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Plenary meeting to determine modalities and institutional arrangements for an intergovernmental science-policy platform on biodiversity and ecosystem services
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Consideration of the modalities and institutional arrangements for an intergovernmental science-policy platform on biodiversity and ecosystem services: work programme of the platform

Report of a meeting of scientific organizations on the generation of knowledge function of an intergovernmental science-policy platform on biodiversity and ecosystem services, held in Paris on 10 June 2011

Note by the secretariat

The annex to the present note provides recommendations related to the generation of knowledge function of an intergovernmental science-policy platform on biodiversity and ecosystem services made at a meeting of scientific organizations interested in the platform. The meeting, convened by the International Council for Science (DIVERSITAS, International Human Dimensions Programme) and hosted in Paris by the United Nations Educational, Scientific and Cultural Organization, took place on 10 June 2011. The annex has been presented as received and has not been formally edited.

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Annex

Considering the generation of knowledge function of IPBES:

Recommendations from a meeting of scientific organisations interested in IPBES convened by ICSU, and hosted by UNESCO (Paris, France, 10 June 2011)

Content

Executive Summary

This document is a summary of views expressed by scientific experts and representatives of key scientific organizations interested in IPBES at a meeting convened by the International Council for Science, ICSU, and hosted by UNESCO (Paris, France, 10th June 2011). The goals of this meeting were to inform the scientific community on recent developments related to IPBES, and to provide input on future discussions on institutional arrangements and modalities of IPBES, on one hand, and on the programme of work of IPBES, on the other hand, with a particular focus on possible elements for the generation of knowledge function of IPBES.

In terms of institutional arrangements and modalities, participants:

1) identified a number of functions considered as key for science, which should be assigned to the governing structure;
2) supported the establishment of an Executive Committee in order to allow IPBES to address urgent issues between plenary meetings;
3) recommended that the governing structure allows representation of key stakeholders, beyond the science and policy communities.

In terms of the generation of knowledge function, participants,

1) Underlined the fact that, as stated in the Busan outcome, IPBES should not directly undertake new research, but should catalyze the generation of new knowledge. A more correct name for this function might thus be: knowledge generation catalysis function.

And suggested that:

2) an IPBES scoping process could be established in order to identify and prioritize knowledge needs of policy makers;
3) knowledge gaps dialogues could be organized in order to catalyze efforts to generate new knowledge; and

4) a knowledge generation strategy was needed for the scientific community to address needs for new knowledge in a strategic way.

These conclusions are offered as a contribution to future discussions at the two sessions of the IPBES Plenary meeting (3-7 October, and early 2012).

Introduction

Experts representing key organizations interested in the knowledge generation function of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) met in order to prepare the scientific community's contribution to the first session of the IPBES plenary meeting (Annex 2: Letter of invitation). The meeting was convened by the International Council for Science, ICSU (DIVERSITAS/IHDP), and hosted by UNESCO (10th June 2011, Paris, France).

The specific goals of this meeting were: (i) to help further define possible elements for the knowledge generation function of IPBES, and ii) to suggest how the scientific community, via its scientific organisations, might engage with IPBES in relation to this function. The meeting produced a set of recommendations submitted to UNEP for inclusion as an information document for the IPBES October meeting (3-7 October, Nairobi, Kenya).

The meeting started with a briefing on IPBES and progress to date, in order to ensure understanding across all participants (Annex 3: Agenda).

The Busan outcome (UNEP/IPBES/3/3) agreed four functions for IPBES, as part of its programme of work, in relation to:
1) Generation of knowledge,
2) Assessments,
3) Support to policy formulation, and
4) Capacity building.

The meeting focused on the first function (see section 2), generation of knowledge, described in the Busan outcome as follows:

"The new platform should:
i) Identify and prioritize key scientific information needed for policymakers at appropriate scales
ii) Catalyse efforts to generate new knowledge by engaging in dialogues with key scientific organizations, policymakers and funding organizations, but
iii) Should not directly undertake new research".

The UNEP Secretariat released (17 June 2011) a draft document on the governance for IPBES for the discussions at the first Plenary. This meeting also dedicated some time to provide input on this document (see section 1).

1- Institutional arrangements and modalities for the operation of IPBES

The meeting first examined issues related to institutional arrangements, in order to ensure that the scientific community, as a stakeholder in IPBES, plays a full role in defining all aspects of IPBES.

1.1-Key functions

Participants considered that it was very important to first identify all the relevant functions of possible subsidiary bodies relating to science, and to then assign them to various parts of the governance structure.

The following functions of the possible subsidiary bodies were flagged as being of particular importance, and need to be adequately addressed by the structure of IPBES bodies and the processes within them:

-Ensure scientific independence and credibility
-Oversee peer review
-Organise scientific work
-Provide quality control for all the reports that will be produced by IPBES
-Undertake communication on behalf of IPBES, and address possible controversies
-Act as a portal to existing networks
-Perform horizon scanning for possible emerging issues to be identified and / or assessed.

1.2-Involvement of all relevant stakeholders

Participants recommended that since IPBES is a multi-stakeholder platform, effective mechanisms for stakeholder involvement need to be given serious consideration. This might include a representation of other stakeholders in the governing structure. More direct involvement of stakeholders in assessment is also a recommendation of the recent Inter-Academy Council (IAC) review of the IPCC review. Some relevant models are available for stakeholder involvement (ILO, IAASTD).

