SPIRAL is an inter-disciplinary research project funded under the 7th Framework Programma, contract number: 244035

SPIRAL
Science-Policy Interfaces for Biodiversity: Research, Action and Learning

Concept Note on Common Framework for Case Study Analysis

Carsten Neßhöver, Ulrich Heink, Johannes Timaeus, Heidi Wittmer & the SPIRAL Team

SEVENTH FRAMEWORK PROGRAMME

SPIRAL
Interfacing Biodiversity and Policy

Concept Note on
Common Framework for Case Study Analysis

Table of Content

1 Rationale

The underlying rationale of SPIRAL is that for the conservation and sustainable use of biodiversity, more effective interfaces between science and policy are urgently needed in order to support more effective policies, better institutional interrelations and changed behaviour of policy makers and political institutions, individual citizens, civil society organisations, scientists and research organisations, and business actors. WP1 contributes to this by building on existing studies and experiences to gain insight into the conditions and challenges of effective knowledge exchange between scientists and policy-makers and helps to identify and assess any additional action needed and best practices for the development of science-policy interfaces (SPIs).

This document summarizes a framework of analysis for the different case studies that SPIRAL will address in WP1, Task 1.2. and supports the development of the adaptive design(s) that will be used for the test cases in WP4, task 4.1.

We anticipate that changes will be needed to this framework during the course of the project, especially after a first set of case studies have been analysed in WP1, and after the first interviews and workshops in WPs 2 and 3. Together with the mapping exercise in WP1 (Task 1.1), the case studies will form one of the "backbones" for the further analyses in SPIRAL.

Additionally, this concept note will also be used for the analysis of case studies in other WPs.

2 Objective of case studies

The overall objective of WP1 is to gain insight into how biodiversity research is connected to policy making processes in order to gain a deeper understanding of existing science-policy interfaces and identify good practices for the development of new interfaces. This will be achieved by taking stock of experiences with biodiversity science-policy interfaces at various levels and in various contexts and by exploring the factors facilitating or hindering their effectiveness. One of the specific objectives of WP1 is to analyse some specific case studies of science-policy interfaces, in particular with regard to their strengths and weaknesses.

The entry point for analysis is a sample of existing SPI institutions (or 'structures') and their observable features and performance, rather than a set of functions (or 'goals') to be fulfilled or thematic issues that might be tackled (or not) by a SPI. This decision is discussed in Section 3.

Following the mapping of the current landscape of biodiversity science-policy interfaces (Task 1.1), we will investigate a selection of science-policy interfaces in detail. We will address different aspects of the SPIs (i.e. structures, functions, processes, and outputs) in order to get further insights into if and how they produce (positive) impacts on the policy and broader societal processes (including the evolution of the issue domain).

This approach will build on an identification of the needs of various actors and the institutional gaps and mismatches that may arise from the existing SPIs.

Three cross-cutting attributes will be looked at in particular: relevance, legitimacy and credibility (adapted from Cash et al. 2003; Farrell et al. 2006, see also Figure 1, right hand side):

- *Relevance*[1] refers to the responsiveness of the SPI to policy and societal needs;
- *Legitimacy* refers to the (perceived) fairness and balance of the SPI processes (includes inclusiveness to other stakeholders, transparency, treatment of diverging values and beliefs, fairness in treatment of opposing views and interests …);
- *Credibility* refers to the (perceived) quality, validity and scientific adequacy of the knowledge (incl. evidence and arguments) exchanged at the interface (includes credibility of the knowledge production processes and of the knowledge holders)

It is important to keep in mind that these are "attributions made by users" (Farrell et al. 2006, p. 8), hence factors that SPI processes can seek to influence but cannot control.

The work will not comprise a critical external evaluation of individual biodiversity science-policy interfaces, but rather a collaborative assessment of the practices and impacts of existing interfaces with those institutions and persons engaged in them and where possible with persons external to the interfaces (users, stakeholders,…).

The lessons learned will directly feed into the development of recommendations and we expect that engagement with biodiversity science-policy interfaces will, of itself, increase interaction between them and promote their development.

The case studies will comprise two categories:

[1] Also called 'salience' in Cash et al. 2003 and Farrell et al. 2006.

