NoK
(network of knowledge)
PROTOTYPE

Version 14 – 25/3/2012

Lead author: Barbara Livoreil , Bangor University

Contributors: Ilse Geijssendorffer, Marie Vandewalle, Estelle Balian, Carsten Neßhöver, Rob Jongman & the KNEU consortium

www.biodiversityknowledge.eu

Communicating knowledge ist providers and users is not always an easy task. Sometimes it might be straight forward when it comes to standard numbers regularly used in policy (e.g., on the labour market or the economic development), but in complex issues, where such regular numbers don't exist and interactions with other areas are high, like in many environmental issues, these communication processes are much more challenging.

This is especially true, when existing knowledge is scattered across many countries and many institutions and individual experte with very different background – as in the field of biodiversity and ecosystem services.

The Network of Knowledge (NoK) approach tries to take up this challenge by opening up possibilities for new kinds of dialogues between knowledge providers and potential knowledge requesters.

Many issues need to be considered in such an approach, and it needs to balance the main criteria for an appropriate exchange process – ensuring relevance for the clients, ensuring credibility of the rpocess and the results produced and, last not least, finding a way to ensure legitimacy from both sides, the clients as well as the knowledge providers.

The following slides explain a draft structure for a Network of Knowledge, and explain some of the main challenges it will face.

From a general point of view, five major challenges arise when creating a network of different players. This is especially challenging when the topic is diverse and the landcape of the players is diverse, too. The Network of Knowledge approach tries to address this first challenge by first of analysing this landscape and trying to identify the factual needs from networking activities.

To achieve acceptance of such a process, a proper governance structure need to be established, this is the second challenge.

The third challenge, on the science-society interface side, is to find ways to jointly identify the right requests to be posed to a NoK.

The requests taken up will then go through a process of conducting an analysis and providing answers to the request. This process needs to be transparent, but also ensure high scientific credibility – challenge No.4

Finally, linking back the results to the requester, and probably beyond, will be a major challenge as well.

For all these challenges, lots of experiences exist on how to address them properly in science-policy processes. And BiodiversityKnowledge tries to bring them together for the area on Biodiversity and Ecosystem services in Europe. The next 5 following sections will present how the NoK apporach can in fact address them in this context.

1) Ensure proper networking and exchange:

THE **N**ETWORK **o**f **K**NOWLEDGE approach

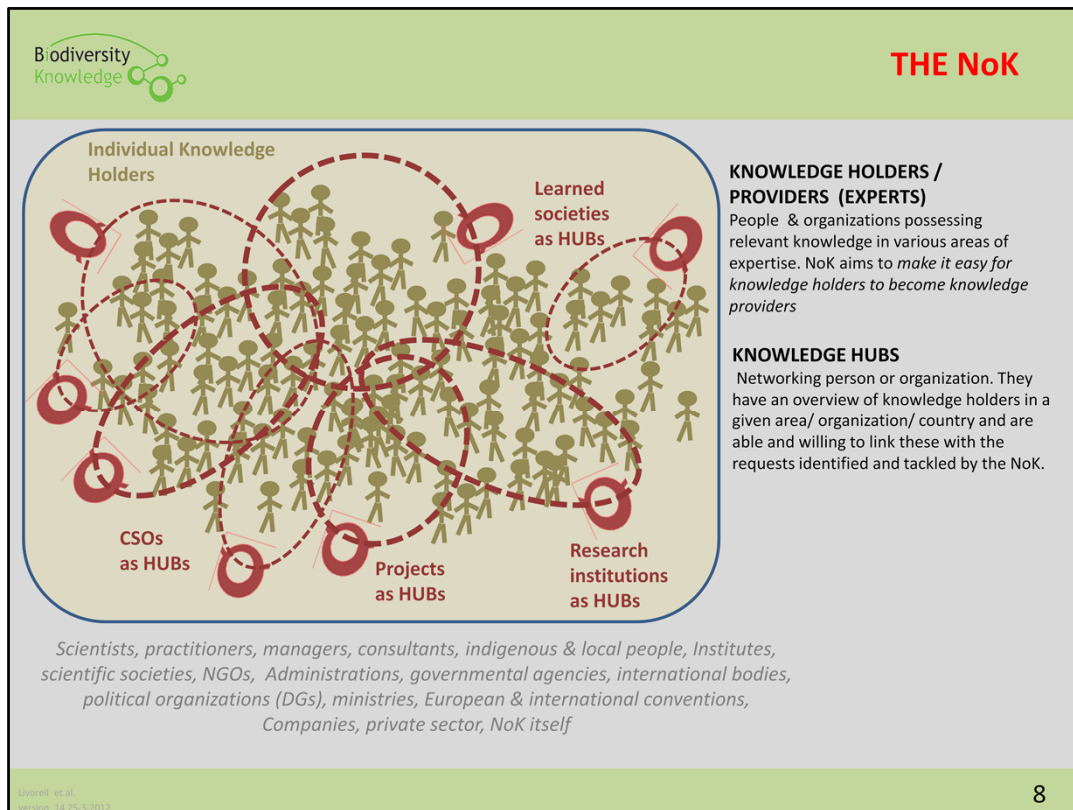The Network

THE NoK: A NETWORK of NETWORKS

NoK (Europe)

6
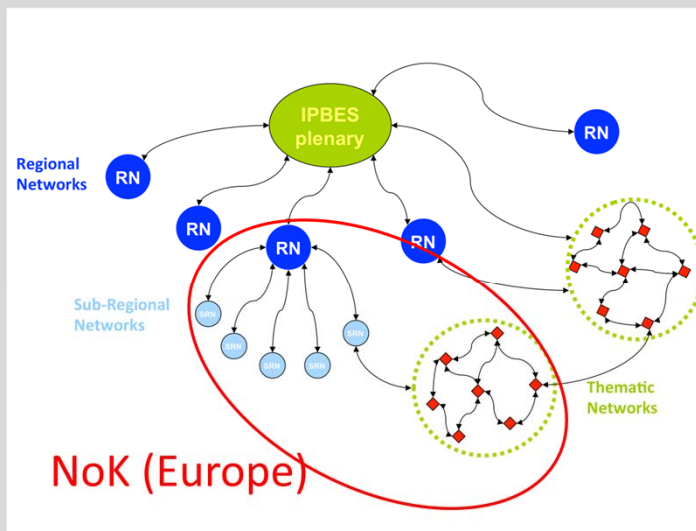
A Network of Knowledge is first and foremost a network of networks of existing institutions, initiatives and projects. It acknowledges the fact that nothing in the area of science-policy interactions starts from scratch and needs to accept that many processes are already going on. Identifying and addressing them is thus of major importance.
In the international level, this can be exemplified very nicely with the IPBES development. Analyses had been made to show, that many international and regional players are already acting it this context, often as networkss themselves, and thus would need to be addressed and strengthened. Also, thematic networks may exist, like GBIF on biodiversity data, or the BIP network on indicators.
A network of knowledge in Euope will them be a subset of these networks again.
The basic idea of a network of networks is then to **federate** and **facilitate** knowledge tranfer (incl. Capacity buidling) via some central **node** (e.g. the NoK for Europe, and IPBES at the global level) which coordinates and plays at the interface, either with ipbes or directly with requesters.
The scale of NoK may makes it relevant to

- address particular **regional conditions** of biodiversity and ecosystem services

- address the particular **linkages to human well-being** at different places

- and the specific **management problems** involved – an aspect will may be difficult to handle on the global scale

Biodiversity Knowledge

Individual Knowledge Holders

Learned societies as HUBs

CSOs as HUBs

Projects as HUBs

Research institutions as HUBs

KNOWLEDGE HOLDERS / PROVIDERS (EXPERTS)
People & organizations possessing relevant knowledge in various areas of expertise. NoK aims to *make it easy for knowledge holders to become knowledge providers*

KNOWLEDGE HUBS
Networking person or organization. They have an overview of knowledge holders in a given area/ organization/ country and are able and willing to link these with the requests identified and tackled by the NoK.

