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Consideration of whether to establish an intergovernmental science-policy platform on biodiversity and ecosystem services

Millennium Ecosystem Assessment: experiences and impacts

Note by the secretariat

The annex to the present note contains a report submitted by the Government of Norway entitled: "The Millennium Ecosystem Assessment (MA) – Experiences and Impacts". The report was prepared by the Swedish International Biodiversity Programme (SwedBio), with funds from the Nordic Council of Ministers. The report is presented as received and has not been formally edited.

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Annex

The Millennium Ecosystem Assessment (MA) -Experiences and Impacts

Disclaimer: The content of this report reflects the views of SwedBio (the Swedish International Biodiversity program) 2010-01-27. The review was made with funds from the Nordic Council of Ministers.

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1 Summary

The Millennium Ecosystem Assessment (MA) represented a major international effort to assess ecosystem changes and the consequences for human well-being, at scales from the global to the local.

The MA is an instrument to identify priorities for action. It provides tools for planning and management and foresight concerning the consequences of decisions affecting ecosystems. It helps identify response options to achieve human development and sustainability goals, and has helped build individual and institutional capacity to undertake integrated ecosystem assessments and to act on their findings The MA findings conclusively prove that society is degrading the planet's ecosystem services, and the current decline of these services presents a serious obstacle in meeting the Millennium Development Goals (MDGs) for many developing countries as well as sustainable development paths for all countries. The MA recommended immediate action to halt and reverse the decline in 15 of the 24 ecosystem services it assessed.

Following broad consultation it was agreed that MA not should be an official intergovernmental process. However, applying a key lesson from the 1995 Global Biodiversity Assessment (GBA), national government buy-in for the MA was obtained through the international environmental conventions that requested and supported the MA. Several evaluations of MA conclude that the MA's technical objective of assessing the capacity of ecosystems to support human well-being were both innovative and far-reaching. The emphasis on ecosystem services and their significance for human well-being has been widely recognized as having made a major contribution to linking biodiversity conservation with poverty alleviation. It produced a series of high quality reports and provided a valuable conceptual framework for multi-scale ecosystem assessments. MA also generated a large interest for Sub Global Assessments (SGAs) which contributed both to knowledge generation and capacity building through learning by doing.

However, the evaluations also concluded that there was little evidence that the MA had had a significant direct impact on policy formulation and decision-making, especially in developing countries. There was a lack of working models that could be used readily by policy-makers to analyze ecosystem services, and their trade-offs with development policies and resource allocations. Few developing country SGAs were adequately funded, and the quality of the SGA products was variable and most did not connect effectively with the global assessment. The MA fell also short of providing convincing economic values of ecosystem services and in particular the regulating and cultural services.

To further implement the results from MA, a follow-up initiative was initiated in 2007, (by UNEP and major stakeholder, facilitated by SwedBio, through a meeting in Stockholm), focusing on translating MA findings and approaches into operational methodologies and tools that would support decision-makers in a policy context. The main objectives of the initiatives has been to 1) build and improve the knowledge base on

the links between biodiversity, ecosystem services and human well-being; 2) integrate the MA ecosystem service approach into decision-making at all levels; 3) disseminate the findings of the MA and its conceptual framework, tools and methodologies to relevant stakeholders and to; 4) explore needs, options and modalities for a possible second global ecosystem assessment.

There have been a number of good outcomes from the MA Follow-up work, including for example manuals for ecosystem assessments, and tools to map ecosystem functions and the use of indicators to monitor change in biodiversity and ecosystem services. New Sub Global Assessments have been developed and are seen as a key mechanism for capacity development and policy implementation. The SGAs were a core component of the MA's multi-scale approach and were designed to meet the needs of decision makers at relevant scales, strengthen the global findings with on-the-ground reality, and strengthen the local findings with global perspectives, data, and models. Together with related activities, such as the UNDP-UNEP Poverty Environment Initiative, they are increasingly being designed to be integrated in national governmental processes, providing a promising way to build capacity and ownership of the MA process among governmental stakeholders. Also a number of other MA follow-up activities are helping to further implement MA results in management and policy decisions.

The International Panel for Biodiversity and Ecosystem Services, which currently is under discussion, is a long term outcome from MA (and also a process called IMoSEB). If approved, IPBES will complement the MA Follow-up activities and both initiatives will be important mechanisms to further follow-up and implement the MA results.

The structure of the IPBES mechanism could aim to provide a platform for scientific discussion and synthesis work that can deliver scientifically based information of importance for existing activities under biodiversity related Multilateral Environment Agreements (MEA:s), as well as of other stakeholders. In order to facilitate this work the mechanism should connect existing scientific societies and networks as well as networks of knowledge. It should synthesize state of the art knowledge across different disciplines. and scales, and make this knowledge available for decision making at global and sub-global levels.

2 Background

The Millennium Ecosystem Assessment (MA) was launched by the United Nations Secretary in 2001, with its global assessment completed in March 2005. The MA is an international work-plan designed to provide decision makers and the public with scientific information about the consequences of ecosystem change for human well-being. It focuses on the benefits that people obtain from ecosystems, known as ecosystem services, such as food, timber, flood protection and biodiversity. It sought to identify how changes to ecosystem services have affected human well-being in the past, how changes might affect people in the future and what can be done at local, national and global scales

to improve ecosystem management in order to promote human well-being and poverty alleviation.

Governed by a multi-stakeholder board drawn from the world of science, civil society, government and the private sector, the MA used a team of over 1,300 authors from 95 countries to produce a global assessment. It brought together information from a range of sources including scientific literature, the private sector and indigenous peoples. The MA was 'multi-scale', consisting of interlinked assessments undertaken at local, watershed and regional scales, which fed into the global assessment. These Sub Global Assessments were "designed to meet the needs of decision-makers at the scale at which they are undertaken, strengthen the global findings with on-the-ground reality, and strengthen the local findings with global perspectives, data and models".

The global assessment report was published in five volumes, one being a summary for decision makers. These were followed by one over-aching synthesis report and five other synthesis reports tailored to specific audiences covering subjects including biodiversity and business.

The MA contains a stark warning. While living standards have generally improved over the past two centuries, human activity is putting such strain on nature that we are undermining the Earth's capacity to support current and future generations. We are living beyond our means: recent gains in quality of life have come at considerable cost to the natural systems on which we all depend. If we act now, we can avoid irreversible damage to ecosystems and human well-being. But this will require a change in the way we think about and use natural resources.

The MA can help us make that change. It offers a pragmatic new framework for solving environmental problems, and a host of proven strategies to protect the environment while raising living standards. These include education, the spread of new technologies, and economic incentives for environmental protection. Fundamentally, the MA asks us to recognize that we can no longer treat nature's bounty as free and limitless; instead, we must value natural systems and their irreplaceable contributions to human well-being. The MA came to four main conclusions:

1. **The world has been dramatically altered by human activity.** Over the past 50 years, humans have changed ecosystems more rapidly and extensively than in any comparable period of time in human history, largely to meet rapidly growing demands for food, fresh water, timber, fibre, and fuel. This has resulted in a substantial and largely irreversible loss in the diversity of life on Earth.
2. **Ecosystem changes have led to substantial gains, and substantial losses.** The changes that have been made to ecosystems have contributed to substantial net gains in human well-being and economic development, but these gains have been achieved at growing costs in the form of the degradation of many ecosystem services, increased risks of nonlinear changes, and the exacerbation of poverty for some groups of people. These problems, unless addressed, will substantially diminish the benefits that future generations obtain from ecosystems.

3. **The continued damage caused to ecosystem services will make it harder to eradicate poverty.** The degradation of ecosystem services could grow significantly worse during the first half of this century and is a barrier to achieving the Millennium Development Goals
4. **Ecosystem damage can be slowed and reversed, but this will take concerted action.** The challenge of reversing the degradation of ecosystems while meeting increasing demands for their services can be partially met under some scenarios that the MA has considered, but these involve significant changes in policies, institutions, and practices that are not currently under way. Many options exist to conserve or enhance specific ecosystem services in ways that reduce negative trade-offs or that provide positive synergies with other ecosystem services.

