



Consultative Group on International Agricultural Research (CGIAR)

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**Mid-Term Meeting 2001
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Charting the CGIAR'S Future – Change Design and Management

Millennium Ecosystem Assessment Project

This item is for Information Discussion Decision

Proposed Action: None

CGIAR MID TERM MEETING 2001

AGENDA ITEM 4f: MILLENNIUM ECOSYSTEM ASSESSMENT PROJECT

Purpose

To provide the CGIAR with an update of the Millennium Assessment Project and the outstanding contribution the CGIAR can make to it through its knowledge base on all the major ecosystems of the world, especially the developing world.

Background

'The Millennium Ecosystem Assessment (MA) seeks to improve the management of the world's natural and managed ecosystems by helping to meet the needs of decision-makers (in governments and the private sector) and the public for peer-reviewed, policy-relevant scientific information on the condition of ecosystems, consequences of ecosystem change, and options for response. The MA will provide information and also build human and institutional capacity to provide information. A diverse group of experts from the natural and social sciences, governmental agencies, non-governmental organizations, and the private sector will undertake the assessment over a four year period, beginning in April 2001.' (Millennium Ecosystem Assessment)

The MA was conceived following a feasibility project entitled 'Preliminary Assessment of Global Ecosystems' (PAGE). The PAGE assembled core data and demonstrated that integrated assessments were useful, as well as publishing preliminary assessments for grasslands, coasts, forests, freshwater and agroecosystems. These preliminary assessments are available on the Millennium Ecosystem Assessment website, <http://www.millenniumassessment.org>. The CGIAR had been represented during the 18 month preliminary and preparatory stages of the initiative by Dr Per Pinstrup Andersen (IFPRI) and Dr Prabhu Pingali (CIMMYT) on the Steering Committee, and Dr Jeff Sayer (CIFOR), Dr Martin Pinero (IFPRI Board Chair) and Dr Meryl Williams (ICLARM) on the Advisory Committee. IFPRI scientists, especially Dr Stanley Woods, played a prominent role in the assessments.

The full MA will be officially launched on International Environment Day on 6 June 2001.

