe (*BiodivERsA 2015-2016 joint call*)

The strength of PERCEBES' identification of policy makers (and other stakeholders) is that it has been precisely carried out while developing the project proposal. The different national groups involved in the project have secured the participation of local policy makers, fisheries' authorities and administrations from, e.g., the Asturias Principality Government in Spain, the Marine Protected Areas Agency in France, the National Agency for Nature Conservation in Portugal, etc. In addition, the project has approached and secured the participation of influential boundary organisations that can act as advisors on the policy landscape and as communicators of the projects' findings, such as the WWF in Spain and Portugal.

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13.   For further guidance on identifying and engaging stakeholders in a research project, please refer to the BiodivERsA Stakeholder Engagement Handbook, accessible here: http://www.biodiversa.org/702

C.   **ENGAGE** WITH POLICY STAKEHOLDERS AND PROMOTE SCIENCE-POLICY INTERFACING WITHIN YOUR RESEARCH PROPOSAL

Given the targeted policies and the identified policy makers/advisors (points A and B above), as much detail as possible should be included in the proposal on the engagement activities planned to ensure a clear and credible link is made between applicants and these end users. There is an expectation that engagement with any identified policy makers and other stakeholders will be built in the project description of work, including but not necessarily limited to the stakeholder engagement plan.

This should include the following information:

✳ A credible stakeholder engagement plan, indicating to what extent policy makers and advisors are part of the stakeholders considered;

✳ Clear indications on the anticipated uses of the research results by named individuals within policy development, implementation or advisory agencies at national and/or regional levels, and planned activities to promote these uses;

✳ The proposal should also detail the arrangements for efficient dialogue with, and knowledge transfer to, policy makers (and other stakeholders). This should be the subject of a detailed communication plan, which is embedded into the project description of work.

This communication plan should include (i) an external communications strategy with details of reporting and dissemination of results and any planned publicity; and (ii) details of arrangements for data sharing and data access and post-project archiving demonstrating how this enhances the capacity of policy makers and other stakeholders to better use information derived from the research.

BOX #5

ENGAGE – EXAMPLES FROM BIODIVERSA-FUNDED PROJECTS

BIOVEINS – Connectivity of green and blue infrastructures: living veins for biodiverse and healthy cities (*BiodivERsA 2015-2016 joint call*)

The aim of BIOVEINS is to investigate the link between the proportion and configuration of green and blue infrastructures, taxonomic/functional diversity and the supply of ecosystem services in cities by combining several disciplines as well as citizen science. The project shows a strong grasp of the need to communicate clearly to the various audiences identified as key to the project's success. It also identified a wide variety of methods to achieve this. A dedicated work package and dissemination plan focuses on bridging the gap between research, practice and policy through a dual approach, i.e. by providing: i) a structure to support stakeholder involvement and; ii) tools to guide policy makers on the implementation of Green and Blue Infrastructure also beneficial to biodiversity. In each case study city, stakeholders (including the Zurich City Council, advisers to the Deputy Mayor's office of the Municipality of Almada, head of the Biodiversity Observatory in Paris, etc.) are specifically identified. The plan is to engage them very early after project inception, thus giving them a voice regarding the research implementation plan, and later during the project life for contributing to formulation of options and evaluation of project development and results. For instance, a 'collaborative learning' process is planned, with workshops gathering scientists and local policy makers identified in the proposal. In addition, the project has identified in the proposal key science-policy events to which it will seek to participate and disseminate results, such as the yearly 'Green week' of the European Commission.

ODYSSEUS – Between Scylla and Charybdis – Managing connectivity for freshwater fish (*BiodivERsA 2015-2016 joint call*)

The ODYSSEUS project argues that there is a lack of quantitative information assessing the efficiency of blue infrastructure (here streams-lakes networks) in influencing fish communities. This restricts science-based decision-making for the management of connectivity for fish in EU rivers. The project's originality is the use of the snowball method[1], beginning with contacts of the local scientific teams, to identify individuals responsible for the national policies concerning the implementation of the Water Framework Directive, and managers responsible for the regional implementation of these policies. In short, the ODYSSEUS team primarily relies on a first set of identified stakeholders to actively take part in developing and implementing their engagement and dissemination plans.

1. Atkinson, R. & Flint, J. (2004) Snowball Sampling. In: The SAGE Encyclopedia of Social Science Research Methods (Ed. Lewis-Beck M.S, Bryman A. & Futing Liao T.), Thousand Oaks, CA, Sage. http://methods.sagepub.com/reference/the-sage-encyclopedia-of-social-science-research-methods/n931.xml

D.   **VALUE** THE EUROPEAN AND INTERNATIONAL POLICY IMPLICATIONS OF YOUR TRANSNATIONAL RESEARCH PROPOSAL

When presenting an overview of the outcomes relevant to policy makers that it seeks to achieve, the proposal should provide clear evidence of either a direct added value for policy making in the EU mainland or in EU overseas regions, countries and territories, or an indirect added value that may result from, e.g.:

✳ Learning from models applied to countries outside the EU;

✳ A reduction in risks, for instance identifying the risk presented by invasive species that have not yet entered the EU and presenting science-based policy or legislative recommendations (i.e. policy options) to mitigate this risk for European countries and territories.

The presentation of the European and/or international added-value of a research proposal (here V. for Value in the S.I.E.V. acronym) can largely build on the first three S.I.E.V elements, including:

✳ An outline of the added value for European (and international when relevant) policy making provided by the proposal;

✳ A presentation of the specific activities planned for promoting the use and uptake of results by policy advisors and policy makers in Europe or European overseas regions, countries and territories (and in international policy arena when relevant).

For a more precise understanding of what European and/or international added-value stands for, please refer to part II.4.

IMPORTANT NOTICE

In some BiodivERsA Calls, other, non-European, scales may be of prime importance (e.g. overseas regions, countries and territories or relevant international scales). Applicants are invited to account for evaluation criteria linked to each call text.

BOX #6

VALUE THE EU AND INTERNATIONAL POLICY IMPLICATIONS OF YOUR TRANSNATIONAL RESEARCH – EXAMPLES FROM BIODIVERSA PROJECTS

BIOGEA – Testing BIOdiversity Gain of European Agriculture with Common Agricultural Policy greening (*BiodivERsA 2015-2016 joint call*)

BIOGEA focuses on policies and funding mechanisms that are largely decided upon on at EU level, in particular, biodiversity policies including the Green Infrastructure Strategy, the Common Agricultural Policy and the Water Framework Directive. Their research is valuable for EU policy making and Member States, as habitat connectivity is an important part of national biodiversity strategies and action plans. In this context BIOGEA allows Member States to learn from one another through the work carried out in the project. In particular, the participating member states in BIOGEA have been selected for the variety of national implementation approaches they have taken to CAP greening measures and their potential effects on Green and Blue Infrastructures. The team explains how parts of the CAP's Pillar 1 and Pillar 2 implementation differ across Member States. They present a table showing how different CAP greening measures are implemented within the project's selected Member States. This approach allows for a better evaluation of the CAP, while also enabling different countries to capitalize on other's experiences. This demonstrates a clear added value for the policy making of the EU but also for multiple Member States.

COFORTIPS – Congo basin forests: tipping points for biodiversity conservation and resilience of forested social and ecological systems (*BiodivERsA 2011-2012 joint call*)

The purpose of CoForTips is to foster better management of the Congo Basin forests through a greater understanding of the dynamics, regime shifts and tipping points of biodiversity and the resilience of forested social ecological systems (SES) and the construction of biodiversity scenarios. Initially, this may seem rather remote from EU policy making. However, the project makes a strong case for its relevance beyond the Congo Basin region based on the fact that the European Union, i) is a net consumer of African tropical timber, ii) owns most of the logging companies in the region, iii) is highly concerned about the capacity of Tropical Montane Forests to serve as carbon sinks, iv) strives to uplift the living standards of marginal communities (citing the Lisbon declaration of the EU-Africa Summit), and v) wants to contribute to biodiversity conservation (Working Program on Forest Biological Diversity). This is a good example of why the definition of the European added value, and more specifically the added value to EU policy making, is defined in a non-prescriptive way in BiodivERsA calls.

So, remember: if you adequately address the four '**S.I.E.V.**' elements in your proposal …

S — **State** clearly and demonstrate the policy relevance of your research

I — **Identify** which policy stakeholders you want to engage

E — **Engage** with policy stakeholders

V — **Value** the European and international policy implications of your research

… then, you have a fair chance that your proposal will be strong on the policy relevance aspect.

However, we recognize that doing this properly is challenging for many scientists. The part II of this guide provides some keys and references to help you address the 4 above-mentioned aspects in your future proposals.

Part II

Keys and resources

How to better qualify and demonstrate the policy relevance of your research proposal

Check your S.I.E.V., don't deceive!

◼ II.1 – **STATE** CLEARLY AND DEMONSTRATE THE POLICY RELEVANCE OF YOUR PROPOSAL

A.   UNDERSTAND WHAT IS MEANT BY POLICY RELEVANCE OF A RESEARCH PROPOSAL

As understood in the context of BiodivERsA calls, policy relevant research is research that seeks to provide relevant knowledge to policy makers[14].

> **Policy is understood here in the wider sense; it seeks to deliver outcomes for society by turning political vision into concrete, manageable and achievable steps.**

It includes all activities from policy formulation to its delivery, which encompasses foresight, developing regulation, managing risks, and reviewing past policies through monitoring and evaluation. In a broad sense, policy relevant research is understood here as research with a clearly articulated and substantive link to outcomes on biodiversity and ecosystem services through a policy process (definition adapted from Game et al. 2015[15]).

A key element to science-policy interfacing is grasping how policy makers and academics understand and use evidence respectively. Shaxson (2010)[16] comprehensively presents the use of evidence in policy realms as directed towards policy priorities, and often applied in the context of current priorities (the "policy agenda"). Evidence use in policy arena is thus characterised by a rather immediate demand. In contrast, the use of evidence in academia is often embedded in the longer term, often directed towards global public goods in biodiversity and ecosystem services research, and sometimes consisting of a curiosity-driven search for knowledge. It should however be recognised that this description has its limitations, as the search and use of evidence in academia can also be mission-oriented, or commercially sensitive i.e. in partnership with the private sector, and/or on shorter time-scales[17]. Also, an important boundary of policy-relevant research that needs to be understood early on is that **policy makers can use evidence or not**. Overall, the interests and motivations of policy makers and researchers when engaging with one another is described by figure 3 below (adapted from Gibbons et al. 2008[18]).

14. This section largely builds on Gardner S., Stott A. & Vindimian E. (2013) How to assess policy relevance in research projects? BiodivERsA report, 8 pp. https://www.biodiversa.org/254/download
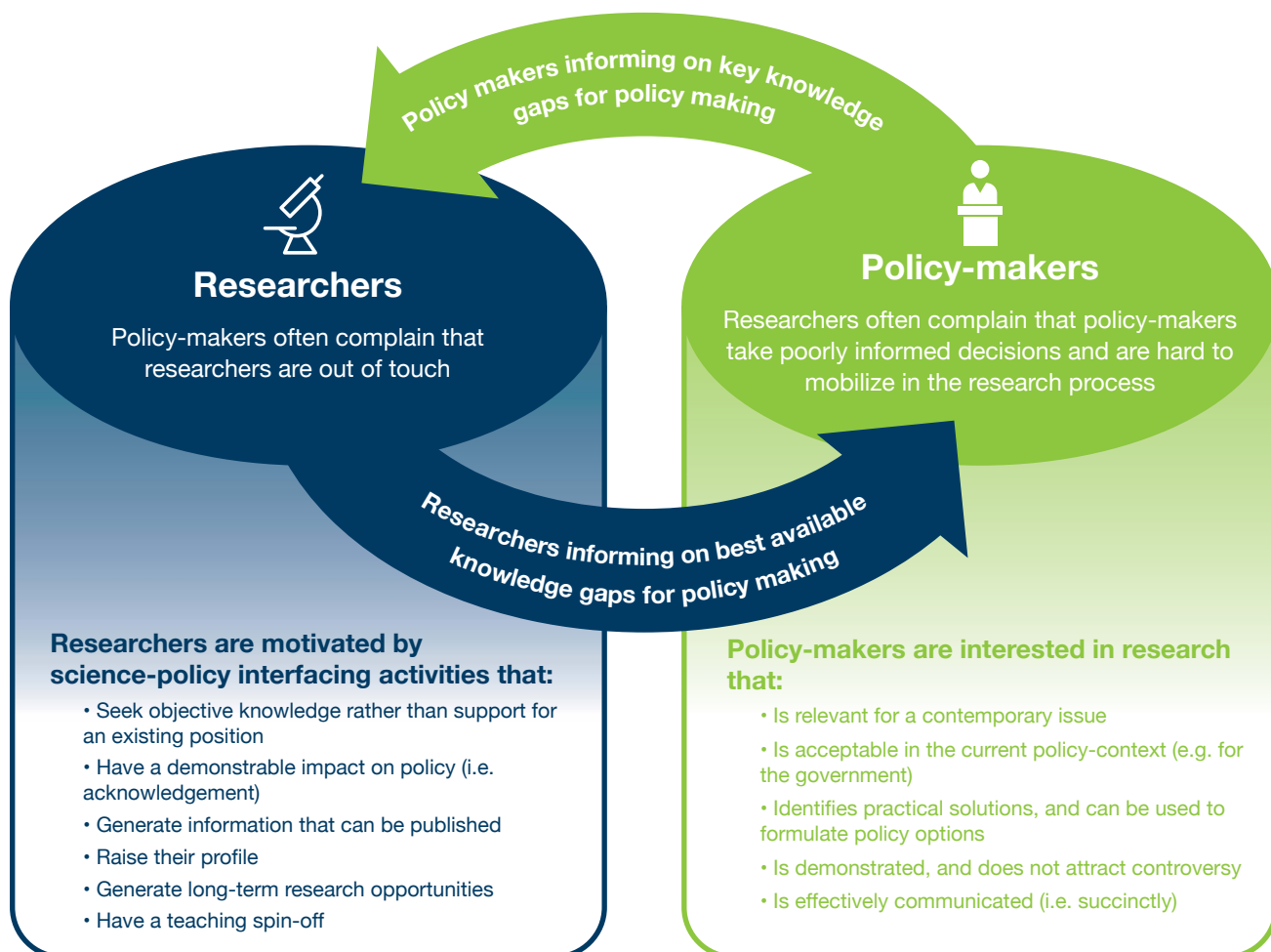
15. Game E.T. et al. (2015) Policy relevant conservation science. Conservation Letters, 8(5): 309–311.

16. After Shaxson L. (2010) What is policy relevant research? PIPSC 2nd Science policy symposium, Ottawa, April 12-14 2010

17. See examples in Mazzucato M. (2018) Mission-Oriented Research & Innovation in the European Union, European Commission report , 36 pp. Accessible: https://ec.europa.eu/info/sites/info/files/mazzucato_report_2018.pdf

18. Gibbons P. et al. (2008) Some practical suggestions for improving engagement between researchers and policy makers in natural resource management. *Ecological Management & Restoration*, 9: 182–186

Researchers

Policy-makers often complain that researchers are out of touch

Policy-makers

Researchers often complain that policy-makers take poorly informed decisions and are hard to mobilize in the research process

Policy makers informing on key knowledge gaps for policy making

Researchers informing on best available knowledge gaps for policy making

Researchers are motivated by science-policy interfacing activities that:

- Seek objective knowledge rather than support for an existing position
- Have a demonstrable impact on policy (i.e. acknowledgement)
- Generate information that can be published
- Raise their profile
- Generate long-term research opportunities
- Have a teaching spin-off

Policy-makers are interested in research that:

- Is relevant for a contemporary issue
- Is acceptable in the current policy-context (e.g. for the government)
- Identifies practical solutions, and can be used to formulate policy options
- Is demonstrated, and does not attract controversy
- Is effectively communicated (i.e. succinctly)

Figure 3: Schematic illustration of how researchers and policy makers have often different interests that can generate difficulties when engaging with one another (adapted from Gibbons et al., 2008[18])

In this context, the robustness of presented evidence and its recognition by the scientific community, or rather the degree of controversy it raises, are important elements considered by policy makers. This has in part lead to a growing use of systematic reviews, knowledge syntheses, meta-analyses and knowledge gaps syntheses for communicating scientific evidence to policy (see box #7). Gibbons and colleagues further detail how the starting point for successful interactions needs to consider interests and motivation for both parties, and how « *actively building and maintaining relationships with key individuals through discussions, meetings, workshops or field days will increase the likelihood that research outcomes will inform policy decisions* ».

BOX #7

IN YOUR PROPOSAL, YOU CAN CONSIDER USING EXISTING SYSTEMATIC REVIEWS, KNOWLEDGE SYNTHESES, ASSESSMENTS AND ANALYSES OF KNOWLEDGE GAPS TO BETTER DEMONSTRATE THE POLICY RELEVANCE OF YOUR RESEARCH

Accounting for and referencing existing systematic reviews, knowledge syntheses, meta-analyses and knowledge gaps syntheses while developing your research proposal may help demonstrate the robustness of your scientific approach but also its added value for policy making. Such exercises are gaining increasing attention as a means to provide the best available knowledge and guidance on knowledge gaps for policy making.

Key resources to identify existing synthesis work relevant to the policy issue your proposal seeks to address include the following.

Collaboration for Environmental Evidence (CEE)

The CEE seeks to promote and deliver evidence syntheses on issues of greatest concern to environmental policy and practice as a public service. The CEE relies on a network of national and regional evidence centres that encourage evidence-based practice and systematic review activity within their geographic region. It publishes the Environmental Evidence Journal (systematic reviews, systematic maps, review and map protocols, etc.) and also provides a handy Environmental Evidence Library, a searchable database for browsing systematic reviews and systematic maps that have been approved by the CEE.

▶ Find out about the Environmental Evidence Library here:

http://www.environmentalevidence.org/completed-reviews

▶ Find out about national/regional CEEs here:

http://www.environmentalevidence.org/cee-centres

Assessments and Catalogue of Assessments of the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES)

The IPBES has produced a number of scientific assessments aimed to provide policy makers with an objective state of knowledge regarding biodiversity, ecosystems and the benefits they provide to people, as well as tools and methods to protect these. So far, the IPBES has/is producing geographical assessments (e.g. regional and global assessments), thematic assessments (e.g. on pollinators, on land degradation) and methodological ones (e.g. on models and scenarios of biodiversity). These are summarized under "Summaries for Policy Makers" (SPMs) or accessible in full (see Chapters).