Almost one year on from the publication of the core MA report, a review was conducted to assess its initial impact (Reid 2006). Although the review conceded that it was difficult to assess the impact of the MA at that stage, it found "widespread evidence that the assessment is having an impact on the intended audiences, but the extent of that impact is very mixed, with some institutions, regions, countries, and sectors significantly influenced by the MA while others have not been influenced at all". A summary of the impact assessment is found in annex 1.

United Nations Environment Programme (UNEP), as part of the GEF procedures, initiated also an independent terminal evaluation of the MA which was completed in September 2006 (Wells et al. 2006). In addition, the United Kingdom's Environmental Audit Committee of the House of Commons undertook an evaluation of the MA and published its results in 2007. Both evaluations reported that the MA's technical objective of assessing the capacity of ecosystems to support human well-being proved both innovative and far-reaching. The MA's emphasis on ecosystem services and their significance for human well-being is widely recognized as having made a major contribution to linking biodiversity conservation with poverty alleviation. However also some weaknesses of the project were raised, indicating further actions needed to address these weaknesses. Taking account of the recommendations of the evaluations of the MA conducted in 2006 and 2007, a global strategy for follow-up on the MA was developed in 2007 by a group of interested partner organizations.[1] Since then a number of follow-up activities has been developed which are outlined further below.

3 Major Achievements

As summerised by Wells et al. (2006) major successes from the MA project included:

1. The MA has produced a series of credible, authoritative and high quality reports, with a very considerable volume of material well packaged for different audiences

[1] Partner institutions involved in MA follow-up process include: UNDP, EEA, FAO, GEF, Sida, Stockholm Resilience Centre, SwedBio, The Cropper Foundation, The Dutch Ministry of Foreign Affairs (DGIS), IUCN, UNESCO, UNEP-WCMC, ISDR, UNU/IAS, and WRI. Since the start of the MA follow-up process a number of other organisations have joined the efforts.

at varying levels of complexity. All of the outputs have been extensively and rigorously peer reviewed, itself a remarkable achievement for publications on this scale. Beyond the main technical reports, the summary for Decision Makers and the other syntheses are especially valuable for a broader audience, although they are not negotiated products. All of these products are available electronically at the MA web site (www.maweb.org/en/index.aspx).

2. The MA emphasis on ecosystem services and their significance for human well-being is widely recognized as having made a major contribution to link biodiversity conservation with poverty mitigation.

3. The MA Conceptual Framework is widely regarded as an innovative and excellent technical analysis that seems likely to have a significant impact on the direction and approach of future applied research, which in turn may lead to more effective ecosystem management decisions and policies. It is important to note, however, that the Conceptual Framework is not a "how-to", operational manual and was not intended as such (Figure 1).

4. The MA responded to and has successfully engaged the secretariats of the CBD and Ramsar. A significant amount of MA information and material has been utilized in decisions and recommendations taken by both of these conventions, whose work programs have been significantly influenced by the MA.

5. The level of interest in carrying out Sub Global Assessments (SGAs) as well as the number of SGAs actually undertaken far exceeded expectations, demonstrating a clear global interest among researchers in assessing ecosystem services and tradeoffs on multiple spatial scales. Many of these SGAs are still continuing. The very few SGAs in developing countries that were adequately funded did make good progress and some have already catalyzed follow-up initiatives.

6. The MA not only engaged a vast number of biodiversity scientists and experts, but also led to the emergence of a genuine global community for multi-scale ecosystem assessments that had not existed previously. This was a considerable achievement given the initial lack of assessment experience among this diverse group of individuals more used to hypothesis testing than synthesizing best-available information and knowledge. This wider MA community is now a remarkable human resource for future biodiversity initiatives.

7. Although difficult to measure, the Project's capacity building goals appear to have been largely met. The most impressive aspects were (i) the Fellows Program that provided accelerated learning experiences to promising young researchers, and (ii) the learning-through-doing opportunities given to the many individuals who participated in the multidisciplinary teams carrying out the SGAs.

8. The MA and its implications are being discussed by various OECD government agencies, especially in Western Europe, and may be adopted in various forms either within their own countries or in connection with their international development assistance programs. The MA seems likely to have an impact on future GEF programming, most immediately in forming strategies to combat land degradation, and has been particularly welcomed by UNDP at a policy level.

9. Project management was strategically organized with a dispersed secretariat, engaging successfully with a very diverse set of stakeholders (including the conventions, the scientific community, civil society, governments, intergovernmental institutions, UN agencies, private sector firms and others). As a result there was substantial overall support for the MA despite persistent concerns among some stakeholders that their priority needs might not be addressed.

10. All of these factors have contributed to keeping biodiversity conservation and ecosystem management on the international policy agenda.

4 Weaknesses

The MA project's successes were also mitigated by some significant weaknesses as summerised by Wells et al. (2006):

1. The MA has had limited direct impact on policy formulation and decision making, especially in developing countries. While the CBD and Ramsar appear satisfied with the results, the key decisions affecting biodiversity conservation and ecosystem management are usually not taken by international conventions. Rather, they are taken at local and national levels by governments and other local and national stakeholders. In this context, the level of awareness of the MA among many developing country governments appears relatively low. Even in those countries and regions where SGAs were undertaken, there are limited signs of decision makers having been involved in or influenced by the MA process or outputs.

2. Assessment results has not been used in management and policy decisions at different scales and for development of 'implementation strategies'. There are at least two reasons for this (i) the very policy and decision makers who are being expected to act on the MA findings were not a part of the assessment process, which was primarily a scientific undertaking; and (ii) the MA has not produced tools, models or methods that can readily be applied by practitioners in the field or by people working at operational levels in conservation and development organizations.

3. The lack of specific policy guidance in the MA has contributed to considerable uncertainty on what should happen next and who was supposed to do what with the MA findings, questions that could have received more systematic attention

during project planning and implementation. This impacted negatively on the momentum and sustainability of activities initiated under the MA.

4. Adequate financial resources were not available for communications and outreach after the assessment's major products were released starting in 2005, limiting the implementation impact of the MA work.

5. Few developing country SGAs were adequately funded. The quality of SGA products were variable and most did not connect effectively with the global assessment. Relatively few of the SGAs engaged with local or national decision makers.

6. The objectives, outcomes and initial expectations of the MA were probably too ambitious for a four-year project, even allowing for a six month extension.

5 Next step

To fully benefit from the important work done by MA, and in response to the weaknesses above, the evaluations concluded that it was vital to initiate a MA follow-up initiative that should focus on translating MA findings and approaches into operational methodologies and tools that would support decision-makers with relevant and timely scientific information and that would help to better understand the value of ecosystem services to people. MA's focus on ecosystem services and their links to human well-being was welcomed by the conservation and development community as a bridge between biodiversity and poverty reduction. However, it is only through the implementation of the MA findings in management, policy and decision making that the key benefits and long term impacts will be realized. If the targeted audiences not have access to, or not act on the MA findings, the sustainability and relevance of the MA initiative will be much less significant.

5.1 The MA Follow-up

There are a number of MA related follow-up activities presently being undertaken by MA partners and others, which have provided important achievement in addition to the achievement under the MA project (see annex II). In order to maximize the impact of all these activities and to move forward with the implementation of the MA, a MA partner's consortium was established in 2007, to facilitate a coordinated MA follow-up effort. It was suggested that a small secretariat where going to be hosted by UNEP and UNDP to support the MA consortium board for the implementation of MA. A MA-strategy was developed, spearheaded by UNEP and developed by the MA consortium, with the aim to provide a roadmap for "operationalizing" the MA as well as building the momentum for a second global ecosystem assessment. The strategy was developed in the spirit of collaboration. UNEP has acted as the anchor institution for MA follow-up activities by

facilitating cooperation, promoting coherence and encouraging joint programming among all partners to ensure delivery of MA approaches and relevant recommendations to policy and decision-makers at all appropriate levels. The MA follow-up activities that the partners identified as critical are guided by the following objectives:

1. **Build the knowledge base**. Continue to build and improve the knowledge base on the links between biodiversity, ecosystem functioning, ecosystem services and human well-being, and develop tools for mainstreaming ecosystem services into development and economic decision-making.

