ENHANCING THE SCIENCE-POLICY INTERFACE ON BIODIVERSITY AND ECOSYSTEM SERVICES

IUCN's vision for an Intergovernmental and Multistakeholder Platform on Biodiversity and Ecosystem Services (IPBES)

Convention on Biological Diversity
Fourteenth Meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA14, 10-21 May 2010, Nairobi, Kenya) and Third Meeting of the Ad-Hoc Open-Ended Working Group on Review of Implementation of the Convention (WGRI3, 24-28 May 2010, Nairobi, Kenya)

This paper lays out IUCN's vision for the function and form of IPBES that would deliver the most effective and improved science-policy interface on biodiversity and ecosystem services. The vision is the result of reflections on the discussions and negotiations to date, including at the first and second IPBES meetings, on the findings of the IPBES Gap Analysis, and on the perspectives of the scientific community and broader civil society[1].

1) THE SCIENCE-POLICY INTERFACE

Science-policy interfaces are social processes which encompass relations between scientists and other actors in the policy process, and which allow for exchanges, co-evolution, and joint construction of knowledge with the aim of enriching decision-making at different scales[2]. This includes 2 main requirements: a) that scientific information is relevant to policy demands and is formulated in a way that is accessible to policy and decision makers, and b) that policy and decision makers formulate their demands or questions in a way that are accessible for scientists to provide the relevant information and that they take into account available scientific information in their deliberations. Figure 1 depicts this two-way and cyclical relationship in the science-policy interface.

The most important attributes of effective science-policy interfaces are widely considered to be salience, credibility and legitimacy[3]:

salience, or relevance, reflects the ability to be responsive to conditions and concerns, and to link to issues on which decision-makers focus and over which they have control;

credibility reflects the believability of produced knowledge to a defined user, i.e. on the extent to which actors perceive the contained facts, theories, ideas, models, causal beliefs, scenarios and options as valid or at least as a better guide to how the world works or how to address a specific issue; and

legitimacy reflects the perceived fairness, political acceptability, transparency and trust in the processes of a science-policy interface, i.e. the perception that its processes have been respectful of stakeholders' divergent values and beliefs, unbiased in its conduct and fair in its treatment of opposing views and interests.

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[1] See summary of views from scientific community and broader civil society in UNEP/IPBES/2/INF/4
[2] Sybille van den Hove, 2007
[3] Cash et al., 2003; Jasanoff and Martello, 2004; Farrell and Jäger, 2006; Mitchell et al., 2006.

Four main conditions for an effective science-policy interface can be identified:

a) Building a **common and shared knowledge base** which effectively supports policy, including the promotion of policy-relevant multidisciplinary research and the appropriate integration of non-formal knowledge, observation and monitoring, indicators, models and scenarios, and assessments;

b) Providing for an **effective dialogue between science and policy** and other relevant stake- and knowledge-holders, including formal mechanisms of policy advice, processes of early warning and horizon scanning, communication and other aspects of effectively targeting decision makers;

c) Providing the fundamental capacity to enable **full engagement in the science-policy interface of all relevant stake- and knowledge-holders**, be it to build the common and shared knowledge base, to communicate more effectively, or to more effectively use the knowledge for policy action/implementation;

d) Increasing **synergy and coherence through coordination** of the different actors and activities and, in particular across scales, sectors and disciplines.

In practice, there exists no one-size-fits-all model for science-policy interface. These mechanisms can be very different in nature with some being more formal than others, or some being closer to scientific processes while others are closer to the political ones. They might also have different principle functions, e.g. in capacity building, coordination or advocacy, or operate at different stages of the policy process – early warning and issue identification, policy formulation, implementation, or policy evaluation.