1.3-Subsidiary bodies

Participants noted that, in order to ensure maximum engagement of the scientific community, the relationships between any new structure or executive body and the scientific community, represented by its organisations, would need to be made explicit.

The recent recommendations made by the IAC review of the IPCC also provide useful guidance for IPBES. Detailed terms of reference for all formal IPBES structures are of crucial importance. These terms of reference should be designed to ensure the broadest possible participation of knowledge holders throughout IPBES in an open fashion.

Specifically, it was considered important to establish an Executive Committee for IPBES, in order to allow IPBES to address urgent issues between plenary meetings and interlink the operations of its multiple work areas.

There was no unanimity in favour of a separate Scientific Advisory Committee (SAC), as described in the UNEP document. Some argued in favour of a separate Scientific Advisory Committee to strengthen and assure co-ownership of the IPBES process by the scientific community, a specific stakeholder status for the scientific community, improved access to subsidiary bodes (e.g. Bureau, Executive Committee) and quality control. Others felt that a separate SAC might not be necessary if the functions listed above are clearly built into other structures. It was argued that it might even be better if scientists are not working separately within a SAC, but are indeed fully engaged in the entire process (e.g. within a Bureau). In place of a SAC, some argued in favour of a separate quality control committee or an evaluation committee, made of eminent scientists and possibly other relevant stakeholders, in charge of quality assessment and relevance.

All noted the need to have an informed debate, looking at advantages and disadvantages of both options, before an agreement is reached.

1.4-Need for flexibility

Participants noted the need to build a system that allows for some flexibility. Not all aspects of IPBES can be designed and implemented successfully at once, and lessons will be learnt as IPBES progresses. An evaluation process was suggested, which would set targets and make recommendations on a regular basis, to adapt IPBES rather than come at the end of a cycle. Such a mechanism is anticipated by the Busan Outcome in its paragraph 8.

2- Generation of knowledge function

2.1-Origin of the generation of knowledge function

The generation of knowledge function originated from the 3rd and 5th findings of the gap analysis which was performed to determine the needs for an IPBES:

Excerpt from UNEP/IPBES/2/3:

"The third and fifth key findings show that, while many institutions contribute valuably to building a common knowledge base in some form, it could be argued that the fundamental challenges of building a common knowledge base covering the full range of biodiversity and ecosystem service issues cannot be adequately met by uncoordinated studies of individual components of isolated traditional disciplines in an ad hoc set of research sites scattered across the globe. Instead, it is argued that gaps in knowledge are to a large extent evidence of the lack of a process providing common and regularly reviewed guidance on a strategic approach to research, designed to ensure that the most important needs in terms of knowledge to support more effective governance at all levels are being identified and responded to in a coordinated manner. There is therefore a need to improve coordination and to facilitate collaboration across and between the various science networks and science-policy interfaces to have a more cohesive and coherent knowledge generation strategy. In addition, there is a need to improve access to the data, information and knowledge that are already available".

The paragraph above and discussions at the 3rd meeting in Busan led to an agreement in favour of a generation of knowledge function for IPBES.

2.2-Brief overview of other relevant initiatives

Participants studied other mechanisms (IPCC, MA, GBO-3, TEEB) in order to draw lessons on how these other mechanisms have ensured that i) scientific information needed for policy makers is identified and prioritized, and ii) the production of relevant new knowledge is catalyzed (See Annex 1).

2.3-Description of the generation of knowledge function

The meeting discussed the Busan Outcome text describing the generation of knowledge function of IPBES.

Participants recommended that the word "knowledge" be used throughout, rather than "scientific information", since knowledge is a more inclusive notion, including scientific knowledge as well as other forms of knowledge such as local, traditional and indigenous knowledge. They also noted the need for all types of knowledge to be critically assessed according to a set of agreed upon rules (e.g. rules on use of grey literature, of published data, etc.).

2.4-Relationship between the four functions

Before discussing the generation of knowledge function in details, participants reflected on how the four proposed functions of the programme of work would interact. They recommended that the four functions of IPBES be developed together, as four strongly interrelated components of the programme of work (see Figures 1 and 2).

The assessment function of IPBES would consist in the production of state of the art policy relevant but not policy prescriptive analyses of the status and trends of biodiversity and ecosystem services and their relationship with human well-being at multiple levels. IPBES might perform global, regional and sub-regional assessments, as well as assessments on thematic issues and emerging new topics. IPBES would not itself undertake national-level assessments. The nature of this assessment work would be to collate, evaluate, and summarize existing knowledge in a useful form. The assessment would be based on primary new knowledge, but it would not itself generate primary new knowledge.

The policy support function, which has yet to be considered in further detail, might be intended to enhance policy relevance in two ways. One might be to ensure that the assessments answer questions of direct interest to policy. The other might be to support policy makers in using the findings of the assessments through the identification and further development of policy tools and methodologies. The latter would be an important step since assessments often fail to deliver scientific information that can be used directly for policy support. The simple delivery of the assessment itself was considered insufficient support for policy.

The generation of knowledge function would ensure, through ways that need to be defined (see next section), that the knowledge needed by IPBES for delivery of policy relevant assessments, is produced in a timely way – outside of, but in close connection to IPBES.

The fourth function would build capacity at many different levels (capacity building function). The Busan Outcome makes clear that capacity building is key to ensuring that

the work programme can be meaningfully delivered. Countries need capacity building in areas of knowledge generation, assessment and policy support, and much of this will feed into and allow better use of global, regional and thematic assessments carried out by IPBES, in addition to supporting national capacity for the stronger use of knowledge in policy making.