Scientists, practitioners, managers, consultants, indigenous & local people, Institutes, scientific societies, NGOs, Administrations, governmental agencies, international bodies, political organizations (DGs), ministries, European & international conventions, Companies, private sector, NoK itself

Livoreil et al.
version 14 25-3-2012

8

The broad community of individual knowledge holders is not explicitly organised to serve one purpose. Instead, the forms of organisation are quite diverse – via research institutions, cross-institutional projects, learned societies, networks in CSOs and many, many more. Many of these organisations exist, with overlapping participants, but covering a quite large number of individuals.

The community as such is a flexible entity, and so are some of the knowledge hubs, especially research projects. So from them, knowledge might get lost or is difficult to identify. Other, continuous knowledge hubs will need to overcome this problem.

The role of a NoK project is to first identify relevant knowledge hubs so that their overview and expertise for some parts of the community can be used and activated, for a mutual profit.

It will never be possible to address a complete community, but the hubs will be needed as multipliers and also as a sort of quality control on the expertise involved in the Nok process.

The knowledge within such a community is overwhelming, better then asking a single expert, better in identifying if there is an answer (or study) to a question at all, and more focussed and high-quality then just using a serach engine on the internet.

The challenge is, to infact motivate knowledge hubs and indivuals to join the NoK activly.
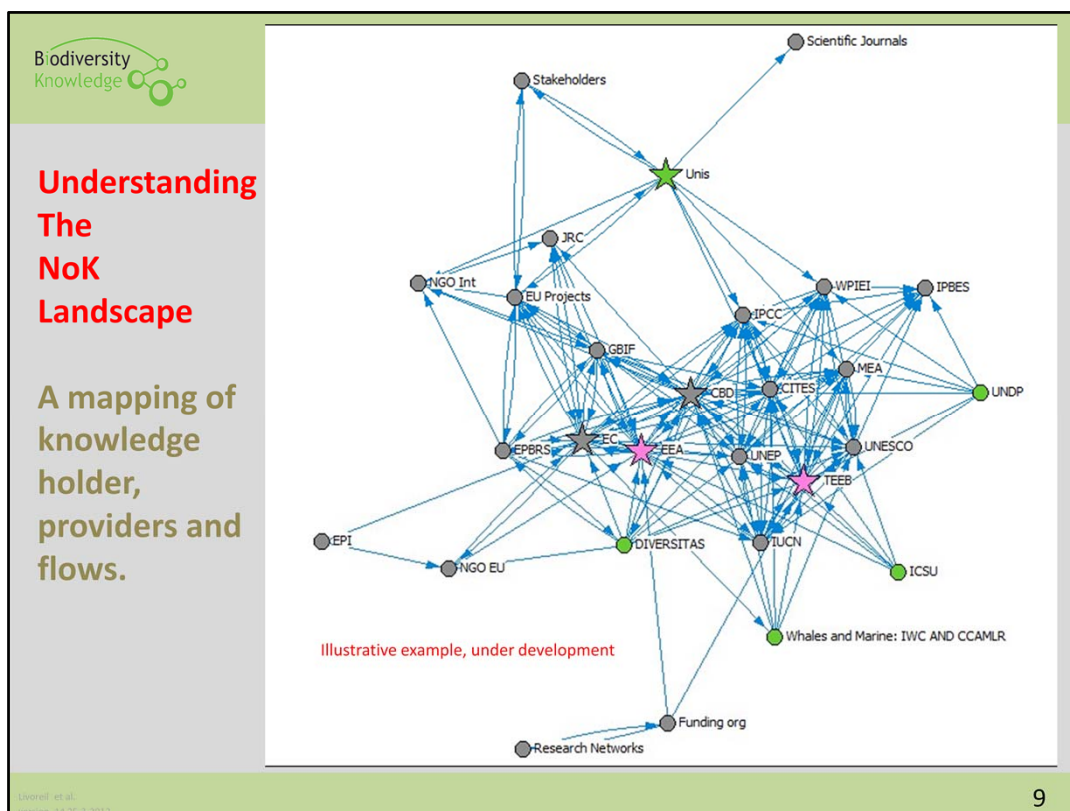
With a NoK having many active hubs and participants, many questions posed to the NoK might be answered quite simply: by identifying products and knowledge of the hubs that is out there somewhere and can help- like project reports, studies, databases and other sources, which are not directly available at first sight.

Many material, on the other hand, is already produced for specific policy questions, but we hardly now that they exist and how they are communicated.

This is exemplified in this NetMap, based on interviews conducted in the KNEU project: Stars indicate institutions with a high between-ness, meaning that they receive as well as provide knowledge. Not surprisingly, this includes the EC, the EEA and the CBD, and the recently released and quite influential TEEB study. Also, the universities are mentioned, but of course not as a single entity. Grenn elements show institutions which are the main providers of knowledge, while pink one are major demanders – this of course directly fits to the role of the EEA as link between science and policy, but also to the TEEB study as an in first place meta-study.

Such a map could be much more detailed, including individual players, but it shows, whre knowledge is situated and which players to address in a NoK. For example, this would include here players basiclaly delivering knowledge, but not broadly linked. This would include for examples the EU projects, universities and research networks (which are not very well linked, according to the recent status of the mapping).

2) How to ensure a proper governance of the process?

The challenge of open and transparent knowledge brokering

As in many existing processes between science and policy, for example the IPCC or the MA and the forthcoming IPBES, organising an open and transparent process which pays tribute to all relevant interests and ideitfies and includes relevant knowledge holders is a challenging task.

On the one hand, institutionalisation of clear and reliable processes is needed to ensure credibility and engagement, on the other hand, the diversity of topics and players who could potentially addressed and included in the work, call for a flexible approach.

