

Millennium Ecosystem Assessment Steering Committee

Edward Ayensu, Ghana
Mark Collins, World Conservation Monitoring Centre, U.K.
Angela Cropper, Trinidad and Tobago
Andrew Dearing, WBCSD
Michael Zammit Cutajar (invited), Framework Convention on Climate Change
Louise Fresco, FAO
Madhav Gadgil, Indian Institute of Science, Bangalore, India
Habiba Gitay, Australian National University, Australia
Gisbert Glaser, UNESCO
Zuzana Guziova, Ministry of the Environment, Slovak Republic
Calestous Juma, Harvard
John Krebs, National Environment Research Council, U.K.
Jonathan Lash, World Resources Institute, USA
Roberto Lenton, UNDP
Jane Lubchenco, Oregon State University, USA
Jeffrey McNeely, World Conservation Union (IUCN), Switzerland
Harold Mooney, International Council of Scientific Unions
Ndegwa Ndiangui, Convention to Combat Desertification
Prabhu L. Pingali, CIMMYT
Per Pinstrup-Andersen, CGIAR
Mario Ramos, Global Environment Facility
Peter Raven, Missouri Botanical Garden, USA
Walter Reid, Secretariat
Cristian Samper, Instituto Alexander Von Humboldt, Colombia
José Sarukhán, CONABIO, Mexico
Peter Schei, Directorate for Nature Management, Norway
Klaus Töpfer, United Nations Environment Programme
José Galizia Tundisi, International Institute of Ecology, Brazil
Robert Watson, World Bank
Xu Guanhua, Ministry of Science and Technology, People's Republic of China
A.H. Zakri, Universiti Kebangsaan Malaysia, Malaysia

Groundswell

The Newsletter of the Millennium Assessment of Global Ecosystems

MA Steering Committee Announces, "It's a go!"

"Today, the challenge of meeting the human needs for ecosystem goods and services is so great that trade-offs have become the rule. A nation can increase food supply by converting a forest to agriculture, but in so doing decreases the supply of goods that may be of equal or greater importance such as clean water...In order to make sound ecosystem management decisions in the next century a dramatic increase, or "step change," is needed in the information that can be brought to bear on resource management decisions...[This] steering committee thus recommends the establishment of a global ecosystem assessment..." - *excerpt from the Resolution of the Millennium Ecosystem Assessment Steering Committee, October 1999*

In 1998, an international steering committee was established to explore the merits of undertaking an integrated science assessment of the state of the world's ecosystems. The committee agreed to a six-month workplan of activities and consultations with a wide range of stakeholders to explore the utility of such an assessment at global, regional, national, and local levels.

According to steering committee member Peter Raven of the Missouri Botanical Garden, these consultations confirmed that, in order to be effective, the MA must be: (1) demand driven—with the choice of issues guided by the decision makers that will use its findings; (2) inclusive—involving the very best natural and social scientists from all relevant sectors and organizations and representing all geographic regions; (3) peer reviewed and independent of political and economic influence on its findings; and (4) relevant to a wide range of public- and private-sector stakeholders.

Following this exploratory period, the committee reconvened in

September 1999, and unanimously agreed to call for the establishment of the *Millennium Ecosystem Assessment*. Thus, the activities necessary to initiate the Assessment are now well underway, with an expected launch date of September 2000! For more background on the MA concept, please visit our website: www.ma-secretariat.org

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Workshop Sheds Light on Malaysia's Ecosystem Priorities

According to participants at a recent MA workshop in Kuala Lumpur, "Malaysia's [ecosystem assessment] needs will be fulfilled using MA as a complementary process to national policies, programs and actions." Workshop attendees representing Malaysian NGOs, government ministries, scientific research institutions, and the private sector gathered over two days in September to debate the merits of an integrated global ecosystems assessment for Malaysia, refine an initial list of Malaysia's ecosystem information needs and indicators of ecosystem productivity, and to provide guidance to the MA steering committee on how such an assessment could best meet the needs of individual countries. The workshop was organized by the *Univesiti Kebangsaan Malaysia, the Academy of Sciences Malaysia, and the Malaysian Ministry of Science, Technology and the Environment.*

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Workshop host and MA steering committee member **A.H. Zakri**, Deputy Vice Chancellor at the *Univesiti Kebangsaan Malaysia* summarized, "there was a great deal of support for the idea of an integrated ecosystem assessment, especially with regard to assessing trans-boundary issues." Professor Zakri added that participants were especially interested in building in-country capacity for such ecosystem assessments.