2.5-Overall goals of the generation of knowledge function

The primary purpose of the generation of knowledge function of IPBES would be to ensure that gaps in our knowledge of biodiversity, ecosystem services and their role for human well-being are identified and filled. Such gaps might relate to understanding of processes, monitoring of critical indicators of conditions, components of economic or other forms of valuation, understanding of particular aspects of the human dimensions of biodiversity and ecosystem services, exploring the availability of indigenous knowledge, or seeking other kinds of information.

Knowledge generation would involve regular exchanges between scientists and policy makers within IPBES, in order to scope the availability of existing knowledge, and for all to develop an understanding of what new knowledge is required, so that this can be translated into research strategies and funding priorities.

It was noted that the terminology "knowledge generation function" could be potentially misleading as IPBES will not generate new knowledge, but only catalyse the generation of new knowledge. The generation of new knowledge will take place within the scientific community, outside of the IPBES process. A more correct name for this generation of knowledge function could thus be: "knowledge generation catalysis function".

2.5.1 Identify and prioritize key knowledge needs of policymakers

Participants suggested that this sub-function "Identify and prioritize key scientific information needed for policymakers" be implemented as a scoping activity.

This scoping activity should cover the broadest range of available knowledge, from all sources. It could begin by ensuring that requests for information from the various constituencies served by IPBES are solicited and received. The scoping activity would consist in inviting experts to examine these requests, and to identify whether scientific information, or other forms of suitable knowledge, necessary to address them is available, and to prioritise this information. This scoping activity should also identify critical gaps in knowledge.

The scoping activity could produce a first detailed outline of the assessment report(s) that would be submitted to the plenary for further discussion and approval.

Participants noted that the IPCC scoping process should be studied in detail to see if lessons could be drawn on how to conduct an IPBES scoping process.

There was a request to define the term ‘policy makers’, possibly identifying different categories. It was noted that business sectors and local governments, for example, have a strong influence on biodiversity, and might be important participants at these dialogues.

2.5.2 Catalyse efforts to generate new knowledge

Participants suggested that this sub-function "Catalyse efforts to generate new knowledge" be implemented as a series of knowledge gaps dialogues:

To generate the required knowledge for the implementation of the work programme of IPBES, and make it available for the assessment, regular exchanges should take place between scientists –in charge of producing primary new knowledge-, other knowledge holders and policy makers within IPBES, and research funders. The exchanges would aim at the development of an understanding of what new knowledge is required, what gaps exist, and which research strategies and funding priorities as well as strategies to capture other forms of relevant knowledge are needed, in order to address the needs of the IPBES programme of work.

The challenge is thus to build a mechanism that is efficient, legitimate, and enables regular dialogs between scientists, other knowledge holders, policy makers and research funders. The ICSU programmes provide a model as to how some of these dialogs could be performed. It should be noted that the gaps that are discussed in this section refer to gaps related to the needs of the programme of work of IPBES. International initiatives such as ICSU and its programmes (DIVERSITAS and IHDP) would continue to identify gaps in current knowledge in its broadest sense.

These knowledge gaps dialogues could begin early in the assessment cycle, shortly after the outline has been agreed by the Plenary. They could present and discuss the questions adopted by policy makers for the IPBES programme of work in an open forum. The goal of these workshops would be for the scientific community to better understand gaps requiring the production of new knowledge. Importantly, these workshops should go beyond broad definition of gaps, and outline detailed specific needs at relevant scales (e.g. missing data sets, model outputs, interaction with indigenous people, research approaches, etc.). The workshops would build an important bridge between knowledge-holders and policy makers to help the former understand the needs of the latter, and, as a result, to improve the production of relevant new knowledge, and the use of existing knowledge.

Filling some of these gaps is likely to only be achievable over the medium (several years) to long term (decade or more), and knowledge might thus only become available for future assessment cycles. This is one of the reasons why it is essential that IPBES is set up as a long term mechanism, with regular assessments, as opposed to a one-off mechanism.

In summary, the knowledge generation function of IPBES might entail the following actions:

- To identify the synthetic knowledge needed for IPBES assessments;
- To scope the availability of existing knowledge, on a broad front;
- To identify gaps in current knowledge;
- To communicate information on gaps to the wider community (scientific community, research funding agencies, and capacity building community);
- To further define gaps at relevant scales (regional, disciplinary, etc.).

2.6 Implications for the scientific community

An important role for the scientific community, as one provider of input to the IPBES knowledge function, would be to coordinate the production of the research that directly addresses IPBES needs.

Part iii) of the Busan statement stipulates that IPBES should not directly undertake new primary research. Participants acknowledged that platforms like IPBES do not directly undertake new research which is the role of the fully open and independent research community, outside of any assessment mechanisms such as IPBES. The IPCC, for example, "reviews and assesses the most recent scientific, technical and socio-economic information produced worldwide relevant to the understanding of climate change, but does not conduct any research nor does it monitor climate related data or parameters" (IPCC web site). Although part iii) of the Busan statement does not specify this, it can be assumed that IPBES would also not directly monitor biodiversity-related data or parameters either. Instead, it would intensely draw from existing monitoring efforts in its assessments, especially GEO-BON (the GEO Biodiversity Observation Network), and formulate recommendations for additional monitoring.