- **Case study category 1.A: Biodiversity science-policy interfaces at the national level: supporting biodiversity strategies and action plans**. Most countries in Europe, following their obligations under the CBD, have developed National Biodiversity Strategies and Biodiversity Action Plans. The WP will consider the role of science-policy interfaces in designing, implementing, monitoring and reviewing these strategies and action plans, and in particular what makes science-policy interfaces effective in this context. A questionnaire will be developed and distributed to the network of national biodiversity platforms linked to the EBPRS in order to get an overview on the role of science-policy interfaces in developing strategies and action plans in those EU countries which have developed them. Combining questionnaire results with interviews and observations from selected countries (Finland, the UK, Germany, Switzerland, Belgium and Romania), we will draw a picture of good practice. The case studies will also identify the needs of different types of actors for both scientific and policy knowledge, the factors that hinder the science-policy dialogue and, as appropriate, produce innovative suggestions for improvements in science-policy interfaces.
- **Case study category 1.B: European research projects (FP6+FP7[2]), their dissemination strategies and their science-policy interface concepts.** During the development of the framework programmes of the EU, increased importance has been placed on strategies for dissemination of project results and communication with potential users of research in policy and society during the life of the projects (for FP5, see van den Hove 2004, for FP6, Arnold 2008). Various approaches were developed by projects to achieve these goals, but their effectiveness remains unclear and anecdotal. The case study aims at analysing these strategies from major FP6 and FP7 projects on biodiversity, using the BIOTA-cluster as a basis. The projects will be analysed on the basis of questionnaires and interviews for those projects in which none of the SPIRAL partners were/are involved and through direct access to relevant persons in cases where SPIRAL partners were/are involved (e.g. ALTER-Net, ALARM, HERMES, EuMon). In order to reduce bias, the SPIRAL partner(s) involved in a given project will not assess it directly but rather give evidence to another SPIRAL partner. The analysis will follow the framework developed in this concept note. The objective will be to learn from their insights and to derive recommendations for improving the science-policy interfaces of research projects.

3 Dimensions to be analysed

The following subsections describe the different aspects of SPIs to be analysed.

To structure the analysis, we propose to set a boundary between the **science-policy interface** itself, identified as one particular institutional arrangement and the **SPI environment** (i.e. the world in which it finds itself) (see Figure 1, main boxes on the left). Such boundary is deemed to be porous and even shifting, as the SPI and its environment are in co-evolution.

The four dimensions 'structure', 'function', 'processes', and 'outputs' described below relate to the SPI itself, while 'environment' and 'impacts' relate to the wider societal arena in which the SPI is embedded (see Figure 1).

[2] In order to use up to date information, the project will not include FP5 projects, but focus on more recent projects.

On the distinction between Structures, Function and Processes

The categories of structure, functions and processes that we are proposing to use are clearly somewhat difficult to isolate completely from one another. There is always a tension between structure and function as one structure can produce different functions, and one function can be performed by different structures (highlighted by the two-sided arrows in Figure 1).

This highlights that the choice of using structure as the entry point for our analysis is not the only possible option. Yet as in this WP we are studying existing SPIs, it seems to be a more 'natural' and probably simpler option. When designing a SPI, it may often be more appropriate to start from the function and work out the structure afterwards.

There is also some fuzziness between the category 'structure' and the category 'processes'. The processes relate to the day-to-day operation of the institution, and the processes are framed by the structure. For instance the structure of the SPI can be an expert group composed members from say research, NGOs, industry and public administrations and the processes would include regular meetings.