The proposed framework for a network of knowledge, as outlined in the following slides, tries to address these needs.
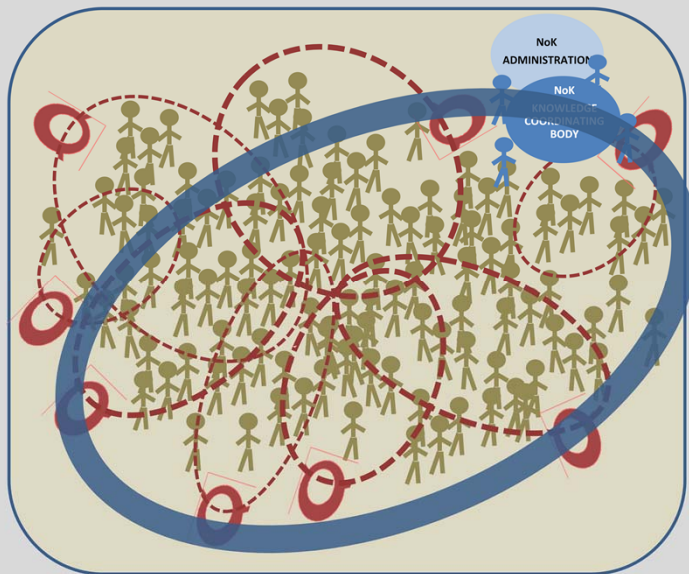
As the basic coordination elements, the NoK will need a knowledge coordination body, a KCB, connecting in first place existing knowledge hubs inetrested in palying an active role in the NoK, even if over time. This should be complemented by a small NoK administration, taking care of the daily operations.

Most important, The KCB and the administration **should not be seen as the tip of a pyramid, or a central core area**. But rather like the **conductor of an orchestra** composed of experts, each in his/her field, sometimes alone (drums) or as a hub of experts (strings), in charge of making them play together several pieces (synthesis) to answer requests from an audience (governments to civil society). In many way, the work of KCB is that of a **knowledge « editor » coupled with that of a project manager**. The whole **mission of the (NoK-KCB) within the whole NoK** is that of a **knowledge broker** in the science-policy realm (including quality assessment).

KCB members belong to the orchestra itself in the sense that they come from it, they have received some training (on issues of biodiversity and ecosystem services), but not only, as this is also a mission of management, coordination, communication. So we can also imagine people in KCB who are not biodiversity scientists (which includes social sciencesbut are coming from the administration realm, accountancy, communication, management etc… (many scientists are not good at this, let's be honest). If a NoK is supposed to act as a science-policy interface with an official

Biodiversity Knowledge

Open and transparent procedures are needed, taking the following NoK principles serious:

1. **Ensuring broad collaboration**, by enhancing good communication and teamwork with a multidisicplinary 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

Livoreil et al.
version 14 25-3-2012

11

BiodiversityKnowledge - NoK prtotype,
v.14 25-3-2012

Biodiversity
Knowledge

Open and transparent procedures are needed, taking the following NoK principles serious:

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 co-ordination to maximize efficiency and minimize costs.

Livoreil et al.
version 14 25-3-2012

11

To take these principles into action, BiodiversitKnowledge needs a clearly structured, but nevertheless flexible process, which defines roles of different actors, but also ensures acknowledgement of involvement.
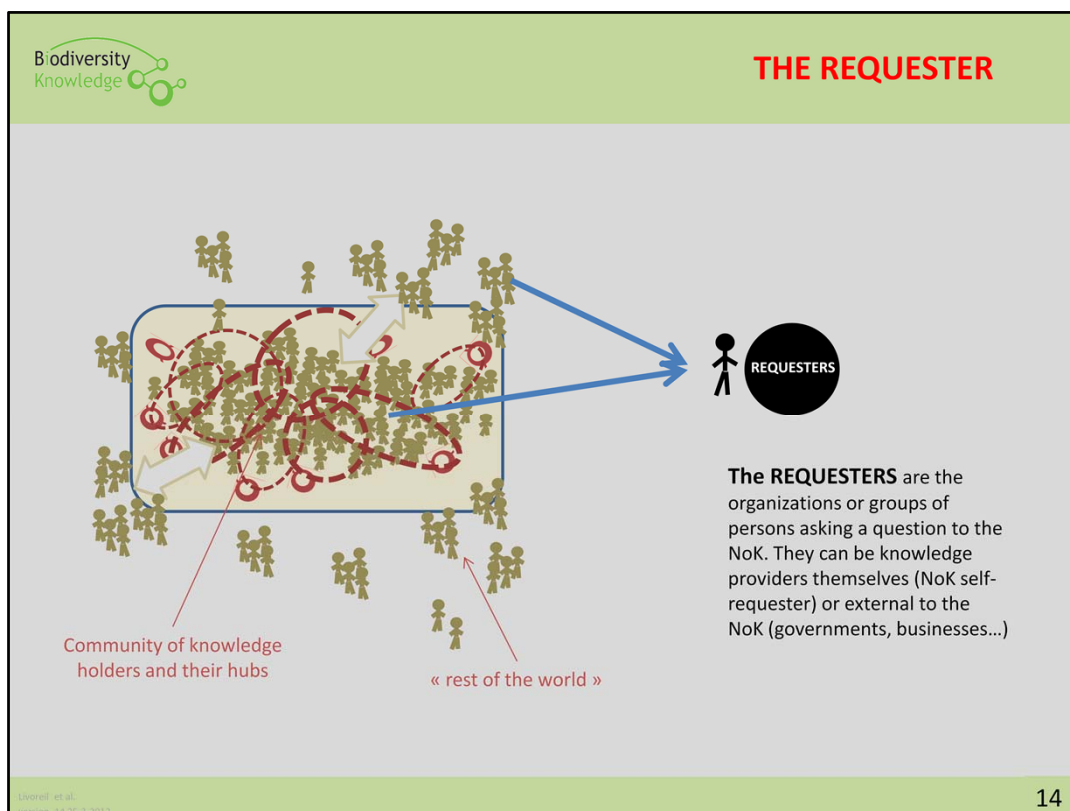
**HOW DO ACTORS INTERACT
AND ORGANISE THEMSELVES ?**

13

Now the question is « How does this work? »

How do requesters consult and rely on the NoK to answer questions of policy relevance for biodiversity and ecosystem services?

First let's see how do NoK, KCB and requesters interact
Then we will see how a request is processed and how the principles can be achieved.

The requester can be **external to the network of KN holders and providers** or **can be from within the NoK**. It can be IPBES itself.

It is important to offer the opportunity to the community of knowledge holders to address questions they consider to be of high priority. Often, such bottom-up approaches are carried out within research projects or NGOs, but a NoK could support such processes by providing a broader basis of knowledge, and an open process to communicate the issue.

The requester has its own knowledge or perception of the problem. Nobody is truly without knowledge. But here we consider this role as independent from that of a knowledge holder for the sake of the exercise. This is where a conflict of interest may exist and the need for independency of the work of NoK is of paramount importance.

The double-arrow between the community of Knowledge holders and the rest of the world, as well as the similar colours of all individual, is to highlight that there is one big community of human beings. Some of them belong to the subgroup of Knowledge holders when the request is about a topic they know, but do not belong when their knowledge is not needed or irrelevant to the task... Again this is a dynamic pattern constantly moving and re-organizing. – following the concept of a dynamic community of interest.

THE SCOPING GROUP

Scoping: a preliminary estimation of what (knowledge) is available to answer the request.

This is an important step to evaluate the feasibility of the mission asked by the requester.