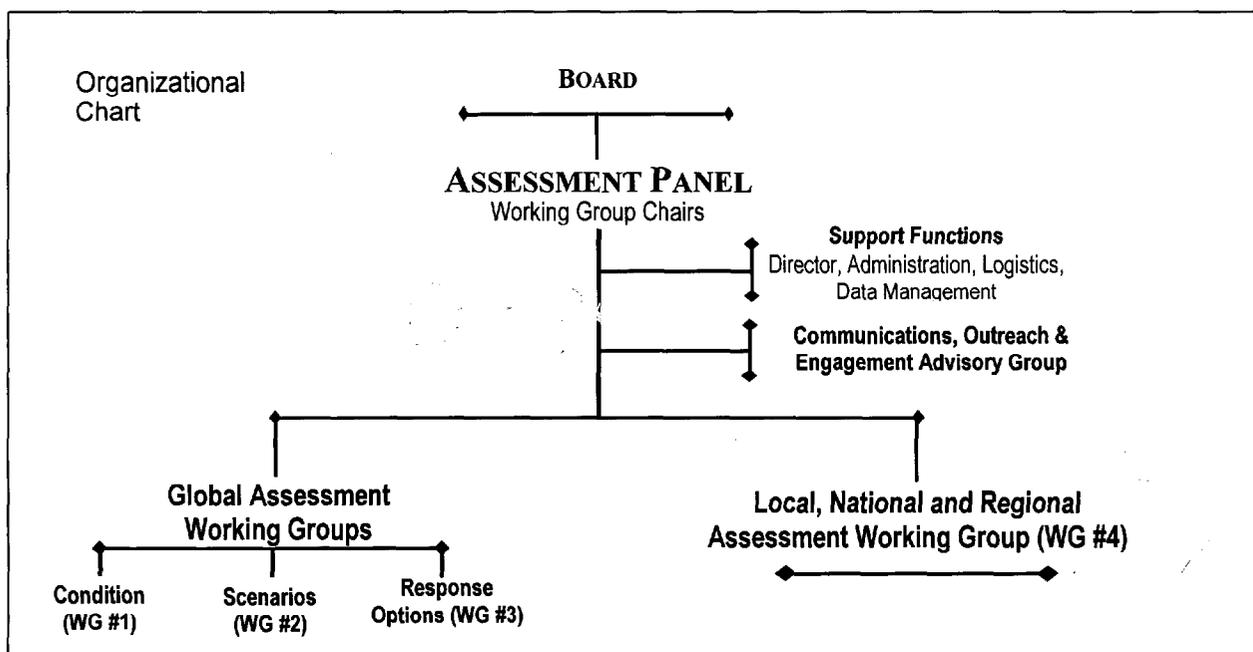
Institutional Arrangements

The MA is officially managed through the United Nations Environment Programme (UNEP) and overseen by a Board that is co-chaired by Professor A.H. Zakri and Dr Robert Watson. The CGIAR is officially represented at the Board level. The Board consists of representatives of organizations, (see Attachment 1), including the CGIAR (Dr Meryl Williams, ICLARM), members at large and the co-chairs of the Assessment

Panel, the technical body of the MA. Dr Prabhu Pingali (CIMMYT) is the co-chair of the Scenarios Working Group of the Assessment Panel.

The global secretariat of the MA will be located at the ICLARM headquarters in Penang, Malaysia from September 2001 onwards.

The structure of governance is given below.



The MA seeks to: (1) meet the needs of “users” (principally the UN Convention on Biodiversity, the Convention to Combat Desertification and the Ramsar Convention, as well as those of national governments, local communities, etc.) for peer reviewed, policy relevant scientific information on ecosystems, the goods and services they provide, and options for meeting policy goals; and (2) build capacity at all scales to undertake integrated ecosystem assessments and to act on their findings.

Assessments

The integrated assessments will be conducted at the global, regional, sub-regional and local levels. The assessment will focus on the production goods and services (e.g. food, fiber, carbon sequestration, water filtration) by ecosystems and how these are impacted by and impact on human survival and development. The assessment will focus on the state of ecosystems at the turn of the millennium.

The CGIAR will contribute to the MA through a collective voice. Centers will use their existing coordinating mechanisms, especially the Integrated Natural Resource Management (INRM) group and the Consortium on Spatial Information (CSI).

The Centers will be able to make an outstanding contribution to the MA as they collectively hold large knowledge banks on the aquatic resource, water, forests and agroecosystems of the world, especially the developing world. These valuable holdings are under-recognized in the CGIAR. The Centers recognize themselves that a knowledge bank is to natural resource management and ecological assessment what a gene bank is to crop improvement. The Centers have invested millions of dollars and decades of time to build up gene banks so that they have now become a priceless asset of the CGIAR system. Our efforts to build up comprehensive and coherent databases for ecological studies and NRM have not been of the same order. The MA is an opportunity to unlock the important holdings that Centers do have. Extra resources will be needed to bring this about and to link this with the assessment models developed in the Centers and in other research institutions.

The MA assessments are now in the design phase (see report of the first technical design workshop following). Regular reports will be provided to the CGIAR as the MA develops. Many agencies in CGIAR member countries will also be involved in the project and the Centers would welcome exchanges of information.

For further information, please refer to the Millennium Ecosystem Assessment website, <http://www.millenniumassessment.org>

FIRST TECHNICAL DESIGN WORKSHOP OF THE MILLENNIUM ECOSYSTEM ASSESSMENT

April 8-11, 2001, Bilthoven, The Netherlands

Summary

The First Technical Design Workshop of the Millennium Ecosystem Assessment (MA) was held on April 8-11, 2001 at the National Institute for Public Health and the Environment (RIVM) in Bilthoven, Netherlands. Harold Mooney and Angela Cropper, Co-chairs of the Millennium Assessment Panel, chaired the meeting. Dr. Prof. N.D. van Egmond, Director, RIVM opened the workshop on behalf of RIVM. The MA process has been under development since May 1998. During this time the MA Board agreed on the broad conceptual framework for the MA, established the institutional structure, formalized the authorizing environment of the international conventions and United Nations agencies, surveyed the availability of necessary data and information, and began to identify the specific information and capacity-building needs of the various users of the MA. Within this broad framework, 90 experts from 31 countries participated in the First Technical Design Workshop to initiate the process of designing the methodology that will be used in the Assessment and to begin to identify the specific products and other outputs of the Assessment.

More specifically, the objectives of the workshop were to: (1) review and revise the basic MA conceptual framework; (2) develop the first-order outlines for the "products" of each working group; and, (3) begin to identify the individuals and institutions that should be involved in the further development of the methodology.

