



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

### *A multistakeholder consultation*

A workshop was held in Rio de Janeiro, Brazil, from the 28th to 30th April 2009, as a joint initiative of DIVERSITAS, Núcleo DiverSus and the ICSU Regional Office for Latin America and the Caribbean, and with the collaboration of the Inter-American Institute for Global Change Research (IAI) and the Botanical Garden of Rio de Janeiro. The initiative gathered 32 key protagonists who dealt with biodiversity and human well-being in Latin America and the Caribbean, including renowned scientists, representatives from government and civil society, international organizations and graduate students. The executive summary can be downloaded from [www.icsulac.org/diversitas/diversitas.html](http://www.icsulac.org/diversitas/diversitas.html) or from [www.nucleodiversus.org](http://www.nucleodiversus.org).

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

ICSU  
International Council for Science  
Regional Office for  
Latin America and the Caribbean

DIVERSITAS  
an international programme  
of biodiversity science

DiverSus

IAI  
INTER-AMERICAN INSTITUTE  
FOR GLOBAL CHANGE  
RESEARCH

On-line consultation on biodiversity and human  
well-being in Latin America and the Caribbean

**2. CORE QUESTIONS - Respondant information**

Your name, gender and organization are optional but ICSU, Diversitas and DiverSus guarantee the anonymous treatment of the data you provide through this survey.

**1. Name (optional):**  
[text input]

**2. Position (optional):**  
[text input]

**3. Organization (optional):**  
[text input]

**\* 4. Country:**  
[dropdown menu]

**\* 5. Sector:**

Academic  Industry  Consulting  
 Government  NGO  
 Other (please specify)  
[text input]

**\* 6. What are the links of your organization with biodiversity (that is, the variety of animals, plants and other organisms)? You can select more than one answer.**

Management of biological resources (forestry, agriculture...)  
 Research on biodiversity  
 Conservation/preservation of biodiversity  
 Teaching about biodiversity  
 I don't know  
 Non-extractive uses of biodiversity (e.g. ecotourism)  
 No connection with biodiversity

**Figure 1:** Snapshot of the first page of the Spanish version of the on-line survey.

## Responses

### *Reply rate and sample*

The survey was created on the monkeysurvey.com platform, in three different languages, and sent to 529 people (who also received a text version they could fill-in and send back by email or standard mail). The questionnaire is available on [www.icsulac.org/diversitas/diversitas.html](http://www.icsulac.org/diversitas/diversitas.html) or upon request (see contact details below). Two hundred and six replies were received (142 in Spanish, 49 in Portuguese and 15 in English), giving an honourable response rate of 39%.

Fifty three percent of respondents were academics, 26% from government and 21% from civil society (15% from NGOs). The institutions they worked for were mainly involved in research on biodiversity (68%) but a sizeable proportion are also involved in conservation (52%) and teaching (47%). The non-extractive use of biodiversity was a concern for 15% of the respondents' institutions.

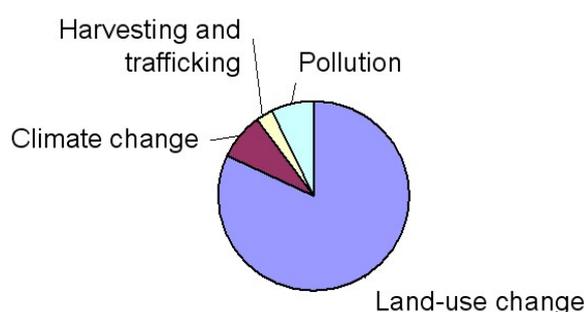
Respondents were asked which ecosystem services they worked with and of the 303 ecosystem services mentioned, over half (53%) were regulation services (mostly water). Thirty one percent were provisioning services (non-timber forest products in particular) while 12% were cultural services (mainly ecotourism).