In addition, the IPBES has prodced a Catalogue of Assessments on Biodiversity and Ecosystem services which gives information on assessments from global to sub-natioanl scales

▶ IPBES assessment reports: https://www.ipbes.net/assessment-reports

▶ IPBES Catalogue of Assessments: http://catalog.ipbes.net/

BOX #7 - CONTINUED

The EKLIPSE mechanism

Supported by the European Commission, EKLISPE is a European mechanism to mobilise knowledge on biodiversity and ecosystem services in support of decision-making. It receives requests from the private or public sectors and organises responses based on available knowledge. You can also make use of the KNOCK forum, an open networking space for the public, policy makers, and scientists, to exchange knowledge, experience, and advice on biodiversity and ecosystem services.

▶ Find out about EKLIPSE reports here:

http://www.eklipse-mechanism.eu/eklipse_outputs_reports

The Sutherland's annual Horizon Scan of emerging issues for global conservation and biological diversity

Supported by the Natural Environment Research Council (NERC) and the Royal Society for the Protection of Birds (RSPB), the Sutherland's annual Horizon Scan exercise gathers between twenty and thirty experts in conservation research and practice, ecology, economics, policy, and science communication for identifying 15 topics each year following a wide consultation. A Delphi-like process is used to score and identify the most important novel or emerging issues for global conservation and biological diversity. The issues span a wide range of fields from emerging or returning diseases, to biotechnologies, financial tools and regulation frameworks that can yield transformational developments. The aim is to highlight systematically both risks and opportunities to the conservation of biological diversity that are not widely known by conservation scientists and decision makers. This allows users, including but not limited to policy makers, researchers, innovators, educators, investors, and practitioners, to identify future political, environmental, technological, and societal changes and consider their possible effects. The result of this Horizon Scanning is published each year in the journal Trends in Ecology and Evolution.[1]

▶ Find the latest report published here:

https://www.cell.com/trends/ecology-evolution/abstract/S0169-5347(17)30289-6

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1.   For the latest publication, see Sutherland W.J., et al. (2018) A 2018 Horizon Scan of emerging issues for global conservation and biological diversity. Trends Ecol. Evol. 33: 47-58.

B.   DETERMINE WHAT KIND OF POLICY RELEVANCE YOUR PROPOSAL CAN HAVE

The type of policy relevance of your research, as understood in BiodivERsA, can be appreciated based on the degree of alignment it has with policy priorities and the degree of knowledge co-production you plan in your research. From a practical point of view, five categories can be defined according to the degree of alignment between the uses of evidence by policy makers and academic researchers, as presented in table 1 below. While this categorization is not used to evaluate proposals as such, it may help identify and describe the policy relevance in your research proposal.

Table 1: Identifying the category/categories of policy relevance of your proposal based on the degree of alignment with policy priorities and degree of knowledge co-production (after Shaxson, 2010)[16]

Type of policy relevance of the research	Definition	Example from BiodivERsA-funded projects
Non-aligned	Research topic of broad policy interest, but not at all aligned with policy priorities, rather a proscpective or experimental interest	The BIOMARKS project works on the importance of marine Eukaryotic life for global biogeochemical cycles and for monitoring the health of marine environments – the objective is to explore and identify new functions and propose new indicators of marine ecosystems status, for instance in terms of monitoring water quality.
Policy interest	Research topic broadly aligned with policy priorities, but issues addressed by research not directly in line with specific priorities and needs identified by policy makers	Although not aligned with specific policy priorities, the RACE project is of policy interest because it studies an emerging threat to amphibian biodiversity. The objective is to get this topic on the policy agenda.
High-level alignment	Research topics are aligned with policy priorities, and evidence produced is related to the wider policy context. However, communications and interpretation of results are performed by researchers independent of any policy stakeholders	The APPEAL project studies land-use change effect on bio-control in in the context of the Common Agricultural Policy, analysing service provision conditions. The objective is to develop knowledge needed for decision-making tools (map service provision, values, etc.), and provide these to policy makers to, e.g., weigh the costs of control measures against production loss and possible environmental degradation
Explicit policy-relevance	The choice of research topics and activities is directly inspired by policy priorities and needs; policy makers are directly involved with the prioritisation of research questions and interpretation of results for policy making during the project life. This necessitates early engagement of policy stakeholders	The CONNECT project investigates the relationship between ecosystem services and biodiversity to assess the effectiveness of policy instruments and governance structures to conserve biodiversity. The aim is to inform conservation policy on certain groups of ecosystem services that exhibit specific synergies or trade-offs with biodiversity conservation. CONNECT analyses how advanced knowledge in combination with intensive stakeholder interaction can contribute to efficient policy strategies and improved policy tools, with guidelines and options to be produced in the project. This entails an analysis of current policies' impacts on biodiversity conservation.
Knowledge co-produced with policy stakeholders	Beyond the joint identification of questions and interpretation of results, researchers and policy makers/advisors collaborate on knowledge production and related outputs. Such research often requires a high degree of multi-disciplinary and participatory approaches	The URBES project co-produces knowledge with an organised network of local city policy makers (namely ICLEI) as project partners as well as with a boundary organisation (IUCN). These stakeholders collaborate on assessing institutional conditions for effective biodiversity policy implementation, take part in developing policy options and scenarios, and lead on results uptake and delivering trainings.

The degree of alignment between the research and policy realms as categorised above is linked to (i) the stage of the policy cycle your project seeks to work with – see part II.2 – and (ii) the level and timing of engagement of the policy stakeholders in your project – see part II.3.

Policy relevance is therefore not only about the research topic but also importantly about the process of engaging policy makers and advisors by researchers.

In any case, moving from one category to another requires specific steps, from involving policy stakeholders in the scoping of the research question ahead of the project, to interpreting the data and collaborating during the project through participatory approaches.

However, the framework provided above for understanding what is meant by policy relevance of research and what category of policy relevance your proposal corresponds to in the context of BiodivERsA calls should be viewed cautiously. Indeed, no single category of the above is deemed best as an aim for science-policy interfacing, but rather different categories are relevant for different questions and stakeholders. Thus, when designing a research project, the choice to follow one category or another should be conscious and explained. Would you relate your project to (one of) these categories, keep in mind that what is important is to clarify and enhance the presentation of the policy relevance of your research proposal, and to present a careful planning of, e.g., the levels and timing of engagement of stakeholders. The next two sections of Part II of this guide aim to provide keys to help you in doing so.

Policy stakeholders may be of different types (see table 2 below), but also work at different levels, from local to global, as explained in part II.4 (European and international added value).

> It may be relevant for a given project to engage policy stakeholders either at local or national level, or at European or international level, depending on the work planned and the policy impact it seeks to achieve.

As BiodivERsA is rooted in the European Union, the focus of the present section on identifying policy stakeholders is at the European level. It is however not necessarily the only nor the right scale of engagement for your project. Further, BiodivERsA may reinforce the international dimension of its future calls. Nevertheless, a better understanding of the policy stakeholders and processes within the EU is useful.

A.   BE AWARE OF THE DIFFERENT TYPES OF POLICY STAKEHOLDERS INVOLVED IN THE EU POLICY CYCLE

I. THE DIVERSITY OF POLICY STAKEHOLDERS INVOLVED IN THE EU POLICY CYCLE

A simplified model of EU policy making is presented in figure 4 (after Germond 2016[19]). This cycle is intended to help depict how policies are developed, implemented and assessed. However, it should be interpreted cautiously. While it has the advantage of clearly laying out each step of the policy process, it is important to mention that this is an idealised representation. In particular, policy may develop at different speeds, and not necessarily along a cyclical pattern. While such a theoretical model is useful to understand the overall process, researchers do not have to wait for a "rational and orderly process" [20], but should engage pragmatically with real-world policy making at the time of their research.

The reality of EU (but also national and international) policy making is complicated, and it may prove essential to engage with stakeholders that understand the policy context associated with your proposal. As described in part II.2.D, a direct engagement of policy makers within research projects may not always be the most successful approach. Engaging with other policy stakeholders such as NGOs and boundary organisations may sometimes be more efficient to ensure a timely and coherent fit of the proposed research and science-policy interfacing activities with on-going policy processes.

The European Union is a complex and unique political entity where part of the decision-making and policy questions are delegated to shared institutions, but Member States remain independent sovereign nations. For a given piece of legislation, there are knowledge needs and opportunities to interact with the institutions and authorities involved at the different stages of the cycle. The planning of science-policy interactions may be time-sensitive (e.g., where a certain piece of legislation is in the process of formulation to adoption and implementation) or not (e.g., agenda-setting where emerging issues are identified).

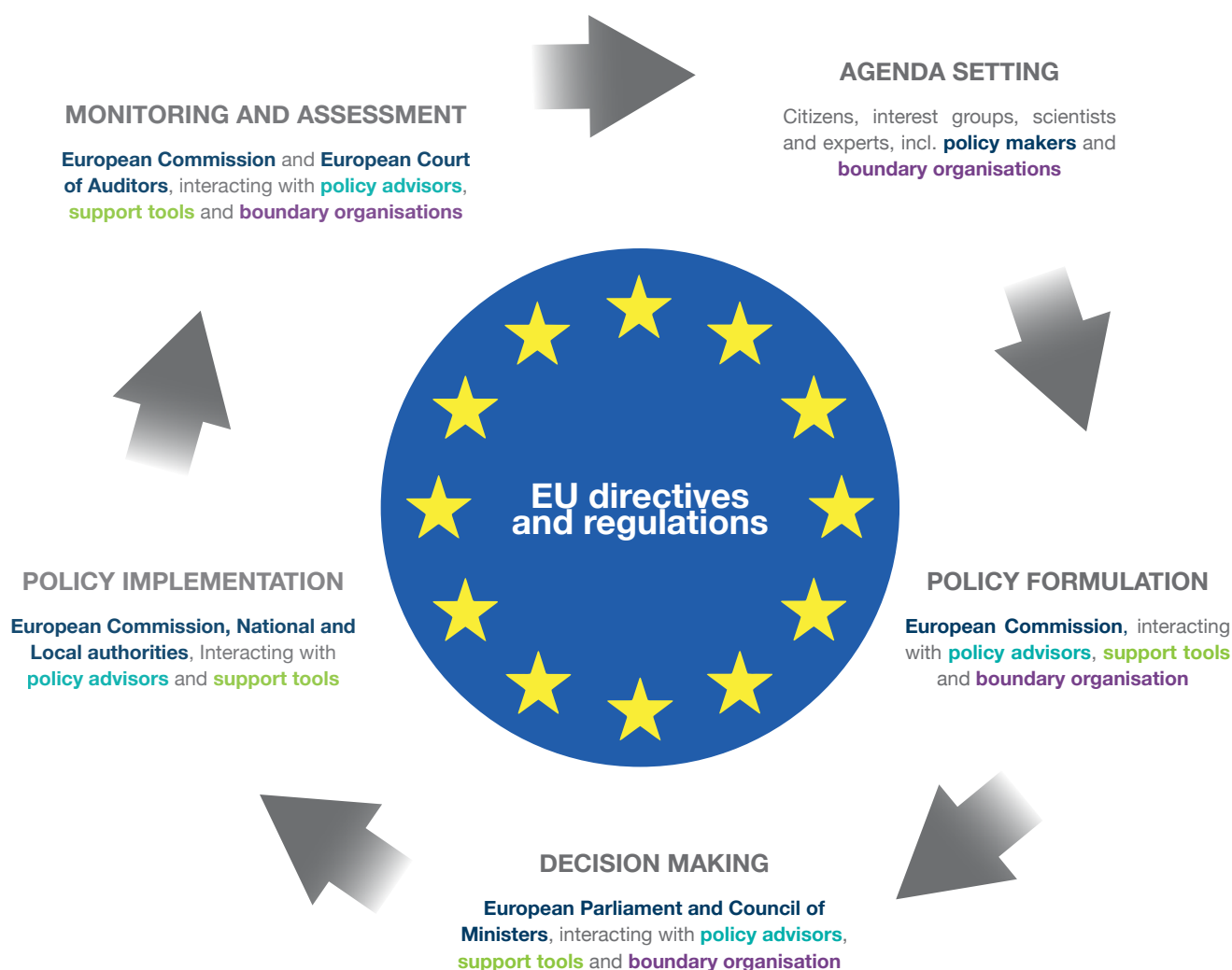The main pieces of legislation that form the EU law are directives and regulations.

* **Directives** set a common goal for all Member States to achieve, and each can decide on how to transpose a directive into national law within one to two years, such as the Bird Directive or Habitats Directive.

* **Regulations** differ in the sense that they are directly applicable throughout the EU once adopted, such as the Regulation on Alien Invasive Species.

19.   Germond C.S. (2016) EU decision making : a brief introduction. ESOF 2016, Marie Skłodowska-Curie Actions Satellite Event "Research and Society", 28-29 July 2016, Manchester, UK. Accessible: http://ec.europa.eu/assets/eac/msca/news-events/events/year/2016/documents/esof-eu-decision-making-cgermond_en.pdf

20.   Cairney P. & Kwiatkowski R. (2017) How to communicate effectively with policymakers: combine insights from psychology and policy studies. Palgrave Communications 3: Article 37 Accessible: https://www.nature.com/articles/s41599-017-0046-8

Understandably, these EU institutions can be difficult to approach and interact with as individual scientists or research groups.

There are however a number of official scientific advisory bodies related to some of these institutions and also myriad non-governmental organisations, scientific associations, institutes, tools, interest groups and fora that can communicate scientific knowledge in support of policy making and decision (see next part II.2.B.iv).

MONITORING AND ASSESSMENT

European Commission and **European Court of Auditors**, interacting with **policy advisors**, **support tools** and **boundary organisations**

AGENDA SETTING

Citizens, interest groups, scientists and experts, incl. **policy makers** and **boundary organisations**

EU directives and regulations

POLICY IMPLEMENTATION

European Commission, National and Local authorities, Interacting with **policy advisors** and **support tools**

POLICY FORMULATION

European Commission, interacting with **policy advisors**, **support tools** and **boundary organisation**

DECISION MAKING

European Parliament and Council of Ministers, interacting with **policy advisors**, **support tools** and **boundary organisation**

Figure 4: The EU policy cycle and key bodies involved at every step. Agenda setting is based on various interests. The European Commission formulates proposals for pieces of legislation to implement this agenda, which are discussed, amended and eventually adopted between the European Parliament and the Council of Ministers. The actual implementation of most pieces of legislation lies with national and local authorities, and the monitoring of implementation and assessment of their effectiveness and impacts are performed by the European Commission and eventually involves the European Court of auditors. Adapted from Germond (2016)[19].

II. PROPOSED CATEGORIES OF POLICY STAKEHOLDERS YOU MAY CONSIDER ENGAGING IN YOUR PROPOSAL

Different categories of policy stakeholders can be distinguished in order to help scientists identify and understand the type of stakeholders they need to involve (table 2). While they are naturally at the core of the decision-making process in several stages,

> policy makers may be difficult to reach out to for an individual project/researcher, and are not necessarily the appropriate stakeholder category to engage.

The key role played by other policy stakeholders in advising and influencing the policy making process, as well as their knowledge of the policy process, potential interest for science, and overall availability to be engaged, can make them highly valuable targets when seeking to inform and advise policy making.

Table 2: Broad categories of policy stakeholders that can be considered for engagement in your research project

Policy stakeholder category	Short description	Examples of institutions
Policy makers	A policy maker is a person (or institution) responsible for, or involved in, the formulation and/or adoption of policies. Different roles in the policy process allow distinguishing in this category policy makers that formulate, decide upon, implement and/or monitor policies. It is important to emphasise the differences between 'policy makers' who mostly work at department-level, and those responsible for policy implementation (which will typically work within regulatory bodies or management authorities). Indeed, these are very different audiences, even though they may be dealing with the same piece of legislation.	✳ European Commission ✳ European Parliament ✳ Council of Ministers ✳ European Parliament Intergroup on "Climate Change, Biodiversity and Sustainable Development"
Policy advisors	A policy advisor is understood to be a person or organisation/institution that provides ideas or plans used for policy formulation, adoption and/or implementation. Policy advisors are formally and officially linked to policy makers/institutions. There are two types of policy advisors: one closely associated with decision makers that cast the policy advice in a political context; and the second offering a more neutral, yet nuanced advice derived from scientific evidence, which are the ones mainly referred to in the present context.	✳ European Environment Agency ✳ Joint Research Centre[21] ✳ European Parliament's Research Service
Support tools	Support tools are referred to as tools that can support science-policy interfacing for research projects. These can be online repositories, platforms, etc.	✳ MAES ✳ BISE ✳ Oppla ✳ ThinkNature
Boundary organisations	Boundary organisations are designed to facilitate collaboration and information flows between the research and public policy communities[22]. It is a general term (see part II.3.C.iv) covering a wide range of organisations and institutions. Some may be purely about facilitating science-policy interfacing flow (e.g. IPBES or IPCC), while others facilitate it as part of wider environmental campaigning and work (e.g. IUCN, WRI).	**Focused on science-policy flow, e.g.:** ✳ IPBES – Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) ✳ IPCC – Intergovernmental Panel on Climate Change **Facilitating science-policy flow as part of wider work, e.g.:** ✳ EBCD – European Bureau for Conservation and Development ✳ EEB – European Environmental Bureau ✳ IEEP –International Institute for Environment and Development ✳ IUCN – International Union for the Conservation of Nature ✳ UNEP WCMC – UN Environment World Conservation Monitoring Centre ✳ WWF – World Wide Fund For Nature ✳ WRI – World Resource Institute

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21. The European Commission actually includes the JRC, which is a Directorate General along thematic ones such as DG ENV, DG AGRI, DG MARE, DG REGIO. It has however a particular scientific advisory role for EU policy making in the Commission, and is thus singled out in this different category.

22. Parker J. & Crona B. (2012) On being all things to all people: Boundary organisations and the contemporary research university. Social Studies of Science 42(2): 262-289.

B. IDENTIFY WHICH POLICIES YOU ARE SEEKING TO INFORM

I. SELECT THE POLICIES RELEVANT FOR YOUR RESEARCH FROM THE EU AND INTERNATIONAL POLICY LANDSCAPES

Many biodiversity and ecosystem services' policies are formulated at international and European levels and implemented at national or local levels. There are numerous pieces of legislation and frameworks related to environmental and more specifically biodiversity policy. This results in an overall landscape that is quite complex (figure 5).

For effective science-policy interfacing, it is necessary to identify appropriate pieces of legislation and frameworks to find hooks for your research in the relevant policy context.