2. **Integrate the MA ecosystem service approach into decision-making at all levels.** Promote the systematic application of ecosystem services considerations in public, civil society and private sector decision-making.

3. **Outreach and dissemination of the MA.** Disseminate the findings of the MA and its conceptual framework, tools and methodologies to relevant stakeholders through the development of action-based media strategies and educational tools.

4. **Future global ecosystem assessments.** Explore the need, scope and modalities for a possible second global ecosystem assessment, complementing existing assessment processes and contributing to the development of a more coherent international environmental assessment landscape.

It is too early to assess to what extend these objectives has been achieved, but they certainly aim to address some of the weaknesses of the MA project outlined above, and there are many examples of good progress being done, such as (See annex II for more detailed information):

1. The MA Follow-up Global Secretariat has been established and based at UNEP/DEPI to help with the overall coordination of the MA follow-process.
2. A Working Group on Sub Global Assessments, with a secretariat based at UNU/IAS, has been established to coordinate and provide a clearing house for the network of 34 completed and ongoing SGAs and, other new SGAs, with a total of 12 new SGAs joining the network so far. The UNDP-UNEP led Poverty Environment Initiative has, for example, completed and is currently working with a number of national focused SGA in close co-operation with national decision makers, integrating biodiversity issues into key national development processes, such as national poverty reductions strategies.
3. A multidisciplinary group of experts has been established to identify key gaps in knowledge and data, to design a research agenda, and to influence the priorities of research funding agencies and has delivered a report on research and monitoring priorities based on the MA (ICSU-UNESCO-UNU, 2008). ICSU has also taken lead of a new Programme on Ecosystem Change and Society (PECS), which builds on the findings from MA.

4. An ecosystem assessment manual has been developed to provide practical guidance for undertaking integrated ecosystem assessments and will be published in the beginning of 2010 (Ash et al. in press);
5. Tools, such as mapping of ecosystem services and indicators to monitor change in biodiversityand ecosystem services, are being developed. The World Conservation and Monitoring Centre has together with WRI, for example, developed indicators on biodiversity and ecosystem services and have made some significant progress on these issues on global and regional scales.
6. New assessment programmes have been initiated such as the Ecosystem Services for Poverty Alleviation Programme (ESPA) and Reefs at Risk + 10;
7. A number of outreach activities have been carried out, such as workshops, media releases, documentaries and websites to support the uptake of the key findings from the MA into policy.

Although these are only some few examples of relevant activities going on (c.f annex II) they illustrate that the MA project has influenced and given guidance to a number of different activities, which should been seen as an important long-term outcome of the MA project. There are also a number of other significant activities outside the MA follow-up initiative which builds on the MA findings, such as the study of "The Economics of Ecosystems and Biodiversity (TEEB)", the ICSU led "Programme on Ecosystem Change and Society" (PECS), and the UNEP led "Ecosystem Management Programme" (EMP). To some extent all these activities captures the "sustainable dimension" of the MA project, which was difficult to assess in the earlier evaluations conducted in 2006 and 2007, and probably still is difficult to fully appreciate as the full impact may come later. Carpenter et al. concludes in an article in Science from 2006 that a major achievement of the MA "was to provide a roadmap; now, we need to start the journey". This is followed up in a recent article, outlining emerging needs for science to manage ecosystem services (Carpenter et al. 2009), further elaborating on the outcomes from the MA work. The article shows that MA at least has influenced on current research agendas, which eventually may lead to further policy impact and implementation of the MA work.

5.2 The MA Follow-up and IPBES

Another significant process initiated by the MA work (and also by IMoSEB, a process not further discussed here though, www.imoseb.net), is the Intergovernmental Platform for Biodiversity and Ecosystem Services (IPBES).

Both IPBES and the MA follow-up are key processes that build on and further could expand the MA project. The potential linkages between the IPBES and the MA follow-up are currently under discussion, and it has not yet been decided what should be the different roles of the two processes. If both will be implemented, it is crucial to clearly outline their different roles to avoid duplication of efforts and to identify how to make the best use of their complementary strengths. IPBES and the MA follow-up are interlinked and, if well designed, the two processes could meet different needs through their different

roles, and at the same time generate synergistic effects. For example it has been argued that IPBES should primarily focus on global and regional knowledge generation and scientific assessments[2], while a priority issue for the MA follow-up could be long term capacity building and policy implementation at national and local levels, in especially developing countries (c.f annex III). Below are some of the experiences from the MA project discussed in the context of the IBPES and the MA follow-up, and how these experiences could provide guidance to the future development of IPBES and the MA follow-up processes.

5.2.1 Global and regional scientific assessments versus local and national ownership and policy implementation

The experience from the MA work shows that it is crucial to both strengthening government's involvement and national ownership as well as having a flexible independent process that produce scientifically credible analyses, unbiased by political influence. These two needs may be best met by two separate, although inter-linked, processes.

Following broad consultations, the originating organizations decided that the MA should not be an official inter-governmental process. This helped the project engage more than 1,400 scientists and experts to carry out the assessment, virtually all of whom worked on a voluntary basis. This extraordinary contribution from the scientific community owed a considerable debt to the independence of the MA as well as the stature of the MA leaders and their ability to engage peers around the world. However, applying a key lesson from the 1995 Global Biodiversity Assessment (GBA), whose results could have gained better acceptance if the process would have been endorsed by governments, national government buy-in for the MA was obtained through the international environmental conventions that requested and supported the MA.

While formal government participation within the MA process might have increased national ownership and engagement in principle, such an arrangement could also have proved premature – and possibly counterproductive – for a project that was largely based on independent science. The formality and procedures associated with inter-governmental representation might well have weakened the project's autonomy and ability to advance independently in its research, and possibly discouraged the commitment of scientific institutions and NGOs that were vital contributors to the MA's progress. It is arguable that, as an evolving process, the MA first needed to consolidate and synthesize a critical mass of information and knowledge before formal government representation would be feasible and generate added value.

The disadvantage of proceeding without an inter-governmental process became apparent during implementation, as many governments and regional inter-governmental structures

[2] the need expressed by WPIEI (biodiversity) 11 February 2009: *"The core mandate of an IPBES will be to compile, assess and synthesise existing scientific information at multiple geographical scales in order to provide policy relevant information and analysis of policy options on changes in biodiversity and ecosystem services and their implications for environmental and long-term human well-being."*

failed to maintain contact with the process, despite evidence of repeated attempts by MA participants to achieve this. This lack of national government engagement with the MA, particularly in developing countries, compounded by the truncated project outreach and communications effort, was a significant weakness of the MA process.

Although care was taken to ensure support was in place from three key environmental conventions (CBD, CCD and Ramsar), which took note of the results from the MA, the results and reports were never fully endorsed by all parties of the conventions, which might have had implications for the implementation of the MA recommendations. MA was well received by and had a positive impact on the both the CBD and Ramsar, but had less impact on UNCCD, UNCMS and CITES, and the international conventions faced significant challenges in actually influencing the local and national decision making processes that determine the fate of biodiversity.