Participants stressed that the needs for additional scientific efforts to adequately serve the requirements of IPBES are substantial. These efforts by themselves require a major upgrade in research activity and in capacity building, in particular, to considerably develop the input of scientists from developing countries and, also new approaches of scientific endeavour. The scientific community has a major role to play, outside of, but in close partnership with IPBES, to ensure that it addresses gaps identified by IPBES in a coordinated and strategic manner. Much of the output from these research efforts will have to occur through traditional mechanisms, such as the production of peer-reviewed scientific literature and open data bases, without direct affiliation with, or labelling by, IPBES. Improved coordination within the scientific community, as well as open access to all findings and data, will however be key to the success of such a research strategy. The International Council for Science (ICSU), and its portfolio of global environmental change programmes (WCRP, DIVERSITAS, IHDP and IGBP), in particular, offer a model of how to perform some of this scientific coordination to fill gaps, in close partnership with policy processes (see Annex 1).

In other words, the scientific community together with funding agencies and all relevant partners would need to produce a knowledge generation strategy, which would evolve with the needs of IPBES, to define how it plans to respond to the needs of IPBES.

Figure 1 summarises, as a conceptual diagram, how the four functions could complement each other, and, specifically, how the generation of knowledge function could work. Figure 2 further identifies the specific roles of each function in relation to the others.

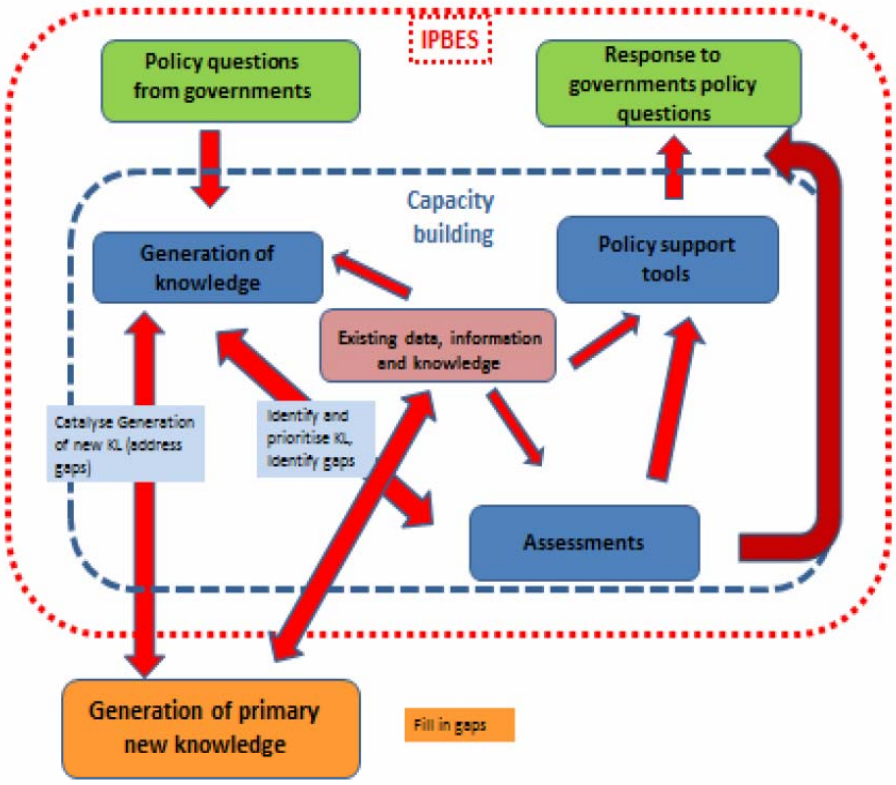

Figure 1: Conceptual diagramme for the four functions of IPBES

-The IPBES process is contained within the dotted red line.

-Existing data, information and knowledge is represented at the centre in pink. This is the knowledge base that will be used for the work of IPBES on assessment, for example. This existing knowledge base is used by IPBES, but not generated by IPBES.

-The 4 functions of IPBES are represented by blue boxes, the capacity building (dotted blue box) being larger, and around the 3 other functions (Generation of knowledge, Policy support and Assessments), to acknowledge the fact that capacity needs to be built for all functions of IPBES.

-The generation of knowledge functions has 2 sub-functions:
Identify and prioritise knowledge, and identify gaps: this would be the scoping activity mentioned in the text, consisting, once questions have been asked by the IPBES constituency, of defining what knowledge exists, prioritising this knowledge for the assessment function, and determining gaps. This is illustrated by the arrow going from the G of KL function to the assessment function.

Catalyse the generation of new knowledge to address gaps: This would consist in regular organised knowledge gaps dialogues between policy makers, the scientific community, other knowledge holders and research funding agencies, so that scientists, other knowledge holders and funding agencies do what is necessary to fill out the gaps. This is illustrated by an arrow going between the generation of knowledge function, and the

orange box, corresponding to the generation of new knowledge, placed outside of IPBES (outside of red dotted circle), to show that the generation of new knowledge works in close partnership with but outside of IPBES itself.

