



Creating a Network of Knowledge for
biodiversity and ecosystem services
www.biodiversityknowledge.eu

1st BiodiversityKnowledge conference

May 21st-23rd 2012, BELSPO offices, Av. Louise 231, Brussels

OVERVIEW about the BiodiversityKnowledge initiative, some background ... and what we would like to discuss at the conference

Content

| | | |
|-----|---|----|
| 1 | Foreword | 2 |
| 2 | Mission Statement | 2 |
| 3 | Concept of Network of Knowledge | 2 |
| 4 | Definitions..... | 4 |
| 5 | Background analysis..... | 4 |
| 5.1 | Mapping the knowledge landscape and flow on Biodiversity in Europe | 4 |
| 5.2 | Summary of the interviews held with potential clients of the Network of Knowledge | 5 |
| 5.3 | Review of impediments to knowledge provision | 6 |
| 5.4 | Series of consultation workshops on designing the prototype | 7 |
| 6 | The NoK prototype..... | 8 |
| 7 | Main challenges of a NoK..... | 11 |
| 7.1 | Challenge 1: Connecting, committing and acknowledging..... | 11 |
| 7.2 | Challenge 2: Scoping and framing of questions | 11 |
| 7.3 | Challenge 3: Data sharing, standards and data exchange | 12 |
| 7.4 | Challenge 4: Governance | 12 |
| 7.5 | Challenge 5: Financing | 12 |
| 7.6 | Challenge 6: Quality assurance | 13 |
| 7.7 | Challenge 7: Communication | 13 |
| 8 | Annex 1: Mission statement and principles of BiodiversityKnowledge..... | 14 |



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1 Foreword

With *BiodiversityKnowledge*, we want to create and test a new approach to better network the knowledge on biodiversity and ecosystem services (BES) in Europe. Funded by the EU FP7 project KNEU, this initiative wants to develop an option for the future challenges in better integrating knowledge on BES in decision making. The need for improvement has been articulated by policy on many occasions over the last years- with the new strategic plan of the CBD, the founding of IPBES, the EU biodiversity strategy and others.

This report summarizes the work and series of reports that were undertaken during the first phase of the *BiodiversityKnowledge* project up to the first conference, which aims at involving knowledge holders from different areas and countries to discussed how the *BiodiversityKnowledge* Initiative could be shaped.

2 Mission Statement

The following (preliminary) mission statement has been developed for BiodiversityKnowledge.

BiodiversityKnowledge is an initiative by researchers and practitioners to help all societal actors in the field of biodiversity and ecosystem services to make better informed decisions. In this challenge, we invite the whole biodiversity community to help us develop an innovative mechanism called Network of Knowledge - an open networking approach to boost the knowledge flow between biodiversity knowledge holders and users in Europe.

For the additional principles we want to follow in the project, see Annex 1.

3 Concept of Network of Knowledge

The idea for a “Network of Knowledge” (NoK) was set up by the EPBRS (European Platform for Biodiversity Research Strategy) in a position paper, originating from the discussion about the need for better and more focused science-policy interfaces for biodiversity in Europe.

From the discussion, a Network of Knowledge should (EPBRS 2009):

- respond to requests for information from its clients, including, if required by its clients, policy-relevant information, policy options and scenarios
- provide reports on issues that its members wish to draw to the attention of its clients, including both early warnings and in some cases the need for further research on key policy-relevant issues
- design and co-ordinate multiple-scale assessments that respond to the needs of decision-makers
- help to build capacity to provide reliable, evidence-based and policy-relevant information and to undertake assessments
- interpret its findings for the clients of the network, and communicate with them, with other scientists, and where appropriate, with the public, concerning the implications of their findings, and what policy options might be available.

This is a challenging approach, given today's situation where biodiversity knowledge is still quite scattered across disciplines, scales and different kinds and a high number of institutions and even individuals. A NoK will need to address the interest of knowledge holders to get acknowledged for their input, but also need to better communicate the need for their input into societal discussions. When providing knowledge to clients, it will need to be as explicit as possible about the knowledge sources, their quality and uncertainties, but also be as relevant as possible for the client's needs.

