A recommended design for "BiodiversityKnowledge", a Network of Knowledge to support decision making on biodiversity and ecosystem services in Europe

Executive Summary

Prepared by the consortium of the KNEU project, based on a broad European consultation

Creating a Network of Knowledge for biodiversity and ecosystem services

www.biodiversityknowledge.eu

Biodiversity Knowledge

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April, 2014

This document is a synthesis of the full recommended design report for BiodiversityKnowledge. This report is the main deliverable of the EU-funded KNEU Coordination Action that aims to develop a European Scientific biodiversity Network of Knowledge to inform policy-making and economic sectors (ENV.2010.2.1.4.3-3).

The report has been designed through collaboration with over 300 active individuals and organisations and has been continuously enriched through exchanges between individuals with different backgrounds, expertise, visions, and cultures. The full final report is available at www.biodiversityknowledge.eu.

1 Background

Biodiversity, its related services and therefore human well-being, are at risk. This is the backdrop behind the need to better connect knowledge on biodiversity and ecosystem services with decision-making. We know a great deal about our natural environment, sufficient to halt its continuous loss, but "much of the available science and experience is not being effectively used" (EPBRS 2009[1]). The need to improve the interface between science and policy has also recently been highlighted by the 7th Environment Action Programme for 2020 in its priority objective 5 to improve the knowledge and evidence base for European Union environment policy[2].

The challenge in improving the science-policy for Europe is two-fold. On one hand, scientists and other knowledge holders produce high quality knowledge, but access points to all this knowledge are still scattered and poorly organized across disciplines and institutions. While some of this knowledge may indeed be used and fed into policy, via agencies, consultation processes and advisory boards, the majority remains unused. On the other hand, knowledge needs and interests of decision-makers are often diverse, can come at short notice and often, scientific ways of providing knowledge are not tailored to these needs.

To counteract these challenges, efforts to strengthen the science – and, more general, the knowledge-policy interface[3] on biodiversity and ecosystem services – have considerably increased over the last few years. These efforts are further enhanced by the launch of IPBES[4] which starts its work at the global scale in 2014. As the word 'interface' indicates, what is needed is an operating space at which the two systems 'knowledge' and 'policy' (and other decision-making) interact. To create and enhance this interaction both complex systems have to be organized accordingly. If both sides are properly organized, facilitating their interaction may be sufficient, avoiding the need for a third complex system in between. The EU project KNEU was set up to help organize the 'knowledge' system, or community, through the creation of a 'Network of Knowledge', called BiodiversityKnowledge.

A Network of Knowledge (NoK) is understood as a 'network of networks' of existing institutions, initiatives and projects (EPBRS 2009[1]). It acknowledges that many processes are already ongoing and that identifying and connecting them is crucial. Many institutions hold knowledge on biodiversity, but decision makers have difficulties finding the type of answers they need. BiodiversityKnowledge will improve this situation by providing an entry point for questions and collecting the available knowledge to answer a request for knowledge in the best possible manner (depending on means and time-frame) and thus also provide knowledge holders with a better pathway for providing their inputs into decision making. This NoK will integrate available knowledge and process it in a sound and reliable way to provide answers to decision makers in a format that they can readily use (see also back cover for the mission and principles of the NoK).

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[1] EPBRS (2009): Concept note on a European Network of Knowledge on Biodiversity, online at http://www.epbrs.org/PDF/2009%2009%2010%20Concept%20note%20on%20the%20network%20of%20knowledge_version%202-1.pdf

[2] European Union (2014): General Union Environment Action Programme to 2020 – Living well, within the limits of our planet.- Luxembourg, Publications Office of the European Union

[3] Today, the commonly used term is still "science-policy interface", although the term "knowledge-policy interface" is more suited to the objectives and approaches of BiodiversityKnowledge, as it recognizes that different forms of knowledge (including but not only science) are relevant for policy and decision-making.

[4] The Intergovernmental Platform for Biodiversity and Ecosystem Services, see www.ipbes.net

2 BiodiversityKnowledge: a tailored Network of Knowledge to meet policy and science needs

During the course of designing BiodiversityKnowledge, a broad consultation with scientific and policy experts identified four main functions which a NoK should address:

(1) **a Networking and capacity building function (NET)**, to better network existing knowledge holders and their knowledge to improve access to this knowledge. This includes a strong element of capacity building activities to strengthen the community of knowledge holders and their ability to participate in the processes of the following functions.