Major weaknesses of the MA, have been addressed in the MA follow-up strategy, and future activities, as outlined in the objectives above, more closely target government involvement and national ownership. This will be achieved through (see annex III); i) Catalyzing and supporting the implementation of Sub Global Assessments to build the scientific knowledge base, raise awareness, build capacity, and influence policy at a range of scales; ii) Providing tools, technical expertise and capacity-building activities at the national level especially in developing countries; iii) and mainstreaming the use of knowledge, synthesized from a range of processes, for policy implementation, especially in developing countries

This focus would complement IPBES focus on global and regional knowledge generation and scientific assessments. By focusing on national and local capacity building and policy implementation, the MA follow-up could be a key mechanism for the integration and implementation of findings from both MA and IPBES into national and local management and policy processes especially in developing countries. MA follow-up activities would most likely also generate relevant information that could feed into and be assessed by the IPBES process.

This development of the MA process would be a relevant response to the key questions stated by the evaluators (Wells et al. 2006)- "whether MA participants, sponsors and partners see "scientific assessment" as the appropriate model for linking ecosystem science and policy?" The answer would probably be "no" as indicated by some respondents from the evaluation, working in conservation and development, who questioned whether the MA was too top-down and academic in its orientation and whether it could meet their needs for practical outcomes.

It is clear that the current unavailability of working models that can readily be used by policymakers to analyze ecosystems services and their trade-offs with development policies and resource allocations still constrains the MA's potential for influencing environmental trends on the ground. Translation of the MA into operational methodologies and tools that will support decision making and policy are absolutely critical. Four years after the completion of the MA work, the international development

community is starting to take up and utilize tools and methods based on the MA approach, but much more needs to happen on national levels, especially in developing countries. Unless significant progress can be catalyzed in these areas, the main legacy of the MA may be to influence the direction of research, which certainly has potential value but would hardly seem to justify the investment that has been made.

5.2.2 Sub Global Assessments-capacity building versus fact finding

Sub Global Assessments has been seen as a key mechanism to both make scientific synthesis and to build capacity through "learning by doing". Local and national stakeholders were significantly involved in the design and implementation of the SGAs, and according to the Sub Global Working Group, the MA "had been an important and highly motivating process that brought together many people and institutions from around the world. It provided a unique opportunity to exchange experiences across continents and cultures, develop innovative methodologies and help strengthen capacity to assess the management of ecosystems for human well-being". Thus, the SGAs were key elements of the MA process and seem to be one of the activities that have been taken up by both countries and international processes. For example 12 new SGA has been proposed, and in a increasing number of cases the UNDP-UNEP Poverty Environment Initiative (PEI) have helped to link the MA framework and SGAs to key national development processes such as poverty reduction strategies.

In the earlier SGAs, national governments were only marginally involved, despite repeated efforts by MA participants to encourage their participation. Future involvement of government institutions in SGAs will be critical to build strong ownership and capacity around the MA framework and to integrate this into national processes. Under the MA work, the effectiveness of the SGAs was sometimes constrained by the limited capacities of the lead institutions, especially in developing countries. Virtually all of the SGAs were led by research groups, while government participation or support was limited and few SGAs made effective connections with or had clear influence on decision-making processes.

Thus, capacity building among individual participants, the encouragement of multidisciplinary networks and broadened awareness of links between ecosystem services and human well-being, which were critical and visible benefits of the early SGAs, should also be key outcomes of future SGAs. SGAs linked to the MA follow-up initiative should be designed to provide opportunities for "learning by doing", involving policy, decision makers and manager who were expected to act on the MA findings. "Practioners SGAs" could be used to development, testing and implementation of tools and methods that can readily be applied by practitioners in the field If funds are available to support developing countries initiatives, SGAs may eventually be the key mechanism to generate significant long-term MA results and impacts, both in terms of capacity building and knowledge generation.

In this sense SGA´s can also constitute a major component of the work under IPBES, although the role of SGA's under IPBES may differ from its role under the MA follow-

up. MA follow-up may focus more on the process of integrating the MA framework in national and local processes with a strong focus on building capacity and ownership. For IPBES data acquisition and scientific assessments of global and regional trends on biodiversity and ecosystem services may be more important. Still, different types of SGAs would most likely complement each other and contribute to an overall process of capacity building and knowledge generation. The status of biodiversity and ecosystem services must be well grounded in updated information from local and national studies, representing a range of different ecosystem and areas of the world. Without such data, it will be very difficult to make relevant and adequate global and regional synthesis, giving accurate pictures of regional and global status and trends of biodiversity and ecosystem services. At the same time local and national studies may have difficulties to influence on regional and global policies if their findings not are included in regional and global analysis and assessments.

A recent subject for discussion has been whether future SGAs should be conducted by IPBES itself. The example of IPCC demonstrates benefits from separating knowledge production from the production of global syntheses. With this in mind it could be recommended that IPBES could provide a methodological framework for SGA:s but do not necessary need to be the main mechanism under which these are to be undertaken. In this way, IPBES could produce synthesis reports based on the SGAs, but not in itself undertake SGAs. IPBES could also provide a key mechanism for mainstreaming, per-reviewing and scientifically assessing the large number of ecosystem assessments being conducted both within and outside the MA framework, and help to synthesis and communicate this information to regional and global levels.

5.2.3 Capacity building

Capacity building has received much attention during the first two meetings on IPBES, and will likely feature prominently in the negotiations on the possible establishment of an IPBES.

The experience from MA and the SGA's clearly shows that the capacity in developing countries to participate in, and contribute to, the work of IPBES is very important for the success of generating global knowledge on biodiversity and ecosystem services based on local expertise. There is also a need for developing countries to build their own knowledge systems. It is crucial to include local and traditional knowledge in the global knowledge base. To ensure ownership, the capacity needs of developing countries have to be manifested in government budgets and poverty reduction strategies.

In respond to these needs IPBES needs to maintain a sharp focus and avoid duplication of efforts with what other players in the international system (e.g. bilateral and multilateral donors) could do better. In a recent meeting in November 2009 three categories of capacity building activities were distinguished with implications for what could/should be covered by IPBES:

1. *Capacity building activities that could qualify entirely for the mechanism, since they are related directly to the activities of the IPBES.* This includes the possibility to participate in activities such as. meetings under IPBES; training programmes and opportunities for scientists from developing countries, such as the provision of scholarships and fellowships and access to modeling tools; capacity building that will take place when assessments are taking place, e.g. Sub Global Assessments; access to knowledge through e.g. free online access to journals, virtual libraries, geo-referenced data.

2. *Capacity building in a broader sense.* IPBES could help to identify gaps and priorities in capacity building which then better situated multilateral and bilateral bodies can target. This refers to the second option in the UNEP/IPBES/2/3 document: "The new mechanism could support existing capacity-building initiatives by identifying potential areas requiring capacity-building" which the EU has proclaimed that it supports.

3. *Other capacity building and support to policy implementation.* This could include building institutional capacity and data collection, etc. Most of these are activities that existing bodies (multilateral and bilateral) are doing to a certain extent. IPBES could have an influence on these activities by the catalyzing role identified under (2) above. It would, however, not be the responsibility of IPBES to perform these activities, which probably would be better covered under the MA Follow-up and related process

As described above, the MA follow-up strategy has been set up to support continued work in the spirit of the MA, and to strengthen capacity building, policy implementation and other outreach activities. The partners to the MA follow-up strategy are at the same time active and important participants in the IPBES process, including ICSU, World Resources Institute and UNEP-WCMC. Several of the items proposed under categories 2 and 3 above are already being considered or performed under the MA follow-up strategy, as outlined more in detail under annex II. Sub Global Assessments are presently undertaken by many MA follow-up partners, providing a key mechanism that support capacity building through "learning by doing". The MA follow-up strategy also disseminates findings from the MA for implementation purposes. Still, it must be recognized that the capacity building task under category 2 and 3 is large and challenging. It will require the coordinated action by many multilateral and bilateral actors, where MA follow-up partners, with their linkages to IPBES and related processes, probably could help to catalyze and facilitate coordinated capacity building efforts. If and when a mechanism for science-policy interface is created through the IPBES process, then the possibilities for mutual and coordinated support between MA follow-up and IPBES still need to be further explored.