A Network of Knowledge is first and foremost a network of networks of existing institutions, initiatives and projects. It acknowledges the fact that nothing in the area of science-policy interactions starts from scratch and needs to accept that many processes are already going on. Identifying and addressing them is thus of major importance.

On the international level, this can be exemplified very nicely with the IPBES discussions (see Figure 1 below). Analyses had been made to show, that many international and regional players are already acting in this context, often as networks themselves, and thus would need to be addressed and strengthened via IPBES. Also, thematic networks may exist, like GBIF on biodiversity data, or the BIP network on indicators.

So collaboration will be a major issue for IPBES, and the need for regional networks in this context have been discussed, although there is not yet a decision in IPBES, whether such networks should be formally established and be part of IPBES. If regional structures would be set up, a network of knowledge in Europe could then act as such a regional hub, as indicated by the red circle in figure 1.

The basic idea of a network of networks is then to **federate** and **facilitate** knowledge transfer (incl. Capacity building) via some central **nodes** (e.g. the NoK for Europe, and IPBES at the global level) which coordinate activities loosely and serves the interface, including request – to IPBES, and possibly also request with European interest only to the regional network.

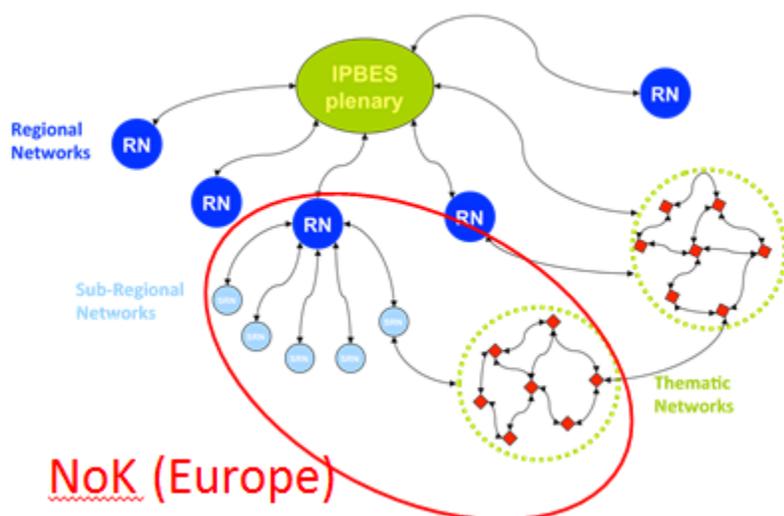


Figure 1: Idea of a “network of networks” in the context of IPBES.

4 Definitions

In the context of the project, we experienced, that it is important to clarify some basic terms that are used.

Knowledge: (1) the concept of knowledge is taken to entail an understanding of processes, concepts and contexts (Conservation Commons, 2011). (2) Knowledge may be considered as ‘actionable information’ (Jashapara, 2004 in Magnuszewski et al., 2010) that allows us to make better decisions and to act on it. Knowledge may be divided into two kinds: tacit knowledge and explicit knowledge (Polanyi, 1967 in Magnuszewski et al., 2010).

Knowledge on biodiversity and ecosystem services: any information that has been processed to support dialogue on biodiversity and ES management and better decision making. This includes information from a wide range of disciplines and from practical implementation (management) and experience as well as from scientific knowledge, i.e. mainly backed and peer-reviewed literature.

Knowledge brokering: an intermediary activity that takes place between the spheres of science and policy. The term implies that knowledge is a commodity that can be brokered between parties. Knowledge brokering is often characterized either by describing specific processes and tools, general models of their functioning or the roles and functions of the individuals and organizations acting as knowledge brokers (Magnuszewski et al., 2010).

Knowledge hubs: any institution that is important for the flow of knowledge, i.e. main player in the provision of knowledge or in the requesting of knowledge, or in both (see next points)

Knowledge requesting: people and institutions responsible for the management and policy strategies on biodiversity and ecosystem services that are requesting knowledge related to their responsibilities.

Providing knowledge: people and institutions that possess relevant knowledge in various areas of expertise, including scientists from different fields, practitioners in biodiversity management, administrative bodies, companies, NGOs and indigenous and local people, which redistribute their knowledge (either generated themselves (source) or gained from a source (relay) or combined between new and gained knowledge) to either a restricted number or multiple users.