(2) **an Answering-Decision-making-Needs function (ADN)**, to improve the support of decision making through the provision of relevant knowledge on a request-driven basis with tested methods and protocols. The objective is to provide consolidated views on specific topics and to make use of relevant types of knowledge including practical and local knowledge.

(3) **a Research Strategy function (RS)**, to identify policy-relevant research gaps and how the research landscape could be used to address them (see full report for description).

(4) **an International Collaboration function (IC)**, to use and disseminate European knowledge into international science-policy processes like IPBES or SBSTTA-CBD, as well as foster European links to global research efforts (see full report for description).

In this executive summary, we focus on the first two functions, which correspond to the basic functions of a NoK. All four functions and their interlinkages are further developed in the full report.

2.1 The Network and capacity building function (NET- function)

As a bottom-up approach, BiodiversityKnowledge should first provide the means for a more responsive biodiversity knowledge community. For many decision makers, reliable and rapid access to existing information, knowledge and expertise may be sufficient for some of their needs, but even such access is often lacking. Interviews on knowledge needs showed that an internet-based "one-stop-shop" or web-platform as entry point to this constantly evolving knowledge would be very helpful, providing access to existing data and information and the opportunity to address knowledge holders directly.

The Biodiversity Information System for Europe (BISE), established in 2010, is currently the most advanced starting point for such a portal, covering a broad range of biodiversity-relevant information. But it currently lacks an explicit link to the knowledge holder community (in science and practice). In this context, KNEU has mapped the biodiversity knowledge landscape and its flow, identifying key knowledge hubs and their respective networks. By linking these, BiodiversityKnowledge could create a 'Network of Networks' and add complementary value to the work of BISE, including:

- An **overview of finalised and on-going research activities at the European level**, including direct links, sorted by themes to existing information, knowledge and expert networks;

- A **'knowledge holder' area** where knowledge hubs are registered and able to present themselves and their work;

- A 'thematic knowledge area' to access knowledge from different policy-relevant perspectives. It could include digests of knowledge as entry points and then links to both the 'project' and the 'knowledge holder' area for further information and detail. Using thematic areas as main building blocks would also help build the platform step by step;

- An online 'forum' to allow knowledge users to ask questions to the community of knowledge holders and projects. It could be either open, or restricted (or anonymized) to allow requesters to pose controversial or 'simple' questions.

For all above elements, an analysis should be carried out to ascertain whether they can be included in BISE or addressed by existing networks[5], with clear links to BISE.

The network will need a strong **'capacity-building' component** to support mutual learning between knowledge holders and decision-makers about needs and restrictions in their respective work, but also capacity-building on methods for synthesising knowledge for decision-making needs (see 2.2). Capacity-building will also enhance the capacity and willingness across knowledge holders to get actively engaged in the Network of Knowledge.

Such a 'Network of Networks' of existing institutions would form the basis for both a broad engagement strategy of the knowledge community in the biodiversity science-policy dialogue in general, and for the second function a NoK should address: the Answering-Decision-making-Needs (ADN) function. The added value of the Networking function is summarized in Box 1.

BOX 1: The added value of actively developing the biodiversity knowledge community via the Network and capacity building function (NET-function)

Knowing who is who: by helping the knowledge holders organize themselves, the potential to identify right addressees for requests will be strongly increased. Similar approaches at the national scale have shown that this is an essential ingredient for success at the Science-Policy Interface.

Enhancing collaboration: bringing together different disciplines and expertise across countries on a specific topic, will strengthen collaborative work. It will contribute to consolidating and better using existing databases. Knowledge holders will be able to have access to the work of others and build on it, thus contributing to tangible progress in biodiversity knowledge and policy.

Making the link between knowledge forms (including science) and policy more explicit will help build a broad knowledge community and enhance the exchange between science and other knowledge holders, e.g. from practical biodiversity management via the thematic knowledge areas. Further developing this link is crucial for a better integration of knowledge.

Enhanced responsiveness: in complement to existing platforms, a more diverse and mutual exchange of knowledge holders and requesters will increase awareness on both sides on "what is out there".

Enhance cost-effectiveness of investment in European research: The Network-function will enhance the ability to use knowledge gathered in European projects and beyond.