No major changes were proposed for the MA conceptual framework, although the framework was improved and refined in many ways. Participants reaffirmed the importance of the focus on "goods and services" provided by ecosystems, the value of undertaking a "multi-scale" assessment, and the importance of the capacity-building objective of the MA. The proposed breakdown of tasks across the four basic working groups (Condition, Scenarios, Response Options, Sub-Global Assessments) was debated, since elements of the work of the "response options" topic were necessarily also included in tasks of the Condition and Scenarios working groups. Participants agreed to a general "causal framework" for the MA:

- (1) Changes in 'driving forces' (population, energy, economic growth, governance, behavior, market and policy failures) lead to:
- (2) Changes in proximate forces on ecosystems (Climate Change, Land Use & Cover Change, Factor inputs (e.g., irrigation, fertilizers), Pollution, Resource Use, Nutrient Release, Species Introductions) which alter:
- (3) Ecological "stocks" and "flows/processes," resulting in changes in both:
- (4) (4a) the goods and services directly provided by ecosystems such as food, fiber, water, pathogens, carbon sequestration, storm buffering, etc., and
(4b) the consequences of those changes for human development (e.g., Food Security, Health, Vulnerability, Employment, Tourism, Climate), which in turn influence the basic driving forces (1).

This causal framework can be applied at any temporal and spatial scale. The participants also felt that in addition to meeting the information needs of the international conventions, there are many other sectors that will find the MA to be valuable for decision-making, including national governments, the private sector, and civil society. For this reason, the participants urged that steps be taken to engage these various users directly in the MA process.

Progress was made in developing the first order outlines and workplans and in beginning to identify institutions and individuals to involve. The "Sub-Global Assessment" breakout group reviewed the initial guidance document that had been prepared for selecting and establishing the sub-global components of the MA and both revised and expanded the conclusions of that document. The group began

to develop the set of "minimum criteria" that that sub-global assessment activities would need to achieve to be included as components of the MA and identified features of the MA process that should be enhanced to ensure that it was attractive to potential participants. Important benefits of association with the MA process should include: assistance with fundraising, assistance in access to data, opportunity to jointly develop new methodologies with others from other regions of the world, enhanced credibility and legitimacy, a stronger platform for dissemination of the findings, the status that would be associated with experts involved in the process, and the opportunity that the MA would provide for experts to contribute to local level decisions regarding resource management. The group recommended that every effort be made to establish a bottom-up approach to the selection and incorporation of sub-global assessments. The breakout group identified various early products that could be beneficial to the establishment of the sub-global assessments, including a document describing a methodology for multi-scale assessment, and noted that the final 'synthesis' of the sub-global assessments would be just one of many products that will result at all scales from this component of the MA.

The "Condition" breakout group developed a basic structure for evaluating trends and conditions for various ecosystem goods and services and revised the proposed working group outline to better address both the assessment of condition of these goods and services and the broader development consequences of changes to these goods and services (through their impact on health, food security, vulnerability and so forth). The group discussed the need for close coordination with other assessment processes, including the IPCC, Global International Waters Assessment, the World Water Assessment, and the Global Environment Outlook. And the group developed a framework for assessing and reporting on 'trade-offs' among various goods and services.

The "Scenarios" breakout group examined how best to link scenarios at the scale of the globe to impacts on ecosystem goods and services at scales ranging from biomes to small catchments or bodies of water. It viewed the unique contributions of this component of the MA to include: (1) the bridging from global to ecosystem scales; (2) consideration of tradeoffs among individual ecosystem goods and services within the "bundle" of benefits that any particular ecosystem potentially provides to society; (3) assessment of modeling capabilities for linking socio-economic drivers and ecosystem goods and services; and (4) consideration of ambiguous futures as well as quantifiable uncertainties. The group developed a workplan that will include a survey of existing global scenarios and the development of draft scenarios for application in the Scenarios Working Group by early 2002. This will be followed by intensive scenario development and modeling at the global scale, small group meetings on keystone topics to be identified, and regional scenarios workshops to be developed in collaboration with the Sub-Global Assessment Working Group. The Working Group will thus produce a series of intermediary products during the MA process, with a synthesis report of its findings at the end of the process.

The "Response Options" breakout group developed an outline similar to that of the Condition breakout group, but focused on the policy dimension of historical and future changes rather than on the biophysical dimensions. Few social sciences other than economists were represented in the breakout group and the group noted that a better balance of disciplines would be particularly important for the success of this Working Group.