5 Background analysis

5.1 Mapping the knowledge landscape and flow on Biodiversity in Europe

To build a network of knowledge in Europe, we need to first understand the flows of knowledge within Europe, i.e. where is knowledge coming from, where does it go and who is playing a key role in this landscape. In order to establish the flows while highlighting biodiversity knowledge hubs we have interviewed persons working with biodiversity issues, using the interview-based mapping tool called Net-Map (Schiffer and Hauck, 2010) as a directive. The main question, that the interviewees have to answer, is:



of the answers provided by the potential clients of the NoK during the telephone and face to face interviews has been compiled and can be found on www.biodiversityknowledge.eu.

In total 24 individuals agreed to be interviewed as part of the project. Whilst they were each fulfilling a unique role with specific responsibilities, it was still possible to organise them into a number of distinct categories:

- **'Briefers'**, who as a group were most actively engaged in the policy agenda;
- **'Digesters'** who, while they may have some limited active engagement in the policy process (and there is indeed a level of overlap with the Briefers), tend to be mainly involved in "creating and collating"; and
- **'Implementers'** who are more likely to be involved in the direct implementation (at various levels: regional, national, international, etc) of specific policy areas.

Their needs in terms of knowledge, information and data also varied according to their broad roles. Thus Briefers derive knowledge from a number of sources including their "immersion" in the policy process (including meetings, workshops, ad hoc and organised discussions, etc) where knowledge is developed and communicated in a highly 'organic' and dynamic way and information is largely conveyed (from and to them) verbally; Digesters tend to need their knowledge related to the basic subject material (information and data) required to develop briefs and digests; and Implementers are more likely to need practical knowledge and related information in the form of how to implement process in the context of national and international policy.

5.3 Review of impediments to knowledge provision

This review was meant to help better understand current barriers to knowledge transfer and to make a specific contribution to defining the most effective and efficient organizational structure and processes required for overcoming these barriers in a fully-functioning NoK, being an important basis for setting up the prototype NoK.

The main barriers identified were:

- Information overload in general, but also scattered/ fragmented information on more specific issues
- Finding information (Poorly signposted information and data)
- Lack of time
- Restricted access
- Legal barriers
- Personal conflict/competition/people do not talk to each other (Summarised as lack of coordination/collaboration)
- Ignorance/Lack of knowledge
- Experts' availability
- No learning from lessons
- Lack of political continuity

The solutions that they came up with were derived from the drivers (and thought processes) provided by the barriers listed above. Most respondents recognized that there are probably few solutions for the current time pressures that they face and that 'lack of time' is always likely to be an issue. However, it will be seen that many of the solutions are directly linked to increasing their efficiency and effectiveness of operation (and therefore are timesaving solutions). The main suggestions included:

- Centralisation/ streamlining of information.
- Thematic presentation of information, Filtered information
- Digests/briefings.
- Tools/mechanisms for information exchange; IT solutions, databases
- Validation.
- Greater use of social media (e.g. Twitter, Facebook, etc).

To summarize, barriers as well as potential solutions are quite diverse, depending very much also on the way people access and process knowledge for their work (as briefers, digesters of implementers).

5.4 Series of consultation workshops on designing the prototype

A series of workshops were organized in the Autumn 2011 to identify and address the challenges behind the NoK and its approach. As these might have varied between different countries and regions in Europe (e.g., when it comes to availability of knowledge and acknowledgment or participation), these workshops were organized in three European regions; southern-western Europe, central-western Europe and North-western Europe. This series of consultation contributed to further develop the Network of Knowledge prototype. The main challenges identified and tackled by the participants to the workshop are indicated in Table 1 below.

| CENTRAL WS | NORDIC WS | SOUTH WS |
|------------------------------|-------------------------------|-----------------------------|
| Scale of requests (12) | Expert motivation (11) | Possible approaches (8) |
| Using existing mechanisms(9) | Credibility (11) | Scale of the requests (7) |
| Added Values of NoK (9) | Expert selection/criteria (9) | Funding of the process (7) |
| Funding of the process (9) | Funding of the process (8) | Transparency (5) |
| | Request selection (7) | Ownership of results (5) |
| | Scale of requests (7) | Request selection (5) |
| | Added values of NoK (7) | How iterative? (5) |
| (.) = Number of votes | | Added values of the NoK (4) |

Table 1: Identified priority challenges from the three workshops. The blue cells highlight the specific challenges identified by one region, while the other colors highlight challenges common to two or three regional workshops.