5.2.4 Governance Structure

A related issue which currently is being discussed is the governance structure for the IPBES. This structure will be important for the policy-science interface, and will also

influence on the design and inclusion of SGAs in future work.

For the MA Project UNEP was the GEF implementing agency and provided overall coordination in partnership with a number of lead co-executing agencies (the World Fish Center, Malaysia; World Resources Institute, USA; UNEP-WCMC, UK; and the Institute of Economic Growth, India, ICSU France and RIVM, the Netherlands). UNEP played a relatively hands-off role, leaving the project leadership and secretariat to be relatively autonomous. The facilitative and delegating role played by UNEP was decisive to encourage shared commitment and ownership.

A Board of 40 members representing "user and audiences of MA findings" was established to govern the project. The board helped ensure that the MA produced information and built capacity needed by the users of the MA assessment at local, national, regional, and global scales. The Board also appointed the Director and the Chairs of the Assessment Panel and Working Groups, approved the budget and workplan, selected the institutions that provided administrative support, and received and approved the findings of the assessment. The Board was comprised of individuals representing key partner institutions, and other individuals selected in their personal capacity as representatives from each geographic region, the associated and cooperating partner agencies, the private sector, indigenous people, NGOs and scientists.

The Board acted through an Executive Committee, while an Assessment Panel oversaw the technical and scientific work. Based on the model of the International Panel on Climate Change (IPCC), working groups were established to cover four areas: conditions, responses, scenarios and the SGAs.

The assessment Panel was comprised of the co-chairs of each working group, three at-large members, and the Panel Co-Chairs. The members were appointed by the Board, and as the Panel directed the assessment itself, its members were selected to reflect the desire for diversity in the MA: balance between North/South, natural and social sciences, and gender.

A Project Director based at the World Fish Centre in Malaysia was responsible for the management of MA operations as well as day-to-day contact with the Assessment Panel and the Co-Chairs of the Working Groups. The MA operated with a "distributed" secretariat, with different functions located at seven other co-executing agencies, who provided core administrative, logistical, and technical support to the working groups and committees that were involved in the assessment.. The dispersed Secretariat had significant benefits, especially: (i) building capacity in project management and administration among the co-executing institutions; and (ii) promoting an image of the MA as a global and culturally diverse initiative.

Although the MA built strongly on the model of the IPCC, adapting many of its procedures and processes, it was also innovative in new and important ways: (i) adopting multi-stakeholder governance, engagement, and outreach; (ii) working with a multi-scale approach including, especially, bottom-up, Sub Global Assessments; (iii) incorporating

local knowledge; and (iv) extending and expanding the idea of a distributed secretariat. All of these are important steps forward in the design of international scientific assessments.

The experiences from MA's organizational and institutional arrangements could provide an important input the future governance structure of the IPBES. Similar to MA, it has been proposed that the IPBES also could build on the IPCC model, adopting two important elements. It should be intergovernmental and at the same time keep a high level of scientific independence. As discussed earlier, the balance between these two elements will probably be very important for the success of the IPBES mechanism.

Building on the MA experience, it is critical that the future governance structure continues to stimulate independent synthesis of knowledge and research and should target flexibility as well as scientific credibility to engage the research community as well as the private sector and civil society organizations. Without an "overall independent" status, IPBES could risk being heavily influenced by the political dynamics within MEA:s etc. Independence also facilitates the mainstreaming of biodiversity into development strategies etc.

However, independence should not be allowed to result in a lack of governmental involvement and ownership, which was a major drawback from the MA project. To have a sustainable impact on policy and management decisions, scientific based synthesis and research need to be developed in close dialogue with governments and other decision makers, and respond to their needs. In this context some degree of joint governance structure between IPBES and the MA follow-up could help to establish a mechanism where the MA follow-up could play an important role in the integration and implementation of IPBES results into governmental processes at national and local levels, while IPBES could primarily target to influence on the regional and global policies. Some partners to the MA follow-up strategy have even suggested that the strategy could be renamed as the "IPBES Implementation strategy". The preparations for IPBES 3 would benefit greatly from a common understanding of how this relationship should look.

6 Conclusions

The MA was developed to identify priorities for action; provide a baseline for future assessments, develop tools for assessment; planning and management; identify response options for achieving sustainable development; and guide future research. Given this wide-ranging scope and the complexity of the issues, it must be concluded that MA was successful in many aspects. MA provided a new framework for multi-scale ecosystem assessment which resulted both in capacity building and awareness raising through high quality reports on the state of biodiversity and ecosystem services and their importance for poverty eradication and for the long-term achievement of the Millennium Development Goals. Although inevitably some conclusions from the MA were based on incomplete evidence, the assessment still provided a most robust analysis upon which to base action to tackle ecosystem degradation and poverty eradication.

The MA had an innovative governance structure that was representative of not only scientists and experts, but also UN conventions, civil society groups, and indigenous peoples. The MA Board, the Assessment Panel, and Working Groups were co-chaired by representatives of both developed and developing worlds. These choices added significantly to the credibility of the MA

MA also had some important weaknesses. Most of the weaknesses were attributable either to strategic choices made during the project design phase or to resource and time constraints that emerged during implementation. The choice not to work through an intergovernmental process resulted in flexibility and scientific independence but also in lack of governmental involvement and ownership, with implications for the implementation and sustainability of the MA findings. Weak communication affected negatively the uptake of the MA findings, and their impact on policy formulations and decision making, especially in developing countries.

Still the MA project impacts must be seen in a longer time perspective than the four year project phase. A number of new activities both within and outside the MA follow-up initiative are now being implemented, focusing on gaps and weaknesses identified by the MA project. In this sense, the MA experience still influence and give guidance to a variety of ongoing and future research and development activities. The coordinated action of all these activities are now helping to mainstream biodiversity and ecosystem services into research as well as policy and decision making at global regional, and national levels. This would not have been possible without MA, and can only be achieved through a number of future parallel interlinked processes at different scales and governance levels.

Sub Global Assessments are seen as a key mechanism for providing updated information on the status on biodiversity and ecosystem services, and for capacity building and implementation of MA findings. The MA follow-up should probably continue to play a key role in SGA development and implementation, while IPBES could provide a key mechanism for mainstreaming, per-reviewing and scientifically assessing ecosystem assessments and help to synthesis and communicate this information to regional and global levels.

If an IPBES mechanism is created then ways in which the MA follow-up might support such a mechanism should be explored. The MA follow-up strategy could be renamed the IPBES implementation strategy to clarify the different purposes with the two, where the MA follow-up could play an important role in the integration and implementation of IPBES results to make knowledge into practice.

7 References

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8 Web-links

MA hompage: http://www.maweb.org/en/index.aspx
MA outreach kit (draft form): http://www.99percentcocoa.com/MA/

Annex I. Extracts from 'Millennium Ecosystem Assessment: Survey of Initial Impacts' by Walter Reid (2006)

"[The survey] provides widespread evidence that the assessment is having an impact on the intended audiences but the extent of that impact is very mixed, with some institutions, regions, countries and sectors significantly influenced by the MA while others have not been influenced at all.