In addition to the above breakout groups oriented towards the core MA Working Groups, participants also met in a set of 'cross-cutting' breakout groups to examine: (1) "synthesis questions;" (2) how to deal with scenarios across all working groups; (3) how to deal with capacity building across the working groups; (4) how to select the scale and resolution for analysis; (5) how to define the 'drivers', 'goods and services' and other key terms being used by all working groups; (5) what steps need to be taken on the development of the data and information systems to support the assessment; and (6) how best to integrate the MA with other Assessment activities.

In most cases, these cross-cutting discussions served principally to develop workplans for further actions needed in each area. On the issue of definition of terms, the group proposes to develop a 'glossary' of terms prior to the next technical design meeting. Progress was not sufficient at this meeting to identify the specific types of information that will need to be produced by the MA, thus it is premature to develop the details of the various data and information systems that will need to support this work. However, prior

to the next technical design meeting additional work can be done to identify suitable core datasets to be used in the analysis and to establish procedures for the use of these datasets. The group did agree to a set of core questions, or "synthesis" questions. These questions, after further revision through interaction with the various 'users' or stakeholders, are intended to be used in structuring the final synthesis report of the MA. Over the next 9 months, they will be used in a set of intensive interactions with various users of the MA to better identify specific information and capacity needs in order to ensure that the MA can be responsive to those needs. As currently formulated, the questions are expressed at a relatively general level. We expect that during the next 9 months more specific questions will be added within this overall structure addressing specific needs of various users. The list of questions is appended in Annex I.

Based on this meeting, by mid-May the Millennium Assessment Panel will revise the strawman outlines that had been developed for this meeting and develop a workplan for the further elaboration of these outlines before and after the Second Technical Design Workshop (slated for September 2001). In addition, the co-chairs of the working groups in collaboration with the Assessment Panel co-chairs will begin to identify individuals to invite to take leadership roles in the further elaboration of specific components of the Assessment process.

Information on follow-up activities resulting from this meeting will be posted on the MA website (<http://www.millenniumassessment.org>).

ANNEX I: SYNTHESIS QUESTIONS

(Note: Each of these questions can be addressed at a range of spatial scales)

1. What ecosystems provide what goods and services and how do these specific goods and services contribute more generally to sustainable development (e.g. through health, security, employment)?
2. How have ecosystems changed in the past and how has this increased or reduced their capacity to provide goods and services?
 - what thresholds, non-linearities or irreversible changes been observed?
3. What were the most critical factors, proximate or ultimate, affecting the observed changes?
4. What are the costs, benefits, risks and distributional effects of the observed changes in ecosystems?
5. What are the plausible future changes in ecosystems and in the supply of and demand for goods and services?
 - under what circumstances are thresholds, non-linearities or irreversible changes likely to occur
6. What are the most critical drivers and factors affecting future changes?
7. What are the costs, benefits, risks and distributional effects of plausible future changes in ecosystems?
8. What response options and processes can be used to realize or avoid specific futures?
 - what are the trade-off implications of the response options?
 - how does inertia in the social and natural systems impact management decisions?
9. What are the most robust findings and key uncertainties that affect provision of goods and services, management decisions and policy formulation
10. What are the tools and methodologies that can be developed and used in the MA to strengthen capacity to assess ecosystems, the goods and services they provide, and the implications of response options.

MILLENNIUM ECOSYSTEM ASSESSMENT

Update – June 2000 to January 2001

Institutional Arrangements

The Board of the Millennium Ecosystem Assessment convened for the first time on July 17-18, 2000 in Trondheim, Norway, hosted by the Government of Norway. The next Board meeting will be held in Malaysia, 14-16 January 2002. The Board largely endorsed the overall MA design and conceptual framework that had been developed by the Exploratory Steering Committee over the prior 18 months. The Board emphasized in particular that the audience for the process should reach beyond governments to include the private sector and civil society. It also stressed that the MA process itself should be viewed as a means of achieving the MA's goals, not just the products. Among other decisions, the Board:

- Selected A.H. Zakri and Robert Watson to be the Board co-chairs;
- Selected UNEP-World Conservation Monitoring Center to be the support agency for Working Group #1 (Condition);
- Agreed to undertake the activities of Working Group #2 (Scenarios) in collaboration with the SCOPE project "International Program on Ecosystem Change," with SCOPE serving as the support agency;
- Selected WRI (in partnership with Meridian Institute) to support the Outreach-Engagement Committee;
- Decided to select support agencies for the two remaining working groups in developing countries;
- Selected five additional Board members and established a nominating committee to identify six candidates for remaining Board seats (the list of Board members is attached);
- Decided to locate the MA Director in Malaysia (the director will be based at the CGIAR Center: ICLARM);
- Established an Assessment Panel Co-chair Nominating committee.