Workshop participants also concluded that several on-going Malaysian activities and experts could contribute significantly to the MA process. The activities include the Environmental Assessment System activities, the Ecosystem Health of Langat Basin project, the Integrated Coastal Zone Management Project, and the Mekong Delta research project.

Professor Zakri concluded that, "Ultimately, the MA must be a bottom-up process, and this workshop was a crucial step towards implementing such a country-relevant, demand-driven project."

Workshop Catalyzes "People's Ecosystem Register" Projects

In West Bengal, India, some communities are already benefiting from local environment assessment efforts, according to **Kailash Malhotra**, of the *Indian Statistical Institute*. Dr. Malhotra says that a study was carried out in the region to examine whether a joint management regime by local communities and the Forest Department would lead to

Scientists and Environment Ministers Express MA Support

According to delegates to an informal meeting of environment ministers held in Elmina, Ghana in September, "The concept of a global ecosystem assessment...should be supported as a means of helping decision makers in assessing the impact of their various actions on national as well as on global ecosystems." At the suggestion of ISC member Edward Ayensu, representatives of environment ministries from Kenya, Nigeria, South Africa, Ghana, Mozambique, Norway, the Czech Republic, the U.K., Japan, Germany, Togo, Finland, Zimbabwe, the Netherlands, Sweden, Canada, and Denmark were briefed on the MA by Dan Tunstall, of the *World Resources Institute*. The Chairman's Conclusions included strong support for the MA as did the Final Report.

Also in September, delegates from over 95 countries involved in the *Convention on Biological Diversity* were briefed on the MA during the Norway/UN Conference on the Ecosystem Approach for Sustainable Use of Biological Diversity in Trondheim, Norway. MA steering committee member Peter Schei, of the *Norway Directorate for Nature Management*, concluded, "The Millennium Ecosystem Assessment builds on the integrated ecosystem approach to include the full range of ecosystem goods and services. Many participants in the Trondheim meeting were enthusiastic about the idea, and eager to see on-the-ground results."

Improvement in local ecosystems and livelihoods. Assessment coordinators worked with community members to develop locally relevant indicators measuring ecological, social, and economic change. These efforts clearly demonstrated that areas with joint management regimes experienced better outcomes. In fact, according to Dr. Malhotra, the assessment results were used

NEW on the MA Website!

Updates to <http://www.ma-secretariat.org> are on the way! Please visit in December to find the new MA Concept Paper and a link to the MA *Science* article, "International Ecosystem Assessment"

By these communities to renegotiate the memorandum of understanding governing resource use between the forest department and local communities, thereby giving the communities more control over resource management decisions that affected their livelihoods.

At both the local and the global level, changes in the provision of goods and services from ecosystems have enormous consequences for human well being. Sound ecosystem management requires actions fine-tuned to local environment and social conditions. At the same time, local conditions may be influenced by factors that are regional or global phenomenon, such as upstream erosion or nutrient discharge or global climate change. Therefore, the challenge for designing an effective means of assessing the condition and future prospects for ecosystems is to combine decentralized, participative approaches for local assessments with more centralized expertise-based approaches at a hierarchy of scales.

Recognizing that a successful international assessment must address this hierarchy of scales, MA steering committee member **Madhav Gadgil**, of the *Indian Institute of Science*, organized a two-day September 1999 workshop in Winnipeg, Canada, to

explore the differences among integrated ecosystem assessments undertaken at varying scales, and to discuss the best options for creating linkages among them.

According to workshop participants, assessments at the local level often employ "a more holistic approach" than do larger-scale assessments because resource users, managers, and planners are often the same individuals. In fact, it is often at the national, sub-continental, and global scales where integration of data across sectors is more difficult due to a highly specialized breakdown of institutional responsibilities (e.g. separate agricultural, environment, energy, and water ministries) and because resource planners, managers, and users often are represented by different groups in society.

After examining how best to link ecosystem assessments at different scales, workshop participants generally agreed that simultaneous assessments at various scales would provide a more thorough understanding of ecosystems and better capture their diversity and complexities. They also recommended that the MA encourage assessments of flows (energy, species, etc.) and interconnections between ecosystems and promote further research on how to better link data at micro and macro scales.

Workshop participants were particularly enthusiastic about developing a methodology and initiating on-the-ground testing of such local assessments. They agreed that India's experience with "People's *Biodiversity* Registers"

provided an excellent model to develop more comprehensive "People's *Ecosystem* Registers." Thus, it was decided that a number of catalytic local assessments would be launched for this purpose. The first will soon be underway in the state of **Karnataka, India**. The feasibility of pilots in **São Paulo State, Brazil; Turkey; Southern Africa; Canada; and Sweden** is also being explored. Please look for an update in the next edition of *Groundswell*.