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[5] On the European level, the major networks include the former 'Networks of Excellence' on biodiversity topics and the common infrastructure LifeWatch (www.lifewatch.eu). On the global level, linkages will need to be explored in the context of the evolving work of IPBES.

2.2 Answering-decision-making-needs function (ADN-function)

The second function of the BiodiversityKnowledge NoK is to explicitly support European policy at different times in the policy cycle – in the development, design, implementation, monitoring, evaluation and reporting of policy and management strategies.

Whenever a topic requires an in-depth analysis and a consolidated view from science, specific activities to synthesize and analyse existing knowledge will be needed. To serve this second function, BiodiversityKnowledge would provide an interface where knowledge holders are addressed and activated to jointly synthesize available knowledge on a given topic. The process is thus a request-driven knowledge-policy interface. Such a process has three phases: a preparing, a conducting and a finalising phase (see Figure 1)[6].

Different types of actors will be involved in this interface: knowledge requesters, knowledge holders, organised in ad-hoc working groups or acting as evaluators, and a knowledge coordination body (KCB) to coordinate the whole process (see chapter 3 and 5.6 of full report).
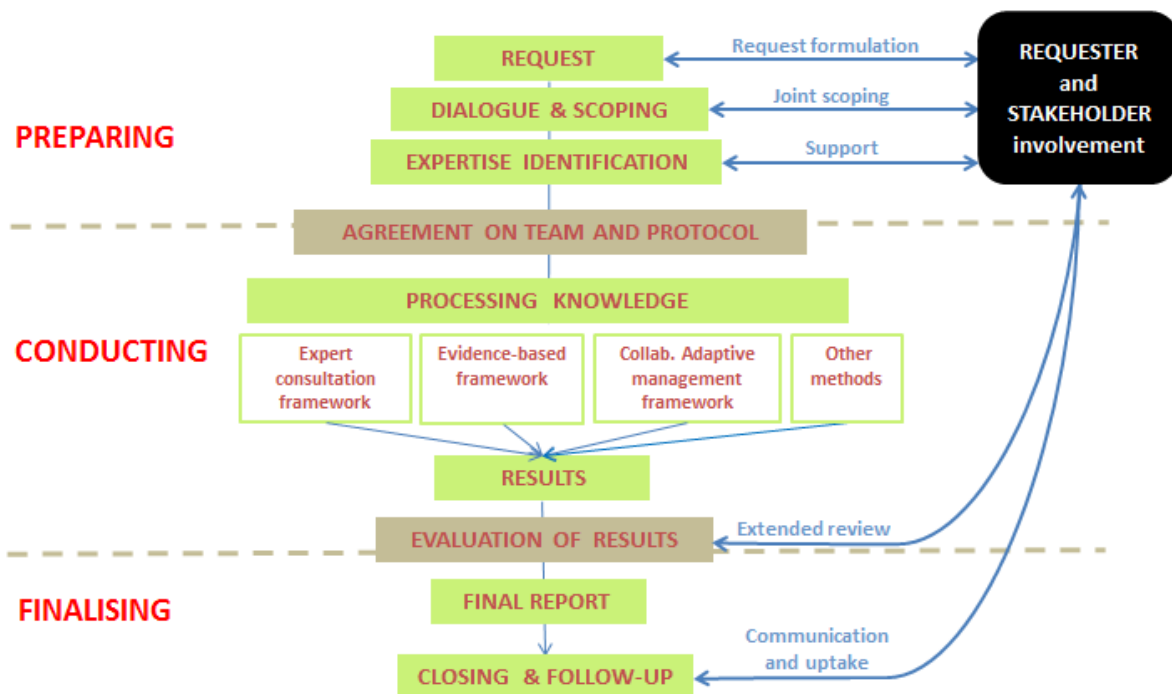

Figure 1: Workflow to address the Answering-decision-making-needs function and where requesters and other stakeholders might get involved. See text for short explanation. A complete narrative explaining the workflow can be found on www.biodiversityknowledge.eu

Through the Knowledge Coordinating Body, requests for policy-relevant knowledge are dealt with in a stepwise process, opening up a continuous dialogue between knowledge users and providers while ensuring a broad level of transparency.

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[6] The general process presented here is similar to the one evolving for the work of IPBES. The BiodiversityKnowledge approach and governance add to this a high level of transparency and traceability and options for using different methodological approaches. The mechanism would thus further strengthen the credibility and legitimacy of the process.