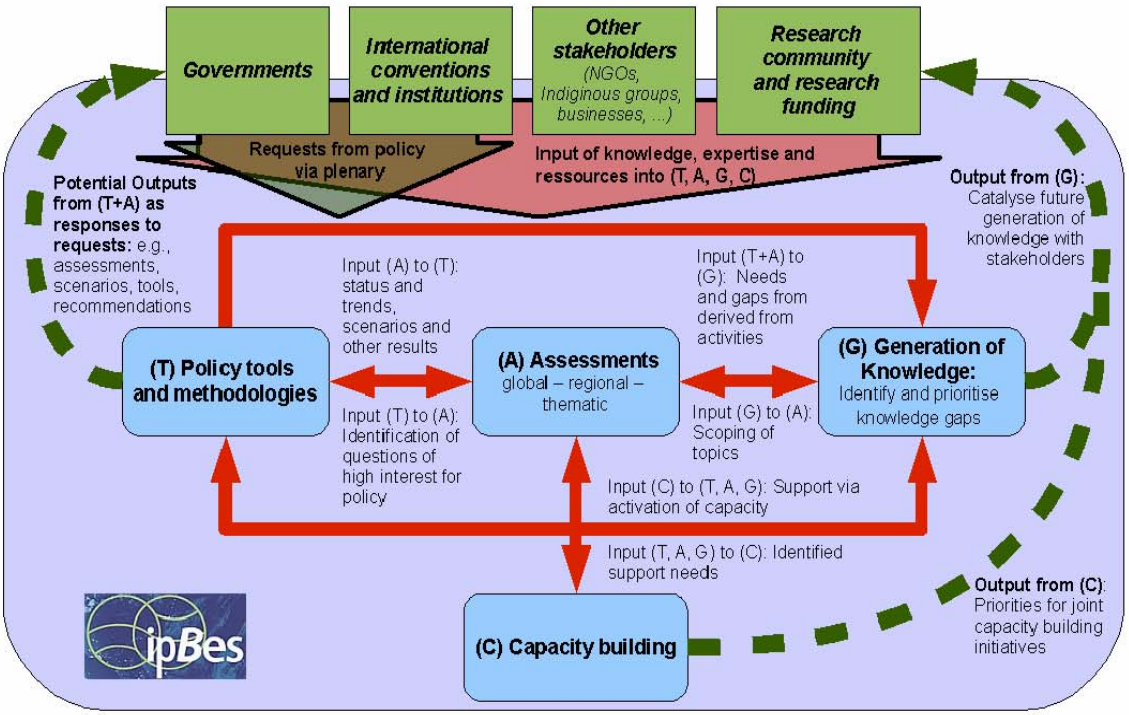

Figure 2: Conceptual diagram 2 showing specific relations between the four functions

This figure, which is fully compatible with Figure 1, shows in a detailed manner, the specific roles envisaged for each one of the four functions (T: Policy tools and methodologies, A: Assessment, G: Generation of knowledge catalysis, and C: capacity building) and how the four functions would contribute to each other.

Annex 1: Learning from other initiatives: IPCC, MA, GBO-3, TEEB

Participants studied other mechanisms in order to draw lessons on how these other mechanisms have ensured that i) scientific information needed for policy makers is identified and prioritized, and ii) the production of relevant new knowledge is catalysed.

1 The Intergovernmental Panel on Climate Change, IPCC

The three Working Groups of the IPCC are rather different in nature, in their disciplinary setting and also with respect to their knowledge generating mechanisms. While fundamentally the rules are the same for all of the IPCC (no science carried out directly for the IPCC, assessment is based on openly available literature), differences prevail. Working Group I (The Physical Science Base) is mostly based on the work of physical and chemical climate scientists, despite of course many openings to other fields, such as the economics of future emission scenarios. Working Group II (Impacts and Vulnerabilities) has a strong basis in the biological and physical sciences of climate impacts, but equally strong abilities in the socio-economic aspects of impacts and adaptation. WGII also relies heavily on more regional information, which sometimes implies publication channels other than peer-reviewed papers in world renowned journals. Working Group III is strongly based on work by economists and political scientists, again using material from different types of publication sources and with different standards of scientific evaluation.

The bulk of the science assessed by WGI is produced in close coordination work with the World Climate Research Programme (WCRP) of WMO and ICSU. WCRP is one of the four global change programmes of the ICSU-sponsored Earth System Science Partnership (ESSP, includes also DIVERSITAS, IHDP and IGBP).

Production of knowledge for IPCC-WGI of IPCC: How does WCRP work with IPCC?
One important project established by the WCRP is the Coupled Model Intercomparison Project (CMIP), which involves the entire international climate modeling community working with coupled atmosphere-ocean general circulation models, to predict future climate change. This community has produced about 20 models which run with various assumptions and hypotheses. CMIP provides a framework that enables this diverse community of scientists to analyze their models in a systematic fashion (common protocols, etc.), a process which serves to facilitate model improvement and intercomparison, and thus to assess uncertainty. For example, phase three of CMIP included "realistic" scenarios for both past and present climate forcing which provided much of the new material underlying the Fourth Assessment Report (AR4) of IPCC. It is expected that some of the scientific questions that arose during preparation of the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (AR4) will through CMIP5 be addressed in time for evaluation in the Fifth Assessment Report (AR5, scheduled for publication in late 2013).

Importantly, there are no formal ties between IPCC and WCRP. There are however several elements which facilitate a strong and regular dialog between the two mechanisms:
1) WCRP is seen as a clear leader and coordinator for physical climate sciences.

2) Both WCRP and IPCC are institutionally placed under the auspices of WMO, which makes them logical partners and favors a strategic partnership between the two institutions.
3) WCRP and IPCC are both physically hosted by WMO at its headquarters in Geneva. This allows for regular informal meetings and discussions to occur between scientists and secretariat members of both mechanisms.
4) There is a strong overlap between the scientists involved in IPCC and those involved in WCRP, which makes it easier for IPCC priorities to be taken up by scientists.