Indigenous Peoples/Traditional Knowledge and the MA

Aboriginal peoples often have a wealth of information about their local communities. According to **Sara Goulet**, a member of the *Aboriginal Caucus of the Convention on Biological Diversity*, "These people understand their land and the environment where they live, they see the changes and recognize solutions to problems which scientists have not even identified yet."

In the MA context, such knowledge will be extremely important in providing local data on invasive species, species populations, and trends; identifying local indicators of ecosystem change; and ground-truthing remote sensing data. Local assessments also need to make effective use of qualitative measures and traditional knowledge; and to synergistically link such knowledge with scientific inquiry.

Through exchanges like the Winnipeg workshop (see article on page 2), the MA steering committee is grappling with the development of models for local assessments, and linking assessment data across scales. According to MA steering committee member **Madhav Gadgil**, "The potential role of indigenous peoples in this process is tremendous, and the steering committee seeks to join forces with this community in designing an effective assessment at all levels."

State of U.S. Ecosystems Prototype Released

Efforts to establish baseline data on ecosystems goods and services are underway in several countries. Such efforts are extremely valuable in providing a snapshot of ecosystem dimensions, uses, and condition. One such project, undertaken by the *H. John Heinz III Center for Science, Economics and the Environment*, will focus on ecosystems in the United States. In October 1999, the Heinz Center released a prototype of The State of the Nation's Ecosystems. This report is a preliminary product, designed to showcase the design and content for a periodic series of reports. According to Robin O'Malley of the Heinz Center, "We view the release of the Prototype as an opportunity for potential users of the Report to comment on the utility of the design - we are seeking constructive feedback." O'Malley adds that a website for the Report will be launched during the first week of November, and can be accessed at: <http://www.us-ecosystems.org/> Interested individuals may also contact the Heinz Center directly (202/737-6307) to obtain copies of the Prototype.

Predicting Ecosystem Change: Is it Possible?

A unique aspect of the MA is its focus on predicting the future capacity of ecosystems to provide the goods and services vital for human well-being and ecosystem health. In twenty years, will the stressed coral reefs of Southeast Asia still support the fish populations on which the livelihoods of millions depend? Given the pace of timber concessions and land use change in West Africa, will the forests of today be able to produce necessary timber products and carbon sequestration services a decade from now?

According to MA steering committee member **Jane Lubchenco**, of *Oregon State University*, "Precise predictions about the future are unrealistic, but it *is* possible for social and natural scientists to forecast the *likely* consequences of alternative courses of actions: in other words, to develop likely scenarios." There has been a long history of work with scenarios or predictive modeling in relation to crop production. Similarly, climate scientists have developed sophisticated models for examining potential scenarios of climate change in coming years.

According to MA Science Director **Walt Reid**, " a central objective of the MA will be to assess the 'state of the science' regarding scenario development for describing the potential impacts of changes in such factors as land cover, land use, nitrogen flows, biodiversity, and atmospheric carbon concentration on the various goods and services that ecosystems produce. At the global/regional scale, the Assessment will analyze the state of the science pertaining to scenario development for particular issues and, where data are available, present a set of scenarios describing the potential biological and economic consequences of alternative courses of action. To meet national needs, the MA will provide a set of methodological approaches and modeling tools that can be adapted for use at a national or sub-national level. For example, the Assessment could provide models for examining the consequences of land use change on the timing, quality, and quantity of river flows within a watershed.

Reid stresses that the work on scenarios will undoubtedly focus on: a) those ecosystem changes likely to be of most significance in terms of the production of goods and services, and b) policy-relevant interlinkages among various environmental issues. Each of these topics must be addressed through a multi-disciplinary approach, involving people with expertise on the biological features of the systems, the social and economic factors influencing the system, and technological opportunities related to the issues involved. In addition, key stakeholder groups must be engaged early in the scenario-building process to ensure that an examination of the ecosystem goods and services most crucial to them is built into the exercise.

The MA is not alone in its ecosystem scenario-building efforts. Groups like the Ecological Society of America and the International Panel on Ecosystem Change are also examining ecosystem forecasting issues. These efforts are likely to form the core of the MA activities. Look for progress reports on this issue in future editions of *Groundswell*.

Calendar of Upcoming MA Consultations & Briefings

- November 15-26, Recife, Brazil**
Convention to Combat Desertification
- November 22-27, Dakar, Senegal**
3rd World Academy of Sciences
- November 24, Copenhagen, Denmark**
European Union Management Board
- November 29-December 3, Beijing**
COP5 of the Montreal Protocol
- November 29-December 4, Marrakech**
World Heritage Convention

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