For the **preparing phase**, a dialogue and scoping process between requesters and knowledge holders will be central to properly identifying the requester's needs and how these can be framed in order to be answered.

The KCB will then convey the question to the NoK to identify what knowledge is available on the question raised. The question can then be dealt with in different ways, depending on the timeline of the policy process to be informed, the availability and type of knowledge needed (including for example practical management knowledge), and the resources available to conduct the work.

Following the final acceptance of the request, a working group is created for the **conducting phase.** This group will assess the question in detail and double-check with the requester, if further specification is needed. The working group will discuss and determine the adequate methodological approach to be used. They can propose expert consultations, a systematic review, an adaptive management approach or other suitable methods. The approach will be outlined in a protocol which will be made publicly available for comment, to ensure transparency of the process. The working group will then use the agreed method(s) to compile relevant answers to the question raised. The draft response will be made available for an extended peer-review by both experts and decision makers, to ensure it provides clear and relevant information and is based on sound analysis. This step is important to ensure quality and credibility of the results, and will, as all other steps be documented transparently via the website.

> BOX 2: The added values of establishing a clear process for answering decision-making needs are as follows:
>
> *One entry point for requests: The need for an entry point for requests from decision making to science and other forms of knowledge has been articulated clearly across the KNEU project by many stakeholders. The questions to be addressed will nonetheless be limited in number and only be addressed if they go beyond the scope of existing mechanisms like consultancy contracts and the work of responsible agencies and other bodies.*
>
> *Ensuring broad and updated coverage of the available knowledge: Knowledge synthesis within the NoK enables broad participation and includes an iterative process with several review loops and opportunities to provide feedback at all stages of the process as well as other means for controlling and increasing quality.*
>
> *Ability to access knowledge at appropriate scales: The direct link to the open 'network of networks' enables expertise to be targeted at the appropriate scales from local to global. It will also facilitate the inclusion of knowledge other than science, for example traditional ecological knowledge.*
>
> *Using tested methodological approaches: Although flexibility will be needed, a high level of credibility can only be achieved through sound methodological approaches. The methodological 'toolbox' proposed and tested in the NoK will be crucial for this and explicitly adds a new dimension of quality and transparency that enables the NoK to address different kinds of questions thereby going beyond a standard assessment process.*
>
> *Transparency of processes: In addition to using tested methods, the NoK process will clearly document every step in addressing a given request. It thus allows a broad participation and opens up to different perspectives in science and beyond.*
>
> *Reducing reaction time: for responding to policy needs and shortening the timeframes for information to reach policy makers. It will also facilitate rapid updating of synthesis by easy exchange of knowledge.*
>
> *Thus, BiodiversityKnowledge will be able to provide a consolidated view from science, and include other forms of knowledge as necessary.*

In the **finalising phase**, the product, which might be for example a report tailored to the needs of the requester, a policy brief, a set of recommendations or scenarios is handed to the requester of knowledge, and is made publicly available. All contributors are widely acknowledged.

Decision-makers can then draw on a consolidated view from science (and other knowledge, as appropriate), which is directly relevant to their specific question, and can therefore make better-informed decisions. The added values of the process proposed for the NoK are summarized in Box 2.