Figure 1: The cycle of science-policy interface
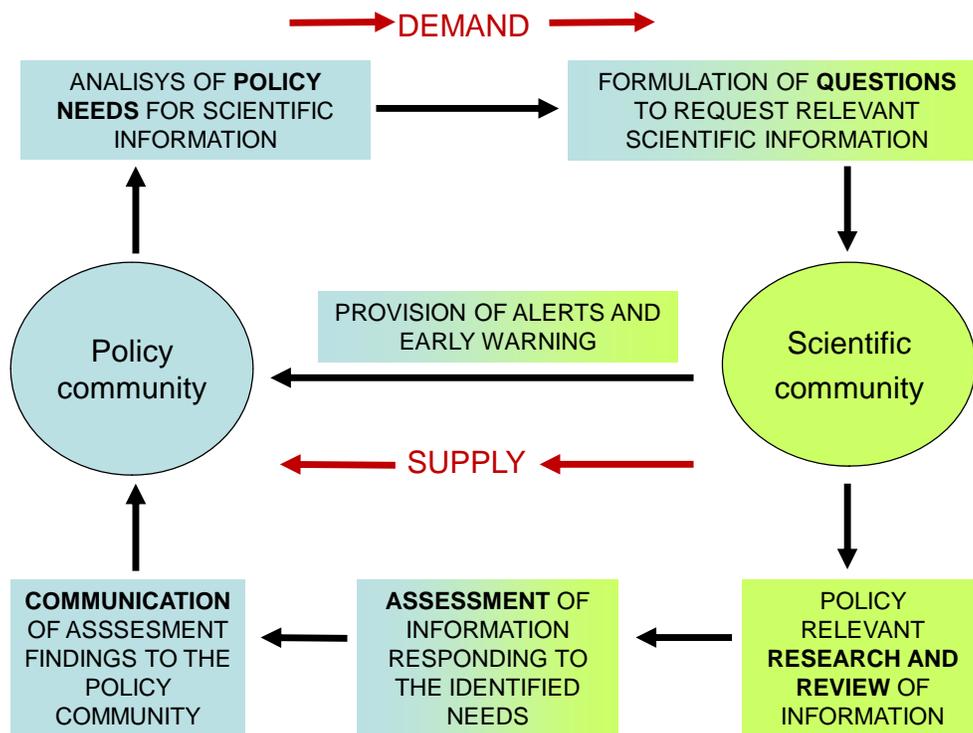
2) THE NEED FOR IPBES

The IBPES Gap Analysis highlighted that although there are many mechanisms in place, there remain considerable gaps in the science-policy interface on biodiversity and ecosystem services at all scales.4 Based on these findings, five main needs were identified for strengthening the science-policy interface:

1. **scientific independence** (credibility, relevance and legitimacy);
2. **knowledge generation** (facilitating and catalyzing collaboration and coordination for common and shared knowledge bases);
3. **knowledge assessment** (regular and timely assessments to generate and disseminate policy-relevant but not policy-prescriptive advice);
4. **knowledge use** (support for policy development and implementation); and
5. **capacity building** to enhance the science-policy interface and mainstream biodiversity and ecosystem services for human well-being

There are clearly opportunities to strengthen existing science-policy processes and institutions to meet or partially meet some of these needs. However, there is currently no established and ongoing mechanism that brings credible and authoritative scientific expertise to bear on the range of biodiversity and ecosystem services policy processes at multiple scales. Periodic international assessment and scientific advice to a range of policy processes on biodiversity and ecosystem services remains ad-hoc, and whilst some mechanisms could be strengthened, there remain considerable opportunities to add value, fill gaps, enhance synergy and ensure cost-effectiveness through the establishment of a new mechanism. In addition, strengthening existing mechanisms sufficiently to meet all these needs would require major revisions and re-design of existing mechanisms, including their governance. Establishing an overarching, multidisciplinary platform would be more effective, efficient and cost-effective and would strengthen existing mechanisms.

This IPBES vision paper focuses on the need to establish IPBES with a function that responds effectively to the identified needs, and with a form that meets these needs in a legitimate manner, including through engaging multiple stakeholders. Such proposed elements of the function and form of IPBES are elaborated below.

3) PROPOSED ROLE AND FUNCTIONS OF IPBES

Based on the five identified needs above, and a review of existing processes meeting some of these needs, the overarching role of IPBES should be to provide relevant decision making processes with independent, authoritative, internationally peer-reviewed scientific information on changes in biodiversity and ecosystem services, the implications of these changes for human well-being, and possible response measures at multiple scales. IPBES should be established with the view to it becoming the standard international source of policy-relevant scientific information on knowledge relating to biodiversity and ecosystems services, and therefore **meet the needs of decision-makers in the environmental sectors, and at the environment-development nexus**.