Specifically:

- *Conventions*: The MA has had a significant impact on the CBD and Ramsar. A significant amount of MA information and material has been utilized in decisions and recommendations taken by both of these conventions. There has been less impact on the CCD.
- *Regional, National and Sub-national governments*: Among governments, the impact of the MA appears to be greatest in regions and countries where MA SGAs were conducted, including the Caribbean, South Africa, China, Sweden and Norway, although significant impacts are also noted in regions and countries that did not undertake SGAs such as the European Union, UK and France. At a national level, there is little evidence of impact among several other economically and politically influential countries, including the USA, India, Japan and Brazil.
- *Business*: The MA findings were well received by business journalists but the impact to date in the business sector has been relatively limited. The most significant impact of the MA within business and industry is the incorporation of the concept of ecosystem services in the environmental policy issued by Goldman Sachs in November 2005. The World Business Council for Sustainable Development is also working with companies on MA follow-up activities.
- *Donors*: The MA has had a notable impact on the multilateral (particularly GEF) and bilateral (particularly Scandinavian) donors and to a lesser extent on foundations.
- *NGOs*: The MA has had a notable impact on international conservation-oriented NGOs but much less impact on national NGOs. To date there is no evidence of any impact on NGOs focused on development, poverty reduction or health issues.
- *International Agencies*: All of the UN agencies involved in the MA process (UNEP, UNDP, FAO, WHO and UNESCO) have incorporated the MA findings and process into their activities. There appears to have been no impact at all within the Bretton Woods institutions.
- *Capacity Building*: The MA SGAs and the MA fellows program were the primary mechanisms established by the MA to build assessment capacity and these were generally successful. A handful of additional training and capacity building activities have been established by partners and by experts involved in the MA.
- *Education*: MA materials are being used extensively in university courses and curricula. There is less evidence of use at other levels of education.
- *Scientific research*: The MA is having a notable impact on research directions and priorities."

Annex II. Progress on MA Follow-up Activities by Various Partners[3]

Objective 1 - Build the knowledge base

Institution	Brief Update
DFID, UK	*Ecosystem Services for Poverty Alleviation Programme* – DFID, in collaboration with UK's Natural Environment Research Council (NERC) and Economic & Social Research Council (ESRC) has been implementing the initiative to develop a 5 year, multi-disciplinary research programme that will address major ecosystem services challenges that hamper poverty reduction measures in four regions. Website: www.nerc.ac.uk/research/programmes/ESPA
DEFRA, UK	*Valuing Ecosystem Services* - Published 'An Introductory Guide to Valuing Ecosystem Services', a guide to help policy and decision-makers take better account of the value of ecosystem services and the benefits of this approach in accounting for a wider range of environmental impacts in appraisals. Under the International Biodiversity Research Programme, a report to look at the benefits of global biodiversity assets to UK citizens, and an evaluation of economic and non-economic techniques for assessing the importance of biodiversity to people in developing countries are also being developed. *Ecosystems Approach Research Programme* – As part of this research programme, Defra has commissioned a scoping study on the potential benefits of carrying out an MA style Ecosystem Assessment for England. *National Ecosystems Assessment* - In July 2008, Secretary of State for Environment, Food and Rural Affairs announced that Defra would support a national Ecosystem Assessment, which will be based on the principles that were developed in the MA. The project will collate and synthesise existing evidence on our natural environment to give a picture of both its current state and of the provision of ecosystem services, as well as exploring how these might change in future.
ICSU	*An Ad hoc Group of experts with natural and social science disciplinary competence* - convened by ICSU in collaboration with UNESCO and UNU to develop a new research programme to address the identified gaps in scientific understanding on linked ecological-social systems. The results of this programme will provide a firm scientific basis for a second assessment of how ecosystem services contribute to, and depend on, human well-being. ICSU has decided to recommend to its General Assembly (October 2008) the establishment of a new 10-year programme jointly with UNESACO and UNU. ICSU is a sponsor of the *Earth System Science Partnership (ESSP)* for the integrated study of the Earth System, the ways that it is changing, and the implications for global and regional sustainability initiated by the four ICSU global change research programmes. The work of ESSP complements that of individual programmes and the new ICSU-UNESCO-UNU programme. Together with UNEP, UNESCO, WMO and FAO, ICSU is sponsoring the *Global Ocean and Terrestrial Observing Systems*. The need of the MA research for monitoring of relevant variables is brought to the attention of the programmes as well as the Group on Earth Observations (GEO) of GEOSS. Through the ICSU Regional Office for Asia and the Pacific (Kuala Lumpur), ICSU has also engaged in stimulating continued strengthening of *sub-global assessments* based on the MA conceptual framework. The Regional Office for Latin America and the Caribbean (Rio de

[3] This summary was originally prepared based on information provided by the MA follow-up partners in August 2008; and it was updated on the basis of follow-up interactions with the Partners in September 2009, as well as a status report submitted by UNEP to SWedBio in March 2009.

Institution	Brief Update
	Janeiro) has biodiversity as one of its key priorities and this will thus also contributed to strengthened science as a follow-up to the MA.
Stockholm Resilience Centre	*Urban Social-Ecological Atlas* - The Stockholm Resilience Center, in collaboration with partners, launched the Urban Biosphere Network in May 2008. Through the network, "Urban Social-Ecological Atlas" is being developed, which is intended to map the spatial extent of selected ecosystem services and to what extent different socio-economic groups have access to the services. The Atlas also includes temporal changes and provides guidelines for where in the urban landscape specific management interventions, protection, restoration or creation would be most needed from a public interest point of view.
UNEP-WCMC	*Ecosystem Assessment Manual* – being developed by UNEP-WCMC in collaboration with partners. The manual is currently in the hands of the printers and is expected to be printed in English by November 2009. Capacity development activities geared at SGA practitioners are currently being planned and it is expected that workshops will be hosted in West Africa and Latin America in November 2009. *Sub Global Assessments (SGAs)* - UNEP-WCMC has been supporting activities on SGA follow-up, by participating actively in the SGA Secretariat and contributing to the development of policy documents required to establish the new SGA network.
WRI*	*Valuation of Ecosystem Services* – Supported valuation of coastal ecosystems in Tobago and St. Lucia (coral reefs) and in Belize (coral reefs and mangroves), focusing on value of fisheries, tourism, and shoreline protection. Valuation methodology is now being extended to Dominican Republic and Jamaica. *Ecosystem Service Markets* – WRI is working to develop market-based solutions to eutrophication, including water quality cap and trade, reverse auctions, and tax reforms. The work is currently focused in the Chesapeake Bay, with plans to expand to other regions in the U.S. and possibly China. *Review of Pilot Integrated Ecosystem Assessments* – Under the auspices of the UNDP-UNEP Poverty-Environment Facility, WRI undertook a "rapid evaluation" of three pilot integrated ecosystem assessments carried out in Rwanda, Tanzania and Uganda with support from the UNDP-UNEP Poverty-Environment Initiative. *Ecosystem Assessments* – WRI is working to synthesize existing data on hypoxic and eutrophic waters. WRI will develop a central repository of data and has already released a preliminary analysis. WRI has launched *Reefs at Risk Revisited* – a follow-up to the groundbreaking assessment of 10 years ago on the state of the world's coral reefs. This new assessment will include components on climate-related threats to reefs, the social vulnerability of reef-dependent communities, and a comparison of reef health in 1998 to the present day. *Biofuels and Ecosystem Services* – WRI is conducting research on the implications of biofuel policy on ecosystem services such as fresh water, soil formation, and C sequestration, with the aim of influencing federal and state policy in the United States. *Ecosystem Service Indicators* – WRI, UNEP-WCMC and IUCN are exploring plans to launch a consortium of organizations to improve ecosystem service indicators and data availability. A consolidated list of MA-related ecosystem service indicators has been compiled. Other preliminary plans include: developing a data model/relational database for organizing indicators and storing data online; identifying indicators/proxies to fill gaps; clarifying what data need to be gathered for indicators, how it should be gathered at different scales, and who should drive data collection, compilation and publication; facilitating distributed data provision via networked databases. An initial workshop will be held 22-24 September 2009 hosted by UNEP-WCMC in Cambridge. *All of the above activities aim to influence policy and decision-making, and so relate to Objective #2 as well.
PEI	*Preparation of Guidance for PEI Country Programmes* - Ecosystem Services Assessment is included as key element of PEI programmatic approach