Production of science for other IPCC working groups
Ties between scientific programmes or organisations and IPCC are less well defined for the other Working Groups 2 and 3. IGBP and IHDP, among others, are involved in producing some of the science assessed by Working Group 2 (impact, adaptation and vulnerability) and 3 (mitigation), but ties are more diffuse. This is mostly because the questions posed cover a wider and more complex set of issues and it is conceptually more difficult to form a WCRP-like programme to support this breadth of disciplines. Nevertheless, considerable work under the IGBP has been guided by the needs of IPCC WGII, and this is expected to continue. The PRO-VIA programme of UNEP, WMO, UNESCO and others (Programme of Research on Climate Change Vulnerability, Impacts and Adaptation) has been set up to partly address this gap in scientific coordination within Working Groups 2 and 3.

Additional lessons from IPCC
The IPCC has its own built-in mechanism to engage the scientific community. In addition to the contribution as authors to the assessment report by scientists, IPCC runs a series of Expert Meetings and Workshops to facilitate discussions of topics relevant to the assessment process and to receive early input from the scientific community. Proposals for Expert Meetings and Workshops are approved of by the IPCC Plenary. The nomination process is rather formalized in order to ensure good coverage of experts from all parts of the world. For Workshops governments nominate experts, while for the less formal Expert Meetings, attendees are nominated by the Working Group Co-Chairs.

Hulme and Mahony (2010) and Hulme (2010) recently remarked that the cultural, social, economic and development dimensions of climate change within IPCC have suffered from important disciplinary biases. They attribute the relatively low number of social science citations (e.g., 12% in the Third Assessment Report) to the fact that the social science community is smaller and therefore produces less. More recent reports of the IPCC have included a stronger emphasis on social sciences, especially in relation to impact, adaptation and vulnerability, but the criticism was repeated for the 4th assessment as well (Yearley 2009). It should be noted that natural sciences are very important to WG2 and 3, and have benefited from the coordination efforts of IGBP, in particular.

Similarly, IPCC has also suffered from a geographical bias with respect to the lack of participation from developing country experts, across all working groups. Despite considerable efforts to enhance developing country participation, the proportion of authors from OECD countries remained constant at about 80% throughout the second, third and fourth assessment report (Hulme and Mahony 2010). As a consequence, some argue that IPCC has not gained enough credibility and legitimacy in many regions of the world. In addition, it may be seen as a consequence that knowledge about climate,

impacts and adaptation options within IPCC suffers from important regional gaps in much of the developing world.

In conclusion what can we learn from this example?
-The link between IPCC and the scientific community seems to work well when a programme –or a set of programmes- ensures coordination at the international level, in response to IPCC needs. This is the case for the rather mono-disciplinary setting of WGI, with WCRP.
-Scientific priorities seem to be less well addressed in multi-disciplinary settings and where strong regional needs for information are involved.
This last observation has implications for the capacity building component of IPBES, and also for the way IPBES constructs its generation of knowledge component. Good geographical representation will, in particular, be critical for IPBES. As such IPBES must establish a firm process for ensuring geographical representation.

2 The Millennium Ecosystem Assessment, MA

The MA at the global level was a one-off assessment, so no long term mechanism for a dialog with the scientific community was set up. On the other hand, it provided an important step in the development of IPBES and could actually be compared to the First Assessment Report of the IPCC, which was far less developed than the later Assessments. The following observations can however be made.

The MA attempted to cover the full range of issues revolving around the functioning of ecosystems on the planet, and the valuation of the services they provide, at several scales from regional to the globe. It was therefore clear from the onset that perfect and full coverage of all ecosystems, or even all existing knowledge about them, could not be achieved. In consequence, several reviews, including that of the UK House of Commons environmental audit committee for the MA (2006) have stated that aspects of the MA were based on incomplete evidence, and called for urgent, concerted, research at all levels to fill the knowledge gaps identified. Given the complex interdisciplinary, multi-scale and global nature of the research that is required, the committee further recommended that effective coordination of this research would be needed. The former director of the MA, Walter Reid, and the director of the UN Millennium Project, Jeffrey Sachs, called for "leading scientific institutions to coalesce behind a shared agenda on sustainable development and thereby help to draw governments into the challenges of the 21st century". One new such effort is the Programme on Ecosystem Change and Society (PECS), initiated by ICSU, UNESCO and UNU to fill the gaps in scientific understanding of the MA (Carpenter 2009).

Overall, the MA inspired a number of initiatives at the global level, within the scientific community to address the scientific priorities that emerged from the assessment and the development of the concept of ecosystem services. These include:

The new strategic plan of DIVERSITAS (ICSU/UNESCO)
The new programme PECS (ICSU/UNESCO/UNU)
The Assessment of Drivers and Responses to Change of IHDP (ICSU, UNU)
The ecosystem services component of GEO BON (GEO)
Others.

In conclusion what can we learn from the MA example?

-The MA has had an influence on scientific agendas at many levels (international, national, etc.).
At the global level, there is a good set of relevant scientific organisations and programmes to involve as partners in this IPBES platform on catalyzing the generation of knowledge. Yet it is probably still not sufficiently inclusive in geographical or disciplinary terms.
-There is definitely no single coordination mechanism for the entire portfolio of global ecosystem services, even though there are several global initiatives, including those listed above that federate the community at the international level.
-It would therefore be important to have within IPBES, a platform where some of these key scientific partners meet, in order for the scientific community to be more pro-active and more policy relevant.

