

# The Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES): progress and next steps

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**Abstract** Biodiversity and the services ecosystems provide have built the foundation of human civilization and provide for the welfare of people. With the increase of the human population it has become clearer than ever that the human exploitation of our natural resources leads to detrimental interactions between ecological and sociological systems. Only concerted and global actions will be able to reverse ongoing biodiversity loss. In response to these needs, the United Nations agreed the establishment of the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) in 2010. Here, we report on the progress IPBES has made since its inception, and suggest how the scientific community can engage with this important science-policy interface.

**Keywords** Convention on biological diversity · Science-policy · Assessments · IPBES

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## Introduction

Biodiversity and the services ecosystems provide have built the foundation of human civilization and provide for the welfare of people. All technological advances people have made will not suffice to guarantee future human well-being without supporting biodiversity, including healthy ecosystems, which provide the raw material for everything people use and consume. With an increasing human population it has become increasingly evident that the human exploitation of our natural resources leads to detrimental interactions between the ecological and sociological system (Florens et al. 2012; Folke 2006; Young et al. 2005). The unsustainable use of natural resources, the expansion of people into habitats with low intensity of human activity, and the extensive changes human actions are causing to our climate all have led to what has been termed the Sixth Mass Extinction (Barnosky et al. 2011; Leakey and Lewin 1995). Only concerted and global actions will be able to reverse this ongoing biodiversity loss.

Fittingly, in the International Year of Biodiversity, and in response to these needs and pressures, and after five years of protracted meetings and negotiations, on 20 December 2010 the sixty-fifth session of the UN General Assembly adopted Resolution 65/162 ([http://www.un.org/en/ga/search/view\\_doc.asp?symbol=A/RES/65/162](http://www.un.org/en/ga/search/view_doc.asp?symbol=A/RES/65/162)). That resolution requested the United Nations Environment Programme (UNEP) to fully operationalize an Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) and convene a plenary meeting to determine the modalities and institutional arrangements for it at the earliest opportunity. That opportunity was 3–7 October 2011, at UNEP headquarters in Nairobi, where IPBES was formally established, and its secretariat in Bonn agreed. Thus, although somewhat confusing, IPBES is “of the UN rather than part of it”, although UNEP oversees the Trust Fund and manages the Secretariat on behalf of the current 124 Platform members. While IPBES is described as a Science-Policy interface, a particular feature is bringing Indigenous and Local Knowledge (ILK) into all IPBES activities, making the term Knowledge-Policy interface a better one (Díaz et al. 2015).

IPBES has the following functions (<http://www.ipbes.net/work-programme>), to: (1) support policy by establishing a continuous dialogue between decision makers, science and a wide range of knowledge holders; (2) understand the impact human actions have on biodiversity and ecosystem services by conducting extensive assessments on pressing conservation issues; (3) generate new knowledge on the interactions between human society and biodiversity by assembling existing data, analyzing this data in policy relevant angles; and (4) build capacities to fill knowledge gaps (Larigauderie and Mooney 2010).

Currently, IPBES is working through its 1st work programme with the objectives to:

- (a) enhance the enabling environment for the knowledge-policy interface for biodiversity and ecosystem services;
- (b) strengthen the knowledge-policy interface on biodiversity and ecosystem services on regional and sub-regional levels;
- (c) strengthen the knowledge-policy interface with regards to thematic and methodological issues;
- (d) strengthen the knowledge-policy interface on the global dimensions of changes in biodiversity and ecosystem services; and
- (e) communicate and evaluate IPBES activities, deliverables and findings.

On 22–28 February 2016, the 4th plenary of IPBES (IPBES-4) was held in Kuala Lumpur, Malaysia. One agenda item relevant for the scientific community was Item 5—the

work programme of the Platform. This included work towards the approval of the thematic assessment on pollinators, pollination and food production (deliverable 3a); the approval of the technical report on scenarios and models of biodiversity and ecosystem services: methodological assessment and proposal on the further development of tools and methodologies (deliverable 3c); to consider the scoping report for a global assessment on biodiversity and ecosystem services, to consider the revised scoping report for a methodological assessment on diverse conceptualization of multiple values of nature and its benefits, the scoping report for a thematic assessment on invasive alien species (IAS; deliverable 3b), and the scoping report for a thematic assessment on sustainable use of biodiversity and work on policy support tools and methodologies.

Three of these assessments are particularly relevant for the readership of *Biodiversity and Conservation*: deliverables 3a, 3b, and 3c. The work on the thematic assessment on pollinators, pollination, and food production (deliverable 3a; <http://www.ipbes.net/work-programme/pollination>) was presented to the Plenary session of the Kuala Lumpur meeting on 25 February 2016, and the Summary for Policy Makers (SPM; <http://www.ipbes.net/work-programme/pollination>) was approved by the Platform Members. This thematic assessment has been a considerable accomplishment, made possible only due to the in-kind contribution of experts and their organizations. The assessment highlights substantial knowledge gaps in different regions on the status and trend of pollinators and pollination, which assure 75 % of food production worldwide. A global assessment of insect pollinators was not possible due to lack of data, but regional and national assessments indicated that more than 40 % of insect pollinators are threatened locally. That might vary between countries and regions, with important declines in some (North-western Europe and North America), but some increases in other countries. The assessment concluded that the decline is primarily due to land use changes, intensification of agricultural practices and pesticide use, arrival of alien invasive species and pathogens, as well as climate change.

