

Biodiversity and human well-being in Latin America and the Caribbean: identifying priorities for research, management and policy

A multiple stakeholder consultation

Rio de Janeiro, Brazil, 28th to 30th April 2009

Executive Report

The Workshop “Biodiversity and human well-being in Latin America and the Caribbean: identifying priorities for research, management and policy” was held in Rio de Janeiro, Brazil, from the 28th to 30th April 2009, as a joint initiative of DIVERSITAS, DiverSus and the ICSU Regional Office for Latin America and the Caribbean, with the collaboration of the Inter-American Institute for Global Change Research (IAI) and the Botanical Garden of Rio de Janeiro.

The workshop had as its main objectives: 1) the identification and prioritization of research activities, management, and necessary policies to face the challenges around biodiversity and human well being in Latin America and the Caribbean; and 2) the formulation of recommendations on the role of science, management and public policies towards the implementation of specific actions related to the *Millennium Ecosystem Assessment (MA)*.

Sandra Díaz of the National University of Cordoba, Argentina, and director of DiverSus, was responsible for the scientific coordination of the event, supported by the local scientific coordination of Fabio Scarano from the Research Institute of the Botanical Garden of Rio de Janeiro.

The general coordination of the workshop was shared by Alice Abreu from ICSU-LAC and Anne Larigauderie from DIVERSITAS. The Scientific Committee for the event included Mary Kalin Arroyo, from the Institute of Ecology and Biodiversity, University of Chile; Rodolfo Dirzo from Stanford University, USA; Carlos Joly from UNICAMP, BIOTA FAPESP, Brazil; Holm Tiessen from IAI; Patricia Ocampo-Thomason from the ICSU Secretariat in Paris; and Fabien Quétier from DiverSus, Argentina.

The initiative gathered 32 key protagonists who dealt with biodiversity and human well-being in

The MA's approach: connecting biodiversity and human well-being through ecosystem services

The MA highlights the effects of biodiversity in the capacity of ecosystems to generate human well-being. In addition to its intrinsic value, independent of any human concern, the MA explored the various roles of biodiversity in the provision of ecosystem services. These roles were summarized as (a) supporting and regulatory roles, through the influence of biodiversity on the production, stability, and resilience of ecosystems; (b) cultural roles, that is, benefits people derive from the aesthetic, spiritual, and recreational elements of biodiversity; and (c) provisioning roles, including the supply of food, fresh water, fiber, and building materials.

Because biodiversity is not only a response variable, but also a factor that influences ecosystem processes, biodiversity loss could negatively impact key ecosystem services such as the regulation of water cycle, soil fertility and climate, as well as key provisioning services such as the production of food, fiber and medicines. Similarly, biodiversity loss could also affect a large number of cultural ecosystem services, all the way from the sense of place of traditional societies to ecotourism - an important source of income for several countries in the region.

The MA's findings thus strengthen the reasons for preserving biodiversity and managing it in a sustainable way.



government and civil society, international organizations and graduate students

The workshop was preceded by a broad-based electronic consultation carried out by DiverSus, where more than 500 specialists were consulted. This on-line consultation contributed to the definition of the priority themes, which were presented in a Concept Document produced by DiverSus and distributed before the Workshop to all participants. These themes were then used to structure discussions during the workshop.

The Key Note conference was given by Carlos Nobre from INPE, “*Tipping points of Biosphere-atmosphere Interaction in Amazonia*”. Two other presentations, by Nicolás Lucas, Secretary of Sustainable Development and Environment of Tierra del Fuego, Argentina, entitled “*Challenges for Governments to Implement the Recommendations of the Millennium Ecosystem Assessment*”, and by Holm Tiessen, Director of IAI, who presented considerations on the relevance of biodiversity, provided additional context.

The participants were then organized in break-out groups, to discuss key topics that emerged from the electronic survey:

1. Balancing the production of food and fuel for export and the long-term preservation of biodiversity-based ecosystem services;
2. The importance of wild biodiversity for poverty reduction;
3. Ecosystem services in and around protected areas;
4. Synergies between ecosystem service provision and global carbon strategies;
5. The role of biocultural diversity and agro-biodiversity in long-term food security.

On the third day, the participants were once again divided in groups, this time to discuss four cross-cutting issues:

1. Developing interdisciplinary research on biodiversity and ecosystem services;
2. Communicating with the general public;
3. Making relevant ecological knowledge rapidly available to decision makers;
4. Building long-term partnerships with stakeholders.

Major Outcomes

The project carried out the first wide-based, multi-stakeholder, multi-country consultation on the links between biodiversity and well-being in Latin America and the Caribbean. The on-line consultation gave high visibility to the involvement of ICSU-LAC, DIVERSITAS, DiverSus and the IAI in issues surrounding biodiversity, ecosystem services and human well-being in the region. The workshop triggered informal collaborations among scientists, administrators and social leaders that had not been in touch before, and upon which follow-up discussions and projects can build.

Two major outcomes of the activities can be summarized as:

- The establishment of an **initial network of multiple stakeholders across LAC**, interested in biodiversity, ecosystem services and human well-being in LAC, upon which future activities could be built.
- A set of **priorities identified for research and action in the LAC region**, having emerged from the on-line consultation, and having been discussed at the workshop. They are summarized below.