6 The NoK prototype

The current Network of Knowledge (NoK) approach is derived from all the uptake from the consultations and tries to tackle some of the challenges identified.

Figure 2 illustrates in a very simplistic way the main steps of the procedures of the current prototype. First a request will be submitted to the NoK and will be followed by a dialogue step between requester, NoK bodies and if needed already some experts from the knowledge community via a Scoping Group. After that, the planning and conducting steps will follow. For conducting a review, we currently anticipate three approaches, which might be chosen according to the nature of the topic to be addressed and which include different steps within them: A review by expert knowledge; an approach of adaptive management; and an evidence-based approach. Mixtures might also be possible, depending on the topic, and other methods might be added as appropriate, e.g. scenario building or modeling.

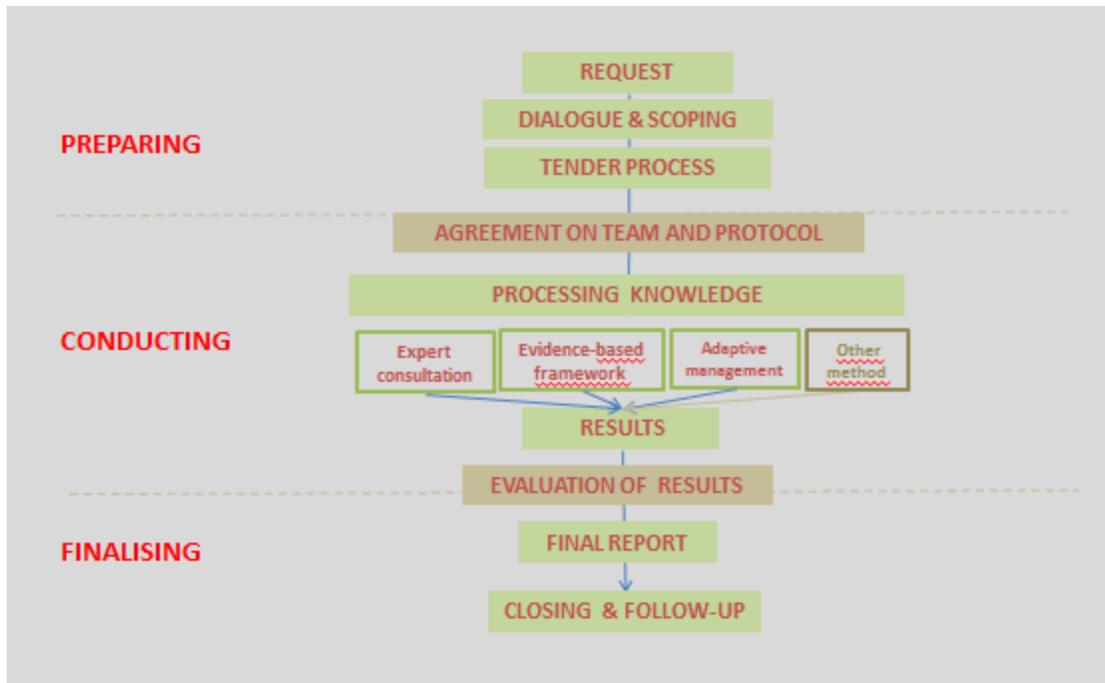


Figure 2: The simplified procedural steps of the NoK

Besides clarifying many underlying challenges in these different steps (see some major challenges below), the first and foremost important issue is how to engage knowledge holders in such processes in the NoK. Figure 3 tries to capture this challenge by identifying different roles in the NoK process and how they could be filled by knowledge holders – and ensure that they are properly acknowledged. This can include getting active in the bodies of the NoK itself, e.g. the Knowledge Coordination Body or secretariat (in blue), as members of working groups (in green) or as evaluators (in red). Most important will be to create an environment of mutual exchange and understanding, including the potential requesters of a NoK.

The Network of Knowledge (NoK) is a European initiative to organise and facilitate the exchange and synthesis of knowledge scattered across many countries, institutions and individual experts, in order to answer questions related to challenges posed by biodiversity and ecosystem services.