The assessment makes several recommendations to protect pollinators and the service they provide, and presents the following specific options:

- (a) maintaining, creating and connecting a greater diversity of pollinator habitats in agricultural and urban landscapes;
- (b) supporting traditional practices that manage habitat patchiness, crop rotation, and coproduction between science and indigenous local knowledge;
- (c) education and exchange of knowledge among farmers, scientists, industry, communities, and the general public;
- (d) decreasing exposure of pollinators to pesticides by reducing their usage, seeking alternative forms of pest control, and adopting a range of specific application practices, including technologies to reduce pesticide drift; and
- (e) improving managed bee husbandry for pathogen control, coupled with better regulation of trade and use of commercial pollinators.

In relation to indigenous local knowledge (ILK), there was extensive debate on the use of the term “biocultural diversity,” which appears undefined in the conceptual framework (Díaz et al. 2015). This term should have been innocuous but while several platform members were supportive of the phraseology, others were equally adamant it was not appropriate. Eventual resolution was achieved by using the accepted terminology “biological diversity, cultural diversity and links between them”, as adopted in the Special Issue on “Landscape and biocultural diversity” in *Biodiversity and Conservation* last December (Agnoletti and Rotherham 2015). Interestingly, this proved more difficult to resolve than some of the contentious issues many had thought would cause the SPM to

crash. It was a lesson that in a knowledge-policy interface there is a need to make sure knowledge and policy meet well across the interface.

IPBES is also aiming for a thematic assessment on invasive alien species (deliverable 3b), the scope of which was approved during final Plenary. The objective of this thematic assessment is to assess the array of alien invasive species that affect biodiversity and ecosystem services. The assessment aims to determine the threats IAS pose to biodiversity and ecosystem services. The assessment aims also to establish major pathways of IAS spread, including elucidating the role trade and other movements of people and vehicles play in that regard. These more scientific elements of the assessment will be complemented by documenting the global status of and trends in the impacts of such species and associated management interventions by region and subregion, the level of awareness of the extent of invasive alien species and their impacts. Recommendations will be made based on the analysis of the effectiveness of current international, national and subnational control measures and associated policy options that could be employed to prevent, eradicate and control invasive alien species. As with other assessments, the role ILK plays in understanding and managing IAS will be included.

In the final Plenary at IPBES-4, it was also decided to conduct a global assessment on biodiversity and ecosystem services (deliverable 3c). It will build on the four regional and sub-regional assessments already underway, but will focus on global issues, i.e. transregional and indirect global driver, including economic, demographic, governance, technological, and cultural drivers. The assessment aims to demonstrate how the integration of nature and ecosystems into development can advance human well-being. It will also offer a new global view of biodiversity and ecosystem services 10 years after the finalization of the Millennium Ecosystem Assessment (Millennium Ecosystem Assessment 2005) and 20 years after UNEP's Global Biodiversity Assessment (GBA; Heywood and Watson 1995).

The scientific community, especially the community contributing to *Biodiversity and Conservation*, can and must play a crucial role in the work of IPBES. The scientific community has been primarily included in the IPBES process through roles as coordinating lead, lead, and contributing authors, but also calls for reviews of chapters of reports from within the scientific community. To open up the possibility of contribution from the largest community of knowledge holders to scoping and assessment documents, IPBES has organized e-conferences in scoping its work programme and these are open to everyone after a registration with the IPBES secretariat.

While IPBES-4 can be seen as a success, there does remain an elephant in the room—the budget. At current funding levels the available funds will dry up substantially by 2018. Thinking about how the budget can be better managed and supplemented will be a major challenge for the newly elected Bureau, chaired by Robert Watson from the UK (Chair of the 1995 Global Biodiversity Assessment). Given the current budget constraints of IPBES and the vastness of the tasks at hand, we here call for active contributions to this important process, to allow for comprehensive scientific coverage and to support already engaged colleagues to reduce their workload. Further, the 124 governments who are Platform Members need to assure sufficient funding for the effective functioning of the platform. In-kind contributions from stakeholder organizations through the time investment of their experts is substantial and, in effect, the backbone of IPBES. Governments must assure facilitation of expert interactions and communication between all actors in IPBES to fulfil their responsibilities. To make IPBES a continuing success is in the interest of everyone, as biodiversity loss and ecosystem service degradation will reduce future options for humanity, perhaps even leading to conflicts. Investing in the process must be seen as an

investment in the future, as only the IPBES assessments are sufficiently comprehensive to robustly bridge the knowledge-policy interface, allowing decisions (many of which will have an increasing urgency) to be made on regional and global scales.

We urge our readers and authors to consult the IPBES webpage (<http://www.ipbes.net/>) and consider how you can contribute to this global initiative.

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