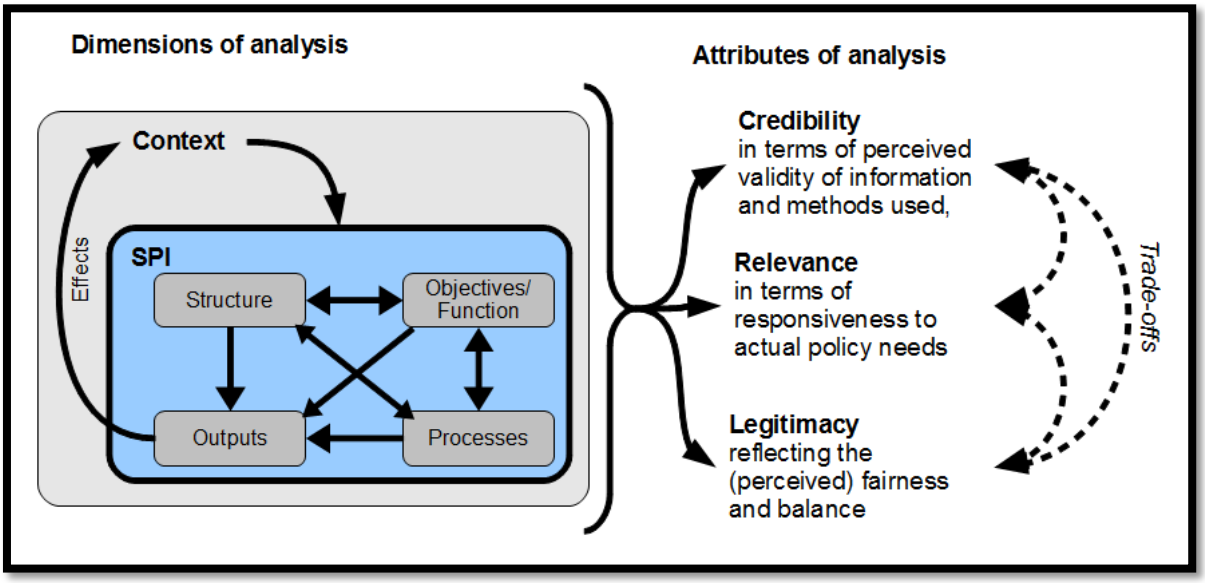

Figure 1: Illustration of dimensions and attributes of analysis

Moreover, the same SPI may do things differently in different cases, hence a given structure will develop specific processes for these different functions.

Finally, just as what we define as being internal and external to the SPI has to be seen as in co-evolution (the environment framing the SPI which in turns frames its environment), the same can be said of structure, functions and processes, which necessarily co-evolve.

3.1 Structure of SPIs (institutions)

By structure, we mean the institutional arrangements that have been set up and developed to achieve the goals of the SPI.

A wide range of 'typical' SPI structures can be identified, ranging from very formal and institutionalised ones to informal and more flexible ones. They can also operate at different political levels, and at different stages of the policy process (early warning, issue identification, policy design, implementation, assessment, review) and they can be closer to the policy or to the scientific processes. (see Box 1)

For each case study we will identify the broader SPI type and describe in more detail the specific institutional arrangement(s).

Box 1: Typical SPI structures and examples

Based on preliminary analyses, the following categories of typical structures will be used (subject to revision, based on the mapping exercise ongoing in WP1):

- Intergovernmental panels (IPBES, IPCC);
- Ad hoc Advisory boards mandated by International Conventions
- Subsidiary bodies of scientific expertise to biodiversity-related conventions (SBSTTA of CBD, Scientific and Technical Review Panel of Ramsar, …)
- International, regional or thematic assessment processes (MA, GBO, the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, …);
- Strategic initiatives (international, e.g. TEEB);
- Sectoral interfaces (e.g, EPBRS for research policy, …)
- Expert groups linked to policy institutions (e.g., to the EEA or DG Environment);
- State Agencies and institutes (e.g., ICES, EEA, …);
- Scientific advisory bodies, councils and panels (e.g. WBGU Germany, EASAC);
- Learned Societies (national and international; e.g., SCB, SER)
- Initiatives and programmes for data collection, technical standards (e.g., GBIF)
- Interfaces of specific research projects or networks
- Open, science-driven knowledge platforms (e.g. national biodiversity platforms)
- Larger Institutions (research, NGO etc) with *inter alia* SPI functions
- personal (but official) advisory roles of single experts
- Others

Some important aspects to keep in mind when exploring the structure include:

- Key underlying principles (e.g. participation, consensus, compromise, transparency, inclusiveness, representativeness, …)
- Range of stakeholder involvement (e.g. scientists, NGOs, business) and their roles;
- If/how the structure allows the balance between different stakeholder groups in an SPI;
- If/how the structure sets limits e.g. on participation, on activities, on editorial control, …
- Accountability of SPI (or its staff) to external institutions / funders