In the case of NoK, the scoping group can assess the existence of knowledge, its quantity, it type (e.g. qualitative, quantitative), as well as the knowledge holders (how many, where, availability…).

This facilitates planning and dialogue requester/KCB, and choice among knowledge synthesis options/methodologies.

Livorell et al.
version 14 25-3-2012

16

Within the processing of requests by the Network of Knowledge, different groups of actors might be needed.

Depending on the nature of the request, the composition might be quite different (see later in the slides), but in general often there will the need for a scoping group with a mixed composition by client(s) and experts form the knowledge landscape. The role of the group is to discuss the request and set up an exact framing for the issue and decide, whether this framing can then be tackles by the approaches of the NoK.
The members of the scoping group may not need to be expert in the field. They need to be highly skilled at finding and classifying the knowledge available, and identify and contact knowledge holders. They are typical resource investigators (Belbin 2010, Elsevier)

They could include librairians or information managers but of course also experts in the area.

Later in the process, when the scoping process has indentified the exact task to be tackled by the NoK, ad-hoc working groups would be set up to take care of processing the request [continute with text in slide]
Reviewers will then later have the role to check the outcome of the group's work. It might be a standard peer-review approach when basicially scientific knowledge needs to be checked, or include review from practitioners and even clients, if applied knowledge is included as well.

In the following we will see appear 3 other types of actors. Here are the working groups and the evaluators. They all come from the NoK itself. The KCB will establish a recruting/nomination process via includin g the knowledge hubs.

THE PROCEDURE

**OF KNOWLEDGE TRANSFER AND
SYNTHESIS TO ANSWER A REQUEST**

17

Finally, let's take a look at the biggest challenge, the procedure to work on a request to the NoK.
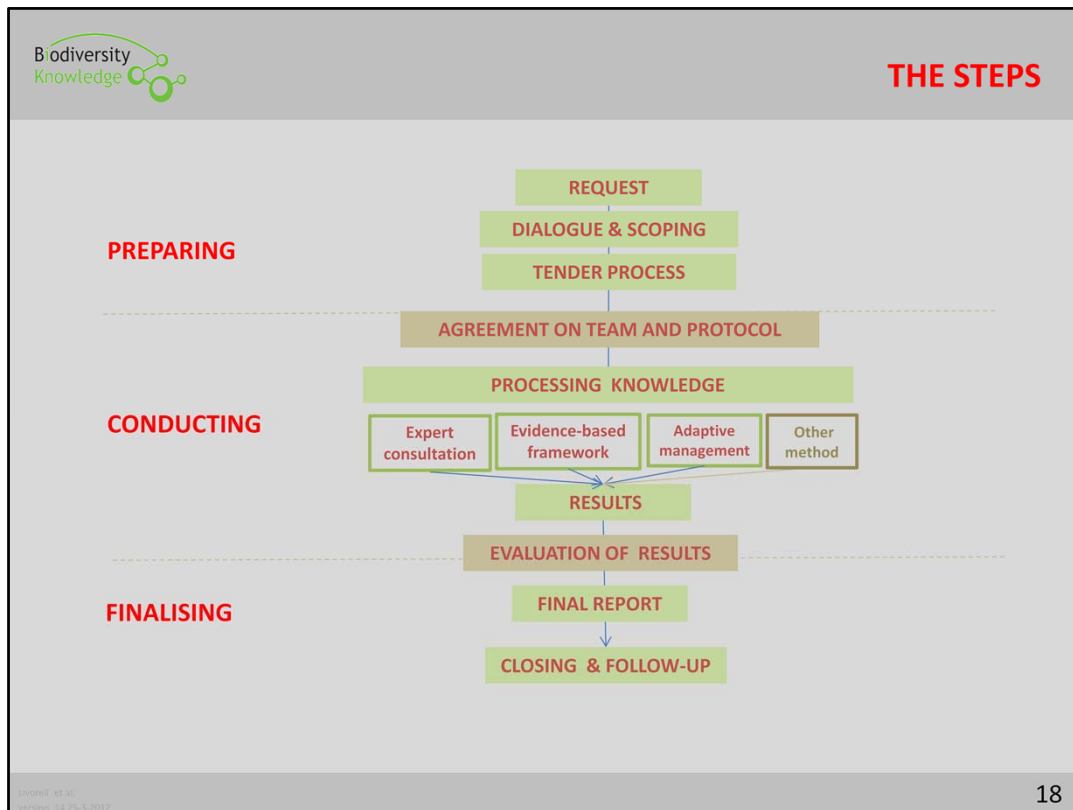
The groups described in the last slides already hint to the basic steps which need to be taken into account to process a request in the NoK.
A first request will be followed by a dialogue step between client, NoK bodies and if needed already some experts from the knowledge community via a Scoping Group.
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 adressed 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 mothods might be added as appropriate, e.g. scenario buidliung or modelling.
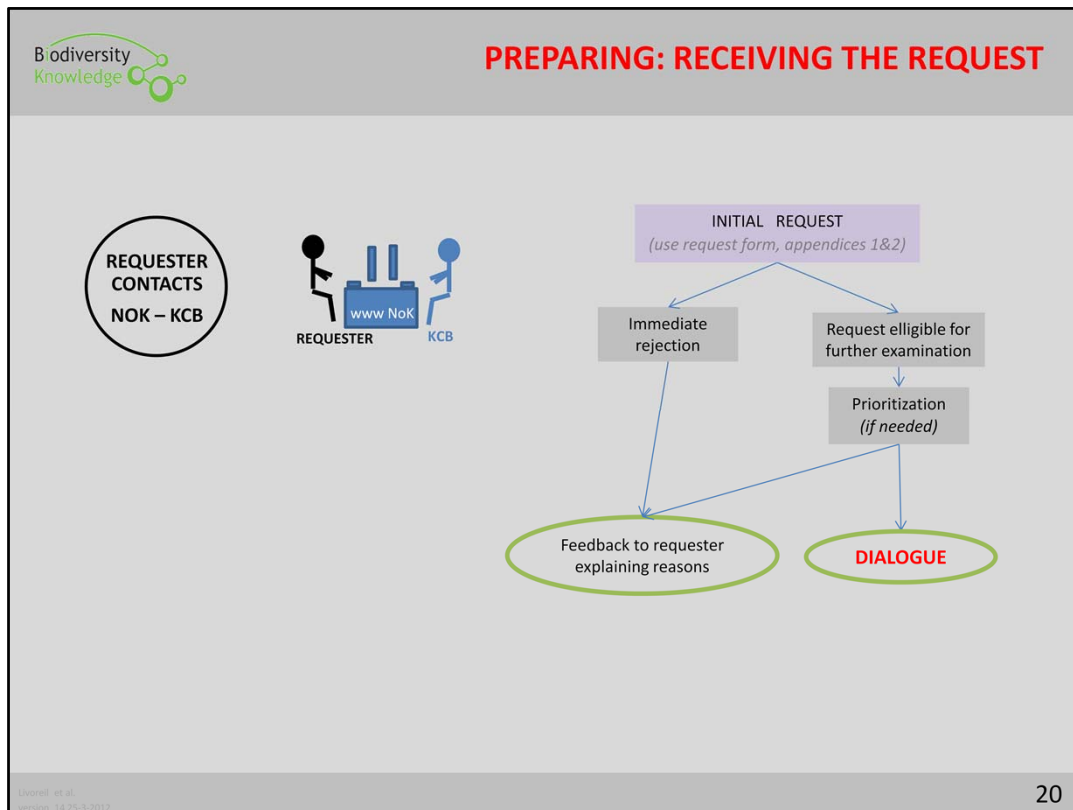Let's take a look at the process step by step.
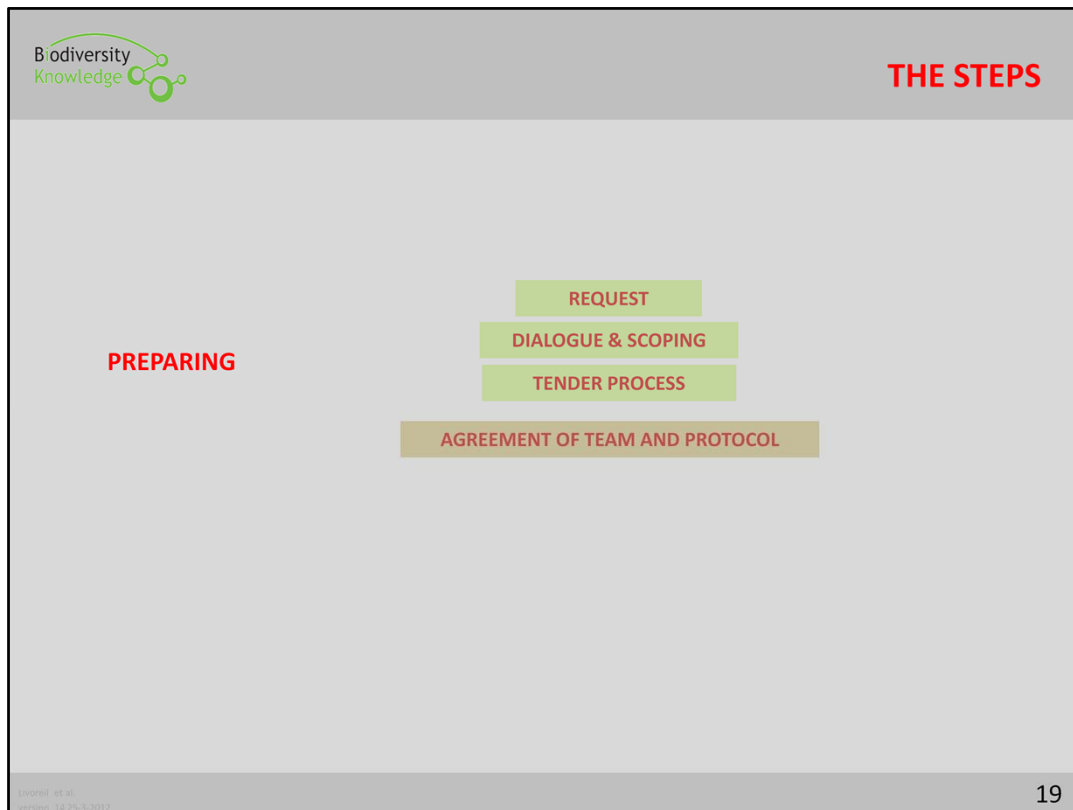
The request from a client (e.g., a DG, a European group concerned with biodiversity management, a private company) would first be posed with a request form (e.g., via the website) outlining the major elements of the request, This would be analysed by the secretariat and then discussed with the KCB.