2.3 How the functions work together

Figure 2 outlines how the two functions described above and the research strategy function would work together to provide a range of approaches: from direct answers (for example using BISE as web-platform) and access to readily available knowledge (upper part of the figure), down to more detailed, in-depth analysis, and/or synthesis using the approach presented above in the "Answering-decision-making needs" function.
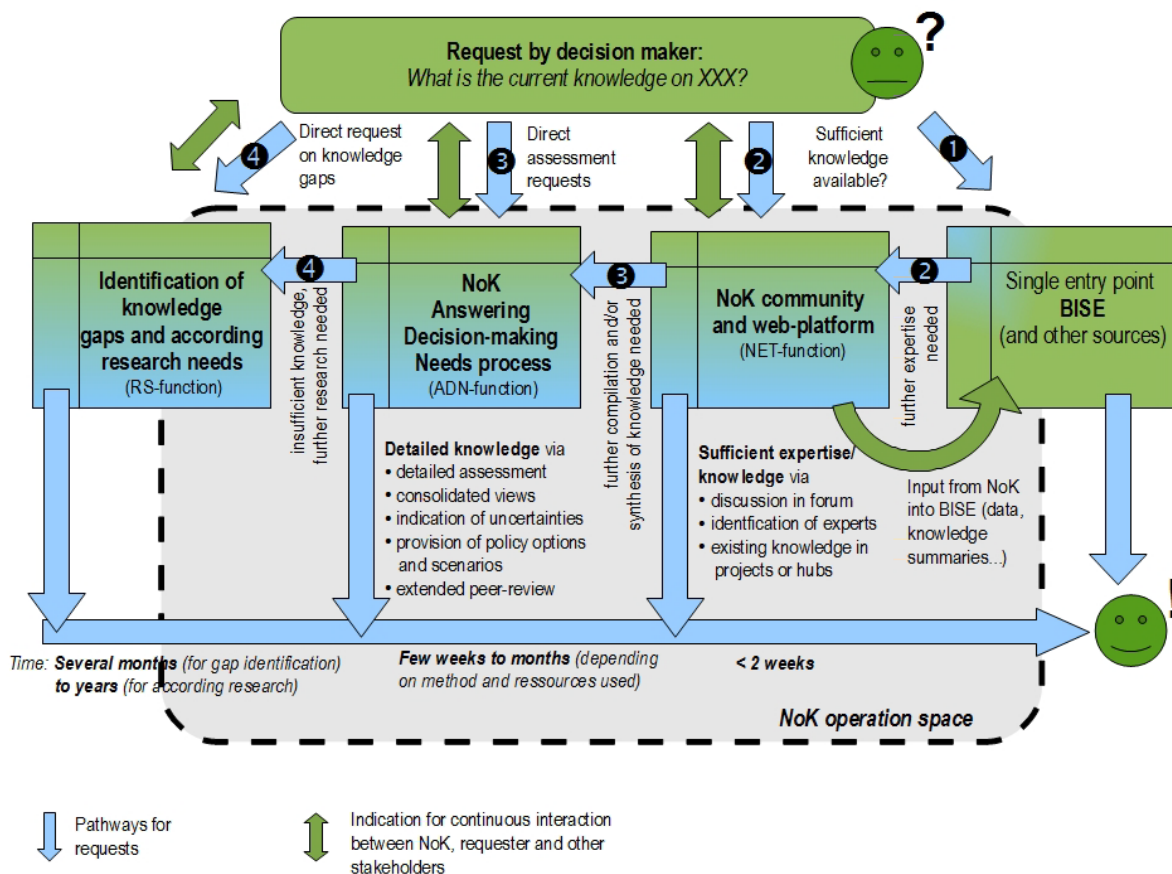

Figure 2: Flowchart of the entry points where the NoK can support decision making by identifying and collating relevant knowledge and thus integrating the three functions of networking the networks (2.1), answering decision making needs (2.2) and supporting the research strategy (see full report)

Figure 2 outlines the potential general 'pathway for requests': A decision-making need is identified. If the requesters are not able to answer it using their usual means, they may use ❶ BISE (or other specific sources/platforms) as a single entry point to look for available knowledge. If this is not sufficient, a next step could lead them to the NoK with its three functions ❷ the NET-function to find quick answers via identification of existing synthesis work or direct contact with experts, ❸ the ADN-function for targeted knowledge synthesis activities and ❹ the RS-function to identify research needs (see full report for detailed description).

The latter approaches, i.e. entering the NoK operating space will lead to more in-depth and consolidated views from a knowledge perspective, and might lead to the identification of knowledge gaps and further research needs. Figure 2 also highlights that taking a topic beyond step 2 will take much more time and resources, but will significantly increase the credibility of the knowledge analysed to answer a request. The NET-function, by integrating across projects, disciplines and institutions, will in the medium-term strongly support the knowledge base available directly via the web platform/BISE (green feedback arrow from step 2 to step 1), ideally allowing for less questions to be posed directly to experts and the network and avoiding duplication of work.

3   A recommended design for the governance of the NoK

In designing the NoK and based on earlier experiences, a set of bodies, rules and procedures can be identified to enable the knowledge community on biodiversity and ecosystem services to enhance the credibility and relevance of the activities at the science-policy interface and serve the functions described (see chapter 5 of full report for further details).

A mandate from policy would help to communicate that the work and results of BiodiversityKnowledge are needed and acknowledged as an important input into decision-making processes.