3 The Global Biodiversity Outlook, GBO

GBO is the assessment mechanism of the Convention on Biological Diversity. It regularly releases synthetic information on current trends related to biodiversity for policy makers and was used as a basis to assess whether the 2010 biodiversity target had been reached (http://www.cbd.int/gbo3review/). It should be noted that its 3rd report, the GBO-3, included for the first time, a section on "Biodiversity scenarios: projections of 21st century change in biodiversity and associated ecosystem services" (CBD TS 50; Pereira, Leadley et al. 2010), highlighting potential tipping points for biodiversity and ecosystem services. Producing these types of scenarios is an example of one of the key gaps that would need be addressed for IPBES by the scientific community to provide IPBES with informations on options for the future of biodiversity and ecosystem services.

What can we learn from this example?

This report on biodiversity scenarios was produced thanks to a partnership between the CBD secretariat and DIVERSITAS and UNEP-WCMC which convened over the course of several years a working group of about 40 leading scientists to assess and synthesize relevant information on biodiversity scenarios. Partnerships of this nature would have to be forged, outside of IPBES, as part of the generation of knowledge strategy to address IPBES gaps.

4 The Economics of Ecosystems and Biodiversity, TEEB

The initiative to perform a global study on the economic costs of biodiversity loss and the economic benefits from maintaining ecosystem services via the TEEB study was originally triggered by a decision of the G8 Environmental Ministers in 2007, and then taken up by a number of countries to fund this study (EU, Germany, U.K., Norway and others) via a UNEP based process.
The aim was, not only to analyze the existing scientific knowledge in the field, but also to deliver concrete options and best practices for acting accordingly on different levels of decision making. For this, different reports -for national & international policy, for local policy and for businesses- were developed and published, accompanied by a report on ecological and economic foundations for this work. Major findings from the study were discussed at international meetings and taken up by policy processes, e.g. within the decisions of the CBD and the new European Biodiversity Strategy. The new phase of TEEB work now focuses on facilitating the implementation of its findings on different levels.

What can we learn from this example?

TEEB finished its report phase in late 2010, and an evaluation of the process is ongoing. At the moment it can be stated that for TEEB, it was important to combine scientific knowledge with practical knowledge (e.g., on best practices and case studies) for many areas, and that this has led to a new form of knowledge generation. Also, many areas of the economics of ecosystem services still have major research gaps, which need further analysis in the follow-up process. This will include basic research needs on economic models and methods, but also research needs for implementation of economic instruments. To identify these needs, the integration of policy makers and practitioners into the TEEB processes was of major importance.

Annex 2: Letter of invitation

5 May 2011

Invitation to participate in an informal meeting of scientific organisations interested in the Intergovernmental science-policy Platform on Biodiversity and Ecosystem Services (IPBES), at UNESCO Headquarters, Paris, France, 10 June 2011

Dear Colleague,

The International Council for Science, ICSU, would like to invite you to participate in an informal meeting to prepare the contribution of the scientific community to the first session of the IPBES plenary meeting. This informal meeting will take place at UNESCO (Main building: 7 Place de Fontenoy, Paris, 7th arrondissement/ district, France), on Friday 10th June (9:00am-17:30). The scientific community, and, in particular, DIVERSITAS, the international programme of biodiversity science, and IHDP, the International Human Dimensions Programme for global change research, has been contributing to the IPBES consultation process, and it is very important to continue and develop this input as IPBES prepares itself for its first plenary session.

Background

Following the "Busan Outcome" from June 2010, and the decisions taken by the UNESCO Executive Board (October 2010), the UN General Assembly (December 2010) and the UNEP Governing Council (February 2011), UNEP is currently cooperating with UNESCO, FAO, UNDP and other relevant organisations to organise a plenary meeting to fully operationalise IPBES. Two sessions of the plenary are provisionally scheduled.

At the first session, it is expected that government representatives and other stakeholders, including the scientific community, will consider the draft principles and procedures governing the work of IPBES, its governance structure, the processes for nomination and election of officers and the nomination and selection of host institution(s) and host country for the platform. The second session will be in a position to determine these modalities and institutional arrangements and consider the detailed draft work programme of the Platform.

The first session of the plenary is provisionally scheduled from 3-7 October 2011 and its second session will be held in early 2012. Please see http://ipbes.net/ for more information.

UNESCO has kindly offered to host this meeting as part of its active role in the Plenary Planning Group of IPBES and, more specifically, its facilitation of IPBES's function related to catalyzing knowledge generation in support of the Platform.

Objectives of the informal meeting

This informal meeting will convene experts representing key scientific organisations interested in IPBES. The goals of this meeting are: 1) to share information among ourselves about items on the agenda at the IPBES October meeting; 2) to discuss key issues, with a view to prepare a set of common positions of the scientific community to be presented at IPBES; and 3) to explore, in more details, the programme of work of IPBES as it relates to "options for knowledge generation". The overall objective of this workshop is to strengthen scientific input into IPBES. The meeting will produce a set of recommendations which will be submitted in the form of information document of the IPBES October meeting.