The decision, of whether a request should be checked further would be subject to a KCB discussion, including criteria, which still need to be set up. These could include: European (EU and beyond) or at least trans-national relevance; applicability of the methodological framework within the NoK; uniqueness of the question in terms of needing a broad knowledge analysis which cannot be conducted within regular contracts, e.g. via consultancies).

If a request is not directly rejected, it would go into step 2, the Dialogue.

Biodiversity
Knowledge

REQUESTER
CONTACTS
NOK – KCB

www NoK

REQUESTER   KCB

INITIAL REQUEST
(use request form, appendices 1&2)

Immediate rejection

Request elligible for further examination

Prioritization *(if needed)*

Feedback to requester explaining reasons

DIALOGUE

20

THIS PREPARATORY STAGE has a cost that is common to all requests in order to cover expenses of KcB, scoping time and administrative tasks (unless rejected immediately). It is the interest of the requester to prepare their request as well as possible to benefit from a « discount » if the question does not need to be refined/amended.
Even if a request cannot be conducted (because finally appears too expensive) the preliminary stage should always be a win-win strategy as its outcomes can be used as indicators and guidelines for future requests, or can be used again when the resources are available.

Factsheets (one for each methodology) should be made available to any requesters to make up their mind and express their initial preference. Then KCB based on results of scoping group can bring its own vision about the best methodology (according to type, quantity and nature of knowledge available)

PREPARING: DIALOGUE & SCOPING
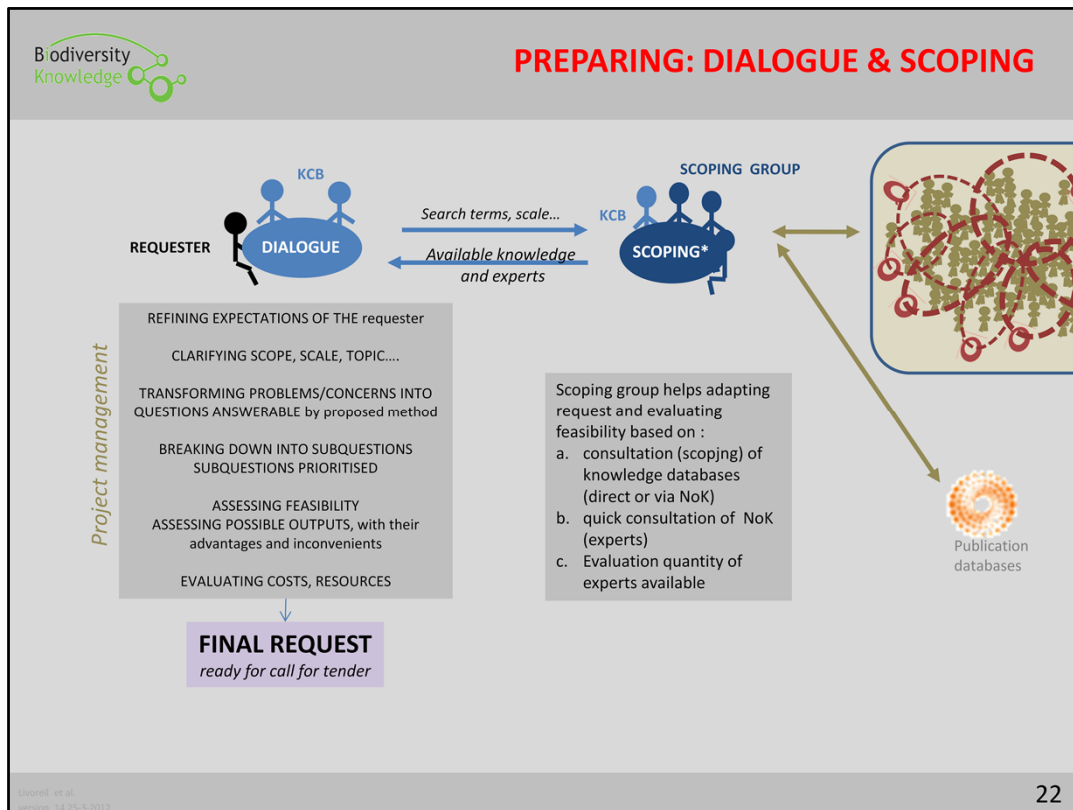
The requester will surely bring in prelimimary elements of knowledge into a dialogue, which led him to pose the question.