### *Familiarity with the Millennium Ecosystem Assessment and the ecosystem service approach*

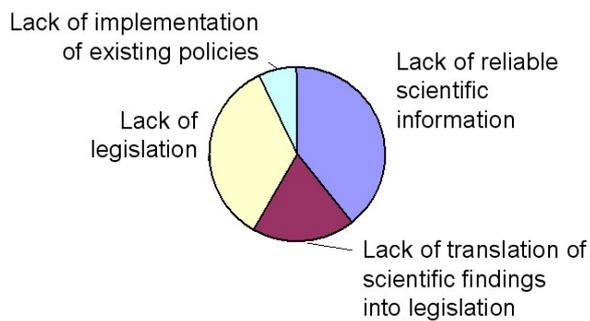
Most respondents were familiar with the MA's aims, philosophy and findings (60% were either very familiar or in general familiar). 26% were partly familiar with the MA while 14% were not familiar at all with the assessment. The majority (82%) thought that biodiversity should be protected for its own sake and because it is important to human well-being. The remaining respondents were split more or less evenly (8% & 10%) between protecting biodiversity for its own sake or because of its importance to human well-being.

### *Threats to biodiversity, ecosystem services and human well-being*

Nearly 100% of respondents considered that biodiversity was under threat in Latin America and the Caribbean. Land-use change was selected as the most important threat by 89% of respondents while climate change, harvesting and pollution were ranked second by an approximately equal share of respondents (29%; 33% and 36% respectively). Pollution was ranked third by 41% of respondents while climate change and harvesting were ranked fourth in 38 and 35% of responses respectively.



**Figure 2:** Land-use change was considered the main threat to biodiversity in Latin America and the Caribbean.



**Figure 3:** Why is biodiversity not adequately protected in Latin America and the Caribbean?

Nearly all respondents (99%) consider that biodiversity is not adequately protected in the region. Nearly 40% of them state the lack of reliable scientific information about biodiversity as the main reason for this. A third (35%) state the lack of appropriate rules and legislation concerning biodiversity management or rules and legislations that negatively affect biodiversity. The lack of practical implementation and enforcement of such rules and legislation was stated as the main reason by less than 10% of respondents.

### **Key issues to be addressed in the region**

Nearly 90% of respondents consider that too few resources are allotted to biodiversity and ecosystem services in the region, when compared to other issues. More than 80% of respondents also considered that preserving the long term capacity of ecosystems to provide ecosystem services is more urgent than making access to natural resources more equitable.

In terms of key issues, respondents ranked “balancing agricultural production with safeguarding ecosystem service provision” and “developing institutional frameworks” as the most important in 34 and 33% of the cases respectively. Managing ecosystem services for the rural poor and balancing agricultural production with safeguarding ecosystem service provision were ranked second in 22 and 24% of the responses respectively (with the former being ranked third in 23% of the responses).

Making biodiversity and ecosystem services a priority for science funding in the region was ranked as the most important issue in nearly 40% of responses. Making data and knowledge on biodiversity and ecosystem services more relevant to nature conservation policies was ranked first and second in a third and a quarter of responses respectively. Trans-border management of ecosystem services was ranked last in 42% of responses.

Respondents were asked to suggest projects and approaches that should be favoured or implemented in the region. Most of the propositions focused on developing modalities and guidelines for the sustainable management of “natural” ecosystems in the region, in the aim of sustaining ecosystem service provision for local communities and the region. Developing alternative and low-impact technologies for food and fiber production was also widely mentioned (this includes new crop and animal genotypes). Another large set of propositions focused on improving the evaluation of global change (land-use, climate...) impacts on biodiversity and ecosystem services. Developing appropriate institutional frameworks for improving the management of ecosystem services was often mentioned as necessary. It includes strengthening community participation in ecosystem and resource management as well as developing innovative market-based instruments to incentive ecosystem service management.

## Conclusions

### *Selected Key topics*

The consultation was the first of its kind in Latin America and the Caribbean and it offers useful insight into the broad spectrum of sensibilities that experts and stakeholders in the region have to biodiversity and human well-being. Among the priorities selected by respondents, several were chosen for further discussion in the face-to-face workshop held in Rio de Janeiro in April 2009. These are summarized below.

*Balancing the production of food and fuel for export and the long-term preservation of biodiversity-based ecosystem services.* Latin America and the Caribbean contains around half of the planet's remaining tropical forests but also suffers from some of the highest deforestation and land conversion rates in the world. Striking a balance between agricultural expansion and sustained ecosystem service provision is one of the most pressing issues in the region. Identifying winners and losers in the face of agricultural expansion and homogenization (including food and fuel crops, large-scale plantations, and associated invasions) is essential to the design of compensation schemes. The full environmental and social costs and benefits, for all relevant stakeholders need to be considered.