First, it is useful to have a clear view of the (large number of!) European and international agreements and instruments overarching across all aspects of biodiversity and ecosystem services. Figure 5[23] illustrates the complex biodiversity policy landscape in Europe where national governments can be parties to many multilateral conventions and instruments – either regional (e.g. European Union Directives, Regional Seas Conventions) or global (e.g. Convention on Biological Diversity, Convention on Migratory Species). Countries are also committed to taking part in global science-policy processes such as the Intergovernmental Platform on Biodiversity & Ecosystem Services (IPBES, see also part II.3.C.iv on boundary organisations).
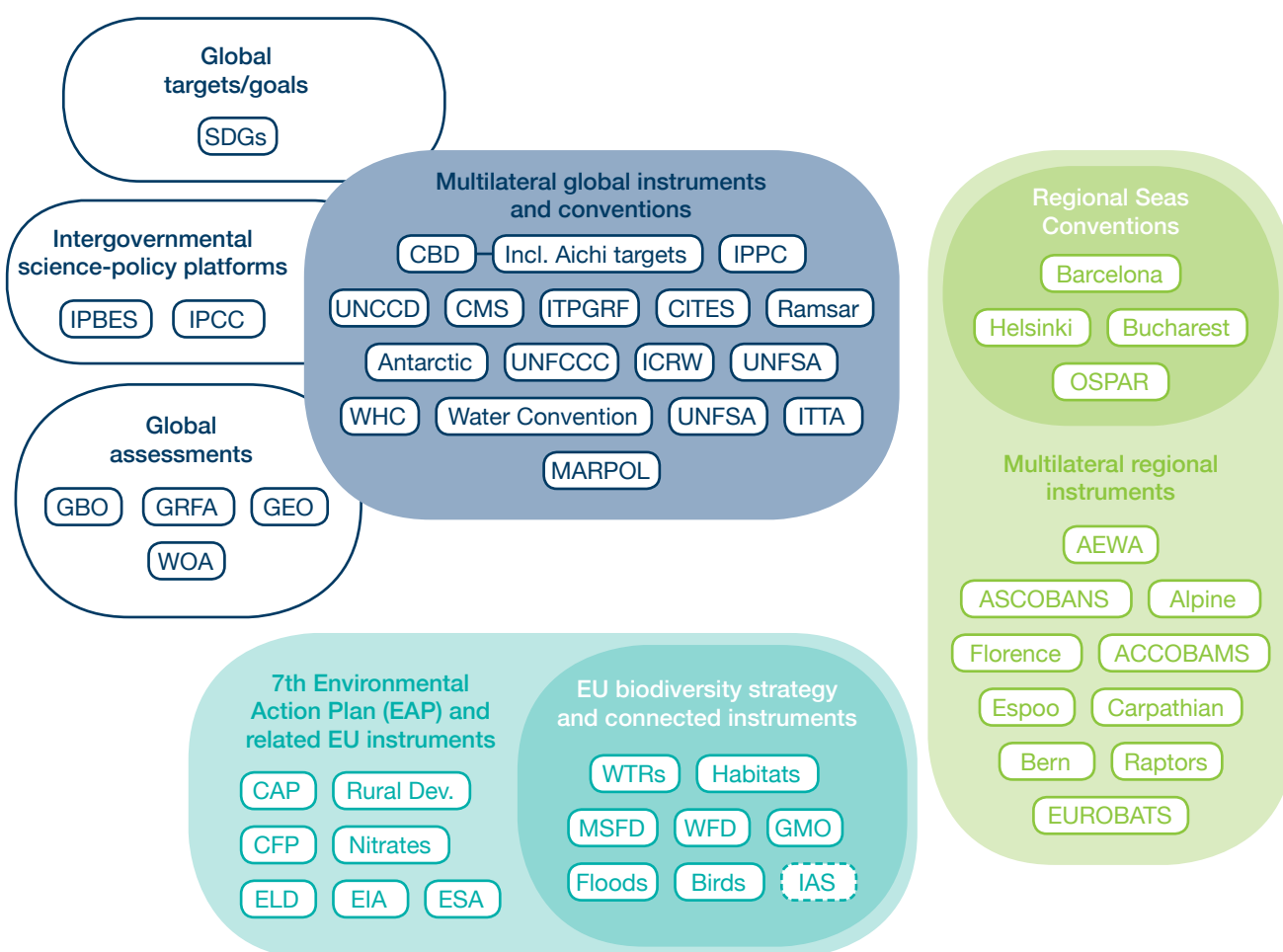
Figure 5: An overview of the EU and global biodiversity policy landscape. After Wetzel et al. (2015)[23]

23.   Wetzel et al. (2015) The roles and contributions of Biodiversity Observation Networks (BONs) in better tracking progress to 2020 biodiversity targets: a European case study, Biodiversity, 16:2-3, 137-149. Accessible: https://www.tandfonline.com/doi/pdf/10.1080/14888386.2015.1075902

II. SPECIFY HOW YOUR RESEARCH CAN RELATE TO MAJOR CONVENTIONS, FRAMEWORKS AND AGREEMENTS

Our objective here is to help applicants identify key frameworks and legislations, both at international and EU levels, that they can seek to inform. It is not intended to be an exhaustive list, especially since biodiversity is a cross-cutting issue that is addressed in biodiversity-specific policies but also in many policies from other sectors (e.g. the EU's Common Agricultural Policy). The present section and tables 3 and 4 below provide an overview of major multilateral conventions and instruments, including how these gather scientific advice for policy making and a few pointers to key contacts and resources. We hope this can help applicants identify the right entry-points for their engagement.

MAJOR CONVENTIONS, FRAMEWORKS AND AGREEMENTS OF THE GLOBAL POLICY LANDSCAPE WITH A MAIN FOCUS ON BIODIVERSITY

Convention on Biological Diversity (CBD)

The CBD is a major international treaty on biodiversity, signed by 150 government leaders at the 1992 Rio Earth Summit, which then formed its decision body, the Conference of the Parties (COP). Compliance with the CBD objectives is ensured by two supplementary agreements, the Cartagena Protocol on Biosafety and the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation. It has 3 aims:

✴ conservation of biological diversity;

✴ sustainable use of the components of biological diversity;

✴ fair and equitable sharing of the benefits arising from the use of genetic resources.

The CBD identifies a common problem of biodiversity loss, sets overall goals and policies and general obligations, and organises technical and financial cooperation. Then the responsibility for achieving its goals rests largely with the countries themselves, through National Biodiversity Strategies and Actions Plans (so-called NBSAPs). At the international level, the CBD has two main Protocols (Cartagena on Biosafety ; and Nagoya on Access and Benefit Sharing). It also has a number of thematic (inland water, forests, island biodiversity etc.) and cross-cutting (climate change and biodiversity, invasive alien species, etc.) programmes.

Aichi Targets

The 20 Aichi Biodiversity targets were adopted part of the CBD's 2011-2020 strategic plan, and are intended as a general framework for all matters related to biodiversity in the United Nations. They are the object of national implementation plans by the signatories, and include targets for 2020 on reducing close to null the loss of natural habitats, or protecting 17% of land and 10% of continental waters, and restoring 15% of degraded areas.

Ramsar Convention on Wetlands of International Importance

With 170 signatories, it is a framework for local, national and international cooperation around the conservation and wise use of wetlands. The objectives of the convention are threefold:

✴ work towards the wise use of wetlands;

✴ designate suitable wetlands for the list of Wetlands of International Importance (the "Ramsar List") and ensure their effective management;

✴ cooperate internationally on transboundary wetlands, shared wetland systems and shared species.

To date there are 2,323 Ramsar sites covering over 248 million hectares. For its implementation, the Convention relies on regional initiatives such as the 4 Ramsar Regional Centres, that promote scientific and technical cooperation and exchange of knowledge in their region, and the 15 Regional networks that provide a platform for collaboration between governments, technical experts, international NGOs, local communities and private companies.

World Heritage Convention

It concerns the Protection of the World Cultural and Natural Heritage. Adopted in 1972 in the UNESCO General Conference, it currently includes 193 signatory parties. It links the concepts of cultural and natural heritage, recognising the way in which people interact with nature, and the fundamental need to preserve the balance between the two. Signing the

Convention is a country's pledge to:

✳ protect World Heritage Sites, and more generally its national heritage;

✳ encourage the integration of the cultural and natural heritage protection into regional and national plans, undertake scientific and technical conservation research and adopt measures which give this heritage a function in the day-to-day life of the community;

✳ report on the state of World Heritage to the World Heritage Committee.

The Convention also sets the framework and process to include elements of World Heritage on the World Heritage List of UNESCO. The World Heritage Centre is a focal point within the UNESCO for all matters related to World Heritage. It is also supported by a network of national focal points, and regional units covering Africa, Arab States, Asia & Pacific, Europe & North America, and Latin America and the Caribbean.

CITES – Convention on International Trade in Endangered Species of Wild Fauna and Flora

It is an international agreement first adopted in 1973, and now counting 183 parties (states and regional economic integration organisations, i.e. the EU). Its overarching objective is to ensure that international trade in specimens of wild animals and plants does not threaten their survival. It does not replace national legislation but rather provides a framework to be respected. CITES member states implement this by preparing and adopting their own national legislation to ensure the sustainable use and conservation of wild species subject to trade. The international trade of species covered by CITES is subject to specific controls. All import, export, re-export and introduction of these species must be authorised through a licensing system. Members states of CITES are required to nominate a national authority responsible for the controls and licensing, as well as one or more Scientific Authorities to advise them on the effects of trade on the status of species.

Convention on Migratory Species

The Convention on the Conservation of Migratory Species of Wild Animals. It is an environmental agreement under the aegis of the United Nations Environment Programme (UNEP) covering the conservation and sustainable use of migratory species and their habitats. The CMS comprises 126 Parties, i.e. signatory states. States through which migratory species pass have a special denomination under the Convention ("range states"), which enables international coordination of conservation efforts in the migration range of relevant species. It lists migratory species threatened with extinction under Annex I and migratory species that would benefit from international cooperation under Annex II. The CMS relies on 7 legally binding treaties ('agreements') and 19 informal agreements (e.g. memoranda of understanding) relating to specific groups or species (birds of prey, dugong, European bats, etc.). It should be noted that countries can join the various agreements without being a Party of the Convention. The main decision body of the Convention is the Conference of Parties that is supported by a Standing Committee, a Secretariat, a Scientific Council and working groups (either regional, species specific, or thematic).

Table 3: Scientific counselling and resources to engage with major global conventions, frameworks and agreements focusing on biodiversity

Convention, framework or agreement	Scientific counselling and possible approach to engage	Key resources
Convention on Biological Diversity (CBD)	**Subsidiary Body on Scientific, Technical and Technological Advice** (SBSTTA) The SBSTTA is an open-ended intergovernmental scientific advisory body established by the Convention, composed of government representatives competent in the relevant field of expertise. It provides the COP and other subsidiary bodies with advice relating to the implementation of the Convention. Its functions include providing assessments of the status of implemented biodiversity measures, responding to questions from the COP, and providing recommendations. **Subsidiary Body on Implementation** (SBI) The SBI's areas of work include reviewing progress, proposing actions and strengthening the means for the impelmentation of the CBD. **Ad Hoc Technical Expert Groups** (AHTEGs) AHTEGs can be set up on specific topics such as digital sequences of genetic resources, climate change, indicators for the strategic plan, or synthetic biology. They generally have remits relating to the synthesis of views from the Parties, fact-finding or performing scoping studies. **Research needs** The CBD expresses research needs, where knowledge is hampering decision making. These are listed throughout all CBD decisions (i.e. 276 Decisions of all 13 COP meetings held so far). The German Institute for Biodiversity compiled them in a thematic table-based format. This useful resource is available from: http://www.biodiv.de/en/biodiversitaet-infos/forschungsbe-darf-der-cbd.html	✳ CBD website: https://www.cbd.int/ ✳ Aichi targets: https://www.cbd.int/sp/targets/ ✳ National Biodiversity Strategies and Action Plans, including a possibility for keyword searches: https://www.cbd.int/nbsap/default.shtml ✳ Incl. search instructions: https://www.cbd.int/doc/nbsap/Google%20Keyword%20Search.pdf ✳ The CBD information center, with links to texts, meeting documents and national information such as country profiles and contact points: https://www.cbd.int/information/ ✳ CBD national focal points, contacts listed by theme, including a dedicated network for the SBSTTA: https://www.cbd.int/information/nfp.shtml ✳ SBSTTA meeting preparations, including topics and upcoming inputs to the COP: https://www.cbd.int/sbstta/preparation/ ✳ SBI pages, including meeting documents: https://www.cbd.int/sbi/ ✳ AHTEG meetings' documents: visit website
Ramsar Convention	**Scientific and Technical Review Panel** (STRP) The STRP was established to provide scientific and technical guidance to the Ramsar Convention bodies. It is expected to provide global, regional and national specific scientific and technical advice, guidance and tools for the implementation of the Convention. The STRP comprises 6 academic members and 12 technical expert members, together with a number of observer experts from scientific and technical and international organisation partners of the Convention. It operates along a 3-year work plan. For, the 2016-2018 period, these relate to monitoring of Ramsar sites and implementation of site management plans, economic and non-economic valuation of wetlands' goods and services, addressing the anthropogenic drivers of wetland degradation, and identifying innovative methods for wetland restoration in the face of climate change.	✳ Ramsar Convention website: https://www.ramsar.org/ ✳ STRP page, including links to the triennial work plan of the panel: https://www.ramsar.org/about/the-scientific-and-technical-review-panel ✳ Ramsar Regional Initiatives: https://www.ramsar.org/activity/ramsar-regional-initiatives ✳ Searchable Ramsar documents database: https://www.ramsar.org/fr/search?f%5B0%5D=type%3Adocument#search-documents ✳ Incl. a dedicated section for Regional Initiatives: https://www.ramsar.org/search?f[]=field_tag_body_event%3A593 ✳ Searchable database of Ramsar National Focal Points: https://www.ramsar.org/fr/search?search_api_views_fulltext=focal+point

24.　Here we indicate specific links that, we hope, can be useful for applicants. However, some of these links may change in the future. In such cases, we recommend to use higher-level site addresses and then navigate from there.

Convention, framework or agreement	Scientific counselling and possible approach to engage	Key resources
World Heritage Convention (WHC)	The WHC relies on three external advisory bodies for its scientific counselling: • The **International Union for the Conservation of Nature** (IUCN) provides technical evaluations of natural heritage properties and, through its worldwide network of specialists, reports on the state of conservation of listed properties. • The **International Council on Monuments and Sites** (ICOMOS) provides evaluations of cultural and mixed properties proposed for inclusion (i.e. mixing culture and nature) on the World Heritage List. • The **International Centre for the Study of the Preservation and Restoration of Cultural Property** (ICCROM) promotes the conservation of all forms of cultural heritage, in every region of the world. It provides Member States with the best tools, knowledge, skills and enabling environment to preserve all forms of cultural heritage.	✳ WHC website: https://whc.unesco.org/ ✳ The Who's who of the Convention, including contacts for staff from the Centre and the regional units: https://whc.unesco.org/en/whoswho/ ✳ European and North America unit page, including links to key documents such as the action plan for Europe, reports on the sites' monitoring, a publication on the state and future of World Heritage in Europe, etc.: https://whc.unesco.org/en/eur-na/ ✳ List of identified factors affecting the World Heritage sites, as identified by the Convention: https://whc.unesco.org/en/factors/ ✳ Searchable documents' library of the Convention: https://whc.unesco.org/en/documents/ ✳ Further information on the sites' reporting and monitoring: https://whc.unesco.org/en/118/
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)	**Animal and Plant Committees:** These committees are composed of experts expected to fill gaps in biological and other specialised knowledge regarding species of animals and plants that are (or might become) subject to CITES trade controls. They provide technical advice for decision making under the Convention. Their missions relate to: • providing scientific advice and guidance to the Convention bodies; • addressing nomenclatural issues; • undertaking periodic reviews of species, to ensure appropriate categorisation in the CITES Appendices; • advising when certain species are subject to unsustainable trade and recommending remedial action; • drafting resolutions on animal and plant matters for consideration by the Conference of the Parties.	✳ CITES website: https://www.cms.int/en ✳ List of CITES covered species: https://cites.org/eng/disc/species.php ✳ Searchable database of CITES species and documents: https://www.speciesplus.net/#/ ✳ List of national CITES authorities, including national and local enforcement authorities and scientific advisors: https://cites.org/eng/cms/index.php/component/cp ✳ Searchable CITES database of species' trade: https://trade.cites.org/ ✳ Members (+ contacts) of the Animal/Plant Committees: 　✳ Animal: https://cites.org/eng/com/AC/member.php 　✳ Plant: https://cites.org/eng/com/PC/member.php ✳ Meeting documents of the Animal/Plant Committees: 　✳ Animal: https://cites.org/eng/com/AC/index.php 　✳ Plant: https://cites.org/eng/com/PC/index.php ✳ Staff directory of the CITES Secretariat: https://cites.org/eng/disc/sec/staff.php
Convention on Migratory Species (CMS)	**CMS Scientific Council:** The Scientific Council of the Convention makes recommendations relating to research on migratory species, specific conservation and management measures, the inclusion of migratory species in the Convention's lists and designation of species for cooperative actions. It also provides advice on projects' eligibility for funding under the Small Grants Programme of CMS. It is composed of experts appointed by each of the Parties, as well as other members appointed by the COP to cover specific themes and issues. Since 2014, a smaller group of experts is used, consisting of a representative selection of the membership of the Scientific Council named the Sessional Committee.	✳ CMS website: https://www.cms.int/ ✳ List of Parties and Range States: https://www.cms.int/en/parties-range-states ✳ List of Scientific Councillors: https://www.cms.int/sites/default/files/uploads/ScC_list_2018_05.pdf ✳ Reports and documentation of the Scientific Council: https://www.cms.int/meetings/scientific-council ✳ The CMS Family portal: http://migratoryspecies.org/ ✳ CMS Agreements: https://www.cms.int/en/cms-instruments/agreements ✳ CMS Memoranda: https://www.cms.int/en/cms-instruments/mou ✳ CMS working groups: http://migratoryspecies.org/en/content/working-groups

MAJOR INSTRUMENTS OF THE EU POLICY LANDSCAPE RELATING TO BIODIVERSITY

Combatting climate change is a policy objective of the EU, while sustainable development is an overarching policy objective of the Union. The Union's environmental policy objectives, including a long term 2050 vision, are set out under the 7th Environmental Action plan (see box #11). Biodiversity is subject to specific EU legislative instruments (see major instruments in table 4 below), but as it is a cross-cutting theme, it also relates to a number of other environmental[25] or non-environmental policies (e.g. the Common Agricultural Policy, the Common Fisheries Policy, the Nitrates Directive, etc.).