The on-line consultation

A semi-guided questionnaire was sent, in electronic format, in Spanish, Portuguese and English, to 529 experts and stakeholders from the academic, governmental, non-governmental and private sectors living in, or linked to the Latin American and Caribbean region.

Two hundred and six responses were obtained, from 16 countries (response rate was 39%). Most respondents categorized themselves as academics (53%) involved in biodiversity-related science (37%) but a substantial proportion were from government and NGO sectors (26 and 15% respectively).

Respondents identified over 300 different ecosystem services (most of them being regulating services according to the Millennium Ecosystem Assessment's classification). Over 80% of respondents were in fact familiar with the Millennium Assessment and recognised that biodiversity provides a series of key ecosystem services to human societies.

Nearly all respondents agreed that biodiversity is under threat in the region, with land-use change being the most important threat (89% of respondents). Respondents stated that biodiversity was not adequately protected in the region, mainly because of a lack of reliable scientific information (39%) and a lack of legislation and regulation (35%). Most respondents felt that too few resources were assigned to biodiversity and ecosystem services in comparison to other important issues affecting the region and that the capacity of the region's ecosystems to provide ecosystem services in the long-term is an urgent priority, together with making access to ecosystem services more equitable.

Respondents were asked to rank a selection of topics. The analysis of the results indicates that key topics to be addressed are:

- Balancing large-scale agriculture for food and fiber production with the sustainable provision of ecosystem services by natural ecosystems.
- Developing institutional frameworks for managing ecosystem services for multiple social actors.
- Managing biodiversity as a source of affordable ecosystem services for the rural poor.

Respondents also listed as important that biodiversity and ecosystem services be made an explicit priority in research funding and that scientific knowledge on biodiversity be better incorporated into nature conservation policies in the region.

The Workshop

At the three day workshop, and on the basis of the discussion topics listed above, the following priorities for research and action were identified:

Land-use planning and ecosystem management that balance large scale food and fuel production with other ecosystem services.

Workshop participants identified specific actions to be taken, such as (1) assisting in the implementation and monitoring of land-use and environmental planning, in particular in areas or regions of accelerated agricultural expansion and in urban and peri-urban areas; (2) assisting in the development of transparent public platforms for debating and negotiating the balance between ecosystem service provision and other land-uses (such as urbanization or agriculture)

and the balance between alternative production methods (e.g. high input or low input farming). In both cases, close collaboration with relevant government agencies and representative of affected parties and sectors was considered of key importance.

The role of biodiversity and ecosystem services in the diversity of livelihoods in Latin America and the Caribbean.

Workshop participants argued that guidelines and technical innovations should be developed for creating productive yet diverse rural landscapes with patches of varying management intensity that allow traditional land-use practices to sustain themselves and help maintaining biocultural and wild diversity that otherwise would be lost. They also mentioned the need for adapted monitoring schemes and experimental and modelling studies for assessing human impacts on ecosystem service provision in such landscapes.

The role of biodiversity in a context of increased spatial and temporal proximity between diseases and vectors as a consequence of land-use and land-cover changes.

Workshop participants mentioned the links between deforestation and leishmaniasis, and between no-till farming and Chagas disease and rodent-transmitted zoonoses as particularly urgent issues. They also mentioned the need for studies aimed at identifying possible new sources of disease and vectors in the Amazon basin, associated with the expansion of the agricultural frontier. They also identified some trade-offs between diversity protection and the expansion of vector-borne diseases that pose considerable challenges to health and conservation public policies.

The role of biodiversity and its derived ecosystem services in adapting to climate change.

In addition to studies of climate change impacts on biodiversity, workshop participants suggested that the possible role of the region's biodiversity in providing avenues for adapting to climate change be investigated.

Most propositions acknowledged the importance of the following key points:

- Ecosystem services provided by **landscapes and regions** should be taken into account as well as those provided by specific ecosystems.
- In analyzing the relationships between human well-being and biodiversity, **inequalities in access** (both physical and by law) must be taken into account.
- **Fair and transparent means** of participation, negotiation, monitoring and control are necessary for any initiative to be successful in the long term. They must also be significant and motivating for stakeholders.
- **All the relevant actors and stakeholders must be involved** in the formulation of the agenda and the actual implementation of initiatives for managing biodiversity and ecosystem services in the region.
- Initiatives must take advantage of, and build on **existing capital**, be it social or natural capital, knowledge or data-bases.
- Institutional **learning and memory**, as well as **creativity and innovation**, are essential to adaptive management at all levels.
- Science funding should combine **international objectives** with **regional and local ones**.

Results and next steps

- 1) This final executive report is being distributed to all participants, and is expected to advance towards an implementation plan for MA findings concerning the links between biodiversity and ecosystem services in the LAC region.
- 2) A short policy brief targeted at the policy community with main recommendations, will be produced on the basis of the conclusions of the workshop, and widely distributed.
- 3) A manuscript for publication, containing the main findings of the workshop, will be submitted in 2010.

The documents of the workshop can be found at the following site: <http://www.icsu-lac.org/diversitas/diversitas.html>

Rio de Janeiro, December 15th, 2009

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