Institution	Brief Update
	Rapid Evaluation of Integrated Ecosystem Assessments (IEAs) – rapid assessment of IEAs undertaken by PEI in three African countries was carried out in September/October 2008. A workshop was held in December 2008 in Nairobi to disseminate, discuss and validate the findings and recommendations. The evaluation was aimed at providing recommendations on the following for undertaking future assessments under the PEI framework: a. Revising and improving the content and application of the training module b. The development of guidelines on mainstreaming SGA results into poverty reduction strategies and economic planning frameworks and options for maximizing impacts of results in the country-specific policy contexts c. Guidance on the arrangements for backstopping, commissioning and managing the studies d. Guidance on developing TORs for SGAs taking into account national priorities, existing information base and local socio-economic factors
WWF/TNC/Stanford - Natural Capital Project	*Global database of ecosystem service projects:* This database contains data on 120 ecosystem service projects implemented by TNC or WWF that allows users to explore quantitatively their many dimensions, from biophysical, finance, policy, landowner, and other perspectives. We have published two high-profile analyses of the database and will be making the database freely available on the web by Fall 2009. *Integrated Valuation of Ecosystem Services and Tradeoffs (InVEST) Tool:* developed a spatially-explicit set of models that allows users to map the delivery and economic value of multiple ecosystem services. It is a scenario-based tool intended for use in diverse natural resource decisions. Version 1.0 was released for free download in October of 2008 and Version 2 is being released in stages. We have over 600 registered users. A special issue of the Proceedings of the National Academy of Sciences of the United States and a special issue of Frontiers in Ecology and the Environment demonstrate applications of the InVEST models. A book documenting the models will be published by Oxford University Press in July 2010. *Marine InVEST:* secured 2 years of funding for the development of InVEST for seascapes in October 2008. Initial models under development focus on: capture fisheries and aquaculture; shoreline protection; and recreation. We expect Version 1.0 of InVEST for seascapes to be running by end-2009 and to be ready for application in our first marine demonstration projects in 2010. *Demonstration Sites:* The Natural Capital Project has established a suite of demonstration projects in which there is opportunity to: (i) influence major resource decisions; (ii) demonstrate the power of natural capital tools and approaches; and (iii) advance sustainable, replicable, and scalable processes for integrating natural capital into policy worldwide. These sites are in Tanzania, China, Indonesia, Colombia, Ecuador and the United States (California, Hawai'i, Oregon, and Washington). Two sites for use of Marine InVEST are in development: British Columbia and California. *UNEP ProEcoServ Sub-global Assessments:* If funding is approved, the Natural Capital Project will train technical teams on InVEST for use in four sub-global ecosystem service assessments in Chile, South Africa/Lesotho, Trinidad/Tobago and Vietnam. *Quantifying Cultural Ecosystem Services:* In April 2009, we received funding for research on cultural values of natural capital, and their current and potential integration in policy decisions. We have recruited an international group of academicians and practitioners (in public, private, and non-profit sectors) to this effort and are holding a series of meetings. *Marine Ecosystem Service Metrics:* The Natural Capital Project, in collaboration with COMPASS, is convening a series of meetings with academics, conservation practitioners and

Institution	Brief Update
	marine managers to develop practical metrics for marine ecosystem services.
SwedBio	"SEA Guidance: Applying Strategic Environmental Assessment: Good Practice Guidance for Development Co-operation", developed by OECD DAC ENVIRONET in 2006, provides a commonly-agreed and shared framework for developing appropriate, fit-for-purpose applications of SEA in diverse areas. To enhance the SEA Guidance, ENVIRONET is developing a series of Advisory Notes to link SEA to key topical challenges. As part of this effort, *Advisory Note on Ecosystem Services and Strategic Environmental Assessment* has been developed by SwedBio in close consultation with WRI, Sida's Helpdesk for Environmental Assessment-Swedish EIA Centre, Sida Helpdesk for Environmental Economics - Environmental Economics Unit at Gothenburg University, Netherlands Commission for Environmental Assessment, Capacity Building in Biodiversity and Impact Assessment/ International Association for Impact Assessment, International Institute for Environment and Development, UNEP and UNDP. *Funding to support MA Follow-up Activities:* In October 2007, SwedBio provided a total of US$1.7 million to support MA Follow-up activities.
ISDR	*Global Assessment Report on Disaster Risk Reduction* - The first ISDR system's biennial Global Assessment Report on Disaster Risk Reduction (GAR) is being coordinated by the ISDR secretariat and the World Bank with UNDP, in collaboration with UNEP, UNICEF, IFRC, ProVention, WMO, UNOCHA, UNESCO and other ISDR system partners. The GAR will contain three main chapters including (i) a global risk update, providing the ISDR system with a baseline on patterns and trends in global disaster risk against which progress in reducing disaster risk can be assessed; (ii) a thematic analysis of a key disaster reduction issue, for example the linkages between disaster risk and poverty, environmental degradation, urbanisation, global climate change, economic growth and gender inequality; and (iii) a review of progress in implementation of disaster risk reduction measures at the national, regional and international level, identifying gaps and challenges and providing analysis and guidance for the establishment of ISDR system priorities. *Assessment on the economics of disaster risk reduction* - This joint UN/Word Bank initiative is a response to the growing demand from countries for concrete guidance on effective measures to reduce disaster risks and to implement the Hyogo Framework.
World Bank and UNEP	*World Wealth Report* – under developed This report is an added objective to the overall project and aims to improve the current understanding of the national economies and macroeconomic indicators
UNEP-University of Liverpool	Development of a Valuation Guide for Practitioners on Regulating Ecosystem Services that will comprise (i) Valuation work (Western Ghat) and developing a tool kit on valuation of regulating services that will serve as the basis for the delivery of the valuation guide for practitioners; (ii) Support for International workshop on the valuation of regulating services; and (iii) Development of a Valuation Guide for Practitioners that focuses on regulating ecosystem services.
UNEP-Autonomous University of Barcelona	Development of a Structured Decision Making Guide, that will (i) provide a short review of alternative methods and discussion of SDM and its applications to development of ecosystem services and poverty reduction strategies/decisions; (ii) Review of tools that might be applicable to SDM approach and identification as to where in the process these tools would be utilized; and (iii) create a Structured Decision Making Guide for integrating ecosystem service concepts into national and regional level.
SGAs – UNU-IAS,	*A Secretariat has been established* for the coordination of the SGA Follow-up Programme. Led by UNU-IAS, the work is guided by two co-chairs (Albert van Jaarsveld and Doris Capistrano), and supported by UNEP DEPI, UNEP-WCMC and The Cropper Foundation. The Programme

Institution	Brief Update
UNEP DEPI, UNEP-WCMC, The Cropper Foundation	aims to ensure synergies among the various SGA activities and to add value by exchanging lessons learned, improving methodologies, fostering a community of practice, and advancing the knowledge on multiscale assessments using the MA Conceptual Framework. *Annual Meetings of SGA Practitioners:* The first meeting of SGAs, held in Kuala Lumpur on 10 – 12 April 2008, was attended by about 60 participants including SGAs from approximately 20 countries, the Working Group co-chairs, the authors of the MA Methods Manual and members of the SGA Secretariat. Several key issues were addressed at this meeting including a policy for data and IPR, financing the SGA Programme and general services offered through the SGA Follow-up Programme. The second annual meeting, originally scheduled to be held in South Africa from October 22 – 25 2009 has been postponed due to funding and logistical constraints. Rescheduling of this meeting is still pending. *Funding Proposals:* Two funding proposals which will help to support the work of SGAs over the next 3 – 4 years have been advanced to the stage of submission. One proposal (ProEcoServ) has been submitted to the GEF (August 2009) to support four of the original MA SGA regions (Chile, South Africa/Lesotho, Trinidad/Tobago and Vietnam) in deepening and extending the work undertaken during the original SGA projects (US$6,296,637 in cash; US$8,367,518 in kind over four years). The main focus of the GEF-funded initiative, led by UNEP, is on the valuation of regulating services. The second project proposal submitted to the EC in September 2009 (1.5 million Euro over three years) focuses on capacity development activities for SGAs. *Applications for the MA SGA follow-up programme* have been submitted by the following SGAs for consideration by the SGA Secretariat: 1) IURMA: Indian Urban Resource Millennium Assessment 2) Wetlands in the downstream Mekong, Vietnam (2nd phase) 3) EURECA 4) PEI Ecosystem Assessment, Mali 5) China (Key Technologies of Comprehensive Monitoring and Assessment of Terrestrial Ecosystems for Ecological Renovation in China) 6) Egypt (Biodiversity, local knowledge and poverty alleviation in El Maghara, Sinia, Egypt) 7) Aboriginal People (Role of ecosystem services from rainforests in well-being of Aboriginal people) 8) IBSA SGA –SA (Comparative marine and terrestrial ecosystem services and human livelihood assessment: South Africa, Brazil and India) 9) IBSA SGA – Brazil (Comparative marine and terrestrial ecosystem services and human livelihood assessment: South Africa, Brazil and India) 10) COAST-MAN – Finland (Long-Term Assessment and Management of Coastal Zones in the Gulf of Finland) 11) California Nitrogen Assessment (Pilot Assessment of Nitrogen in California Agroecosystems) 12) Western India (Adaptation to change in Interlinked Cultivated and Wetland Ecosystems : A Study in Western India) 13) EEMB – Spain (Millennium Ecosystem Assessment in Bizkaia (MEAB) – Evaluación de los Ecosistemas del Milenio en Bizkaia (EEMB) 14) Himalayan SNS (Assessment of Sacred Natural Sites in Indian Himalayas) 15) Uganda SGA (Initial phase) 16) Thailand SGA (Coastal ecosystem services) 17) Ecuador SGA (Trade off analysis focusing on Yasuni ITT initiative)