Scientific counselling in relation to these instruments is received through dedicated advisory entities from the European institutions, for example within the different Directorate General of the European Commission and notably from its Joint Research Centre. In addition, the EU institutions can set up ad-hoc working groups (e.g. the working group on No Net Loss of Ecosystems and their Services in relation to Action 6 of the biodiversity strategy) and specific thematic initiatives (e.g. the EU Pollinators' Initiative)[26].

Table 4: Major instruments of the EU policy landscape relating to biodiversity[27]

Instrument	Description	Key resources
Our life insurance, our natural capital: the EU biodiversity strategy to 2020	The 2020 biodiversity strategy is an overarching document that encompasses different legislative instruments of the EU relating to biodiversity. It identifies five key threats to biodiversity (habitat change, pollution, over-exploitation, invasive alien species, and climate change) and sets six targets for 2020: 1. Conserving and restoring nature: this objective relates to a better implementation of the Birds and Habitats Directives (i.e. existing legislation) to reach a favorable conservation status of all habitats and species of European importance. 2. Maintaining and enhancing ecosystems and their services: this objective primarily relates to the successful development of green infrastructures in the EU. It also comprises a quantitative objective of restoring 15% of degraded ecosystems in the EU by 2020. 3. Ensuring the sustainability of agriculture and forestry: also expected to feed targets 1 and 2, it relates mostly to the environmental measures under the Common Agricultural Policy and Forest Management Plans of publicly owned forests. 4. Ensuring sustainable use of fisheries resources: this primarily relates to the Common Fisheries' Policy implementing Maximum Sustainable Yield (MSY) and the Marine Strategy Framework Directive's aim to achieve Good Environmental Status by 2020. 5. Combatting Invasive Alien Species (IAS): seeks to identify, isolate or eradicate IAS, and to control their introduction thereby preventing the appearance of new species. This led to the development of the IAS regulation. 6. Addressing the global biodiversity crisis: this objective seeks to step up the EU's contribution to averting the global biodiversity crisis, mostly in relation to the international multilateral agreements such as those under the aegis of the United Nations. In addition, these targets translate into a set of 20 time-bound actions key to their achievement.	✳ Access the Biodiversity strategy summary and full text: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=legissum:ev0029 ✳ Synthesis of the 20 actions of the Strategy: http://www.mzoip.hr/doc/strategija_europske_unije_o_bioraznolikosti_do_2020_.pdf ✳ Interactive presentation of the EU biodiversity strategy's mid-term review, including summary and complete assessments for each target: https://biodiversity.europa.eu/mtr/biodiversity-strategy-plan ✳ Full report on the mid-term review of the strategy and targets' achieving: visit website ✳ Commission's communication on green infrastructure: visit website

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25.   See here a resource to browse environment and climate change related EU policy instruments: https://eur-lex.europa.eu/summary/chapter/environment.html?root_default=SUM_1_CODED%3D20 ; including specific instruments relating to biodiversity and the protection of nature: https://eur-lex.europa.eu/summary/chapter/environment/2007.html?root=2007

26.   See the presentation of EU nature and biodiversity policy: http://ec.europa.eu/environment/nature/index_en.htm

27.   Many policy instruments (programmes and plans, mainly) have a limited lifetime. Readers should therefore look for the most updated versions, rather than stick to those mentioned in the present guide.

Instrument	Description	Key resources
Habitats Directive	Together with the Birds Directive, the Habitats Directive forms the cornerstone of nature conservation policy in the EU. The Habitats Directive covers 1,000 rare, endemic or threatened animal and plant species as well as 200 habitat types protected in various ways. It is organised around species listed in its annexes and relies on the Natura 2000 network of protected areas. Species covered by the Directive can be protected in different ways, either: • core areas of their habitats are designated as sites of community importance (SCIs) and included in the Natura 2000 network, which must be managed appropriately (for Annex II species, about 900); • a strict protection regime must be applied across their entire natural range within the EU, both within and outside Natura 2000 sites (for Annex IV species, over 400 including many Annex II species); • Member States must ensure that their exploitation is sustainable, i.e. compatible with a favorable conservation status (Annex V species, over 90). Selected species listed under the Habitats Directive are subject to specific EU action plans. Member States are required to report on the conservation status of habitats and species, on compensation measures taken for projects having a negative impact on Natura 2000 sites or on derogations they may have applied. The Commission is supported in implementing the Directive by the **Habitats Committee**, comprising national policy makers. It also advises on the selection of projects funded under the LIFE programme (Financial Instrument for the Environment) which supports applied conservation projects. Finally, the Habitats and Birds Directives underwent a "fitness check" in 2016. While confirming their performance, the Commission built an action plan in response to identified shortcomings.	✳ Habitats Directive website: http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm ✳ Contact list of the Habitats Committee : http://ec.europa.eu/environment/nature/legislation/habitatsdirective/docs/2-3-1-Habitats-Committee.pdf ✳ Natura 2000 website: http://ec.europa.eu/environment/nature/natura2000/index_en.htm ✳ Natura 2000 Network Viewer and databases: http://ec.europa.eu/environment/nature/natura2000/data/index_en.htm ✳ EU Species Action Plans: http://ec.europa.eu/environment/nature/conservation/species/action_plans/index_en.htm ✳ LIFE programme: http://ec.europa.eu/environment/life/ ✳ Fitness check of the Birds and Habitats Directives: http://ec.europa.eu/environment/nature/legislation/fitness_check/index_en.htm
Birds Directive	Together with the Habitats Directive, the Birds Directive is a key element of EU policy on nature conservation. It seeks to protect Europe's over 500 naturally-occurring bird species, highlighting migratory species and negative drivers such as habitat loss. It establishes a network of Special Protection Areas, included in the Natura 2000 network (see Habitats Directive). The Directive implements various protective approaches: • designating Special Protection Areas (SPAs) for the survival of particularly threatened (sub)species (Annex 1, 194 species). These are considered "priority birds" for LIFE projects (see Habitats Directive); • including protective measures for bird species that can be hunted, linked to phenology and a set of guidelines on the use of concerned species for hunting (Annex 2, 82 species); • banning activities that directly threaten birds, with certain restrictions and derogations at Member State-level (Annex 3, lists 26 species with restrictions and derogations); • providing for the sustainable management of hunting, while banning methods listed in this Annex 4; • promoting research to underpin the protection, management and use of all species of birds covered by the Directive, which are listed in Annex 5. As for the Habitats Directive, Member States have reporting requirements and a number of EU Action Plans relate to the Directive. The Directive's implementation is supported by the **ORNIS Committee** of national policy makers. Finally, the Habitats and Birds Directives underwent a "fitness check" in 2016. While confirming their performance, the Commission built an action plan in response to identified shortcomings.	✳ Birds Directive website: http://ec.europa.eu/environment/nature/legislation/birdsdirective/index_en.htm ✳ E.C. guidance under the Birds Directive (incl. for hunting): http://ec.europa.eu/environment/nature/conservation/wildbirds/action_plans/guidance_en.htm ✳ LIFE priority Birds (listed under Annex 1): http://ec.europa.eu/environment/nature/conservation/wildbirds/life_priority/index_en.htm ✳ EU Species Action Plans relating to the Birds Directive: http://ec.europa.eu/environment/nature/conservation/wildbirds/action_plans/index_en.htm ✳ Contacts for the ORNIS Committee: http://ec.europa.eu/environment/nature/pdf/ornis_committee.pdf ✳ Fitness check of the Birds and Habitats Directives: http://ec.europa.eu/environment/nature/legislation/fitness_check/index_en.htm

Instrument	Description	Key resources
Water Framework Directive (WFD)	The WFD is the main instrument of the European Water policy. It aims for cleaner rivers and lakes, groundwater and coastal beaches, i.e. good environmental status. It seeks to implement a River Basin Management Plan across Member States as a single, transnational system for water management in Europe and to coordinate national legislative measures concerning surface and groundwater. Its implementation is detailed in several strategic plans relating to different topics covered by the Directive. It also relies on a "Blueprint" that outlines actions for a better implementation of current water legislation, integration of water policy objectives into other policies, and filling the gaps in particular with regard to water quantity and efficiency. The European Commission is also preparing a fitness check of the WFD, following one performed in 2012, which will likely be published in 2019.	✳ WFD Website: http://ec.europa.eu/environment/water/water-framework/index_en.html ✳ WFD "Blueprint": http://ec.europa.eu/environment/water/blueprint/index_en.htm ✳ WFD Fitness check: http://ec.europa.eu/environment/water/fitness_check_of_the_eu_water_legislation/index_en.htm
Marine Strategy Framework Directive (MSFD)	The Marine Strategy Framework Directive aims to achieve Good Environmental Status (GES) of the EU's marine waters by 2020 and to protect the resource base upon which marine-related economic and social activities depend. It explicitly relates to the protection of marine biodiversity, as it contains the explicit regulatory objective that "biodiversity is maintained by 2020", a cornerstone for achieving GES. The Directive covers four European marine regions – the Baltic Sea, the North-east Atlantic Ocean, the Mediterranean Sea and the Black Sea. It operates in a cyclical manner starting again in 2018. The Directive: • establishes the environmental status used as a baseline • determines GES targets, plans for the monitoring and indicators of environmental status • develops measures to maintain or achieve GES in accordance with the 2020 objective	✳ Marine Directive website: http://ec.europa.eu/environment/marine/eu-coast-and-marine-policy/marine-strategy-framework-directive/index_en.htm ✳ Good Environmental Status as understood in the Directive: http://ec.europa.eu/environment/marine/good-environmental-status/index_en.htm ✳ How the Marine Directive ties in with other (environmental) EU policies: http://ec.europa.eu/environment/marine/eu-coast-and-marine-policy/marine-strategy-framework-directive/index_en.htm ✳ Marine research and needs for decision-making under the Directive: http://ec.europa.eu/environment/marine/research/index_en.htm
The Regulation on Invasive Alien Species	The regulation on IAS entered into force in 2015, fulfilling action 16 under target 5 of the EU biodiversity strategy. It provides for a set of measures to be taken across the EU in relation to invasive alien species included on a list of Invasive Alien Species of Union concern, distinguished as follows: • Measures to prevent entry of IAS in Europe. • Development of a Member State-led surveillance system to detect the presence of IAS of Union concern as early as possible and take rapid eradication measures to prevent species establishing. • Management of IAS already well-established in certain Member States through concerted management plans and actions. The Commission is assisted by different expert groups in implementing the IAS regulation, in particular the **Scientific Forum on IAS** which provides advice on scientific questions relating to the implementation of the IAS Regulation. It notably reviews risk assessments for species included on the Union list.	✳ IAS Regulation website: http://ec.europa.eu/environment/nature/invasivealien/index_en.htm ✳ IAS Scientific Forum (incl. members' list): https://circabc.europa.eu/faces/jsp/extension/wai/navigation/container.jsp
Wildlife Trade Regulation	The Wildlife Trade Regulation regulates the trade of wild flora and fauna in the EU single market, includes rules and procedures for their trade and ensures compliance by Member States. It is tightly linked, although slightly different, to the CITES at the international level, of which the EU is a Party. It relies on national Management Authorities for its coordination and monitoring, and on a number of bodies including a Committee on Trade of Wild Fauna and Flora (Member States' Management Authorities), an Enforcement group (national authorities from MS) and more particularly the **Scientific Review Group** which examines scientific questions relating to the application of the Regulation and provides "opinions" to the Committee on matters relating to the Regulation.	✳ WTR website: http://ec.europa.eu/environment/cites/index_en.htm ✳ Scientific review group (incl. meeting reports): http://ec.europa.eu/environment/cites/srg_en.htm

C. IDENTIFY WHICH POLICY STAKEHOLDERS YOU WANT TO ENGAGE IN YOUR PROJECT

Beyond the identification of policy instruments and agreements that the proposed research seeks to address, it is important to identify the appropriate stakeholders to engage in order to maximise your chances of having an impact. Identifying the appropriate stakeholders as precisely as possible in your proposal will also help strengthen the credibility of the planned science-policy interfacing work.[28]

This section provides examples of major policy stakeholders according to the categories devised in table 2. It is intended to open your mind to the diversity of possible policy stakeholders you could think about, rather than to prescribe the stakeholders you should engage; this is indeed highly project-specific!

I. EU'S POLICY MAKERS AND INSTITUTIONS

As detailed in part II.3.D, the most credible route to engagement may not be straightforward. Although European institutions may often be highly relevant potential end users of the research proposed (see table 5), it may prove difficult to achieve direct engagement with these institutions from a single research project's perspective. While one can be successful in doing so, it should be noted that European institutions often already have

well-established mechanisms and channels to approach trusted scientific expertise for synthesised knowledge and evidence on a given policy issue. Therefore, it may be easier and more efficient for single research projects to seek engagement with such policy makers and institutions through these pre-existing channels. These channels include policy advisors, support tools and boundary organisations involved in the science-policy flow.

Table 5: Brief description of key EU policy making institutions involved in the formulation and adoption of EU directives and regulations

Institution	Role	Functioning
European Commission https://ec.europa.eu/	Driving force and executive body of the European Union, the commission proposes new legislation, manages and implements EU policies and budgets, enforces European law together with the Court of Justice and can represent the EU as a single voice on the international stage.	It is divided in thematic policy areas (Directorates General); those relevant to research on biodiversity and ecosystem services are notably DG Research and Innovation, DG Environment, DG Climate Action, DG Agriculture and Rural Development, DG Maritime Affairs and Fisheries, DG Regional and Urban Policy, and DG Mobility and Transport[29].
European Parliament http://www.europarl.europa.eu/portal/ Parliament Intergroup coping with biodiversity: http://ebcd.org/intergroup/	The Parliament has legislative power and exercises democratic control over EU legislation and budget.	The Parliament is composed of Members of the European Parliament (MEPs) elected for 5 years. Note that there is a European Parliament Intergroup on "Climate Change, Biodiversity and Sustainable Development" which brings together MEPs from all political groups and Parliamentary Committees and explicitly works on biodiversity and sustainability.
European Council http://www.consilium.europa.eu/	The European Council provides the EU's political direction and sets strategic priorities. It is the main decision body of the EU	It is composed of the heads of Member States' governments. Its president is also the EU representative in foreign affairs. In addition, there are 10 thematic configurations, where the Council is then made of the Ministers of Member states. (e.g. environment, agriculture, etc.). It works on budgetary and legislative tasks with the Parliament.

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28.   Please note that it may be relevant to focus on a few key stakeholders to involve in your proposal, or to deliberately exclude some. This choice should however be clearly explained in your proposal.

29.   The full list of Directorates can be found here: https://ec.europa.eu/info/departments_en

II. EU'S SCIENCE-POLICY ADVISORS

The main scientific advisory bodies related to European institutions include the European Commission's Joint Research Centre[30], the European Environment Agency[31] and the European Parliament's Research Service[32].

The European Parliament's Research Service

The EPRS is a think tank and advisory service of the institution. It is organised around three directorates, A, B and C, with A and C being of most relevance to the present guide. Directorate A (Members' research service) responds to individual MEP's and Parliamentary Commissions' requests related EU policy and legislative matters through independent and objective analysis and research, and also produces spontaneous and publicly available publications. This includes fact sheets and policy briefings, in-depth analyses and studies performed by the EPRS (see box #8). The Directorate C (Impact Assessment and European Added Value) conducts ex-post and ex-ante assessments of EU policies for the Parliamentary Committees.

BOX #8

NAVIGATING THE EU LEGISLATIVE PROCESS – KEY RESOURCES FROM THE EUROPEAN PARLIAMENTARY RESEARCH SERVICE

The EPRS conducts a number of analyses, syntheses and research activities that are made publicly available and develops tools to help navigate the ongoing legislative processes at the Parliament and in EU institutions. A general directory of EPRS tools and publications is available at: http://www.europarl.europa.eu/at-your-service/en/stay-informed/research-and-analysis

Tools include:

✳ A searchable online library to access all EPRS briefings and more in-depth reports to the Parliament (also accessible via a smartphone app): http://www.europarl.europa.eu/thinktank/en/home.html

✳ The "EU legislation in progress" which gives an overview of the legislative process in the Parliament and allows to browse all items in the different stages of the process, from legislative proposals by the Commission to adopted regulations and directives: https://epthinktank.eu/eu-legislation-in-progress/

✳ The "legislative train schedule" which is an online tool overarching the different EU institutions involved in the EU policy cycle. It allows to follow up on the legislative elements proposed by the European Parliament, being implemented part of the European Commission's 5-year work programme (currently following the Ten point Junker agenda) and eventually adopted by the European Parliament and Council: http://www.europarl.europa.eu/legislative-train/summary

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30. https://ec.europa.eu/jrc/en/about/jrc-in-brief
31. https://www.eea.europa.eu/
32. http://www.europarl.europa.eu/atyourservice/en/20150201PVL00031/European-Parliamentary-Research-Service

The European Environment Agency

The EEA is an EU agency that provides sound, independent information on the environment. It seeks to achieve significant and measurable improvements in Europe's environment, through the provision of timely, targeted, relevant and reliable information to policy makers. It publishes data and maps, performs assessments and manages biodiversity indicators (see for example the COPERNICUS land monitoring service which includes a local biodiversity component[33]). The EEA is responsible for preparing and publishing the European SOER (State and Outlook on the Environment Report), which is published every 5 years (next edition in 2020) and synthesizes the state, trends and prospects for the environment in Europe to inform policy making, in relation with different networks and tools (see box #9).

BOX #9

BEYOND THE EUROPEAN ENVIRONMENT AGENCY: THE EUROPEAN ENVIRONMENT INFORMATION AND OBSERVATION NETWORK, AND THE EUROPEAN TOPIC CENTRE ON BIOLOGICAL DIVERSITY

The European environment information and observation network (Eionet) is a partnership network of the EEA and its member and cooperating countries. Through Eionet, the EEA brings together environmental information from individual countries concentrating on the delivery of timely, nationally validated, high-quality data.