- Which information flows in and out of the science-policy interface are allowed by the structure, e.g. respectively preparatory synthesis work and outputs;
- Funding and other arrangements related to resources;
- If/how the structure allows to take into account different kinds of knowledge (e.g. practical, local, indigenous, political, moral, institutional knowledges), or if the work is restricted, e.g. to peer-reviewed scientific knowledge;
- If/how the structures entails a mechanism for quality assurance of information;
- If/how the structure entails a mechanism to deal with complexity, risk, uncertainty and ignorance;
- Timing of interface work with external processes (end of pipe activity vs. upstreamed activity)

3.2 Functions and Objectives of SPIs

An SPI will have stated objectives, and will in principle have as its function to fulfil these objectives. All functions in principle are there to answer one or more specific policy needs and sometimes also societal needs[3], to fill a specific gap in the interaction between science and policy, with the ultimate aim of enriching the decision-making and the knowledge production process. But the function of an SPI in reality may depart from the stated objectives, as some functions may be emergent or hidden. Hence several caveats need to be noted:

- There may be a difference between the stated (explicit) objectives and the (implicit) realised functions.
- Not all SPI will have stated objectives; this may be the case for instance of very informal ones.
- Individual participants in a SPI may have different expectations from (and goals for) the SPI that may not be captured in its stated objectives; similarly, individuals or institutions outside the SPI may have expectations and goals that differ from or even contradict the objectives, but this relates more to the SPI environment.

For each case study, we will:

- identify main stated (explicit) objectives and corresponding functions;
- identify realised (implicit) functions, if any;
- identify functions as expected by participants (if any and if possible);
- assess how explicitly and specifically these functions are defined and discussed between involved parties;
- assess if and to what extent functions are re-defined during the life-time of the SPI;

[3] for instance IPCC has a public communication function that can be deemed to answer a societal need for public awareness about the risks and stakes of anthropogenic climate change.

- investigate whether these functions are more demand-driven (by the policy side) or rather supply-driven (by the science side); this may be documented indirectly by looking at things such as who is funding the SPI, or where its mandate stems from (if any);
- assess (where possible) if and to what extent the aims of the SPI are met in practice, and if not, what the causes of this failure are.

One way to identify the functions is through a reflection about the needs that have to be fulfilled by the function. Thinking in terms of needs may contribute to the identification of the less obvious functions and to the assessment of whether aims are met in practice.

Box 2 lists a series of key functions of SPIs.

Box 2: Key possible functions of science-policy interfaces

Source: adapted from Cash et al. 2003, van den Hove 2007, van den Hove & Chabason 2009

Knowledge creation

- Allow for **co-evolution** of scientific and policy **knowledge**;
- Facilitate or produce integrated **assessments** and demand-driven targeted assessments, incl. foresights and scenarios;
- Joint creation of **models, indicators and other tools**
- Contribute **new thinking** to address complex problems;
- Contribute to the **scientific quality** process (critical assessment of scientific outputs in light of users needs and of other types of knowledge);
- Ensure strategic **orientation of research** and appropriate funding of research in support of policies and societal issues;

Communication

- Allow for exchange of scientific and/or policy **knowledge**;
- Provide **advice** (demand-driven and scientific-driven);
- Outreach to raise **public awareness**;
- Outreach to raise **willingness to act** amongst policy-makers, other stakeholders and the public.

Translation

- Facilitate timely **translation of research** into policy option or advice and early use of results in practice;
- Facilitate translation of policy needs into scientific questions;
- Facilitate the translation of specific knowledge into other (policy) contexts

Watching and warning

- Contribute to **horizon scanning** exercises**;**
- Alert decision-makers about **emerging issues**;
- Support implementation of **precautionary principle** (incl. early warning systems);

Mediation

- Allow for the expression of **different perspectives;**
- Contribute to improved **networking and cooperation** across issues, sectors and levels.
- **Coordinate** sectoral or sub-level **assessments;**
- Provide information about and/or access to knowledge holders;
- Contribute to broad, rapid, fair and cost efficient **availability and accessibility of** scientific and monitoring **data**.
- Creation of **bridges across scales** of action (esp. relevant for biodiversity issues)

Capacity building

- Support **capacity building** in monitoring, research, assessments, data management, science-policy interfaces, policy, management, and/or decision-making;

3.3 Processes

The processes of interaction leading to the production of outputs and impacts will be analysed. By outputs, we mean the tangible products emerging from the process, whereas impacts are effects that either the SPI process itself or the outputs may have. Outputs and impacts are dealt with in later sections.