Several **options** for the design of BiodiversityKnowledge have been developed, ranging from an option improving the networking model to an option of a platform model based on dedicated institutions with the capacity and mandate to answer requests (see chapter 5.5 of full report). From these options, the NoK recommended design was developed. It aims at balancing different challenges faced when setting up new innovative structures, including funding, avoiding overlap with existing institutions, fostering openness, transparency and inclusiveness of processes, considering timeframe and scale (see principles on back cover).

The recommended design proposes a governance structure with four main bodies:

- a decentralized **Knowledge Coordination Body** (KCB) of about ten members that cover with their expertise the whole range of functions, with a specific focus on thematic and methodological expertise for the answering of decision-making requests.

- a **Secretariat** overseeing the daily business and coordinating the NoK work flows and communications.

- an **Advisory Board** with eminent experts from knowledge holder institutions as well as decision-making institutions advising the KCB on strategic issues.

- an independent **Evaluation Body** that would actively support the KCB and the secretariat in their work regarding procedures and structures.

The KCB could be set up initially by a number of dedicated institutions in a pilot phase, which would ensure a broad involvement via existing networks, but would also guide the NoK into a permanent open structure mainly based on individual membership. Funding is anticipated to come from different sources, including project funding, contributions by members, but also direct support from policy institutions.

Central to the success of the NoK will be its direct link to decision-making in policy and beyond. For this, links need to be established, as discussed in the full report jointly with further details on governance and financing options. The Network of Knowledge is a proposal to better organise the knowledge side of the interface, within the wider context of improving the evidence base for policy making as recommended in the Seventh Environment Action Programme. How the policy side of the interface and the interaction between science and policy beyond specific requests could be structured needs to be determined in the discussions on an EU mechanism for improving knowledge on biodiversity and ecosystem services.

To conclude, an innovative approach like the NoK can only be set up in a stepwise approach, supported by core kick-off funding. Based on this, a detailed business model will need to be developed and set up. The full NoK report provides the baseline for this, and first steps have been taken to bring together key partners in the discussions during the KNEU project.

Bringing together the perspectives and underlying interests and values of all actors engaged in biodiversity and ecosystem services remains the overarching challenge in shaping the knowledge-policy interface in Europe. The KNEU team is confident that the recommended design of the NoK can play a crucial role in shaping this interface in the future in an open, transparent and innovative way. We invite you to get engaged and build with us this community to make a difference for a sustainable future.

For a detailed description of the NoK proposal, and an analysis of the challenges behind them, see the full report of the KNEU project: www.biodiversityknowledge.eu

Mission & Principles of BiodiversityKnowledge

BiodiversityKnowledge is an initiative by researchers and practitioners to set up and operationalize a Network of Knowledge to improve the knowledge flow between biodiversity knowledge holders and users in Europe.

The goals of BiodiversityKnowledge are to answer questions from decision making, to improve the evidence base, to contribute to developing a research strategy, and to enable societal actors to make better informed decisions concerning biodiversity and ecosystem services.

The approach of BiodiversityKnowledge strives to integrate all relevant forms of knowledge to answer questions jointly formulated with decision makers using transparent and rigorous procedures. Throughout this approach, BiodiversityKnowledge relies on and provides networking, actively builds capacity and engages in learning on all aspects of knowledge interfacing. Accordingly, the processes of BiodiversityKnowledge matter as much as topics and outputs to ensure a coherent and credible approach.

BiodiversityKnowledge will…

(1) enable **OPENNESS** by wide participation from all potential actors, including relevant experts and knowledge holders, through open invitations for participation, building on participants' enthusiasm and diversity, and ensuring open access to the NoK products.

(2) **ENSURE QUALITY**, by applying established and tailored methodologies, developing systems for quality assurance including extended peer-review, and responding to feedback.

(3) **MINIMISE BIAS and ENSURE FAIR and TRANSPARENT PROCESSES**, by ensuring scientific rigour, broad participation, and by avoiding conflicts of interest, through clear rules and procedures.

(4) **AVOID DUPLICATION** by collaborating with relevant established institutions to maximize efficiency and minimize costs in science-policy interactions.

(5) integrate **CAPACITY BUILDING** as essential component to improve collaborative working and information sharing.

(6) ensure strong internal and external **COMMUNICATION.**

(7) integrate **REFLEXIVITY and LEARNING**, by ensuring that processes and results are continuously and formatively evaluated.