The EEA also supports the European Topic Centre on Biological Diversity (ETC/BD), which:

✳ assists the EEA in its task of reporting on Europe's environment by addressing state and trends of biodiversity in Europe;

✳ Provides information to support the implementation of environmental and sustainable development policies in Europe in particular for EU nature and biodiversity policies (DG Environment)

✳ Builds capacity for reporting on biodiversity in Europe, mainly through the Eionet

Useful resources:

✳ EEA website: https://www.eea.europa.eu/

✳ Eionet, and links to national/regional pages:
https://www.eea.europa.eu/about-us/countries-and-eionet

✳ European Topic Centre on Biological Diversity:
https://www.mnhn.fr/en/research-expertise/expertise/european-topic-centre-biological-diversityment

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33.   See here useful resources of the EEA on data and maps (https://www.eea.europa.eu/data-and-maps), COPERNICUS (https://land.copernicus.eu/), its organisational chart (https://www.eea.europa.eu/about-us/who/who-we-are-1) and dedicated section on biodiversity and ecosystem services (https://www.eea.europa.eu/themes/biodiversity)

The Joint Research Centre

The Joint Research Centre is a Directorate General of the European Commission. It acts as a science and knowledge service in support of policy formulation, implementation, monitoring and assessment. The JRC provides foresight in emerging issues and knowledge intensive tools for policy making. It has specific laboratories and equipment and provides training for researchers on specific subjects based on the JRC's work programme[34] (see box #10).

BOX #10

THE EC'S JOINT RESEARCH CENTRE

The JRC's areas of work and activities are detailed in its bi-annual work programme, which guides all research and capacity building activities of the Centre. It constitutes the formal mandate of the JRC and can be considered a framework of reference for interactions with the Centre. Although mostly gathered under the "environment and climate change" theme of the JRC work programme, there are several entry points for biodiversity work across the themes of the JRC work programme, e.g. for soil biodiversity, agricultural biodiversity, marine biodiversity, etc. It should also be noted that it is difficult for the JRC to engage in external research projects as a formal partner, due to its status as a DG of the Commission.

Useful resources:

✳ JRC website: https://ec.europa.eu/jrc/en

✳ Current biodiversity-related topics at JRC: https://ec.europa.eu/jrc/en/research-topic/ecosystems-and-biodiversity

✳ Keyword search tool of JRC research topics: https://ec.europa.eu/jrc/en/research-topics

In addition, the Commission also directly or indirectly collects biodiversity data (see Table 6 on EU policy support tools), supports research, performs foresight, strategic planning and assessment work, e.g. through the Framework Programme for Research and Development, titled Horizon 2020 for the current period (2014-2020)[35]. It is the main programme of the Commission for funded research, demonstration projects, capacity building for researchers, etc.

The EU's overall policy on the environment, and thus the Commission's actions on environment, are guided by the Environmental Action Plan (currently 7th EAP[36] running until 2020, see box #11).

BOX #11

THE 7TH ENVIRONMENTAL ACTION PLAN

Running until 2020, the action plan is themed « Living well, within our planet ». It is organised around 9 thematic priority areas, one of which is directly related to biodiversity conservation (*priority objective 1: To protect, conserve and enhance the Union's natural capital*), while several others indirectly relate to biodiversity. See: http://ec.europa.eu/environment/action-programme/

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34. https://ec.europa.eu/jrc/sites/jrcsh/files/detailed_wp_2018_19.pdf
35. See https://ec.europa.eu/programmes/horizon2020/en/ ; which will be replaced by Horizon Europe after 2020.
36. See http://ec.europa.eu/environment/action-programme/index.htm

III. EU'S SUPPORT TOOLS

The European Commission develops science-policy platforms, tools and interfaces[37], either internally (e.g. MAES and BISE) or by supporting their development through various actions (e.g. funding coordination and support actions through its framework programmes). These can be of interest for applicants and are detailed in table 6.

Table 6: EU science-policy support tools

Institution	Description	How to engage
MAES https://biodiversity.europa.eu/maes	MAES stands for Mapping and Assessment of Ecosystems and their Services. It directly relates to the objective 2 of the EU biodiversity strategy, i.e. maintaining and enhancing ecosystems and their services and corresponds to action 5, calling on Members States to map and assess their ecosystems and services. This objective comprises a number of quantitative targets and actions to halt biodiversity loss, which MAES helps inform by providing maps and assessments directly used for policy making.	MAES implements a common analytical framework for the assessment of ecosystem and their services across Europe. It produces maps and reports on their status and trends for decision making in support to EU policy. ✳ Indicators per ecosystem type used in MAES: https://biodiversity.europa.eu/maes/mapping-ecosystems/indicators-for-ecosystem-services-across-ecosystems ✳ MAES Digital Atlas: https://biodiversity.europa.eu/maes/maes-digital-atlas ✳ Portfolio of case-studies (i.e. integrated maps that do not fit the harmonisation efforts under the Digital Atlas): https://biodiversity.europa.eu/maes/maes-catalogue-of-case-studies ✳ Find out about national developments linked to MAES: https://biodiversity.europa.eu/maes/maes_countries MAES relies on a number of sources to produce its maps and indicators: ✳ Reference data for ecosystem mapping: https://biodiversity.europa.eu/maes/mapping-ecosystems/reference-data-for-ecosystem-mapping ✳ EU-wide assessment of ecosystems and conditions indicating on which data sources MAES assessments build, and where there are gaps: https://biodiversity.europa.eu/maes/mapping-ecosystems/eu-wide-assessment-of-ecosystems-and-conditions
BISE https://biodiversity.europa.eu/	BISE stands for the Biodiversity Information System for Europe. It is a joint effort by the EEA and DG ENV of the Commission, channelling theirs and other stakeholders' biodiversity data. It is a single-entry point for data and information on biodiversity supporting the implementation of the EU biodiversity strategy and the Aichi targets in Europe.	BISE gathers information and data in support of the EU Biodiversity strategy, as follows: ✳ Data and information on the status and trends of biodiversity in Europe ✳ A comprehensive view of EU and related global policy on biodiversity: https://biodiversity.europa.eu/policy ✳ An overview of on-going biodiversity research, funding sources and science-policy interfacing projects supported by the EU: https://biodiversity.europa.eu/research ✳ National reports on biodiversity from EU members states: https://biodiversity.europa.eu/countries Sources of information for BISE are as follows: ✳ Data is provided through a number of sources, including the Biodiversity data centre managed by the EEA as well as the European environmental data centres, GBIF, GEO-BON, LifeWatch, etc. https://biodiversity.europa.eu/data ✳ BISE also streamlines other sources of knowledge and data on biodiversity for policy making, ranging from national networks to NGOs and public participation: https://biodiversity.europa.eu/networks

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37. For further information on the Commission's support for nature-based solutions, see Faivre et al. (2017) Nature-Based Solutions in the EU: Innovating with nature to address social, economic and environmental challenges. *Environmental Research*, 159: 509-518

Institution	Description	How to engage
Oppla https://www.oppla.eu/about	Oppla is a knowledge marketplace on ecosystem services, natural capital and nature-based solutions. It is an open platform designed for science, policy and practice, linking public, private and voluntary sectors. Oppla was initially created by the EU funded projects OPERAs and OpenNESS but has grown to support many new projects and partners. It is the main EU repository for nature-based solutions knowledge.	Oppla provides several free tools that you can use to help disseminate research outputs and information: ✳ Oppla Marketplace: a "knowledge supermarket" for disseminating your tools and outputs, including guidance, policy briefs, software and other useful resources tailored for decision-making. ✳ Ask Oppla: an enquiry service, where Oppla members (e.g. policy makers) can ask questions and seek answers from others (e.g. researchers). ✳ Case-Study Finder[38]: an interactive map of case studies supplied by Oppla members. Detail your case-studies here to showcase your work and demonstrate how tools are used in different contexts. ✳ Oppla Community: a searchable database of Oppla members from research, policy and practice. Useful for building project proposals and finding local experts. ✳ Outline: Oppla's weekly e-newsletter, providing a roundup of recent news and events on nature-based solutions and related topics.
ThinkNature https://platform.think-nature.eu/	ThinkNature is a platform that supports the understanding and the promotion of nature-based solutions by organising a community of knowledge and practice around the concept, providing case-studies and organising regional forums for science-policy-society interactions at a more local scale.	ThinkNature provides tools to support the uptake of nature-based solutions (NBS) in Europe, including: ✳ Stakeholders: an interactive map of people interested in or working on NBS, including policy makers and advisors ✳ Dialogue: ThinkNature organises forums around 4 thematic areas (sustainable urbanisation, restoration of degraded ecosystems, climate change adaptation and mitigation, risk management and resilience), in which it is possible to take part (through an expression of interest) or follow up (online) ✳ A case study repository: an interactive map of case-studies on NBS ✳ NBS projects: an interactive map of EU-funded projects on NBS

38.   Please note that the case-study repositories of Oppla and ThinkNature are interoperable, i.e. a case-study marked « Nature-based Solutions » in Oppla is then copied as information into the ThinkNature case-study repository.

IV. BOUNDARY ORGANISATIONS

"Boundary organisation" is a term that was introduced in 1999 by Guston, looking at the role of specific technology transfer organisations in the interplay between science and public policy in the medical sector[39]. Since then, the term has gained attention and evolved from its original meaning. It now more generally refers to organisations operating at the science-policy interface in a dynamic (non-linear) way and helping cross the perceived boundary between the two realms[40]. As detailed by Gustafsson et al. (2018), the term does not refer to specific forms or positioning of organisations. It is rather loosely defined and is used as an empirical term for describing key players involved in the expertise and management of science-policy interfacing.

Table 7: Examples of boundary organisations relevant to biodiversity and ecosystem services, and keys to engage them

Boundary organisation	Description	Key resources
Intergovernmental Panel on Biodiversity and Ecosystem Services (IPBES)	The IPBES comprises 130 members (governments) as well as numerous observers. Similar to the IPCC, it seeks to provide policy makers with objective, independent knowledge on the state of the world's biodiversity and ecosystems, as well as tools and methods to protect and sustainably use the world's natural resources. It focuses on 4 complementary functions: ✳ **Assessments:** The IPBES performs thematic assessments (e.g. on pollinators), methodological (e.g. on scenarios and models) and regional and global assessments (e.g. Europe and Central Asia) that review available knowledge (scientific, indigenous and local knowledge, etc.) and include Summaries for Policy Makers (SPMs). In 2018, the IPBES Plenary has approved the beginning of a set of new assessments, including one on invasive alien species, one on the diverse values of biodiversity, and one on sustainable use of wild species. ✳ **Policy support:** the IPBES identifies policy-relevant tools and methods, facilitates their use, and promotes their further development. Key productions include the "Catalogue of relevant assessments" (to browse non-IPBES assessments of biodiversity) and the "Catalogue of policy tools" (to browse tools in support of policy making on biodiversity and ecosystem services). ✳ **Building capacities:** this function seeks to develop the capacities of institutions and individuals to use and feed into the IPBES process. ✳ **Catalysing the production of new knowledge:** the objective is to identify and communicate knowledge and data needs of IPBES, to fill these. Upcoming activities include a review of all knowledge gaps identified in IPBES assessments that hinder policy making.	✳ IPBES website: https://www.ipbes.net/ ✳ IPBES assessment reports: https://www.ipbes.net/assessment-reports ✳ IPBES catalogue of assessments: http://catalog.ipbes.net/ ✳ IPBES catalogue of policy tools: https://www.ipbes.net/policy-support ✳ Section on the catalysis of new knowledge in IPBES: https://www.ipbes.net/knowledge-generation
International Union for the Conservation of Nature (IUCN)	The IUCN is an international union of governments and civil associations providing public and private organisations with knowledge relating to nature conservation and sustainable development. The Union mobilises over 10,000 experts organised in six commissions dedicated to species survival, environmental law, protected areas, social and economic policy, ecosystem management, and education and communication. Their work is guided by the IUCN work programme. Members meet every 4 years for the IUCN World Conservation Congress, which has initiated several international multi-lateral agreements such as the Convention on Biological Diversity (CBD), the Convention on International Trade in Endangered Species (CITES), the World Heritage Convention, and the Ramsar Convention. Most notably, the IUCN manages the IUCN Red list of threatened species and the IUCN red list of threatened ecosystems, which are world references on the status of threatened species and ecosystems. The IUCN regional office for Europe is situated in Brussels, and very active in E.U. biodiversity policy processes.	✳ IUCN website: https://www.iucn.org/ ✳ IUCN programme: https://www.iucn.org/about/programme-work-and-reporting/programme ✳ Searchable database of IUCN's published work: https://www.iucn.org/our-work ✳ IUCN Red lists: https://www.iucn.org/resources/conservation-tools ✳ IUCN Europe: https://www.iucn.org/regions/europe

39.   Guston D.H. (1999) Stabilizing the boundary between US politics and science: the role of the office of technology transfer as a boundary organization. *Soc. Stud. Sci*. 29(1): 87-111

40.   Gustafsson K.M. & Lidskog R. (2018) Boundary organisations and environmental governance: Performance, institutional design, and conceptual development. *Climate Risk Management* 19: 1-11

Boundary organisation	Description	Key resources
World Wildlife Fund (WWF)	The WWF is a global conservation organisation that counts over 6 million members worldwide. At the EU level, it has established an EU policy office working on a number of environmental issues. As regards biodiversity and wildlife, the WWF EU policy office is committed to its protection through advocacy work, specifically for: ✳ the full implementation of the Birds and Habitats Directives ✳ the enforcement of existing EU laws on nature protection ✳ the integration of biodiversity across sectors and policies (e.g. agriculture, water, climate energy) ✳ the development support of the EU for biodiversity conservation around world and its positions in international policy frameworks (e.g. CBD, CITES) Their ultimate aim is to help shape EU policies for a positive impact on the European and global environment.	✳ WWF Europe's website: http://www.wwf.eu/ ✳ A dedicated section on biodiversity, including a useful synthetic policy timeline (also available for other WWF areas of work relevant to biodiversity): http://www.wwf.eu/what_we_do/biodiversity/ ✳ Contacts of the EU policy office's staff: http://www.wwf.eu/contact_us/
UN Environment World Conservation Monitoring Centre (UNEP-WCMC)	The WCMC develops and shares data and knowledge intensive tools for policy making to help decision makers account for biodiversity. It participates in developing the knowledge base on biodiversity by developing and updating biodiversity datasets, supporting the production of assessments of biodiversity, building tools for better understanding the environment and even supporting the development of policies.	✳ UNEP-WCMC website: https://www.unep-wcmc.org/ ✳ UNEP-WCMC staff and contacts: https://www.unep-wcmc.org/employees ✳ Search tool of UNEP-WCMC reports and data: https://www.unep-wcmc.org/resources-and-data
European Environmental Bureau (EEB)	The EEB is a large network of European environmental organisations. It focuses on agenda setting, monitoring and advising the EU (particularly policy makers) on dealing with its environmental problems. It is guided by a medium-term strategy implemented through annual work programmes, which may help identify entry points and hooks for engaging with the EEB in the context of your research.	✳ EEB website: http://eeb.org/ ✳ EEB strategy: http://eeb.org/wp-content/uploads/2017/05/EEB-MTS-2016-2019.pdf ✳ EEB work programme for 2018: http://eeb.org/wp-content/uploads/2018/03/EEB_2018_Work_Programme.pdf ✳ EEB staff directory and contacts: http://eeb.org/who-we-are/staff/
European Bureau for Conservation and Development (EBCD)	The EBCD is an NGO promoting the conservation and sustainable use of natural renewable resources both in Europe and worldwide by supporting science-based solutions and the engagement of civil and policy stakeholders. It works closely with EU institutions, for instance through managing the secretariat of the European Parliament's Intergroup on Climate Change, Biodiversity and Sustainable Development (see Table 5). The core activities of the EBCD includes monitoring the EU's environmental policy and advising policy makers; especially in relation to marine and fisheries' policies. It is also involved in numerous policy advisory councils and is very active on the international level through its work with conventions such as CBD, CITES, and UNFCCC.	✳ EBCD website: http://ebcd.org/ebcd/ ✳ EBCD's involvement in advisory councils: http://ebcd.org/ebcd/our-work/advisory-councils/ ✳ EBCD staff directory and contacts: http://ebcd.org/ebcd/about/staff/

D. THE MOST CREDIBLE ROUTE TO ENGAGEMENT OF POLICY STAKEHOLDERS MAY NOT BE A STRAIGHT LINE

As detailed above, there are different types of policy stakeholders and numerous organisations that take part in and influence the policy process. Of course, policy decision-making stays in the hands of policy makers. However, whether it be through policy advisors, science-policy tools and mechanisms, or boundary organisations, the route to making your research and results known and accounted for in policy decision-making is not necessarily a straight line, i.e. it does not necessarily imply a direct engagement of policy makers. As explained throughout this guide, there are numerous pressures affecting the use of evidence in policy-making[41]. Policy makers deal with complex issues and make time-sensitive decisions, and have their own mechanisms to procure and access evidence when necessary. In that regard, it is recognised that direct engagement of policy makers and policy-making institutions by individual researchers or research project consortia may be very challenging and time-consuming, for potentially limited or uncertain outcomes.

In some cases, engaging with policy stakeholders beyond policy makers can be a more effective way of getting your evidence across to the general policy-making arena than directly engaging policy makers.

Such stakeholders, as presented in the previous pages, have a very detailed knowledge of the policy agenda and time-span, and often have long-standing relationships and engagement channels through which they inform and eventually influence the policy-making process. In addition, organisations that are at the interface between science and policy can bring a detailed and strategic understanding of how your evidence can be used, when, with whom and for what. Engaging with this type of policy stakeholders to ensure the transfer and uptake of your research findings may strengthen further the credibility of science-policy interfacing work at the research project level than exclusively planning (and hoping for) a direct engagement of relevant policy makers. This should be however nuanced and interpreted cautiously. Where projects manage to present credible plans for a direct engagement of policy makers, this is excellent. While experience shows that local and national policy makers are more accessible to research teams than international and EU ones[42], EU and international policy makers have also been successfully engaged by research teams in past BiodivERsA projects.

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41. See Box 3 of: United Nations Environment Programme (2017). Strengthening the Science-policy Interface: A Gap Analysis. *UNEP report*, Nairobi, page 69

42. Lemaitre F. & Le Roux X. (2015) Analysis of the outputs of BiodivERsA funded projects: BiodivERsA 2008 joint call on "Biodiversity: linking scientific advancement to policy and practice". BiodivERsA report, 63pp.