The overall thematic scope of IPBES should be biodiversity and ecosystem services (the environment-development nexus), and as such the scope of IPBES assessments and other functions would need to include the status and trends in biodiversity and ecosystem services, and of human well-being as affected by biodiversity change. IPBES would also need to assess the drivers of biodiversity change, and the options available to address trends in drivers, biodiversity, ecosystem services, and human well-being. In doing so, IPBES will need to draw on scientific and traditional knowledge, as appropriate.

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4 The IPBES Gap Analysis (UNEP/IPBES/2/INF/1) was prepared as a response to a request made by countries
during the first consultative meeting on IPBES on 10-12th of November 2008 in Kuala Lumpur, Malaysia

The functions of IPBES need to respond to each of the five needs identified by the Gap Analysis. The first, scientific independence, in addition to being a need is also a principle under which IPBES should be established and implemented. Both the findings and products of IPBES, and the process by which they are produced, need to be credible, legitimate and salient. The other four identified needs could be met through IPBES as follows:

1. Facilitating and catalyzing knowledge generation:

IPBES should not itself conduct research, but rather should identify gaps in policy-relevant science that could be filled by further research, play a role in catalyzing such research, and also form a channel for the existing scientific information to contribute to policy making. IPBES would provide a synthesis mechanism to respond to the needs of MEAs and others stakeholders for scientific information on biodiversity and ecosystem services, and in doing so would provide a robust international peer review process for scientific contributions to policy making.

In addition, in facilitating knowledge generation, IPBES should ensure that guidance is provided to the scientific community on the identified policy priorities. This could involve, for example:

- Disseminating direct requests from subsidiary bodies of MEAs and other relevant processes to scientific networks, and convening representatives of the scientific community to plan a response to those needs.

- Compiling science-policy digests for the scientific community to raise awareness of key policy needs and gaps in knowledge to support policy development.

- Liaising with international research networks and organizations (such as ICSU, DIVERSITAS, and IHDP) and national research funding councils to support prioritizing investment in and implementation of policy relevant science.

2. Knowledge assessments:

Assessments of knowledge build on the generation of knowledge, and provide critical judgement of such knowledge to inform policy needs. The process of assessing knowledge also leads to the identification of gaps in knowledge and understanding, which informs both policy processes on the state of knowledge, but also provides priorities for future knowledge generation. The generation of knowledge and the assessment of knowledge are therefore closely related processes.

It is proposed that a core function of IPBES will be to provide support to, and undertake, assessments at various scales, responding to national, regional and international demand from governments, MEA subsidiary bodies and other policy fora. Specifically, IPBES could:

- Provide technical support to in-country institutions to undertake **national assessments**. Such requests would come from national governments directly to the IPBES mechanism. However, IPBES would not provide direct support to sub-national assessments (although see also capacity building section below).

- Undertake or provide technical support for **regional assessments**, building on national assessments where available. Such regional assessments could be undertaken by IPBES on the request of regional bodies and groups of national governments in developing regions.

- Undertake **periodic global comprehensive assessments**, building on the national and regional assessments as available. Such global assessments would be undertaken on request from IPBES governance.

- Undertake global and regional **thematic assessments** based on demands from MEA subsidiary bodies, from other relevant processes and from the IPBES governance reviewing and considering the needs of the policy community across sectors and policy fora, including the needs of the UN agencies. Criteria would need to be developed to assist the IPBES plenary or bureau with prioritizing global thematic and other assessments according to available resources.

IPBES would also provide a means of facilitating the **integration of assessments across regions and scales**. This would be particularly important function for future regional and global assessments, which would build on assessments at national and smaller scales. Such a function will be undertaken with the view to developing standard methodologies for assessments, developing and adopting a standard assessment framework, and developing scalable metrics and variables that could be used in IPBES and other assessment processes to allow integration and analysis across regions and scales.

In addition to supporting and undertaking assessments, IPBES should also have a function of **horizon scanning and early warning** on policy-relevant biodiversity and ecosystem services science. Whilst this would build on the assessments implemented, it would also provide opportunity for rapid assessment of key emerging issues to be brought to the attention of the IPBES bureau and/or plenary.