Technical Design

The MA Board invited Harold Mooney (Stanford University, USA) and Angela Cropper (Cropper Foundation, Trinidad and Tobago), to serve as

the co-chairs of the Assessment Panel. The Assessment Panel, which will be comprised of the chairs of the MA Working Groups, will be the body that carries out the work of the Assessment.

The first technical design workshop for the MA is scheduled for April 8-11, 2001, hosted by the National Institute for Public Health and the Environment (RIVM) in Holland. This workshop will be a preparatory meeting for the technical work of the Millennium Assessment. Participants will review the goals and approach for each of the proposed working groups and prepare preliminary draft outlines and workplans for those groups. The second technical design workshop – a larger meeting involving the core members of each of the four working groups – is tentatively scheduled for September 2001.

Plans are also being finalized for a workshop on "Remote Sensing and the Millennium Ecosystem Assessment" tentatively scheduled for October 2001 at Yale University. This will be co-sponsored by the U.S. National Aeronautics and Space Administration (NASA) and potentially by remote sensing agencies in other countries.

In September 2000, President Clinton stated to the Security Council at the Millennium General Assembly of the United Nations that the United States would commit support to the MA process with data from its TERRA, SeaWiifs and Landsat satellites. (These data have been valued as an in-kind contribution of some \$60 million.)

Sub-Global Assessments

With support from the Government of Norway and Rockefeller Foundation, work has been underway since October 2000 to select and design the sub-global components of the MA process. A call for proposals was distributed widely in September 2000. The Sub-Global Assessment Working Group met on November 2-3 in Washington, DC to design a process to select and plan the sub-global assessments. The final report from that meeting is now available and will be posted on the MA website (<http://www.ma-secretariat.org>). The MA Board has approved the selection of Southern Africa and Southeast Asia as two of the "focal regions" for the sub-global component of the MA process. In

addition, seed funding will be available to help initiate assessments in both Europe and Central America. The response to the initial call for proposals far exceeded expectations. While the MA will not be able to directly support many of the proposed assessment activities, opportunities will exist for other assessments to become partners in the MA process.

Fundraising

Cash and in-kind contributions now cover more than 80% of the core budget of \$21.1 million, allowing the process to formally begin in April, 2001. The GEF, UN Foundation, Packard Foundation, World Bank, UNEP, Government of Norway, Rockefeller Foundation, and NASA have made financial contributions with in-kind contributions from NASA, World Bank, UNEP, FAO, UNESCO, and UNDP. However, the remaining fundraising challenge is still significant. Until the full budget is secured, nearly one third of the funding already committed to the project (from GEF) is unavailable. Because the costs of the first (design) year will be relatively low, the process will not be significantly slowed by the absence of GEF funding during this first year. Almost all of the remaining funds needed are for the sub-global components of the Assessment.

Outreach and Engagement

In December 2000, the MA Executive Committee reviewed a concept paper outlining the process for developing the MA communications and engagement strategies. Both strategies will involve a two-phased approach, with a basic set of activities to be implemented during the design year (2001) while a more comprehensive strategy is developed for the course of the assessment process. Several Board and Advisory Group members will be invited to join in the development of these strategies, along with other user groups and stakeholders.

An international "launch" of the MA is being scheduled for World Environment Day, June 5, 2001. The theme for World Environment Day will be "The Web of Life", an excellent fit with the MA.

Work is now beginning on a Data and Information Support System that will buttress the communication, engagement, and analysis involved in the MA. As a first objective, an

improved Internet site will be developed for the MA in time for the June launch.

Engagement of the ecosystem-related conventions continues to be a priority. A side-event on the MA was held at the December 2000 meeting of the Convention to Combat Desertification Conference Of the Parties (CCD COP) in Bonn, Germany and a statement was presented to the Committee on

Looking Ahead Upcoming MA Meetings and Events	
2001	
<i>February 1-2</i>	South Africa Regional Assessment Planning meeting, Pretoria, South Africa
<i>February 16</i>	Southeast Asia Regional Assessment Planning meeting, Chiang Mai, Thailand
<i>March 12-16</i>	Sixth meeting of the Convention on Biological Diversity SBSTTA, Montreal Canada (Includes plenary presentation on MA on Monday March 12)
<i>March 26</i>	Northern/Central Europe Regional Assessment Planning meeting Potsdam Institute, Germany
<i>April 8-11</i>	First MA Technical Design Meeting, RIVM Holland
<i>June 5</i>	Official Launch of the Millennium Assessment
<i>September</i>	Second MA Technical Design meeting: Location tbd
<i>October</i>	Remote Sensing and the MA workshop: Yale University, USA
2002	
<i>January 14-16</i>	2 nd MA Board meeting: Kuala Lumpur, Malaysia

Science and Technology. The COP requested the CCD secretariat to continue following closely the

activities of the Millennium Ecosystem Assessment and to facilitate the involvement of the Parties in order that the concerns of the Parties are taken into account in the assessment. Over the course of the first year, engagement with the MA users will be closely linked to the technical design process since the design must respond to the specific needs of the users.