Each SPI, in the framework of its function and structure, will operate through a series of processes, which will be, more or less, defined in procedural rules and guidelines for their work. It is important to note that actual processes might not be codified, or may differ from the 'official' codified procedures.

Processes in principle relate to a specific function and/or principles.

Processes might include, for example, measures to:

- Ensure the desired participation, by:
  - Regular meetings
  - Specific forms of discussions, e.g. informal discussions in meetings with different kinds of written summaries; world café approaches and others
  - iterative, or specifically designed stakeholder processes to bridge gaps between scientists and policy makers (and other stakeholders)
  - electronic means (e-conferences, shared workspaces, …)
  - …
- Ensure fairness and balance , by issues of
  - inclusiveness to other stakeholders (e.g. selection procedures),
  - transparency (e.g. via a clear communication policy)
  - procedures to treat diverging values and beliefs, or opposing views and interests,
  - procedures to balance of power between groups
  - open to external contributions (e.g., involving the research community and other stakeholders by open consultations) or closed (e.g. with only a few scientists/experts bringing in their expertise)
  - ….
- Ensure communication by
  - Common understanding of participants of aims and main processes of the SPI; communication channels and means within the group
  - Communication and dissemination procedures to the outside, especially to clients (if they are specifically defined); incl. face to face communication.
  - Developing common language (e.g. translation activities to bridge gap between policy / science speak)
  - One-way vs. two-way interaction
- Provide resources and inputs, e.g.
  - By ensuring management of the SPI processes by an institution or specific secretariat

- by a secretariat also responsible to collect and pre-analyse information as well as finalising/editing outputs
- Motivation of involved persons and institutions to contribute as needed
- …

- Co-production of knowledge , e.g. by
  - Joint development of tools, models or scenarios
  - Promoting closure of discussion topics to develop common ground
- Use and analyse existing knowledge, promoting mutal understanding, e.g. by:
  - Explicitly outlining the forms of knowledge used and illustrating its diversity
  - Ensuring quality of knowledge exchanged and analyses made, including peer-review,
  - Ensuring treatment of uncertainty and ignorance
- Evaluation of the SPI work
  - Self-assessment of performance and adaptive review process
  - Targets and indicators of impact defined, explicit success criteria stated
  - External evaluation, e.g. by involved external organisations or funders
- Reaching across scales and sectors

Another point of analysis related to function is the scale and nestedness of a biodiversity SPI. In general, SPIs will be designed to serve a given scale, e.g. the European or national one. But for many topics it will be important to recognize the potential linkages to other scales (e.g., local and regional) to obtain knowledge from, or to provide knowledge to, other levels but also to recognize consequences for these scales. A similar challenge is whether the SPIs take note of cross-topic relationships (e.g. climate and biodiversity, water framework directive and biodiversity). We will need to check if the biodiversity SPI case studies take these cross-topic linkages into account and if so, how they address them, including whether cross-scales or cross-sectoral linkages are actively sought.

3.4 Outputs

With outputs, we understand the specific products that an SPI develops in order to fulfil (part of) its defined functions.

These outputs can include:

- regular (e.g. yearly) reports
- thematic one-off reports,
- common development of models, scenarios and other tools for use in biodiversity management and decision making,
- participation in assessments

- more specific, request driven forms of summarized expertise or knowledge

As outlined in 3.2, the stated official function might often be complemented by additional implicit functions, triggered by specific situations and "windows of opportunity" to act, or by hidden agendas of involved persons. These objectives might also lead to products of an SPI, which do not fit explicitly in the stated functions (and accordingly planned products) of it.

Foreseen potential products will even not necessarily be realised, and may take altered forms, whether for reasons in the structure and the process of an SPI, or because of the co-evolutionary and flexible nature of processes, for example in response to unexpected discoveries or windows of opportunity to deliver knowledge into a concurrent policy process. (see effects, 3.6).

Additionally, products will also include publications (flyer, website) and other activities (e.g., presentations and participation of members of the SPI in their role in it in other meetings and events) which refer more to the presentation of the SPI itself to its context, rather than the knowledge it has developed. To some extent, these products will directly interlink with the potential impacts / effects of the SPI itself (see 3.6).