1. A COMMUNITY OF KNOWLEDGE HOLDERS

We often belong to various hubs and networks
We are concerned by challenges linked to biodiversity and ecosystem services

2. FEATURING SPECIAL ACTORS:



3. A PROTOTYPE:

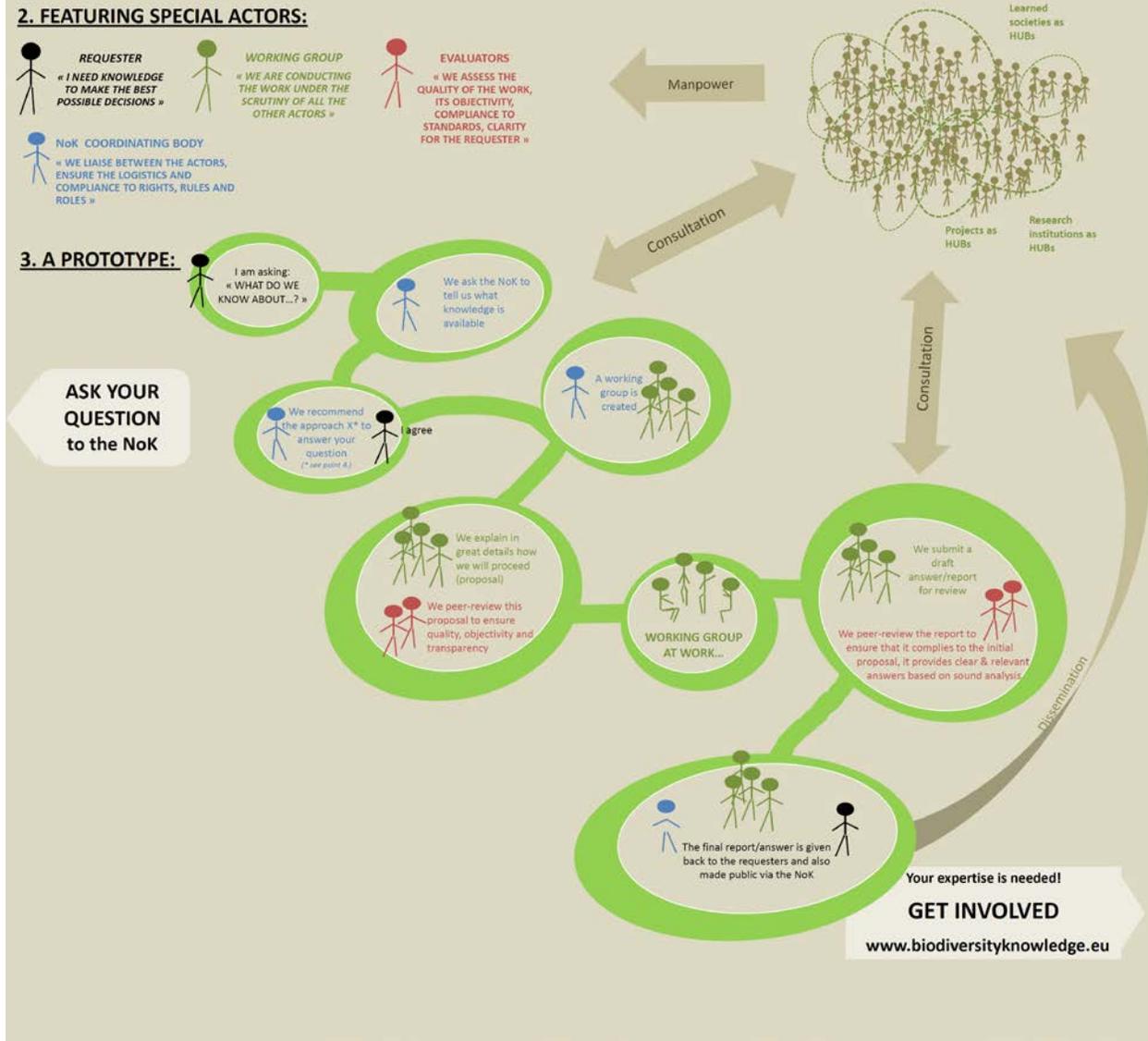


Figure 3: Actors of the NoK and their roles in the process. Most important is the Community of knowledge holders, and how they can get engaged in the processes of the NoK.