The Steering Committee that undertook the initial design of the MA also helped shape two related processes to help set the stage for and build support for the launch of the Millennium Ecosystem Assessment:

- A "Pilot Analysis of Global Ecosystems" to demonstrate the utility of an integrated ecosystem assessment, provide a technical foundation for *World Resources 2000*, and assemble core data that would be used in the full Millennium Assessment;
- Preparation of *World Resources 2000 – People and Ecosystems: The Fraying Web of Life*, a joint publication of UNEP, UNDP, World Bank, and World Resources Institute.

Each of these activities is now in its outreach phase and helping to raise awareness regarding the importance of ecosystem goods and services and the need for the Millennium Assessment. Four of five PAGE technical reports have been released and the remaining report is in press. *World Resources 2000* was launched in September 2000 at the opening of the Bergen Ministerial meeting of 35 environmental ministers, with follow-up launch activities in London, the Czech Republic, the USA, Amman Jordan, and Beijing China. A television documentary based on the report is now being produced in the United States by Bill Moyers in association with CNN, and should be available for release near the time of the MA launch.

Note: A project summary document is currently being revised, and we anticipate translations from English into Spanish and French. This version will be available on the website as soon as it is completed.

Millennium Assessment Board

Board Co-Chairs:

Robert Watson, World Bank
A.H. Zakri, United Nations University

Assessment Panel Co-Chairs:

Angela Cropper, Cropper Foundation, Trinidad & Tobago
Harold Mooney, Stanford University, USA

Representatives of Institutions

Delmar Blasco, Convention on Wetlands
Gro Harlem Brundtland, WHO (*invited*)
Hama Arba Diallo, Convention to Combat Desertification
Gisbert Glaser, UNESCO
He Changchui, FAO
Nicholas Lapham, United Nations Foundation
Peter Matlon, UNDP
Jorge A. Jiménez Ramón, Convention on Wetlands
Mario Ramos, Global Environment Facility
Cristian Samper, Convention on Biological Diversity
Dennis Tirpak, Climate Change Convention
Klaus Töpfer, UNEP
Meryl Williams, CGIAR
Hamdallah Zedan, Convention on Biological Diversity

At Large Members

Phoebe Barnard, Directorate of Environment Affairs, Namibia
Gordana Beltram, Ministry of Environment, Slovenia
Esther Camac, Asociación Ixá Ca Vaá de Desarrollo e Información Indígena, Costa Rica
Partha Dasgupta, University of Cambridge, U.K.
José María Figueres, World Economic Forum, Switzerland
Fred Fortier, Indigenous Peoples' Biodiversity Information Network (IBIN), Canada
Mohammed Hassan, Third World Academy of Sciences
Yolanda Kakabadse, Fundación Futuro Latinoamericano, Ecuador
Yoriko Kawaguchi, Ministry of Environment, Japan
Jonathan Lash, World Resources Institute
Corinne Lepage, Huglo, Lepage & Associés Conseil, France
Wangari Maathai, Greenbelt Movement, Kenya
Hubert Markl, Max Planck Society, Germany
Paul Maro, Southern African Development Community, Lesotho
Susan Pineda Mercado, Ministry of Health, Philippines
Marina Motovilova, Moscow State University, Russia
M.K. Prasad, India
Walter Reid, Millennium Ecosystem Assessment
Henry Schacht, Warburg, Pincus & Co., USA
Peter Schei, Directorate for Nature Management, Norway
David Suzuki, David Suzuki Foundation, Canada
M.S. Swaminathan, MS Swaminathan Research Foundation, India
José Tundisi, International Institute of Ecology, Brazil
Muhammad Yunus, Grameen Bank, Bangladesh
Xu Guanhua, Ministry of Science and Technology, China

Interaction among components?
- land - sea (poll., sediment)
- air - sea (C)
- various land based
(forest, agriculture, urban)