3.5 SPI Context

Any science-policy interface is operating in a broader context or environment, i.e. a *"context of demand" for the SPI which led to its establishment.* It is important to understand this context when analysing the SPI itself since it may have strong influence on the function, structure and processes of the SPI (as can for example be seen in the discussions on IPBES over the last years [van den Hove & Chabason 2009]).

Any SPI is justified (more or less explicitly) by a normative context and an underlying set of values. For the biodiversity area, this is especially relevant as values behind an engagement into science-policy processes will be quite different for different stakeholders. These may or may not be explicit. For instance, one could implicitly or explicitly justify science-policy interfaces on the grounds that they would be morally right, especially in complex global change topics like biodiversity. Also, European countries and their cultural context and understanding of science might include strong expectations by society and policy that publicly funded research should contribute as a public good to societal discussions. Where this expectation is strong, the establishment of SPIs in different areas of policy might be "standard" whereas in other countries, they might be perceived as unusual institutions, only installed for specific, problem-driven cases and thematic areas. These different perceptions will also influence the design of structure, function and processes of the SPI explicitly.

One main driver for this will be the institutional context that an SPI is situated in: for example working with policy institutions such as ministries and state agencies (and even linked explicitly to them), scientific institutions such as national science academies, large scale research institutes or learned societies. It will be important to see, if an SPI is accountable to these institutions, not only on the policy side, but also on the science side. For biodiversity in particular, it will also be relevant to check how an SPI is linked to non-governmental organisations, from the biodiversity user as well as the biodiversity conservation side, and how their knowledge is included in the work of the SPI.

For our case studies, we will describe this context to the extent appropriate, building on the following questions:

- Which underlying concepts of biodiversity, its valuation and its use and conservation are recognized as being politically and culturally relevant?
- What is the institutional context and how are the links between SPI and institutions developed (e.g. by persons/organisations taking up a role in the SPI)? To whom is the SPI accountable?
- Is the involvement into the SPI rewarded by home organisations and if so, how?
- For national biodiversity strategies: What is the role and appreciation of biodiversity policy compared to other policies in the SPIs context? Are there different perceptions of this from different stakeholders?
- For FP projects: What is the understanding on the role of science for society in the projects, and accordingly in their SPIs?

3.6 *Effects, impacts, outcomes*

SPI effects are the results of the influence of the SPI's "processes" and "outputs" on the "context" of the SPI.

Effects can be:

- Positive or negative
- Intended or unintended
- Direct or indirect
- Short-to medium term (sometimes called "outcomes"[4]) or long term (sometimes called "impacts")[5]

The effects of an SPI are often difficult to measure or even to identify: "successes" will often not be traced back to the SPI work only, but to a combination of the SPI and other, complementary activities and developments. "Failures" might be linked to single hindering effects or institutions (even other SPIs) not properly involved in SPI processes and blocking changes for specific reasons.

Nevertheless, the following aspects should be analysed:

- Coherence of effects with stated function of the SPI
- How the effects are taken up by clients and others
- How effects relate to other processes which might have an influence (including outputs of other SPIs)

Some effects may be **direct** (e.g. as a result of information feeding directly into policy decision processes or research agendas) but there are also, potentially important **indirect** and dynamic effects on the future development of the policy and science spheres, for example through

- Appreciation of different kinds of information discussed in the SPI (e.g., with respect to uncertainty and risks)

[4] OECD Glossary of key terms in evaluation and results based management, available at: http://www.oecd.org/dataoecd/29/21/2754804.pdf
[5] Ibid.

- Influencing the mutual understanding between involved groups,
- Changing behaviours in their interactions,

There can also be **intended** as well as **unintended** effects. It is important to check the intended outputs and effects (the **potential** effects as assessed under 'function' above), against the **actual** outputs and effects, which may sometime turn out to be quite different and include unintended effects (see for example Sharman & van den Hove 2005).

Concrete effects will thus often be hard to measure, but even anecdotal information in this respect will be important in identifying the reasons for success or failure. So for the case studies the personal contact to persons involved in the SPIs is of major importance in the analysis and in the methodological approach .

Table 2: Summary table for the Case study analysis with respect to the different dimensions to be analysed. Grey area indicates SPI internal dimensions.

