

Put major government policy options through a science test first, biodiversity experts urge

February 17 2011

Scientific advice on the consequences of specific policy options confronting government decision makers is key to managing global biodiversity change.

That's the view of leading scientists anxiously anticipating the first meeting of a new Intergovernmental Panel on Climate Change (IPCC)-like mechanism for [biodiversity](#) at which its workings and work program will be defined.

Writing in the journal *Science*, the scientists say the new mechanism, called the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES), should adopt a modified working approach from that of previous, large scientific assessments, which forecast environmental change based on a range of imagined futures.

IPBES should stress assessments of actual policy options proposed by decision makers, they say, providing authoritative, independent, peer-reviewed scientific advice on the implications of alternative [policy decisions](#).

"Hypothetical scenarios bear no relationship to the real options confronting policy makers now," argues co-author Charles Perrings, Professor of [Environmental Economics](#) at Arizona State University.

"Discussions between decision makers and scientists should start with the question 'what do governments want and what options do they have?' Knowing the likely consequences of alternative policy options is critical to choosing the best strategy."

Profs. Perrings of ASU and Hal Mooney of Stanford University co-wrote the paper with Anne Larigauderie, Executive Director of Paris-based DIVERSITAS, and Anantha Duraiappah, Executive Director of the International Human Dimensions Program on [Global Environmental Change](#), based at the United Nations University's offices in Bonn.

"A critical lesson from the Global Biodiversity Assessment, the Millennium Ecosystem Assessment and the IPCC is that assessments should evaluate consequences of real policy options," they write. "This requires closer integration of the different elements of the science-policy process – research, monitoring, assessment and policy development."

"People generally have yet to appreciate the importance of biodiversity and ecosystem services, and how much is at stake in biodiversity loss," adds Prof. Perrings.

"It may not be obvious but biodiversity underpins where people live, what they do, what crops they can grow, how safe they are, and what viruses and bacteria they're exposed to."

"Decisions taken today that change the biosphere will have profound implications for humanity's welfare. They must be well informed by science. It's important, therefore, to establish IPBES the right way, right from the beginning."

World governments agreed last June in Busan, South Korea, to create IPBES with the goal of creating a united international scientific voice on biodiversity and ecosystem services and providing policy makers at all

levels with the information they need to make decisions about the sustainable use of resources.

At its Governing Council annual meetings in Kenya Feb. 21-24, the UN Environment Programme is expected to receive a formal mandate to organize the first plenary of IPBES later this year.

In their article, the scientists also urge that IPBES assessments pay "at least as much attention" to social sciences as to natural sciences – estimating, for example, the value of ecosystem services in economic terms to help societies make better-informed development choices.

Economists recently estimated, for instance, that an average hectare of coral reef provides services to humans valued at US \$130,000, and in some places as much as \$1.2 million, per year.

Worldwide, coral reef 'services' – including food, raw materials, ornamental resources, climate regulation, moderation of extreme weather events, waste purification, biological control, recreation and tourism, and maintenance of genetic diversity – were given an estimated annual value of \$172 billion.

Also useful to policy-makers: estimated returns on environmental investments. Planting mangroves along a coastline in Vietnam, for example, cost \$1.1 million but saved \$ 7.3 million annually in dyke maintenance.

In their article, the scientists note that the IPBES governing "plenary" will set the scale, focus and terms of reference of most biodiversity assessments, oversee their technical quality, and evaluate policy implications.

Composition of the plenary membership is therefore critical.

Core members will be representatives of nations and officials of multilateral agreements related to biodiversity and ecosystem services, foremost among them the UN Convention on Biological Diversity.

"However, (the CBD) is only one amongst many relevant multilateral agreements," they write. "IPBES should support conservation conventions as well as the many agreements dealing with [ecosystem services](#) (e.g. the UN Fish Stocks Agreement) or the drivers of change (e.g. the General Agreement on Tariffs and Trade)."

A "balance of disciplinary expertise" spanning the natural and social sciences needs to be reflected in both the membership and leadership of the IPBES plenary, in the choice of working group co- chairs and participants (the scientists invited to carry out assessments), and in the secretariat (the 'permanent' IPBES staff scientists supporting assessments).

Provided by Diversitas

Citation: Put major government policy options through a science test first, biodiversity experts urge (2011, February 17) retrieved 24 April 2024 from <https://phys.org/news/2011-02-major-policy-options-science-biodiversity.html>

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