Nevertheless, the scoping group acts independently, they premiminary retrieve knowledge to assess its quantity and type (quality?) according to a list of criteria. They also launch a call to the NoK and its knowledge hubs to identify experts on the topic and consult them about

1/ the importance of the request for biodiversity & ES,

2/ their perception of current challenges and state of knowledge on this topic,

3/ if they would like to be involded as in what role… Then they report to KCB or with KCB to the requester.

Often, the scoping process might lead to a refinement of questions, breaking them down into sub-questions, and even prioritizing these from a requesters perspective, depending on the means available to conduct the work.

In the end, this might lead to an agreement between the NoK and the client on the future process regarding procedure, timeline and also financial issues.

NOTA: the requester **may have done this prior to requesting**, using his own resources… in which case it means that the requester thinks it is worth asking NoK to work on this and this step can be skipped. This is a way for the requester to save money and time. It will be similar for the choice of approaches for knowledge synthesis

Quick Consultation of experts could be done by e-conference and otehr electronic means. using NoK structure to relay the call to contribute

PREPARING: CHOSING METHOD/APPROACH
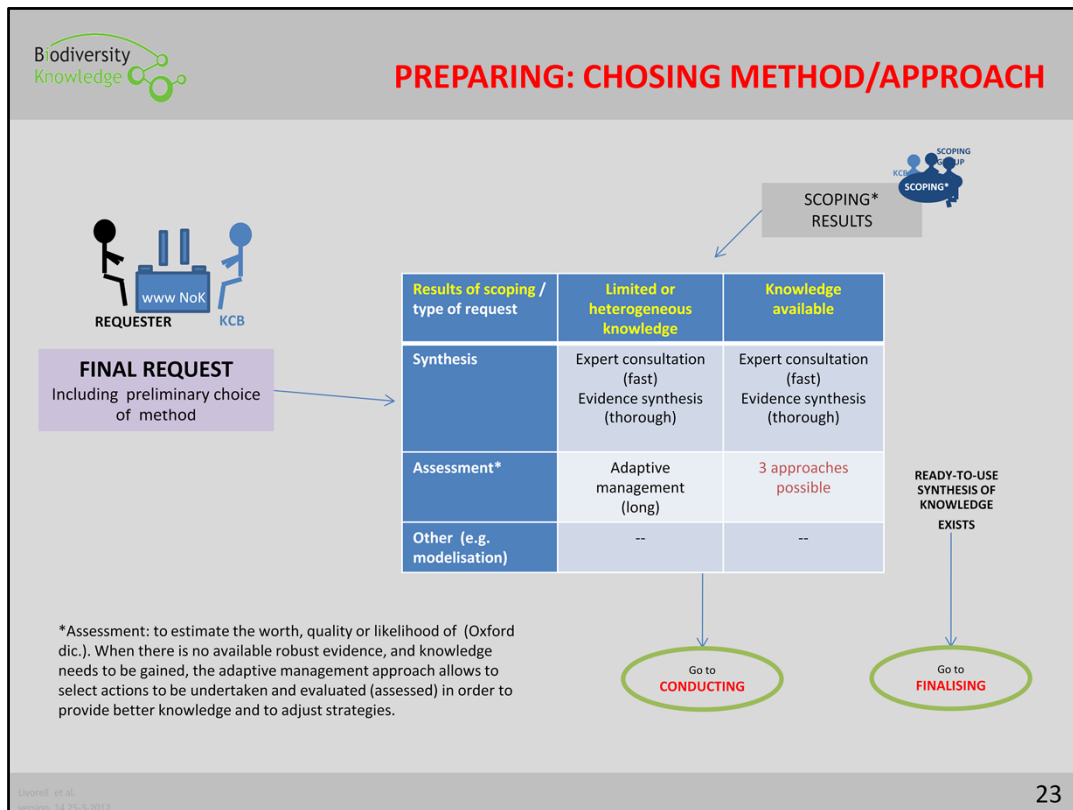
The different methods we proposed for the starting phase of the NoK, expert consultation, evidence-based synthesis and adaptive management, are of coruse not mutually exclusive, but are interlinked. They will ALL involve some expert consultation, for example.

The main constraints are the availability of resources (knowledge, experts for working groups and peer-review) from the NoK point of view, and the time and funds from the requester perspective.
Nevertheless, the requester should be informed about the avantages, risks and limitations of each approach and also see what is possible with the resources available (money, time, HR).

In all approaches, the common point is to use NoK to gather, evaluate and use the largest quantity of knowledge available.

One asset of NoK is this to facilitate expert consultation and knowledge transfer to feed the synthesis or assessment and give the best and most argumented answer to the request as possible. The ability to question a large number of expert, to make this consultation credible and un-biased will be a major goal of the project.

The scoping stage is thus interesting to FRAME the future consultations to be implemented within each approach. And get the approval of the requester to see how far the synthesis and consultation is implemented (scale)

The protocol is identical to a Material & Methods section of a scientific paper. It should give a maximum of details about how the knowledge will be gathered, examined, compiled, about methods used for expert consultation, AM or EBC, sample sizes, timelines, …