■ II.3 – **ENGAGE** WITH POLICY STAKEHOLDERS AND PROMOTE SCIENCE-POLICY INTERFACING WITHIN YOUR RESEARCH PROPOSAL

A.   RECOGNISE THE RANGE OF SCIENCE-POLICY INTERFACING APPROACHES YOU CAN CONSIDER FOR YOUR RESEARCH

I. EXAMPLES OF SCIENCE-POLICY INTERFACING APPROACHES YOUR PROJECT COULD ALIGN WITH

Many researchers have experienced challenges developing the science-policy interface of a research project[43]. The intention here is to provide an overview of the broad approaches to science-policy interfacing. As presented in figure 6, three broad types are identified, which are detailed and exemplified in table 8.
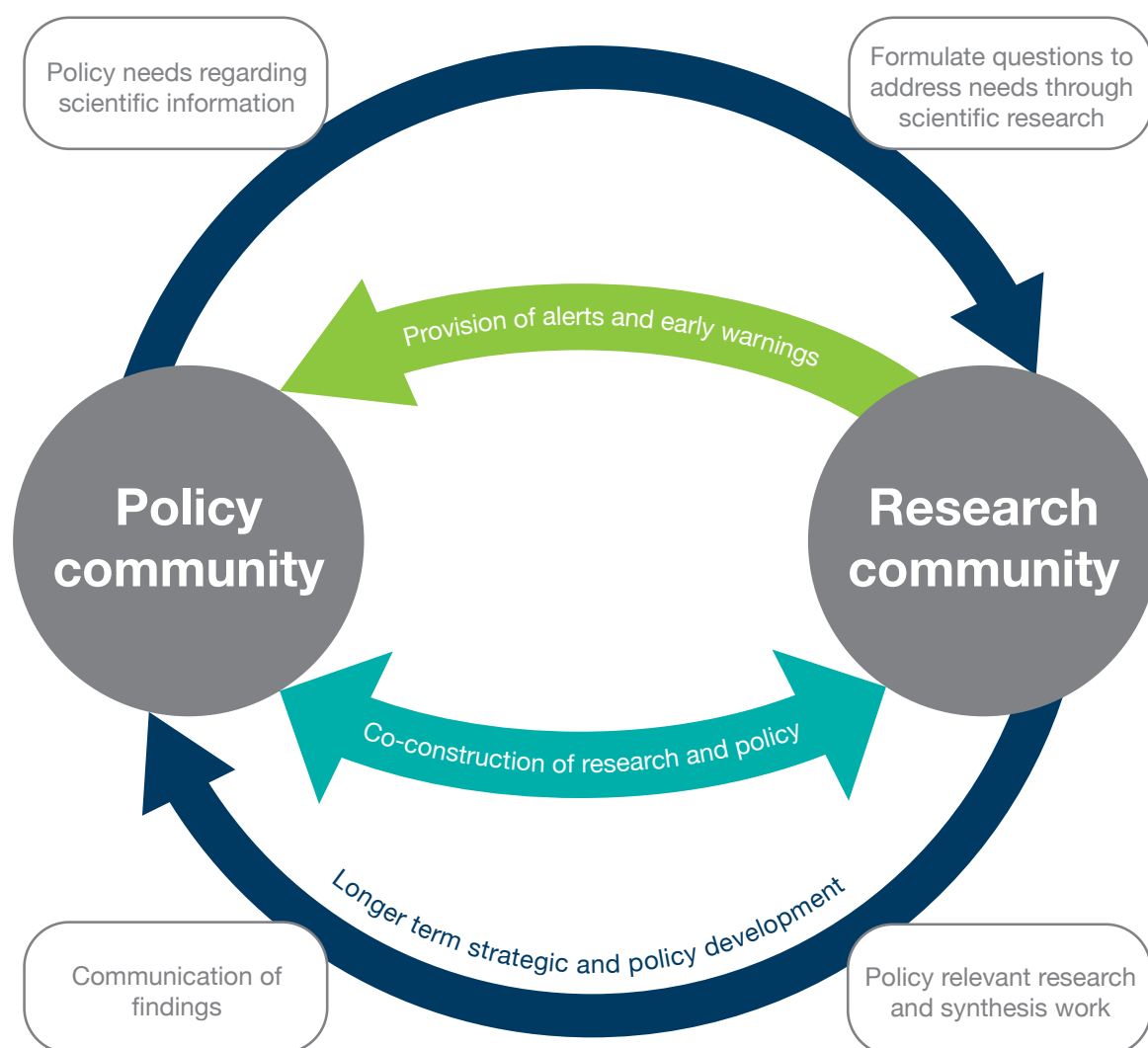
Figure 6: Representation of the different collaboration pathways between research and policy, either reactive and short-term, linear and long-term, or co-constructed

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43.   Neßhöver C. et al. (2013) Improving the science-policy interface of biodiversity research projects. *GAIA* 22(2): 99–103

Table 8: Main types of approaches that can be applied for science-policy interfacing. Colours refer to approaches indicated in Figure 6.

Type of approach	Definition	Example
Provision of alerts and early warnings	Predominantly a one-way interaction, initiated by the research community, and directed at the policy community. These may or may not relate to topics already on the policy agenda.	A recent example is the study of temporal changes in insect biomass published in Plos ONE (Hallmann et al. 2017[44]). This study, which sparked considerable media coverage, documented a 76% loss of insect biomass in German protected areas over the past 27 years. Although the decline of insect biodiversity has been shown before, this study gave a credible view on the rates at which this is happening, even in protected areas, helping to raise the alarm in the minds of European citizens and policy makers.
Longer term strategic and policy development	Mainly a linear, cyclical approach, where research stems from policy needs for scientific information. The research community is solicited to translate policy needs for evidence into research questions, which are then responded to through new research, or through the synthesis of existing research, and through research to policy communication efforts.	Through the work on biodiversity scenarios stimulated by the IPBES, members of the IPBES and IPBES stakeholders have identified policy-making needs in terms of biodiversity models and scenarios. The identification of these needs has fed the development of new research programmes seeking to support the development of policy-relevant biodiversity scenarios, such as the BiodivScen programme launched jointly between Belmont Forum and BiodivERsA in 2017[45].
Co-construction of research and policy	Tight collaboration between research and policy in defining the research questions, implementing the research project, interpreting, and disseminating the research results.	Several BiodivERsA projects have successfully implemented this approach. For example, in the LinkTree project[46] (BiodivERsA 2008 call) local authorities were consulted to refine the projects' research questions. They were asked about the major challenges faced in relation to forests and climate change, while the project researchers posed hypotheses and assessed tree adaptation capacities linked to genetic resources in response to these challenges. Moreover, the LinkTree project involved local and national forest authorities from France, Spain, Sweden and the United Kingdom in interpreting the results, leading to a joint publication between scientists and stakeholders about how genetics can contribute to forest management and policy in the face of global changes (see Fady et al., 2017[47]).

It should be noted that one approach is not deemed better than another. The most appropriate approach for science-policy interfacing will depend on the research topic.

44. Hallmann Caspar A. et al. (2017) More than 75 percent decline over 27 years in total flying insect biomass in protected areas. PLoS ONE 12 (10)

45. See http://www.biodiversa.org/1224

46. See http://www.biodiversa.org/128

47. Fady B. et al. (2015) Forests and global change: what can genetics contribute to the major forest management and policy challenges of the 21st century? Regional Environmental Change 15(6): 1-13

II. EXAMPLES OF EXPECTED POLICY IMPACTS FROM A RESEARCH PROJECT

Despite the intentions and methods identified by researchers to produce and transfer policy-relevant knowledge, many factors influence the actual delivery of policy impact. For BiodivERsA, policy relevance of research and its expected impact (evaluated in terms of credibility and suitability of the methods put in place to achieve a given impact) should be clearly differentiated from the *actual* impact of research on policy (which cannot be evaluated at the proposal phase and often hardly quantified and/or explicitly related after research completion).

Impact on policy is understood to be where research can (or seeks to) influence policy in terms of attitudinal change, procedural change, policy content, policy implementation and behavioural change[48]. These different impacts are not mutually exclusive – a project can demonstrate more than one impact.

Table 9: Examples of policy impacts of research projects (definitions adapted from Jones & Villar, 2008[49])

Type of policy impact aimed at	Definition	Examples from BiodivERsA-funded projects
Attitudinal or behavioural change	**i.e. framing debates and getting issues on the political agenda.** Drawing attention to new issues that were not part of the policy debate. Usually achieved through communication and awareness raising, new ideas can lead to a rethinking of dominant values and policy priorities.	The RACE project (BiodivERsA 2008 call) worked on the spread of a fungal disease affecting amphibians. It has characterised the virulence and spread of the infection in particular in Europe and provided evidence on the role of the international trade in amphibians spreading the disease. These results were discussed with key policy makers and boundary organisations at EU and international levels (European Commission's DGs, CITES Animal Committee, Amphibian Survival Alliance, etc.[50]).
Procedural change	**i.e. change in the procedures through which policy decisions are made**, beyond straightforward policy outcomes. Procedural change does not necessarily imply an improvement of policy content, rather improved dialogue between policy and research (and its stakeholders), leading to gradual policy reforms over time.	The GLOBAM project (2017-2018 call) aims to characterise and quantify the biomass flows of aerial migratory insects and birds from regional to continental scales in Europe and North America, identifying their response to climatic and land-use changes, light pollution and wind energy development. It seeks to provide the scientific basis for policy to better account for the "aerial habitat", for example by developing forecast models to advise on temporary shutdowns of wind energy installations, and advising efficacy of these procedures in reducing the impact of wind energy installations on migratory birds to inform energy development policy on future installations.
Change in policy content	**i.e. affecting policy making.** Securing changes in policy – for example through new legislation. Change in policy content includes changes in policy makers' position towards international declarations or conventions, or of national policy positions.	The Ecocycles project (2008 call) focused on the causes and consequences of changing rodent abundance cycles, and characterised the impacts on the demography of their predators which are often species of conservation concern. In Norway, they collaborated with the Norwegian Environment Agency and ultimately contributed to the draft National management plan to conserve the Arctic fox, which relies heavily on small rodent prey[51].
Change in policy implementation	**i.e. affecting the way policy is implemented.** It should be noted that successful policy change also depends on policy implementation. Adopting policies does not guarantee concrete change if not implemented well, and advising on policy implementation can be equally as effective in impacting policy as change in actual policy content.	The BeFoFu team (2008 call) investigated both ecological challenges related to the management of protected forests and governance challenges related to the implementation of Natura 2000 in forests. Based on their results, researchers outlined policy options for reducing land use conflicts and improving the implementation, and thus effectiveness, of the Natura 2000 policy in European forests[52].

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48. JRC (2017) Policy impact of knowledge and knowledge organisations: from understanding impact towards measuring it – Reflexions and the way forward, JRC workshop report, Tuesday 20 June 2017, accessed here: https://ec.europa.eu/jrc/communities/community/eu4facts-evidence-policy-community/event/policy-impact-knowledge-and-knowledge

49. Jones N. & Villar E. (2008) Situating children in international development policy: challenges involved in successful evidence-informed policy influencing. *Evidence & Policy* 4(1): 31-51

50. See also the RACE policy brief produced by BiodivERsA : http://www.biodiversa.org/552

51. See also the Ecocycles policy brief produced by BiodivERsA : http://www.biodiversa.org/664

52. See also the BeFoFu policy brief produced by BiodivERsA : http://www.biodiversa.org/660

B.   DESIGN THE KIND OF POLICY STAKEHOLDER ENGAGEMENT YOU NEED FOR YOUR RESEARCH

The BiodivERsA Stakeholder Engagement Handbook[53] provides information and guidance on how to plan and implement stakeholder engagement from the inception of a research project.

This guidance is provided to potential applicants to BiodivERsA calls to help develop and present a credible engagement approach in their research project. Although these are not necessarily flagged as evaluation criteria (see part I), referring to, and using, this guidance can provide a framework for detailing the engagement strategy of your proposal and its implementation. Applicants should pay particular attention to:

Level of engagement: distinguishing four "intensities" of engagement, from 'informing' and 'consulting' to 'involving' and 'collaborating with' (see box #12). The appropriate level of engagement for each policy maker or policy maker group can be planned out according to the objectives of the engagement, type of policy maker, methods, etc.

Timing of engagement: timing has a considerable impact on the perception and uptake of research findings by stakeholders, particularly in the policy process (see box #13). Therefore, planning the timing of engagement work is a key aspect of the overall stakeholder engagement strategy of a research project, as detailed in the handbook: *at certain times during research that is ultimately to be used to formulate policy, new opportunities for policy makers*

may emerge (e.g. feeding into election manifestos). At other times, research may help address specific challenges faced by decision makers (e.g. a pest or disease outbreak), and at other times, research may simply be used to justify or jeopardize existing opinions or policy positions if research findings that are consistent with the decision arrive after the decision has been made. Attention to external policy agendas is crucial in terms of science-policy interfacing, and the handbook details how it can constitute a direct contribution from stakeholders involved in the project (see best practice examples in part III.1).

BOX #12

LEVELS OF ENGAGEMENT: EXAMPLE FROM THE INVALUABLE PROJECT

One of the objectives of the BiodivERsA INVALUABLE project (2010-2011 call) was to **inform** policy makers about the use of market-based instruments (MBIs) for the management of biodiversity and ecosystem services. Researchers **consulted** stakeholders to produce policy-relevant documents to advise how MBIs could be better used to meet biodiversity conservation objectives.

BOX #13

PLANNING THE TIMING OF ENGAGEMENT: EXAMPLE FROM THE ACCES PROJECT

The ACCES project (BiodivERsA 2017-2018 call) studies different de-icing scenarios and aims to determine potential early warning of (socio-) ecological breakpoints and regime shifts and provide scientific and social science advice for sustainable ecosystem-based management of coastal regions in the high-Arctic. The team plans for close engagement with the Arctic Council **before, during and after the project**, as they are developing monitoring and management plans for the region and would be primary users of the projects' outcomes. To build scenarios useful for decision-making, they plan to involve local knowledge alliances **during** the project, while seeking to inform wider audiences from policy and practice during an Arctic Frontier meeting towards the **end** of the project.

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53.   Access the handbook here: http://www.biodiversa.org/702

Planning for the dissemination and uptake of results: Precise planning is required for the dissemination and successful uptake of results by policy makers. Although each plan is different, there are a few key principles applicable to all[54]:

✓ Need to identify the appropriate people/organisations to speak to. Information provided in part II.2 of this guide may be useful. In addition, the research topic and messages must be clear and compelling for the audience.

✓ Need to emphasise the expected contributions from the proposed research to policy making and vice-versa.

✓ Need to prepare succinct briefing documents for policy makers using operational language, for example with headings such as "issue", "considerations" and "options and costs"

(this requires specific skills which may require including an adequate partner part of the research consortium).

✓ Need to build long-term and frequent interactions with policy stakeholders. This is critical to building mutual understanding and trust. Potential stakeholder organisations such as learned societies, non-governmental and international organisations can represent strategic channels of engagement.

✓ Need to clearly communicate uncertainties and limitations of research findings for mutual understanding and trust.

Finally, including information in applicants' CVs about relevant experience in terms of engaging with policy stakeholders also helps raise the credibility of the proposal's engagement plans.

■ II.4 – **VALUE** THE EUROPEAN AND INTERNATIONAL POLICY IMPLICATIONS OF YOUR RESEARCH PROPOSAL

Where a project proposal accurately addresses the first three **S.I.E.V.** elements (**S**tate the policy relevance; **I**dentify relevant policies and policy makers; **E**ngage with relevant policy stakeholders), applicants are likely to be in a position to demonstrate the European and/or international added value of their research proposal for policy making. This

added value may be direct or indirect and will vary, depending on the type of project. Therefore, this question can be addressed in different ways. It can for instance build on the linkage of the proposed research to EU and international policy needs and specificities, or it can result from developing policy work at the national level.

### A.	DEMONSTRATE THE GENERAL EUROPEAN OR INTERNATIONAL ADDED VALUE OF YOUR PROPOSAL AND ITS POLICY IMPLICATIONS

The general European or international added value of a project proposal is its additional value compared to research projects funded and implemented at the national level only. Proposals should provide evidence showing either direct or indirect European or international added value. This may include clear added value to national research projects at transnational scale through linking expertise and efforts across national teams and across studied areas; bringing about comparisons at the local level between researchers and stakeholders who are

not used to working together; standardisation of methods, general increase of common knowledge in biodiversity relative to the themes of the call, etc.

One aspect of this general European or international added value concerns the research implications for EU or international policy making. The intention here is that you should explain how the transnational research proposed can have policy impacts that a national or even bilateral research project could hardly have.

54.	After *The Government Chief Scientific Adviser's* Guidelines on the Use of Scientific and Engineering Advice in Policy Making, Department for Business, Innovation and Skills www.bis.gov.uk First published June 2010 Crown Copyright URN 10/669

B.   EXPLICIT THE POLICY IMPLICATIONS OF THE GENERAL EUROPEAN OR INTERNATIONAL ADDED VALUE OF YOUR PROPOSAL

You should identify clearly how the transnational nature of your research proposal will allow better outcomes for European or international policy. For instance, performing a transnational, integrated research along different European climate or socio-ecological gradients may allow building policy recommendations at the EU level better than comparable research projects made independently at each site (through nationally funded projects) along the same gradients. The European or international policy implications in such a case could also relate to the provision of tailored policy recommendations adapted to the different EU regions, where different local conditions may call for different policy actions on a same issue.

BOX #14

ADDED VALUE FOR EUROPEAN POLICY MAKING – EXAMPLE FROM A BIODIVERSA PROJECT

The CONNECT project

The overall aim of the CONNECT project (2010-2011 call) is to investigate tradeoffs and synergies between biodiversity, ecosystem functioning and ecosystem service values for improved integrated EU biodiversity policy, i.e. assess the effectiveness of governance structures in place to conserve biodiversity at the regional and EU level. It collects empirical evidence across regional case studies representing the different European landscape types and performs an EU-level analysis to provide a European overview and context of the regional case studies. The applicants detail the implications of this analysis for the design of appropriate biodiversity policy instruments and governance structures which are deliberated with policy stakeholders both at the case-study and EU levels. The end result and relevant output for EU policy making is the development of strategies and guidelines on how alternative EU policy instruments and conservation strategies can most efficiently meet the EU policy's biodiversity targets (e.g. EU Biodiversity Action Plan at the time). These guidelines are intended to explicitly reflect that adequate strategies can be different across the various EU environmental and socio-economic contexts and provide guidance for matching the appropriate strategy to the context, which is of key relevance for EU-level policy making.