7 Main challenges of a NoK

Several main challenges for a NoK have been identified in the course of discussions (see also Table 1). The following sections summarize the probably most important ones and outline the major issues behind them in order to support a solution-oriented discussion at the conference.

7.1 Challenge 1: Connecting, committing and acknowledging

A Network of Knowledge is first and foremost a network of networks of existing institutions, initiatives and projects. It acknowledges the fact that nothing in the area of science-policy interactions starts from scratch and accepts that many processes are already going on and the majority of knowledge needed is available via existing knowledge holders, or can be integrated based on their knowledge. Identifying and addressing them is thus of major importance.

Given the existing number of initiatives within regions, member states, across Europe and worldwide (see Mapping exercise of KNEU, D.1.2) and that the NoK should be able to connect with all types of networks, organizations and individuals within Europe, this remains a major challenge.

Therefore, the NoK has to be flexible in order to be able to cope with the dynamics of the landscape and to be able to include new nodes as new questions arrive and contexts change. Additionally, the NoK has to be attractive for knowledge holders to be willing and interested to connect, commit and contribute the NoK.

For this a proper acknowledgement of the work needs to be ensured. As discussed in many other contexts, this is especially challenging:

- For scientists, ISI-ranked publications and third party funds are still the major measure for their success; work on the science-policy interface is still rarely acknowledged by funders and employing institutions.
- Research institutions might have a similar challenge on a higher level, where for every networking activity, a clear added-value must be visible. The degree of these constraints differ strongly for different kinds of institutions (e.g., universities, museums, research institutes), as well as between countries.
- Funders often still don't acknowledge science-policy activities as a quality and excellence measure when evaluating research proposals.

To achieve a proper acknowledgment, all three aspects must somehow be tackled.

7.2 Challenge 2: Scoping and framing of questions

From the first phase of the NoK demonstration cases in different areas, it has become clear that jointly identifying and then framing relevant questions for policy, which also can be answered from a knowledge or science perspective, is a major issue and challenge. For this, an exchange format, or scoping exercise needs to be developed within the NoK. Often, knowledge requesters will not look for big reports or specific processes to answer their request, but rather

to be directed to existing information sources or experts they can use right away. A NoK has to be designed to support such processes and replace “google” as major source or knowledge.

7.3 Challenge 3: Data sharing, standards and data exchange

Answering questions that require interpretation of biodiversity data is hampered by lack of harmonization of protocols, taxonomy and common databases. The lack of agreement and use of standardized protocols and names can result in multiple experts seemingly disagreeing with each other on conclusions in complex issues involving multiple interests. This does not contribute to transparent easy to understand communication with requesters, nor does it contribute to the credibility of the scientific community.

Harmonization is being pursued and stimulated by the reporting obligations for the International Conventions on Biodiversity such as the Convention on Biological Diversity (CBD) but also by the European reporting on the Birds Directive and the Habitats Directive. These require integrated assessments on status and trends of species, habitats and ecosystems (GEO BON 2011, Topic Centre Biodiversity 2009).

7.4 Challenge 4: Governance

Communicating knowledge between providers and users is not always an easy task. Sometimes it might be straightforward when it comes to standard figures regularly used in policy (e.g., on the labour market or the economic development), but in complex issues, where commonly accepted figures do not exist or are insufficient, and many different interests are involved, like in many environmental issues, communication processes are very challenging. A governance structure addressing this challenge needs clear procedures but will also need a high degree of flexibility, nevertheless ensuring a high degree of mutual trust between involved partners. Governance of the procedure to ensure quality and transparency are therefore of crucial importance for the acceptance and credibility of the NoK.

Currently, IPBES is to be established this year (2012) and would exist of three central bodies:

- A plenary of governments as main decision body
- A bureau for day-to-day administrative guidance
- A Multidisciplinary Expert Panel to oversee and guide scientific issues.