The protocol, once approved (see further) should be made available (open-access) so that it would adversise for the on-going mission and may also help reach new experts and gather more knowledge.
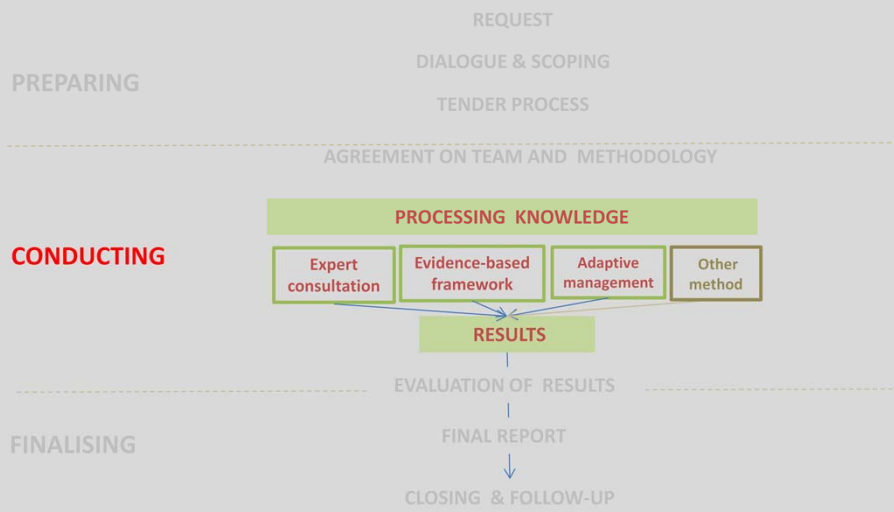
The main step is then, to in fact conduct the review on the request, based on the protocol.
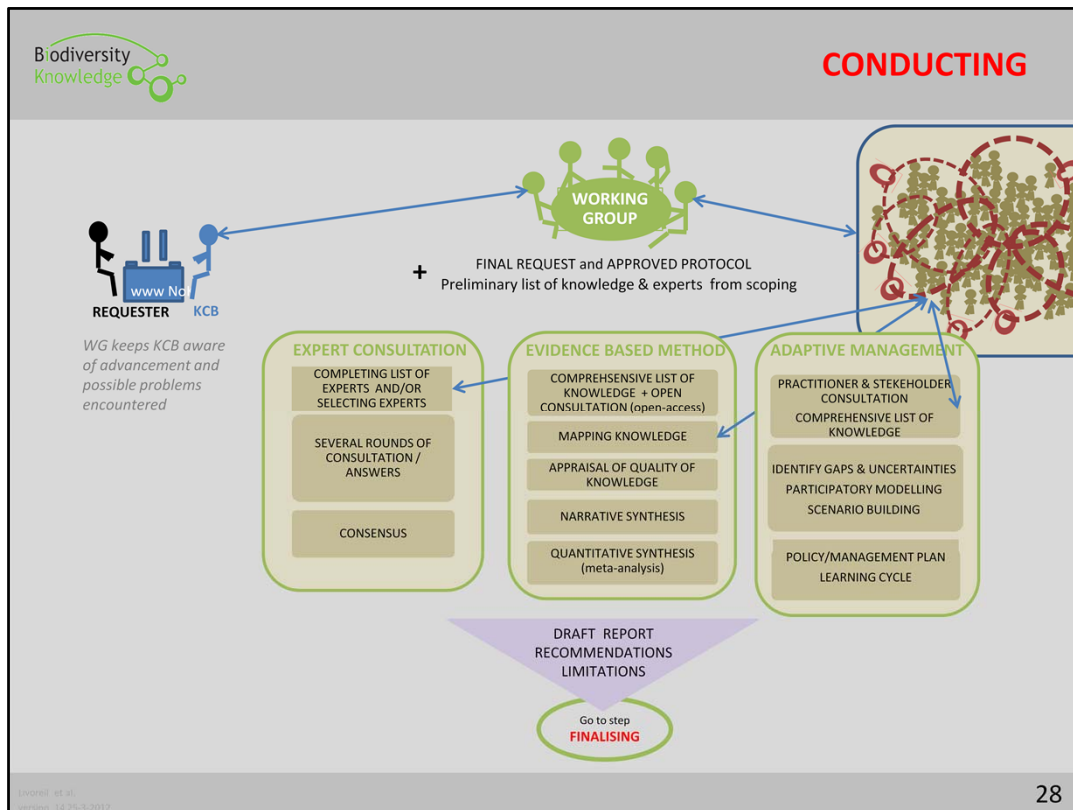
The expert consultation within the evidence-based method is normally more informal and organised as an « open-consultation » (invitation to give feedback) rather than a structured consultation like a Delphi or Townhall approach, depending on the topic, such apporaches coudl of course be chosen as well.
It may be an asset of NOK project to allow a real expert consultation within the evidence-based approach as a mean to add tacit knowledge and indigeneous knowledge to the synthesis.

The evaluators could eventually check the quality of the process and work in progress at various stages during this step to prevent any distortion or loss in quality, ensure objectivity and clarity (make sure decisions and methods kept transparent, data recorded…), alternatively, they may only come in at the finalisation stage for a peer-review.

In general, the working group (as in other similar processes like IPCC, MA) will be responsible to oversee and lead the process, based on the protocol agreed with the requester. In an expert consultation, claisscially the working group may be identical with the writers of the report, which is then opened up for peer-review. Also for the evidence-based method, this might be the case. For adaptive management, egagement of additional experts and stakeholders will be needed.

The finalisation of the process is an important step, as it includes review processes of the working group's results and is thus of major importance for the credibility of the NoK processes.
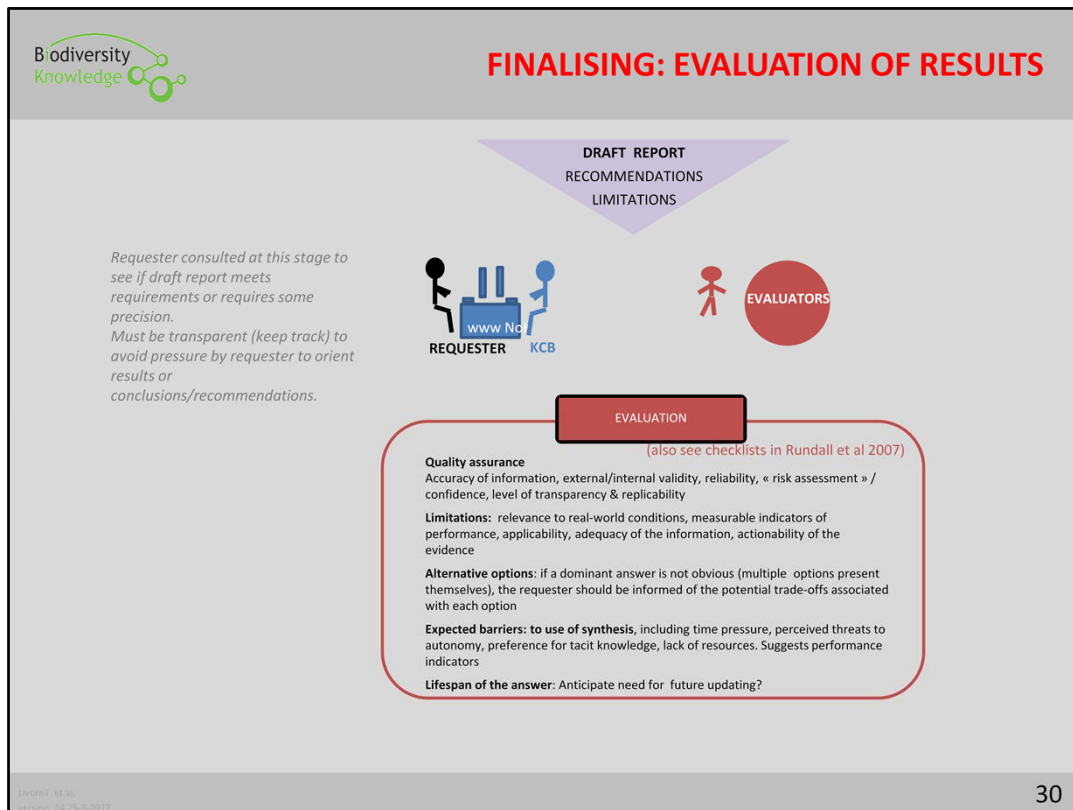
With the draft synthesis, the working group will engage, depending on the type of questions, via the KCB with potential stakeholders of the results, the clients and (academic) peer-reviewers to check and feedback on the preliminary synthesis and (if requested) recommendations. These feedback are essential to ensure quality of the work, make ist limitations explicit, identify and discuss alternative options in the results, and clearly communicate issues of uncertainty, including the boundaries of applicability and lifespan of results.
The final synthesis will then take into account these issues and would be adopted by the working group and the KCB.