Logistics

This is an informal meeting, and it is expected that each organisation will fund their representative participating in the meeting. We are attaching a list of hotels in the vicinity of UNESCO, should you need a hotel room in Paris. We would appreciate **confirmation of your participation** by email to Melinda (secretariat@diversitas-international.org) **by Friday 20 May**. For questions related to the meeting, you may contact Anne Larigauderie (anne@diversitas-international.org) or Anantha Duraiappah (duraiappah@ihdp.unu.edu). Additional documents will be sent as we get closer to the meeting.

We believe that this meeting of scientific organisations will make a valuable contribution to the discussions that will take place later this year. We hope that you will be able to participate.

Yours sincerely,

Anne Larigauderie
ICSU representative to IPBES
Executive Director DIVERSITAS

Attachments:

-Draft agenda
-List of participants

Annex 3: Agenda

9:30-17:00	
9:00-09:30	Coffee, registration
Chair: A Larigauderie	
	1-Opening session
09:30-10:45	Welcome, opening remarks UNESCO, ICSU (10)
	Round table of self-introductions (15)
	Background presentation on IPBES (15) J Harrison
	Goals of this meeting (15) A Larigauderie/A Duraiappah
	Questions
10:45-11:00	Break
11:00-13:00	2-Governance and rules of procedure
	Institutional arrangements and modalities of operating IPBES (60) S Arico
	3-Programme of work
	-Capacity Building (20) J Harrison -Assessment (30) A Duraiappah
13:00-14:00	Lunch (at UNESCO)
Chair: A Duraiappah	
14:00-16:00	Programme of work (continued) -Generation of knowledge A Larigauderie
16:00-17:00	4-Closing Summary of key recommendations Next steps End of meeting

Annex 4: List of participants

ALLEN David
United States Global Change Research Program (USGCRP) and International Group of Funding Agencies for global change research (IGFA)
USA

ARICO Salvatore
UNESCO
France

BILLE Raphael
Institut du Développement Durable et des Relations Internationales (IDDRI)
France

BEARD Douglas
United States Geological Survey (USGS)
USA

BENNUN Leon
BirdLife International
UK

BROOKS Anathea
UNESCO
France

COLLETTE Linda
FAO
Italy

CRAMER Wolfgang
Potsdam Institut für Klimate (PIK)
Germany

DIETERICH Martin
Society for Conservation Biology (SCB)
Germany

DURAIAPPAH Anantha
International Human Dimension Programme for global change research, IHDP
Germany

EL GHAZEL MOUAWAD Nissrine
UNESCO
France

FUENTES Rodrigo
ASEAN Center for biodiversity
Philippines

GAIJI Samy
Global Biodiversity Information Facility (GBIF)
Denmark

GAUTHIER Claude-Anne
Fondation pour la Recherche sur la Biodiversité (FRB)
France

GOLDFARB Leah
International Council for Science (ICSU)
France

HARRISON Jerry
UNEP-World Conservation and Monitoring Center (UNEP-WCMC)
UK

HAUESER Christoph
Consortium of European Taxonomic facilities (CETAF)
Germany

HEJNOWICZ Adam
University of York
UK

HODGKIN Toby
Bioversity International
Italy

HOFFSCHIR Didier

Ministère de l'Enseignement Supérieur et de la Recherche (MESR)
France

van den HOVE Sybille
Median SCP
Spain

JALLON Jean-Marc
International Union of Biological Sciences (IUBS)
France

JANSEN Michael
Ministère de l'Enseignement Supérieur et de la Recherche (MESR)
France

JOLY Carlos
Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP)
Brazil

KALKO Elisabeth
University of Ulm
DIVERSITAS Germany
Germany

KALONJI Gretchen
UNESCO
France

LARIGAUDERIE Anne
ICSU & DIVERSITAS
France

LE PRESTRE Philippe
Laval University
Canada

MAINKA Susan
International Union for the Conservation of Nature (IUCN)
Switzerland

MATTHEWS Andrew
Asia Pacific Network for global change research (APN)
New Zealand

Mc NEELY Jeff
Society for Conservation Biology (SCB)
Switzerland

NESSHÖVER Carsten
Biodiversity Knowledge (KNEU)
European Platform for Biodiversity Research Strategy (EPBRS)
Germany

PRIEUR-RICHARD Anne-Hélène
DIVERSITAS
France

THORNS David
International Social Science Council (ISSC)
New Zealand

MOONEY HA
Stanford University
USA

The following experts or organizations provided comments at various stages in this process, but were unable to attend the meeting:

BUCK Alexander
International Union of Forest Research Organizations (IUFRO)
Austria

HUNTLEY Brian
GEF Scientific and Technical Advisory Panel (GEF STAP)
UNEP
Kenya

LEADLEY Paul
Université Paris-Sud Orsay
France

LOREAU Michel
Mc Gill University
Canada

LOVEJOY Thomas
Heinz Foundation, USA, and
GEF Scientific and Technical Advisory Panel (GEF-STAP)
UNEP
Kenya

MACE Georgina
Imperial College London
UK

MURENZI Romain
The Academy of Sciences for the Developing World (TWAS)
Italy

OTENG-YEBOAH Alfred
Council for Scientific and Industrial Research (CSIR)
Ghana

PERRINGS Charles
Arizona State University
USA

ROSSWALL Thomas
Climate Change, Agriculture and Food Security (CCAFS)
France, Sweden

SCHOLES Bob
Council for Scientific and Industrial Research (CSIR)
S-Africa

THIESSEN Holm
Inter-American Institute for global change research (IAI)
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