7.5 Challenge 5: Financing

As in every science-policy interface (SPI), financing the organisation of the framework is a major challenge. Looking at these SPIs in general, three models of operation and financing can be identified:

- a) **Complete funding of activities by one major donor**
- b) **A core funding via a fund**
- c) **A bottom-up approach mainly driven by knowledge holder institutions**

In IPBES for example, financing will be required for the central bodies, but might need to be complemented by support for regional bodies. Of the possible financial models, option b) is the preferred one for IPBES, with voluntary contributions from countries and other bodies.

Given that on the European scale the purpose of such an SPI (with the NoK becoming a part or core of it), is clearly defined in its roles and includes purely European task (e.g. in the context of implementation of the EU Biodiversity Strategy), also an option between a) and b) seems most applicable. From the regional workshops it also became clear that financial needs, e.g. for the involvement of experts, will be quite distinct from country to country.

7.6 Challenge 6: Quality assurance

Learning from experiences like IPCC, the quality insurance of the process and the output are of crucial importance. For a NoK, this indicates that for all products meant for the public clear review procedures need to be established.

The quality assurance will need to tackle the following issues:

- **Accuracy of information:** external/internal validity, reliability, « risk assessment » / confidence, level of transparency & replicability
- **Limitations:** relevance to real-world conditions, measurable indicators of performance, applicability, adequacy of the information, actionability of the evidence
- **Alternative options:** if a dominant answer is not obvious (multiple options present themselves), potential trade-offs associated with the options identified must be discussed
- **Expected barriers to use of synthesis,** including time pressure, perceived threats to autonomy, preference for tacit knowledge, lack of resources. Suggests performance indicators
- **Lifespan of the answer:** Anticipated needs for future updating

Although many of these issues may appear complex, suitable ways of accounting for them are available from other assessments and evaluation processes. As one major cornerstone, this would include, besides a peer-review process, an approach to assign certainty terms to key findings, as it has been developed for the MA and IPCC. This would include an indication of the level of expert agreement on a given statement (from high to low) and the level of established knowledge (from high to low).

7.7 Challenge 7: Communication

Communication is important to develop and maintain a position in the international context for the NoK as a means of importance as well as for the status of the outputs. This is both true for within the network of knowledge holders, so that commitment and motivation is captured to contribute to the NoK, as well as to knowledge seekers, to demonstrate the value of the contribution of the NoK to their requests. Additionally, communication should take place to demonstrate transparency about the process of selection evaluators, contributors and project coordinators.

8 Annex 1: Mission statement and principles of BiodiversityKnowledge

Mission Statement

BiodiversityKnowledge is an initiative by researchers and practitioners to help all societal actors in the field of biodiversity and ecosystem services to make better informed decisions. In this challenge, we invite you to develop with us an innovation called Network of Knowledge - an open networking approach to boost the knowledge flow between biodiversity knowledge holders and users in Europe.

Principles

BiodiversityKnowledge's activities are based on the following principles:

1. **Ensuring broad collaboration**, by enhancing good communication and teamwork with a multidisciplinary team of experts.
2. **Minimizing bias**, through a variety of approaches ensuring scientific rigour, broad participation, and by avoiding conflicts of interest.
3. **Striving for relevant and up-to-date information**, by linking the most recent knowledge with ongoing policy discussions on biodiversity and ecosystem services.
4. **Promoting access and enabling wide participation**, through open communication of procedures as well as outputs of BiodiversityKnowledge, taking advantage of existing networks and strategic alliances in the area of biodiversity research and management
5. **Ensuring quality**, by responding to feedback, applying advanced methodologies, and developing systems for quality improvement
6. **Supporting international processes**, by linking up with international organisations and bodies, including the Intergovernmental Platform for Biodiversity and Ecosystem Services (IPBES)
7. **Building on the enthusiasm of individuals**, by involving and supporting people of different nationalities, expertise and backgrounds working on biodiversity
8. **Avoiding duplication**, by providing overview of existing knowledge, and by good management and coordination to maximize efficiency and minimize costs.

Principles inspired by those of the Cochrane Collaboration (<http://www.cochrane.org/about-us/our-principles>). These principles will be under revision during the development of the project.

v.2 – Koen van Muylem, Angélique Berhault, Estelle Balian, Marie Vandewalle, Juliette Young, Jiska van Dijk, Klaus-Peter Zulka and Carsten Neßhöver, 27.2.2012