A number of ongoing or emerging assessment initiatives also address elements of the proposed thematic scope for IPBES. **Synergy will therefore be required with ongoing global assessments**, including the Regular Process for Global Reporting and Assessment of the State of the Marine Environment including Socio-economic Aspects, the IPCC, Forest Resources Assessment, World Water Development Report, and the UNEP Global Environmental Outlook assessment. IPBES could additionally play a role in identifying which of these various ongoing processes might be best placed to respond to requests for information received by IPBES. In addition to these global assessments, many assessments are underway (and some completed) at sub-global scales under the auspices of the Millennium Ecosystem Assessment (MA) and the MA follow-up process, it is anticipated that the most effective future coordination and integration across the multiscale assessment landscape would be undertaken by the IPBES Secretariat and mechanism.

IPBES should **meet the assessment needs of multiple conventions and development policy processes**, and also recognise the broader audiences and needs for information on biodiversity and ecosystem services, including in civil society. IPBES assessments should support the environmental-related information needs expressed by national governments through the subsidiary bodies of a range of international decision-making fora, including CBD, Ramsar, UNCCD, CMS, CITES, the World Heritage Convention, and the ITPGR. However, IPBES will also have considerable benefits to decision-makers and practitioners in sectors including health, agriculture, planning, development and finance. IPBES will therefore have **important audiences beyond the MEAs**, such as UN agencies (FAO, UNCLOS, UNESCO, UNIDO, UNFF, UNDP, WHO ILO, IFAD), the process of the CSD, the MDG process, as well as civil society including local government, the scientific community, and non-governmental actors involved in biodiversity and ecosystem services management, and development. Whilst prioritizing information requests will clearly be essential for IPBES, assessments that respond to multiple needs of MEAs, UN agencies and civil society will have the widest audiences and greatest relevance to the conservation and use of biodiversity and ecosystem services, and sustainable development.

3. Knowledge use:

Knowledge use is the uptake of assessment findings and impact of assessment processes to support policy development and implementation. IPBES should have a key role in identifying, compiling and making available tools and methodologies – such as economic valuation tools, scenario and trade-off analysis tools – which allow the information from IPBES and a range of other scientific processes to be taken up in national and other policy processes. Materials developed as part of the follow-up strategy to the Millennium Ecosystem Assessment could also be more widely disseminated and used as part of IPBES support to knowledge use.

A key element of ensuring knowledge use is communications, and it is essential that IPBES have strong communications of its findings to policy makers and a broader audience, including to the media and general public. Effective communications lies at the core of successful assessment and uptake of findings. In order to most effectively communicate to different policy audiences, IPBES should produce summary policy documents for all its outputs, targeted at specific sectors, policy communities or processes when appropriate, based on specific demands.

4. **Capacity building to enhance the science-policy interface and mainstream biodiversity and ecosystem services for human well-being:**

In order to be most effective, IPBES would benefit considerably from building capacity to undertake policy-relevant science, to assess that science through scientific assessment, and to use information from such an assessment in the decision-making process. IPBES could carry out capacity building activities such as the production and promotion of training material on biodiversity and ecosystem service assessment, and providing opportunities for scientists and decision-makers from developing and developed countries to engage in science-policy processes. There will also be indirect capacity building opportunities provided by IPBES, through raising international awareness of policy-relevant science and options to deliver this into decision-making processes at national and international scales. Core capacity building functions of IPBES might include:

- Providing technical support for national and regional assessments, including training on assessment methodologies and the use of tools and approaches.
- Providing fellowship opportunities for young and developing country scientists to engage in national, regional, global and thematic assessments, and through doing so facilitating their access to international scientific networks and data.
- Establishing a network of scientific networks to provide access to expertise and information in developing and developed countries. This would enhance capacity in developing and developed country institutions to identify expertise and information for assessments.
- Supporting improved understanding in the scientific community of policy processes, and improved understanding in the policy community of scientific processes and approaches.

As with other functions, capacity building activities under IPBES should complement mandates of existing organisations, and build on ongoing initiatives. For example, Governments and other organizations supporting the establishment and implementation of IPBES could play an additional role in supporting capacity building activities such as ensuring free access to scientific journals and the enhanced availability of georeferenced data as a contribution to strengthening the science-policy interface and the scientific community in developing countries, without this being a part of IPBES *per se.* Additionally, there could be a role for IPBES in identifying broader capacity building needs, and convening donors to stimulate support for such needs.