Scientific peer-review with one or more appointed lead-reviewers is the main tool in this step. In addition to that, an open call for comments could be feasible, but such a process would need to be accompanied by a registration process of reviewers to avoid bias and conflict of ineterest.
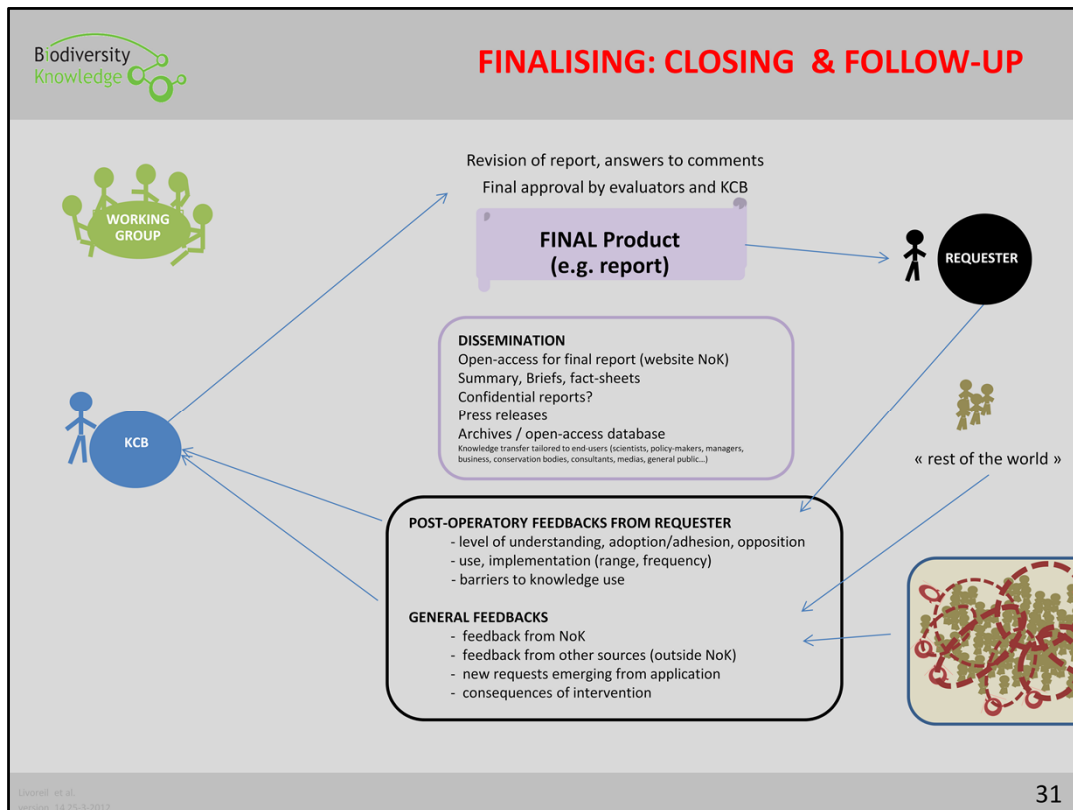
Based on the final product (in most cases, it will be a report), the KCB (with feedback from clients and working groups) would produce additional products like policy briefs, press releases, or open databases (to name just a few options), and also a documentary of the process, in order to ensure transparency on how the results were achieved.

In agreement with the client, results could then be used for further dissemination and use, if possible with monitoring its impact on decision making.

This is, in rough terms the outline of the way a NoK could work in handling requests from decision makers. This descdription focuses on the general process and many challenges are still lying in this process to actually make it work properly. This includes, among others:

- Ensuring that the NoK is only used for requests, where the knowledge of the scientific community as basis is in fact available and could not be processed by anotehr, existing way, e.g. via the work of environemntal agencies or by consultancies.
- Ensure motivation and participation: It is by far not a self-running process to engage experts in NoK-like processes. Incentives for experts (and institutions as knowledge hubs) need to be clear, This includes proper and visile acknowledgement of all person involved in products; a strong political linkage and support; and it may also include financila support in cases, where experts cannot affpord to take part in process via tehir institutional support.
- The handling of requests is only one of two main pillars of a functioning NoK. The second and probably more important pillar is, to create an (electronic) environment where the NoK can engage with each other and build the community of interest needed to bring the NoK to life.

These and other aspects of the NoK will be furtehr worked in in the KNEU project, starting with the conference in May.

Acknowledgements

To all who organised and attended the workshops in Budapest, Copenhagen, Aix-en Provence and Brussels. Also, those who have answered questionnaires, surveys, and provided support and feedback at different stages.

Without they input, this prototype would have never gone so far into details. We have learnt a lot from our exchanges, our various backgrounds, expertise and visons, from our different cultures.

This narrative is only a rough outline of the procedures of the NoK. They will be further shaped and detailed during the course of the KNEU project and will be subject to continuous revision.

Biodiversity
Knowledge

KEY REFERENCES

- Cochrane Collaboration: www.cochrane.org
- Collaboration for Environmental Evidence: www.environmentalevidence.org

- Defra Annex 10 – *Methodology for the science review of Defra* - www.bis.gov.uk/files/file35891.doc

- Foundations of success – Improving the practice of conservation – www.fosonline.org

-- Graham, I. D. *Translating knowledge into action: strategies for bridging the gap between research, policy and practice.* Available at: <http://clahrc-sy.nihr.ac.uk/images/KEE-presentations/day1/morning/Dr Graham CLAHRC October 2010 .pdf> (also: Graham, I.D., Logan, J., Harrison, M.B. et al. *Lost in knowledge translation: time for a map?*.J. Continuing education in the health professions 2006: 26, 13-24)

- NICE, National Institute for Health & Clinical excellence. www.nice.org.uk

- Rundall, T.G., Martelli, P.F., Arroyo, L., McCurdy, R., Graetz, I., Neuwirth, E.B., Curtis, P., Schmittdiel, J., Gibson, M., Hsu, J., Butler, P.W. *The informed decisions toolbox: tools for knowledge transfer and performance improvement.* Journal of Healthcare management Sept-Oct 2007. Available at <http://www.entrepreneur.com/tradejournals/article/169448477.html>

--Seventh Framework Programme Theme ENV.2010.2.1.4-3 *Developing a European scientific biodiversity Network to inform policy-making and economic actors* (PDF document distributed to all partners, 55p) –(KNEU)

Livoreil et al.
Version 10 – Sept 2011

BiodiversityKnowledge - NoK prtotype,
v.14 25-3-2012   28