ASPECTS	**Identify:**
SPI Context	• Analyse the "context of demand" for the SPI and its outputs • Cultural (even normative) context and perception of biodiversity issue by involved stakeholders • Institutional context: Involvement of different stakeholder organisations, links to policy and science • explicit linkages to external institutions via SPI structure
Structure (institution) *"How is the SPI linked into policy (and science?) processes?"*	The structure describes the institutional arrangement of the SPI, and will be described following the different categories outlined in the text (Box 1). General issues to be considered: • Range and balance of composition of stakeholders involved • Key underlying principles (participation, consensus, compromise etc.) • form of knowledge and information included in the work • quality assurance of information and how uncertainty is dealt with • funding and other arrangements related to ressources • what limits are set (on participation, on activities, on editorial control...), accountability of SPI to external institutions
Objective(s)/Function(s) *"What are the aims of the SPI? What need or gap does it aim to fill?"*	Functions of the SPI are the explicitly (and sometimes implicitly) stated objectives of the SPI, which might include aspects (see Box 2): • Knowledge creation • Communication • Translation • Watching and warning • Mediation For each case study, the stated explicit objectives/functions and the implicit and realized functions (linking to Outputs) will be analysed. Also it should be checked if the functions are more demand-driven or supply-driven
Processes *"How are products developed and delivered within the SPI work?"*	With processes we refer to the operational procedures inside the SPI to fulfil its functions. These will be more or less defined in rules and guidelines. Again, there might be some unofficial, not codified processes that differ from "official" ones. Processes might include, for example: • Ensure desired participation (e.g. by meetings, iterative processes for writing reports, electronic for a) • Ensure fairness and balance (balance of power between groups, treatment of divergent values…) • Ensure communication (common understanding of aims and main processes; dissemination procedures, …) • Provide resources and inputs (e.g. resource persons/secretariat, motivation of experts, • Co-production of knowledge • Ensuring quality and treatment of uncertainty and ignorance issues

	• Assessment of SPI (self-assessment, external evaluation, defined targets and indicators) • Reaching across scales and sectors • …
Outputs *"Which products does the SPI deliver?"*	The concrete products of the SPI , which could include • Regular or one-off reports • Development of models, scenarios and other tools • Assessments • Other (request driven) forms of summarized expertise or knowledge • …
Effects *"What are the effects of the SPI's structure, processes and outputs?"*	Effects are the results of the interactions between the SPI Structure, Processes and "Outputs" and the Contextof the SPI, in many cases these effects will strongly depend on other external hindering or supporting circumstances and activities from external institutions, even other SPIs. The following aspects should be analysed: • Consistency between stated objectives/functions and effects • Interactions between SPI structure, processes and outputs with other features of the SPI context (e.g. their perception by potential clients) • Relationship to other processes Effects should be divided into *potential* effects (linking back to functions), and *actual* effects. The analysis should ideally allow to assess the efficiency and effectiveness of the SPI, but often the analysis might only yield qualitative, anecdotal insights.

4 Analysis of strengths and weaknesses

With the analysis of the six dimensions outlined in chapter 3, we aim to analyse each case study SPI with respect to its strengths and weaknesses, including the trade-offs between credibility, legitimacy, and relevance, as well as the potential mismatches between functions, structure, processes, outputs and impacts of the SPI.

As said in section 2 above we will build on an identification of the needs of various actors and the institutional gaps and mismatches that may arise from the existing SPIs.

Some of the relevant research questions here include:

- Assessing whether there is a balance or trade-off between credibility/ legitimacy/ relevance and having an impact or whether more of these attributes always mean more impact (a hypothesis could be that sometimes promoters of an interface focus only on the attributes with not so much concern for impact or the other way around).
- As these can be perceived differently by persons/institutions internal and external to the SPI, it will be interesting to assess and discuss the implications for the SPI.
- This may lead to mismatches between an SPI and their institutional context, in science as well as in policy. Considering that biodiversity problems often extend over ranges of scales and show there are vast regional differences, this issue is especially relevant (van den Hove & Chabason 2009).
- With regard to 'relevance' it may be useful to pay attention not only to whether SPIs are (perceived as) relevant to policy and societal processes, but also to how SPIs may make themselves relevant (as in co-production of knowledge and agenda setting)? SPIs in a way may produce policy needs, and not just respond to them.

From the single case analyses, the aim is to derive general messages, best practices and insights into the strength and weaknesses of SPIs, in order to support the work of especially WP4.