Objective 2 - Integrate the MA ecosystem service approach into decision-making

Institution	Brief Update
DEFRA, UK	*Ecosystems Approach Action Plan* – developed by Defra in December 2007, to help developing a more strategic approach to policy-making and delivery on the natural environment by the Government.
PEI	*IEA Mali and Mauritania* – as part of the SwedBio project on MA follow-up, new SGAs (proposed to be in Mali and Mauritania) will be launched in 2009, as part of the PEI country programmes.
WRI	<u>*Public Sector:*</u> *Ecosystem Services: A Guide for Decision Makers* – Released by WRI in March 2008, targeting the public sector. WRI has been working with public sector groups to "road test" the methodology presented in the report, including conducting an ecosystem services prioritization in Puget Sound (Western U.S.) to inform restoration policy. This Guide will be used in conjunction with the MA Methods Manual developed by UNEP-WCMC and partners. *Banking on Nature's Assets: Incorporating Ecosystem Services in Multilateral Development Bank Strategies* – A new WRI Report to be published in October 2009 with recommendations for scaling-up MDB and partner country application of ecosystem services. *Ecosystem Services for Development* – As part of its Mainstreaming Ecosystem Services Initiative, WRI is developing a new strategy to expand its work in developing countries on ecosystem services information and assessment, with a focus on integrating ecosystem services into development planning and investment. *WRI-U.S. Environmental Protection Agency (EPA) Memorandum of Understanding* – WRI and the EPA's Ecological Research Program have launched a new partnership to bring research on ecosystem services into the mainstream of science, business and public policy. <u>*Corporate Sector:*</u> WRI *Ecosystem Services Review (ESR) methodology* – Launched in March 2008 at the World Business Council for Sustainable Development's (WBCSD) Annual Worldwide Conference of Delegates, targeting the private sector[4]. WRI, along with WBCSD and the Meridian Institute simultaneously issued a press release that was picked up by more than a dozen media outlets including Dagens Nyheter. The ESR has been translated into Spanish, Portuguese and Japanese. WRI has been working with several major companies to undertake an assessment of how their business depends on and impacts ecosystem services, and how to minimize ecosystem-related risk and benefit from ecosystem-based opportunities. WRI has created a *Business and Ecosystem Leaders Group* (BELG) to share lessons learned. Under the MA Follow-up Strategy, WRI is collaborating with UNEP/DEPI and DTIE on the project "Integrating the Corporate Ecosystem Services Review into Existing Performance Management Systems". Major activities/outputs include: (1) Three consultative workshops in Asia, Latin America and Africa; (2) Published Guidelines for integrating an ecosystem services review into 1-3 business performance management systems; and (3) Relevant guidance reflected in related TEEB report targeting business.

Objective 3 - Outreach and dissemination of the MA

Institution	Brief Update
DEFRA, UK	*Workshops for policy makers on integrating the findings of the Millennium Ecosystem Assessment into sustainable development policy in South Africa and Mexico* – held in spring 2008. directed to policy-makers.
RRes-Roth	*Media and documentary releases*- develop a 10 minute documentary on MA findings and implementation impacts, a collection of powerpoint presentation for the use of academics and CSO on MA and a 3 minute documentary for mass distribution on MA findings and

[4] WBCSD includes approximately 200 international companies that span multiple industry sectors and continents. The audience during the launch included more than 200 business managers.

	implementation impacts
UNEP	MA Follow-up Website: UNEP DEPI has been leading the development of website for the MA Follow-up Programme which will be available in November/December 2009. Support and Participation at the 10th Biennial Conference of the International Society for Ecological Economics: This conference was held 7 – 11 August 2008 at the UN conference facilities in Nairobi, Kenya and highlighted the vision, methods and policy adjustments needed for ecological economics principles to be applied to the design and management of environmentally and socially sustainable development processes. The conference sought to build capacity in this area in developing countries in the face of increasing global change and interdependence. One of the major topics discussed during the conference was ecosystem services and economic incentives, and this led to a special issue of the Journal of Ecological Economics on payments and markets for ecosystem services to be published by end 2009 (it will include acknowledgement of SwedBio and UNEP's support). SGA Intranet: In collaboration with UNU-IAS, an SGA intranet system has been established to allow for exchange of information. This was launched in early 2009. Develop Audio Visual Materials for MA External Communications which comprises (i) one short film (between 10 and 15 minutes long on the MA); (ii) video clips for use with explanatory audio-visual powerpoint presentations; and (iii) 3 minute film clip for Airline use
UNEP-WCMC	*Web based collaborative platform for ecosystem services* – in collaboration with the Conservation International, developing a web-based platform which will allow researchers and other stakeholders to post details of their studies of ecosystem services directly on a three-dimensional map of the world, with protected areas as one of the main base layers.

Annex III. Millennium Ecosystem Assessment (MA) follow-up process. From MA follow-up meeting held in Nairobi October 4, 2009

There is an MA follow-up process with a number of partners convened in 2007. It has been developed to increase the impact of the MA through an expanded collaboration which is working to address the needs of multiple users.

MA follow-up partners have helped to build the scientific understanding and methods for mainstreaming knowledge of ecosystem services for human wellbeing into policy making. Examples of current outputs include a MA methods manual, ecosystem services valuation tools, decision support systems, and guides for various sectors. Supporting sub-global assessments has been a main focus of the MA follow-up strategy.

The MA follow-up is continuing to focus on:

- Catalysing and supporting the implementation of sub-global assessments to build the scientific knowledge base, raise awareness, build capacity, and influence policy at a range of scales;
- Providing tools, technical expertise and capacity-building activities at the national level especially in developing countries;
- Mainstreaming the use of knowledge, synthesized from a range of processes, for policy implementation especially in developing countries

If an IPBES mechanism is created then ways in which the MA follow-up might support such a mechanism could be explored.

Map of SGAs

MA Approved Assessments
MA Associated Assessments
New Assessments

Partners in the MA Follow-up Network include: CBD, DEFRA, UK, DFID, DIVERSITAS, EC, European Environment Agency, FAO, ICSU, IUCN, PEI, Sida, Stockholm Resilience Centre, SwedBio/CBM, The Cropper Foundation, UNDP, UNEP, UNEP-WCMC, UNESCO, UNU-IAS, WRI Together with a host of sub-national, national and regional bodies involved in sub-global assessments.

Figure 1. The MA Conceptual Framework