4) PROPOSED FORM AND MODALITIES OF IPBES

The following form and modalities for IPBES are proposed in order to ensure that it operates as an effective and efficient mechanism to deliver on the functions described above. Key principles on which IPBES structure should be based and on which IPBES activities should be implemented include:

- **Independence:** IPBES should be politically and scientifically independent. Both the regional balance of experts and the participation of the multistakeholder community in the implementation of IPBES would help ensure the political neutrality of IPBES processes and findings.

- **Scientific excellence:** IPBES should be established with a view to it becoming the standard international scientific reference on the state of knowledge relating to biodiversity and ecosystem services.

- **Inclusiveness:** IPBES should ensure legitimacy through appropriate involvement, endorsement and support by the governmental, intergovernmental and multistakeholder user community, and through an appropriate balance of geographic, disciplinary and gender input into in its design and implementation.

- **Transparency:** IPBES procedures for prioritizing, selecting, developing and approving assessments and their findings should be clearly established and made widely available.

- **Multidisciplinarity:** A key added value for IPBES is its scope: biodiversity, ecosystem services and the environment-development nexus. When fulfilling the functions of knowledge assessment and knowledge use, IPBES should include the environmental, social and economic disciplines in its work.

- **Efficiency:** IPBES should build on existing processes and assessments – especially at national and regional scales - and liaise with other institutions and mechanisms active at the science-policy interface at multiple scales.

IPBES Governance

The main components of IPBES governance structure should be: the plenary, the executive body (or bureau), working groups and task forces, and the secretariat. If these bodies are appropriately constituted and mandated, then a separate Scientific Panel would be unnecessary. IPBES's governance structure will require an adequate and sustainable financial mechanism.

The **plenary of IPBES** should comprise governments (Member countries of the hosting organizations) and representatives from MEAs, UN agencies and civil society. Representatives of MEA secretariats, UN agencies and civil society should be given the right to actively participate in each of the agenda items of the plenary. The plenary should be the highest instance of the decision-making process of IPBES and it should decide on the approval of budgets and workplans, and the establishment of working groups and/or task forces to implement the workplan, among other. In addition, the plenary would review and adopt as appropriate outputs from IPBES assessments, in an analogous manner to the IPCC plenary. The modalities for interventions as well as submission of relevant information and requests by participants should be established at the first meeting of the plenary.

The **executive body (or bureau) of IPBES** should be selected by the plenary, ensuring balanced geographic representation and the relevant multidisciplinary scientific expertise. It is essential that scientific expertise be represented at the executive body/bureau so that decision making is appropriately informed, in an analogous manner to the IPCC structure, and if so formed, the bureau itself could oversee the scientific aspects of IPBES governance, supported by temporary task forces if required. Representatives of MEA secretariats, UN agencies and civil society should also be given the right to actively participate in each of the agenda items of the exective body / bureau.

It is proposed that **permanent working groups** be established with a regionally and disciplinary balanced membership. Four working groups could be envisaged, one for each of the key needs relating to IPBES. Each working group would be tasked with implementing one of the key work programme elements of IPBES, namely: catalyzing knowledge generation, knowledge assessment, knowledge use, and capacity building. Ad-hoc task forces of these working groups or of the bureau or plenary may also be constituted as needs arise for specific activities.

IPBES should be hosted by one or more UN agencies and/or Intergovernmental Organizations, and be supported by a **small distributed secretariat**, providing administrative and technical support to the plenary, bureau and working groups. Depending on the functions and the expertise of relevant organizations, working groups and task force may have additional technical secretariats. There are considerable advantages to establishing distributed technical secretariats, as was the case with the MA, and as is the case with the technical support units of the IPCC. Such a distributed secretariat can bring both a regional presence and also the experiences and expertise of host organizations to bear on specific elements of the IPBES work programme. The development of an objective set of criteria for the selection of institutions to provide overall hosting of IPBES, and for hosting elements of its distributed secretariat is essential to ensure transparency and to ensure that the most appropriate option for an efficient and effective IPBES is put in place.

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