*The importance of wild biodiversity for poverty reduction.* Some of the least privileged sectors of society, such as subsistence farmers, indigenous peoples and the rural poor, live in close contact with ecosystems. Acknowledging the essential contribution of biodiversity-based ecosystem services to their livelihoods and well-being is a crucial step in dealing with rural poverty.



*Ecosystem services and protected areas.* Protected areas play an important role in the provision of ecosystem services both within and beyond their borders, to both rural and urban populations. Governmental and non-governmental conservation organizations should maximize the usefulness of existing protected areas and work with scientists and other stakeholders to define criteria to adapt protected area networks to climate change.

*Synergies between ecosystem service provision and global carbon strategies.* Latin America and the Caribbean holds a third of the carbon sequestered in terrestrial ecosystems and produces a substantial share of the world's energy crops but also accounts for a significant portion of global carbon emissions, basically through deforestation. Considering the region's strategic position in terms of biodiversity and carbon/energy issues, specific recommendations are needed to neutralize perverse incentives, solve potential conflicts and identify win-win solutions.

*The role of biocultural diversity in agro-biodiversity in long-term food security.* Latin America and the Caribbean have remarkably high biocultural diversity, including the centers of origin and domestication of many crops of worldwide importance. Subsistence farmers represent an important proportion of the region's population and for several centuries the variety of crops and cultivars they use have contributed to improving their food security in the face of climatic extremes. However, their importance and potential for the future tends to be underestimated, and they risk rapid disappearance in the face of present market trends and associated biotic homogenization. Appropriate agro-biodiversity management, both within and across farming systems is essential for the long-term sustainability of food production in the region and beyond.

### *Selected cross-cutting issues*

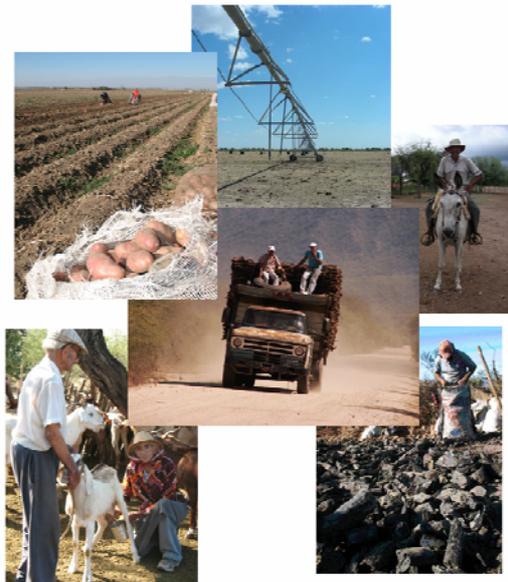
In addition to the topics above, the workshop offered the opportunity to discuss several cross-cutting issues. The on-line consultation inspired several such issues, a selection of which is summarized below.

*Developing interdisciplinary research on biodiversity and ecosystem services.* The challenges ahead are often multidimensional and sometimes involve more than one country. What is the best way to develop international and interdisciplinary research networks that can adequately produce new knowledge or synthesize existing knowledge? How can international collaboration be strengthened? How to enhance the role of interdisciplinary research in the region's science agendas and post-graduate education programs?

*Communicating with the general public.* Strategies for managing biodiversity that are socially and environmentally fair, now and in the future, require the informed participation of the civil society. Effective strategies and tools are needed for communicating knowledge and developing awareness about the importance of biodiversity and ecosystem services for human well-being at various levels of society. How, for example, can primary and secondary school students and teachers be reached? How can the general public be engaged?

*Making relevant ecological knowledge rapidly available to decision makers.* Specific strategies and tools need to be identified to improve the flow of information between the production of knowledge and its application to management and policy. How can the products of scientific research be made rapidly available to decision makers, so they can respond to a rapidly-changing economic, environmental and political context? How can we make sure that scientific research addresses the most pressing questions faced by practitioners and policy makers? How do emerging issues detected by the scientific community attract early attention from decision makers?

*Building long-term partnerships with stakeholders.* Many management and policy actions based on sound science and stakeholder consensus end up in failure as a result of poor implementation, regulation or control. The development of new institutions and collaborative frameworks, or the adaptation of the existing ones is essential for the adequate management of biodiversity, ecosystems and ecosystem services. How can existing structures and procedures be made more participatory, transparent, and efficient? Where are new institutional frameworks and mechanisms needed?



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The electronic consultation was designed and carried-out by  
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