C.   THE EU AND INTERNATIONAL ADDED VALUE OF YOUR RESEARCH REGARDING POLICY IMPLICATIONS MAY ALSO EMERGE FROM WORK AND ENGAGEMENT AT NATIONAL/LOCAL LEVELS

European and/or international added value expected in proposals to BiodivERsA calls can also result from research and engagement at national and/or local levels, these different scales being interlinked rather than exclusive.

One example is the upcoming reform of the EU Common Agricultural Policy as presented in the European Commission's Communication (COM(2017) 713 « The Future of Food and Farming »[55]). The Communication gives insights in the way the Commission envisages the implementation of the future CAP beyond 2020. With regard to direct payments (CAP Pillar I), the Commission's intentions are to link these to the « application of various environment- and climate-friendly practices », with more attention to national and local specificities than the previous "one size fits all" approach. In practice it is proposed that Member States will themselves formulate plans for the implementation of environmental measures appropriate in their own context, which will be reviewed by the Commission prior to approval. In this example, high European added value would be realised through researchers working on environment- and climate-friendly agricultural practices in different national contexts

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55.   https://ec.europa.eu/agriculture/sites/agriculture/files/future-of-cap/future_of_food_and_farming_communication_en.pdf

and engaging with national to local policy makers responsible for devising Member State's national plans (see box #12). In addition, linking these measures to the EU's targets and engagements related to biodiversity, which is a task on the agenda of the Commission, could even extend this added value to the international scale.

BOX #15

INTERNATIONAL ADDED VALUE EMERGING FROM WORK AT NATIONAL/ LOCAL LEVELS – EXAMPLES FROM BIODIVERSA PROJECTS

The FARMS 4 Biodiversity project

Using Malawi as a case study, the FARMS 4 Biodiversity project (2017-2018 call) aims to model future land-use change scenarios and whether agroecological practices can buffer against loss of biodiversity and ecosystem services. It plans to address the challenges between food security and biodiversity loss by developing community-scale and regional-scale scenario maps that could be used by policy makers at a regional and national scale and to foster long-term transformational change to address these challenges in the future. Through these findings, the project seeks to provide insights into the key social factors which influence biodiversity and land-use. These results would, in turn, allow the development of potential solutions at the community and regional level, as well as relevant policy measures addressing identified macro social forces that impact land-use and biodiversity.

Although this research focuses on a specific country, Malawi, the work aims to achieve wider ramifications for agricultural and social policies in similar African countries. The researchers explain that following the initial and optimistic review of Malawi's Farm-Input Subsidy Program, countries throughout Africa adopted similar policies – implying that African countries with similar agricultural and social systems are likely to evaluate and potentially adopt policy advances piloted through this project. The project team has extensive experience and contacts in other African countries (e.g. Tanzania, Kenya, Ghana, Rwanda), thereby adding credibility to the plans, and will disseminate the uptake of results at a macro-level.

The BUFFER project

BUFFER (2011-2012 call) aims to increase the knowledge for decisions on Partially Protected Area, PPA, status by characterising drivers of socio-ecological resilience in coastal systems. To address this challenge, BUFFER gathers marine and freshwater PPA case-studies across Europe, spanning different ecological systems and within a variety of socio-cultural contexts.

Nationally, BUFFER will support policy decision makers and managers in establishing new effective PPAs, creating efficient management strategies and revising previously established management plans. However, the multiplicity and diversity of case studies increases the robustness, generalisation, and applicability of their results, as well as their transferability to decision makers. Based on the combined results from different case studies, BUFFER seeks to inform ongoing EU agreements (e.g. OSPAR), initiatives (e.g. Habitats, Water, and Marine Strategy Framework Directives) and regional legislative frameworks implementing EU Directives (e.g. Natura 2000 which are specific cases of PPAs). In turn, BUFFER aims to identify and integrate indicators of coupled social-ecological resilience as tools for decision-making at a transnational scale, enabling better governance and management of multiple uses in coastal areas.

Part III

Dos and Don'ts

Case studies for scientists to increase the policy relevance of their research projects

This section presents best practices for embedding science-policy interfacing and increasing chances to obtain the expected policy impacts in research proposals. These are based on experiences from proposals submitted to previous BiodivERsA calls and the feedbacks from a group of societal impact evaluators from BiodivERsA evaluation panels. At the end of the section, we also present some poor practices that you should avoid when preparing your proposal.

SUMMARY OF BEST PRACTICES

Table 10 presents best practices that have been identified and gives a view of how some project proposals have applied them. The current practices relate to the EU and international policy relevance, however, the general principles stated here are also applicable at local and regional levels.

Table 10: Directory of best practices for Science-Policy Interfacing, SPI, identified from research proposals funded by BiodivERsA. Selected case-studies illustrating these best practices are detailed in the following pages of the guide.

Broad SPI elements and activities	Identified best practice
State clearly the policy relevance of the proposal	Clearly state the policy context and expected implication for policy of the proposed research
	Relate the proposed research to precise pieces of legislation and policy objectives
	Relate the proposed research to on-going and up-coming policy processes
	Relate the proposed research to policies across sectors and scales
Identify precisely the policy stakeholders you plan to engage	Identify precisely the stakeholder groups, organisations and individuals you are looking to target/engage
	Relate specific project outcomes to specific stakeholder's interests
	Relate your research and engagement activities to the timeline of policy processes you are seeking to address, and think of policy relevance when choosing case-studies
Engage policy stakeholders in your project through co-development and co-implementation	Engage policy stakeholders at proposal stage, and/or early on in the project to discuss (or even co-construct) the proposed research
	Involve policy stakeholders in the project implementation with precise roles, e.g., to prepare project plans, provide data or interpret results
	Plan for policy-relevant outputs in appropriate formats (e.g. science-based decision-making tools, synthesised briefings, etc). Even develop these jointly with policy end users
(co-)Develop a dissemination plan	Devise a precise dissemination plan citing relevant science-policy events and fora to be targeted
	Involve policy stakeholders in your dissemination plan and activities to provide knowledge into the policy arena through adequate tools and organizations (e.g. stakeholder-led dissemination activities)
Value the European and international policy implications of your research proposal	Explicitly link the EU (and/or international) added value and policy relevance of your proposed research
	Where appropriate, state that you build on previous policy-relevant research or work

In addition to the above, a few general comments can be added on good practices:

✳ To facilitate the evaluation of the proposal, it is useful to **include a specific section on policy relevance** (e.g. "Research relevance for policy application"). However, this should not simply be an add-on to the proposal, rather a focus on the policy context and aims of the proposal.

✳ In addition to the statement, it may be useful to **include references to expected policy application and outputs throughout the work plan**, for example in relation to specific deliverables, designing case-studies or when describing expected results of the proposed research related to policy making.

✳ When identifying pieces of legislation and policy processes that the proposal is seeking to engage, it may be relevant to **include not only approved instruments, but also those plans and laws that are under discussion**, where those plans have to be publicly communicated. This considerably strengthens the proposal's expected impact on policy.

✳ Relevant policy instruments are not only those directly related to biodiversity (e.g. Habitats and Birds Directives, species conservation plans, international biodiversity agreements) and the specific themes of the proposal (forestry, agriculture, fisheries…). They can also **include cross-sectorial issues** (at the crossroad between biodiversity and spatial planning, energy, climate change, public health…).

✳ **Linking the current proposal to previous (successful) policy-relevant work** may be useful to reinforce policy objectives. Applicants usually highlight this link only from the science perspective whereas it should also be specified for policy objectives.

CASE STUDIES
from successful BiodivERsA proposals

The following case-studies are provided as examples of project proposals that have implemented particularly good practices in terms of policy relevance and policy stakeholder engagement. But these case-studies cannot be viewed as recipes, just as particular examples illustrating good practices.

BEARCONNECT PROPOSAL

Functional connectivity and ecological sustainability of European ecological networks – a case study with the brown bear

Key elements of policy relevance and SPI in the proposal	Examples
State clearly the policy relevance of the proposal: • clear and precise statement presenting how the project is embedded in the policy context	**Stating the policy context of the proposed research:** *"Ecological networks of protected areas and reserves have been developed in response to the current biodiversity crisis. They are supported both at the national and European level, i.e. by the Bern Convention on the Conservation of European Wildlife and Natural Habitats (1979), and the Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (1992), and have therefore the potential to be relevant across a large range of scales. (...) However, ecological networks have been criticised because conservation efforts in Europe need to extend across human-dominated landscape. A scientific evaluation of ecological networks and their integrity is therefore very relevant for the policy application."* **Citing precise legislation and objectives:** *"More recently, Boitani et al., under contract for the European Commission, produced a technical report covering the most urgent actions necessary for four species of large carnivores protected under the EU's Habitats Directive. For the brown bear, the first recommended action is "Protection of bear habitat and enhancement of connectivity within and between populations", and it is given the highest level of urgency, and the highest level of expected benefits in terms of conservation and coexistence with locals. The proposed BearConnect project is fully in line with the research priorities for the species in Europe."*
Engage policy stakeholders in your project through co-development of the proposed research: • contacts with policy stakeholders at proposal stage • early workshop to discuss involvement and potential roles	**Engagement at proposal stage, early discussion in project's life about research plans, and on actual engagement of stakeholders:** *"in Europe, conservation of large carnivores is usually carried out by national/regional governmental agencies dealing with nature conservation, land-use planning, forestry and hunting. (…) To ensure engagement of (these) main actors in the project, an initial workshop will be held at the very beginning with representatives of main actors dealing with management and research of European brown bear populations. Table XXX gives a list of main actors already contacted during proposal preparation, but additional ones will be identified. Goals of the workshop will be to (i) present project objectives and proposed research activities; (ii) discuss main actors' desired level of engagement in the project and expectations from participation; (iii) define intellectual property rights and rules of collaboration; (iv) evaluate how existing databases can be adapted and/ or integrated in the analysis for WP1, WP2, and WP3 and plan coordination at the regional/ national/ international/European level for realisation of the analyses; (v) gather context-specific knowledge on critical aspects of bear management and bear-human conflicts (i.e. differing management strategies and priorities, human-caused mortality, legal barriers to connectivity, etc.) to increase the relevance of the analysis for WPXXX; and (vi) identify other categories of stakeholders (hereafter referred to as local actors)"*

Project partners:

CNRS/Université Grenoble Alpes, Grenoble, FRANCE (Coordinator) Georg-August-University, Göttingen, GERMANY University of Rome "La Sapienza", Roma, ITALY Telemark University College, Bø I Telemark, NORWAY Polish Academy of Sciences, Krakow, POLAND National Institute for Research and Development in Forestry "Marin Dracea", Brasov, ROMANIA

Key elements of policy relevance and SPI in the proposal	Examples
Engage policy stakeholders in your project through co-implementation of the proposed research: • co-development of the project framework and co-interpretation of results • co-identification of future research needs	**Co-interpretation of results and co-identification of future research needs:** *"The workshops will examine the implications of the research findings. In particular, (i) the information for the Environmental Impact Assessment resulting from WPXXX will be discussed and further developed together with the stakeholders to devise adequate and applicable solutions for conservation planning; (ii) strategies to monitor the implementation and effectiveness of project guidelines beyond the end of the project will be evaluated; and (iii) future research needs will be identified. (…) The outcomes resulting from this process will be transferred to policy makers at the national and European level in form of practical and spatially explicit guidelines for improving ecological networks for bears' and other species' functional connectivity."*
Co-dissemination of the proposed research and plans beyond project's end: • involvement of stake-holders in dissemination activities, incl. planning phase, but also plans beyond the end of the project's life	**Involving key stakeholders to help identify further ones:** *"Most relevant regional stakeholders (Table XXX), which we have denominated main actors (refer to WPXXX) have been already identified, contacted, and involved during the proposal preparation. Additional regional and local stakeholders, as well as additional policy makers that are end users of project results, will be identified at the very beginning of the project in collaboration with the main actors."* **Extracts from the dissemination/communication plan:** *"The website will also have a section dedicated to stakeholders and policy makers involvement, including a list of their contacts, and updates on the implementation of project outcomes after the project end. An Android/iPhone application will also be created to increase visibility of the project among the general public and promoted online for rapid dissemination. [...] Results of the project will also be disseminated locally through communication at community meetings after the end of the project, thanks to collaboration with stakeholders."*

BIOGEA PROPOSAL

Testing BIOdiversity Gain of European Agriculture with CAP greening

Key elements of policy relevance and SPI in the proposal	Examples
State clearly the policy relevance of the proposal: • Clear and precise statement on policy relevance • References to ongoing policy processes • Stating policy relevance across sectors • Addressing policy at different scales	**Precise statement on the policy context and relevance of the proposed work** *"Biogea aims to contribute information and practical measures to the achievement of targets 2 (ecosystems and their services) and 3 (contribution of agriculture and forestry) of the EU Biodiversity Strategy 2020 as well as the achievement of the objective of "good ecological status" of all waters in the EU set by the Water Framework Directive (WFD) in 2000. (...) the Biodiversity Strategy recognised that "the benefits of these actions have been outweighed by continued and growing pressures on Europe's biodiversity: land-use change, over-exploitation of biodiversity, invasive alien species, pollution and climate change [which] have remained constant or are increasing". Recent reviews such as (...) the first results of the Nature Directives Fitness check have stressed that ecosystems under agricultural management are amongst those in the poorest condition (only 12.3% are in favourable conservation status) and it is these systems that must most urgently be addressed. (...)* *As the main influencer of land use change in the wider countryside, the Common Agricultural Policy (CAP) has an essential role to play in improving Green and Blue Infrastructures (GBI) between and within biodiverse areas. The greening measures introduced into the CAP for the programming period 2014-2020 aim to actively contribute to combating biodiversity loss and mitigating and adapting to climate change. The European Environment - State and Outlook 2015 report (SOER 2015) indicates that their positive effects will depend on the implementation of the specific measures, due to the additional flexibility in implementation which was granted to Member States and farmers in the Regulation. Several reviews have been carried out about the likely impacts of greening (see research questions) and the measures have been criticised for their lack of predicted environmental effectiveness (e.g. Westhoek et al. 2012, Hart and Menadue 2013) but have not yet been tested in terms of their real life implementation on the ground. This is exactly the "niche" which Biogea aims to address."* **Citing on-going and upcoming policy processes the project can feed into** *"The results of Biogea can be used for policy application in the context of the report on greening measures expected in the mid-term of this CAP which is likely to focus on Ecological Focus Areas (EFAs), any review around the review of the Multiannual Financial Framework (MFF) as well as in the preparation of the next CAP reform. The policy recommendation tool will allow results to be extracted at policy-relevant times as required. The first briefings based on data reviews of the year 2016 and literature review will be available from spring 2017 (concurrent with the report on greening from EC and from Member States, see table XXX) and more profound work on the surveys and interviews in the case study areas and building on previous work in which the partners have been engaged will be available later that year."* **Stating the relevance of results across different sectorial policies and scales** *"Evidence-based and multi-level recommendations on potential changes to the EU policies and instruments to better maintain GBI will be developed based on findings and the stakeholder network's feedbacks. Recommendations will also include ideas of how to integrate CAP reforms with other policy levers affecting GBI such as the GIS, MAES or TEEB initiatives and with policy areas (biodiversity, water, climate)."*

Project partners:

Adelphi Research gGmbH, Berlin, GERMANY (Coordinator) University of National and World Economy, Sofia, BULGARIA Institut für Agraökologie und Biodiversität, Mannheim, GERMANY National Museum of Natural Sciences, Madrid, SPAIN Universidad de Extremadura, Plasencia, SPAIN

Key elements of policy relevance and SPI in the proposal	Examples
Identify precisely the policy stakeholders you plan to engage: • Precise identification of policy stakeholders at proposal stage • Case-studies selected upon explicit criteria of policy relevance and with specific stakeholders	**Identifying precise stakeholders, in a structured manner:** *"Stakeholders (persons or groups who influence or are influenced by the research) will be engaged throughout the lifetime of the project in the informal network of stakeholders of the project. This is considered of key importance for the success if the project is to have results beyond its own lifetime. Given the topic of the research, the potential list of stakeholders is long. Table XXX gives an overview of the initial mapping of stakeholders gathered through researchers' contacts, discussions with relevant stakeholders who have already expressed an interest in the work (such as BirdLife on the EU and national level). This initial mapping will be built upon while developing the communication plan (WP1) and the policy analysis (WP 2 and 3) through a systematic search of secondary data and the snowballing method. Stakeholders will be engaged to different levels depending on their influence and interest in the area of research. It is important to identify at the start, the reason to engage with each type of stakeholder and what they can gain from the research. While stakeholders have been grouped together, it is also important to consider the interlinkages, connections and conflicts already existing within and between groups.* *Table XXX. Initial stakeholder mapping (edited for the purpose of this guide, to be considered as a possible example only)* *"* **Case-studies' selection in terms of policy relevance:** *"- The participating member states have been selected for the variety of national implementation approaches they have taken to CAP greening measures and their potential effects on GBI (table XXX).* *- Other parts of the CAP's Pillar 1 implementation (cross compliance; definitions of permanent pasture; requirements for active farming; and eligible area definition) also differ across the selected member states.*

BIOGEA PROPOSAL, continued

Key elements of policy relevance and SPI in the proposal	Examples
Engage policy stake-holders in your project through co-development of policy-relevant project outputs: • Co-development of policy recommendations with policy stakeholders • Preparation of policy making tools and briefs • Recommendations at EU and local levels, tackling policy formulation and implementation	**Co-development of policy recommendations** "*Task XXX: Collect and systemise results to develop recommendations relevant to national level policy and decision making.* *Evidence-based and multi-level recommendations on potential changes to the EU policies and instruments to better maintain GBI will be developed based on project findings and feedbacks from the participatory research and development network (… set up by the project and involving precisely identified policy stakeholders).* • *Review findings and recommendations from the project from the range of Member States to integrate relevant good ideas and policy implementation approaches into national policy decision making.* • *Organise 2 national stakeholders' roundtables per project country to discuss the initial situation, case study areas' recommendations and develop national-level policy recommendations (building on project results).* • *Develop policy recommendations targeted to the responsible regional and national policy makers – ministries of agriculture, ministries of environment, etc.*" **Preparation of policy making tools and EU recommendations** "*Task XXX: Summarising the results of the project analysis in form of an ongoing policy recommendation tool* • *Policy recommendation tool developed allowing the generation of recommendations at any time according to project progress taking into account the ongoing nature of CAP reform including regular policy briefings (every 4-6 months) and on request for important events.* • *Final policy conference for stakeholders at EU level to discuss and verify case study and national findings and recommendations (potentially located at the European Parliament).* • *Formulate EU level recommendations for realistic changes to CAP and its greening measures which can lead to improved agricultural management of GBI in time for the post-2020 policy process.*" **Tackling policy implementation by practitioners, with support from national policy stakeholders** "*Task XXX: Analysis of national-level policies in the case study Member States* • *Literature review and document analysis on the national level.* • *Analysis of national implementation of the CAP measures identified through task 2.2 through collaborative working within the national participatory research development network (interviews and round tables (in also tasks 3.2 and 6.1)).* *WP XXX: Development of guidance and tools for farmers and advisors* *Development of practical recommendations and guidance within the project's network of stakeholders on the basis of the project findings in order to facilitate the delivery of GBI at farm level via the CAP greening mechanism. This WP will build on the initial work of the project targeting particularly at the case study Member States. Building on the initial contact and information gathered, the project's stakeholder network will work together to develop optimal ways to manage GBI within the structures of the CAP including how to respond to global change drivers such as climate change. A tool-kit will be developed which can be used in many ways depending on what suits farmers in a particular area e.g. guidance to advisors in areas where face-to-face advice has the greatest impact, online tool in areas where farmers have access and use internet, smart tools where these are frequently used in the field.*"