5 Methods to be used

To gain a first overview and insight into the cases, existing documents, websites and other written information on the SPIs will be used and analysed with respect to the (officially stated) function, structure, process and outputs.

To link these dimension back to the SPI context and the impact of the SPI, we will use stakeholder analysis techniques to help focus our efforts, looking at stakeholders as potential participants, potential users, potential allies and potential opponents (allies and opponents, e.g. press, other SPIs – people who could either help or hinder the transmission of messages to intended audiences). This will also help to categorise the SPI context, conceptualizing it as formed of other actors, as well as by rules, norms and attitudes.

Based on this, the in fact realized aspects will need to be analysed in more detail. For this, written information will rarely be available so this will be done by questionnaires to participants, but more frequently by semi-structured interviews to be conducted with participants of the SPIs and also stakeholders not directly involved.

Where possible and feasible, direct observations on the work of the SPIs might also be relevant and possible, especially on the aspect of structure and process.

6 CASE STUDY next steps

The case studies will involve the following steps:

1. Identify case studies - For 1A and 1B, we will first identify a set of cases:
   - For 1A: different countries with different histories of producing and implementing NBSAPs,
     - Germany: Science as one among other stakeholders in a consultative process
     - Switzerland: Biodiversity Research network as one main driver to set up national strategy
     - Finland: Evaluation of first NBSAP done by scientists
     - Romania: Scientists, NGO's and central authorities involved in NBSAP elaboration & implementation
     - Belgium: involvement of stakeholders into NBSAP development
     - U.K.: Biodiversity Action Plan process.
   - For 1B: Identify FP projects with explicit SPIs (or SPI-like) structures. They should be large enough to be of relevance for European policy, ideally in different fields
     - EuMon: Project explicitly meant to improve Monitoring situation across Europe
     - ALARM: Large Scale project with high diversity of outputs and strong integration within the project over a 5 year period
     - HERMES: An integrated research project on the biodiversity, structure, function and dynamics of ecosystems along Europe's deep-ocean margin, with explicit science-policy work package
     - AQUAMONEY – a project that dealt with development of tools and guidance for environment costs and benefits analysis to be integrated in economic valuation, according to article 4, 5 and 9 of WFD.
     - ALTER-Net - large scale networking project focused on durable integration of research potential in terms of human resources and institutional infrastructure, targeted for inter and transdisciplinary knowledge and operational tools, regarding functions and services of biodiversity and public awareness.

2. Review literature on SPIs, including fields other than biodiversity: The work on the role and nature of science-policy interfaces has widened considerably over the last 18 months, we will review this work in terms of relevant input into SPIRAL and the case study work. [UFZ]
3. Identify personnel to carry out each case study [all partners]
4. Develop a joint guideline for interviews/ research of documents regarding points 3.1-3.6 above [UFZ, CEH, Median, UNIBUC]
5. Label parameters that are analysed jointly between the case studies, including the issues of credibility, relevance and legitimacy. [UFZ, CEH, Median, UB]
6. A workshop will be organised bringing together coordinators and/or partners in charge of science-policy interfaces in FP6 and FP7 projects from within and outside the SPIRAL consortium and representatives from DG RTD and DG ENV to present the preliminary

results of the analysis and enrich it through interactive discussion and brain-storming among the key players. Results from the workshop will feed into the Workshop 3 organised by WP2 (task 2.3) and into the handbook to be produced in WP5 (task 5.4). Case study 1.B and its results will also feed into test case 4.E in WP4. [UFZ, UB]

7. Case studies finalized and summarized (if needed via additional internal workshop) into WP1 synthesis report and paper

References

Cash D.W., Clark, W.C., Alcock, F., Dickson, N.M., Eckley, N., Guston D.H., Jäger, J., Mitchell, R., 2003. Knowledge systems for sustainable development. PNAS 100 (14), 8086-8091.

Farrell et al. 2006 Overview: Understanding Design Choices, in: Farrell, A.E., and Jäger, J., (eds), 2006. Assessments of Regional & Global Environmental Risks: Designing Processes for the Effective Use of Science in Decisionmaking. Resources for the Future, Washington, DC, USA.

van den Hove, S. (2007): A rationale for science–policy interfaces, In: Futures, Volume 39, Issue 7, 807-826

van den Hove, S. & Chabason, L. (2009): The debate on an Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). IDDRI Discussion Papers N° 01/2009 Governance