BIOVEINS PROPOSAL

Connectivity of green and blue infrastructures (GBI): living veins for biodiverse and healthy cities

Key elements of policy relevance and SPI in the proposal	Examples
Identify precisely the policy stakeholders you plan to engage: • Identify precisely the stakeholder groups, organisations and individuals you are looking to address • Relate specific project outcomes to specific stakeholders' interests	**Identify precisely the stakeholder groups, organisations and individuals you are looking to address** *"BIOVEINS implements a multi-stakeholder approach, which involves – throughout the design and the development of the entire project – key practitioners, urban policy and decision makers interested in innovative solutions for the management of GBI. In each case study city, stakeholders will be specifically identified to be engaged in priority setting, formulation of options and evaluation of project development and results at three levels: i) the provision of information, i.e. the two-way 'knowledge transfer' between researcher and stakeholders to raise the understanding of GBI in cities and to explore the social demand of GBI; ii) the consultation and knowledge dissemination through a more interactive and structured two-way process, where stakeholders fulfil data needs elicited through interviews or workshops; iii) a 'collaborative learning' process, which is the deepest level of involvement with workshops gathering scientists and policy makers.* *Table XXX: Key contact persons of stakeholders in the involved cities (edited as an example for the purposes of this guide)*

City	Contact	Role	Institution
e.g. Zurich	*Contact Name*	*e.g. Deputy for Nature Conservation*	*e.g. Zurich City Council*
…	…	…	…

Relate specific project outcomes to specific stakeholder's interests

"The knowledge gained in this project will support planning decisions by providing data on the role of functional diversity (FD) on the provision of ecosystem services of urban green/ blue infrastructure. Based on the project's results policy makers will obtain data-supported knowledge to solve pressing issues (…) for example, on which tree species to plant in order to optimise ecosystem services like air pollution mitigation or climate regulation (trade-off analysis; Elmqvist et al. 2011) or to maintain and optimise FD. (…) The involved cities' authorities show a clear willingness to intensively interact with the research teams to optimise their GBI since the preparation of the project."

Engage policy stakeholders in your project through (co-) development of policy-relevant project outputs: • Plan to develop policy making tools and briefs as relevant	**Detail plans for developing relevant tools for policy making at the relevant scale** *"The results obtained in the previous WPs (...) will provide ecologically-supported knowledge that will be the basis for the development of (a) tools for successful and standardised monitoring and (b) guidelines for successful urban planning and management of the urban GBI. These tools and guidelines will be delivered to urban policy makers and green designers, and will contain information on e.g.: guidelines on which plant species (combination) to use in urban GI to maximise biodiversity and ecosystem services, how to connect urban green and blue infrastructures and threshold values for urban GBI in terms of area, fragmentation and connectivity.*

Project partners:

University of Antwerp, Antwerp, BELGIUM (Coordinator) Estonian University of Life Sciences, Tartu, ESTONIA French National Institute for Agricultural Research, Paris, FRANCE Université Paris Sud, Orsay, FRANCE Poznan University of Life Sciences, Poznan, POLAND Universidade de Lisboa, Lisbon, PORTUGAL WSL Swiss Federal Research Institute, Birmensdorf, SWITZERLAND

Key elements of policy relevance and SPI in the proposal	Examples
(co-)Develop a dissemination plan for the proposed research • Develop a precise dissemination plan	**State your dissemination plan including objectives and strategy** *"Result dissemination in the project serves to raise awareness, improve understanding and stimulate action. Therefore, communicating the results will be considered as a major task. The project results will be communicated via a broad variety of ways, thereby majorly investing in communication towards the primary stakeholders, i.e. the urban policy makers. Due to the involvement of citizens (via citizen science projects) communication will also be strongly emphasised towards citizens and of course more traditional scientific communication will not be forgotten. (...)* *As being the first and major stakeholders of this interdisciplinary project, the policy makers from the cities considered in the research project will be involved from the very first beginning of this project till the end (see WP description). In the first meetings we will concentrate on explaining the strategy and objectives of this project. Together with the stakeholders, study sites will be selected (see WP1) that fit the research strategy of the project, but also taking into account e.g. stakeholders' future development plans or questions on planning urban green and blue corridors in the involved city. Because of the different 'languages' spoken by scientists and policy makers, the major project's findings will be translated to laymen's terms and communicated with the involved policy makers of the participating cities by means of reports and via the project's website. Moreover, regular meetings will be organised by the local scientists to give feedback on the results, and to check whether the followed approach is of interest for the involved municipalities. At the end of the second year a common meeting of all involved scientists and policy-makers or practitioners of each involved city will be organised to allow for collaborative learning to elicit new options for action."*
Value the European and international policy implications of your research proposal • Relate the policy relevance and EU added value of your proposed research • State when you build on previous EU policy-relevant research or work	**Where relevant, explicitly state the relevance to EU policy making as an EU added value of the proposed research:** *"As such, green infrastructure (GI) is becoming established as an internationally recognised (e.g. EU) urban planning mechanism for ecological and urban sustainability (EC 2013). The development of a strategy for GI figures prominently in the EU's post 2010 biodiversity policy (EC 2013). This is because GI provides a range of ESs. GI is viewed as one of the main tools which can be used to tackle threats to biodiversity resulting from habitat fragmentation, land use change and loss of habitats (TEEB 2011). Accordingly, it will also fit the 'Convention on Biological Diversity' objectives to integrate land- and riverscapes in a way to improve (functional) connectivity. As Europe has a large territory, a single city approach will not suffice for a European wide GBI approach. Therefore, the project is established along a S-N and W-E gradient while the use of functional diversity will ensure that the results are comparable across countries and climates. This requires transnational collaboration, thereby enhancing the European research and knowledge networks and strengthening Europe's position as a knowledge hub."* **Cite previous policy-relevant research and work your proposal builds on:** *"The BIOVEINS consortium is majorly born within the framework of the COST-action FP1204 'GreenInUrbs: linking environmental with social aspects in studying and managing urban forests'. This COST-action was approved because it fitted well in the environmental vision of Europe »*

OSCAR PROPOSAL

Optimising the configuration of woody riparian buffer strips along rivers to enhance biodiversity and ecosystem services

Project partners:

University of Duisburg-Essen, Essen, GERMANY (Coordinator) Institut National de Recherche en Sciences et Technologies pour l'Environnement et l'Agrictulture, Lyon-Villeurbane, FRANCE Leibniz-Institute of Freshwater Ecology and Inland Fisheries, Berlin, GERMANY Norwegian University of Life Sciences, Aas, NORWAY

Key elements of policy relevance and SPI in the proposal	Examples
State clearly the policy relevance of the proposal: • References to ongoing policy processes • Stating policy relevance across sectors	**Citing on-going and upcoming policy processes the project can feed into** *"Objective: Upscaling and translating the results into clear management and policy recommendations at national and EU levels, particularly targeting the Water Framework Directive's River Basin Management Planning (with a focus on the third cycle), the WFD revision planned for 2019, planning procedures under the Natura2000 Directive, and the next revision of the CAP to support the implementation of the EU Biodiversity Strategy. (...)* *The project's results will contribute to a more targeted application of woody buffers by providing knowledge rules on their effects, a tool to estimate their benefits, and guidelines on the optimal configuration (spatial arrangement and design), in particular for the WFD, Natura2000, the European Biodiversity Strategy, and the CAP. This is in accordance with the recent 2015 mid-term review on the implementation of target 3a of the European Biodiversity Strategy, reporting a continuous biodiversity loss associated with agriculture and the need to use the revision of the CAP to provide instruments to support biodiversity (*http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52015DC0478*)."* **Stating the relevance of results across different sectorial policies, identified specific issues the project will respond to:** *"The implementation of woody buffers contributes to harmonising the goals of the WFD and Natura2000 by integrating green infrastructure and providing both, biodiversity and ecological networks, in a sustainable way. (...)* *The project will explicitly address the sensitivity and uncertainty related to the prediction of the effects of woody buffers, which is crucial in a political and legal context but rarely considered. It will contribute to bridge the gaps between the WFD and Natura2000 requirements and between concepts of ecological status and ecosystem services"*

III.2 POOR PRACTICES IN PRESENTING POLICY RELEVANCE OF RESEARCH PROPOSALS

In addition to good practices, it is important to also highlight recurrent pitfalls and caveats found in project proposals as far as policy relevance is concerned. These are summarised in the table 11 below based on feedbacks from policy evaluators in BiodivERsA calls. The table includes possible solutions to avoid falling into recurrent mistakes when it comes to describing the policy relevance and science-policy interfacing in your research proposal:

Table 11: Examples of poor practices and possible solutions

Key elements of policy relevance and SPI in the proposal	Example of poor practice	Possible solutions and S.I.E.V. elements to refer to in the guide
State clearly the policy relevance of the proposal	Policy relevance is tackled loosely, either as an appendix or a separate paragraph only, and not linked with the rest of the proposal.	➔ It is preferable if the policy relevance of the research had rather been embedded throughout the proposal where relevant and with a specific dedicated section for its detailed development and planning. *Use the following S.I.E.V. sections of the guide to help you avoid this pitfall:* • *Part II.1 "State"* • *Part II.2 "Identify", in particular section B* • *Part II.4 "Value"*
	Policy instruments are not identified at all or simply cited, without further analysis (directives, international agreements, plans, green books, etc.). Proposal simply cites, e.g., the Habitats and Birds Directives.	➔ Try to identify precise policy instruments and analyse them precisely to relate the objectives of the proposal to specific articles of the instruments. *Use the following S.I.E.V. sections of the guide to help you avoid this pitfall:* • *Part II.2 "Identify", in particular sections B. and C.* • *Part II.4 "Value"*
	Applicants fail to demonstrate added-value or formulate the research objectives in policy terms.	➔ Detail how your precise research objectives and expected outcomes can support specific pieces of legislation and objectives (see above). *Use the following S.I.E.V. sections of the guide to help you avoid this pitfall:* • *Part II.2 "Identify", in particular section B.* • *Part II.4 "Value"*
Identify the policy stakeholders you plan to engage	The text indicates that research results will be "disseminated to relevant (policy) stakeholders" without further details.	➔ Try to identify precise organisations and even individuals when referring to policy-stakeholders you seek to engage. This tends to demonstrate a stronger and more thought-through approach to engaging with policy than citing only broad stake-holder groups to be engaged such as "policy makers". *Use the following S.I.E.V. sections of the guide to help you avoid this pitfall:* • *Part II.2 "Identify"*
Engage policy stakeholders in your project through co-development and co-implementation	Applicants consider policy makers as passive receivers of the results, only acknowledged in the "communication" section. Policy makers are at best addressed as a specialised public to be targeted at specific conferences or workshops at the end of the project, without providing opportunities for interaction or active participation earlier in the project's life cycle.	➔ Where relevant, plan for an early engagement with policy stakeholders, which is instrumental in verifying the usefulness and favouring the uptake of the project's results. Describe such existing or planned early discussions to increase the credibility to the policy relevance of your proposal. *Use the following S.I.E.V. sections of the guide to help you avoid this pitfall:* • *Part II.3 "Engage"*

The BiodivERsA Partners

French Foundation for Research on Biodiversity, FRANCE (coordinator)

Austrian Science Fund, AUSTRIA

Belgian Science Policy Office, BELGIUM

The Fund for Scientific Research – Wallonia, BELGIUM

The Research Foundation - Flanders, BELGIUM

National Science Fund Bulgaria, BULGARIA

Estonian Research Council, ESTONIA

Academy of Finland, FINLAND

French National Research Agency, FRANCE

French Ministry of Ecology, Sustainable Development and Energy, FRANCE

French Ministry for Higher Education, Research and Innovation, FRANCE

New Caledonian Economic Development Agency, FRANCE

Guadeloupe Region, FRANCE

French Guyana Region, FRANCE

Reunion Region, FRANCE

Project Management Agency of the German Aerospace Center, on behalf of the German Federal Ministry of Education and Research, GERMANY

German Research Foundation, GERMANY

Ministry of Agriculture, HUNGARY

The Irish Environmental Protection Agency, IRELAND

Ministry of Environmental Protection, ISRAEL

Latvian Ministry of Environmental Protection and Regional Development, LATVIA

Research Council of Lithuania, LITHUANIA

Research Council of Norway, NORWAY

National Science Centre, POLAND

Portuguese national funding agency for science, research and technology, PORTUGAL

Regional Fund for Science and Technology, Azores, PORTUGAL

The Executive Agency for Higher Education, Research, Development and Innovation Funding,

ROMANIA

Slovak Academy of Sciences, SLOVAKIA

Spanish Ministry of Economy and Competitiveness, SPAIN

Regional Government of the Canary Islands, SPAIN

Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning, SWEDEN

Swedish Environmental Protection Agency, SWEDEN

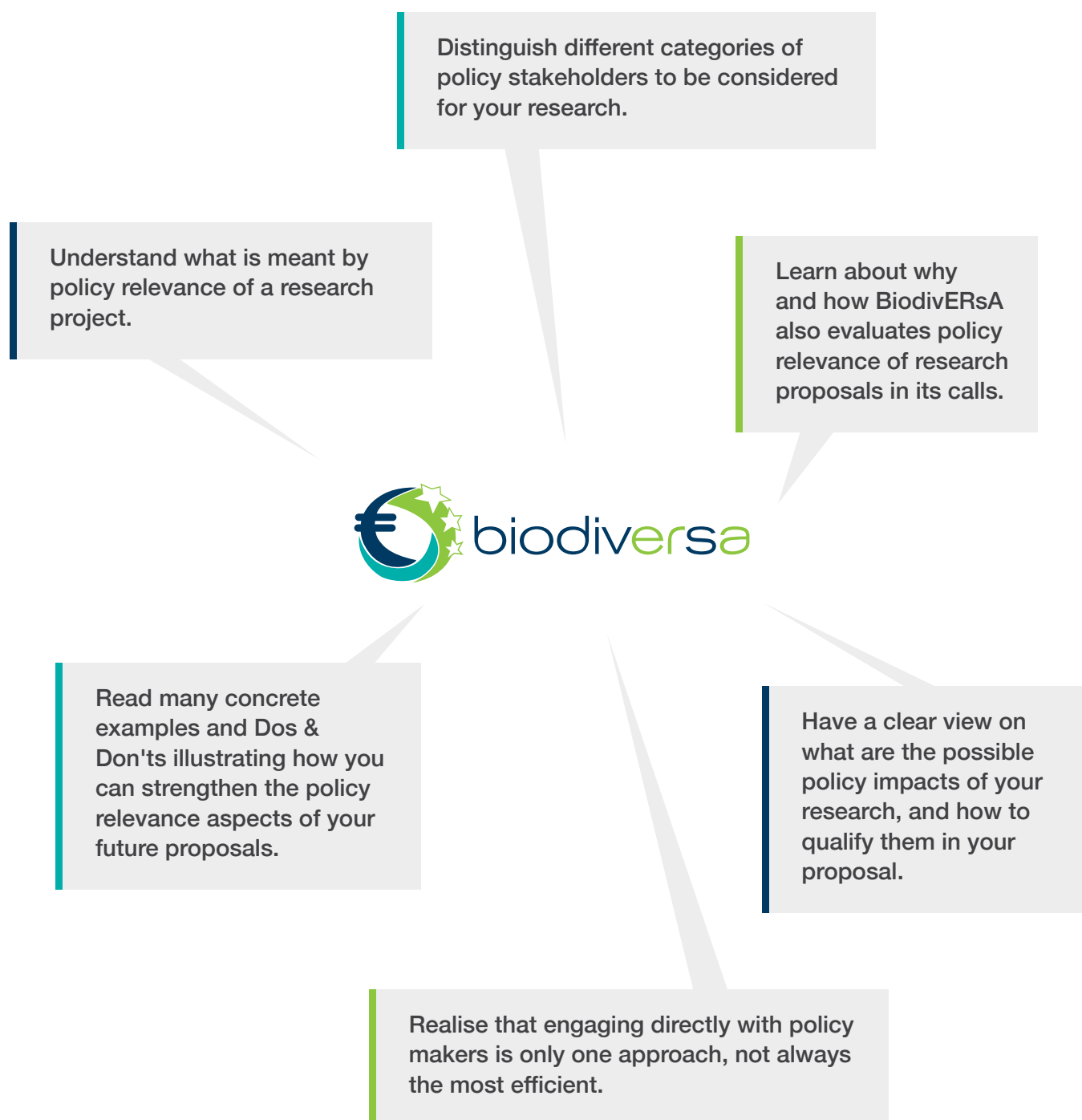Swiss National Science Foundation, SWITZERLAND

The Netherlands Organisation for Scientific Research, NETHERLANDS

Ministry of Food, Agriculture and Livestock, TURKEY

Joint Nature Conservation Committee, UNITED KINGDOM

Reading this guide you will...

Distinguish different categories of policy stakeholders to be considered for your research.

Understand what is meant by policy relevance of a research project.

Learn about why and how BiodivERsA also evaluates policy relevance of research proposals in its calls.

Read many concrete examples and Dos & Don'ts illustrating how you can strengthen the policy relevance aspects of your future proposals.

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Have a clear view on what are the possible policy impacts of your research, and how to qualify them in your proposal.

Realise that engaging directly with policy makers is only one approach, not always the most efficient.

...and much more!

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