

# Sustainable Development Update

– Keeps you updated on the interactions between ecological issues and social and economic development

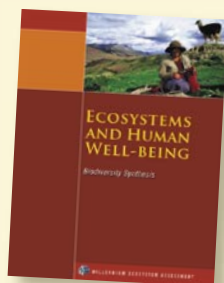
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Issue 2-3, 2006

Special Issue on the Millennium Ecosystem Assessment

“ MA has provided me – and others working with biodiversity from a livelihood and poverty alleviation perspective – with very good arguments for our case ”

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“Biodiversity is our future life insurance in a changing world”

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“The world should invest in ecological infrastructure in poor countries”



Page 4 >>

“There are many pressing reasons to value ecosystems and the extraordinary range of services they provide [...] They are also, and this is especially true for the poor, the basis of livelihoods from forestry and fishing to farming and tourism. For too long their economic value has been ignored”

Klaus Toepfer, Executive Director of the United Nations Environment Programme (UNEP), at the launch of the Millennium Ecosystem Assessment.

## “Healthy ecosystems key to poverty alleviation”

This is a special issue of Sustainable Development Update. It contains a collection of articles on the UN-initiated global study The Millennium Ecosystem Assessment (MA).

MA is the most extensive study ever of the linkages between the planet’s ecosystems and human well-being. It shows that the international community needs to make environmental conservation a top priority if it wants to meet the Millennium Development Goals.



### Editorial:

## “The MA has had zero impact on policy”

It is time to summarise. The findings of the Millennium Ecosystem Assessment (MA) have now been out for more than a year. The unique global survey was called for by Kofi Annan at the millennium to meet the needs of decision-makers and the public for scientific information on the consequences of ecosystem change for human well-being.

The bottom line of the MA is that we humans are putting such a strain on the planet’s ecosystems that their capacity to sustain future generations can no longer be taken for granted. Read again: *their capacity to sustain future generations can no longer be taken for granted*. However, the MA also shows that it is possible to do something about the problems, but that this requires substantial changes in policy and practice.

So, has the world listened and do we see any real signs of changes in policy? Interestingly, the MA is regarded by some to have been a great success while others claim that it has had “zero impact on policy”. Walter Reid, the MA’s director summarises the impacts in a new survey available at [www.maweb.org](http://www.maweb.org) and concludes that MA “has had an impact on the intended audiences, but the extent of that impact is very mixed”.

The MA was awarded the Zayed International Prize for the Environment and the World Economic Forum called it one of the environmental ‘heroes’ in 2005. Among politicians, the impact appears to be greatest where MA sub-global assessments

were conducted, including South Africa, China and Sweden, says Walter Reid. There is, however, little evidence of impact among several other influential countries, including the U.S., India and Japan.

Another key aspect is media. The MA made it to the front pages of Le Monde and the Guardian. CNN International and BBC also covered the launch extensively.

In an earlier editorial I wrote that the unique thing about the MA is that it states the obvious (that we still need nature) in ways that should make the leaders of the world listen. Listening and hearing are, however, really two different things. The MA did get some attention, but the impact on policy still seems to leave a lot to be desired.

“The message of the Millennium Ecosystem Assessment bears repeating. Read again!”

The MA-study was conducted by some 1300 experts from 95 countries over five years. And now it is over. In my opinion the real work starts now. Maybe the MA study should have had some 1300 communicators to ensure that its important messages reach as broad an audience as possible?

It is in this spirit we have chosen to collect a number of our previous articles on the MA in a special issue. In addition to these old, but re-edited, articles this issue also includes a number of new additions. The message of the Millennium Ecosystem Assessment bears repeating. Read again!

/Dr. Fredrik Moberg, Editor

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### SUSTAINABILITY SCHOOL

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# "Healthy ecosystems key to poverty alleviation"

**Healthy ecosystems are fundamental for alleviating poverty and achieving sustainable development, according to the Millennium Ecosystem Assessment (MA). One of the main messages of the UN-sponsored study is that the international community needs to make environmental conservation a top priority if it wants to meet the UN's Millennium Development Goals.**

The UN-initiated study, Millennium Ecosystem Assessment (MA), released its technical assessment reports earlier this year. This marked the end of the unique global survey that was called for by United Nations Secretary-General Kofi Annan at the millennium. In a series of seven reports the MA has assessed the state of global ecosystems and their role for human well-being. Ecosystems provide food, wood, textiles and medicines; they are a source of aesthetic, spiritual, cultural, and recreational values; they

**"It is the most extensive study ever of the linkages between the planet's ecosystems and human well-being"**

support crop pollination, maintenance of water quality and soil fertility, and regulate regional climate, natural hazards and pests, to name a few. The MA-report's focus on the interactions between social and ecological systems and its findings, should incite decision-makers to incorporate ecological issues in all sectors.

– The Millennium Ecosystem Assessment brings ecosystems back to the heart of development decision-making by documenting how much we gain from nature every day in the form of ecosystem goods and services. They are literally the foundation for the livelihoods of millions of the poorest, says Achim Steiner, director



Intact and healthy ecosystems are often worth more to society than ecosystems optimised for production of one or a few goods or services. The private benefits are, however, often greater from the converted ecosystem. Photos: Jakob Lundberg and Nils Kautsky.

general of the World Conservation Union (IUCN), one of the report's signatories.

The UN launched the MA in order to better understand the consequences of current changes to ecosystems and to evaluate scenarios for the future. The study, spanning the local to the global scale and carried out by 1,360 experts in 95 nations, delivers a stark message to policymakers in developing as well as developed countries.

### Time to act now

MA shows how humans have, over the past 50 years, changed ecosystems faster and over larger scales than ever before. This has, for the most part, been done to meet rapidly growing demands for food, fresh water, timber, fibre and fuel, the report says. These changes have helped to improve the lives of billions, but have at the same time weakened ecosystems' capacity to deliver other crucial services. Today, about 60 percent of the ecosystem services that support life on Earth are being degraded or used unsustainably, the

MA says. Scientists behind the MA warn that, if nothing happens now, the detrimental consequences of this degradation could become significantly worse in the next 50 years. These consequences affect also the wealthy. This is "fortunate" as these are the social groups and nations that need to make the largest and most immediate changes. Given the scale of human action and impact, it is no longer possible to deal with these issues at a local or national scale. International agreements are essential, and their impacts

**"Humans have, over the past 50 years, changed ecosystems faster and over larger scales than ever before"**

need to be improved by, for example, co-ordinating between environmental agreements and other international economic and social agreements as well as subsequent enforcement.

### The poor worst off

One of the main messages of the MA is that the international community needs to make environmental conservation a top priority if it wants to meet the UN's Millennium Development Goals (MDGs).

"Any progress achieved in addressing the goals of poverty and hunger eradication, improved health, and environmental protection is unlikely to be sustained if most of the ecosystem services on which humanity relies continue to be degraded," the MA reports state.

Despite the progress achieved in increasing the production and use of some ecosystem services, levels of poverty remain high, inequities are growing, and many people still do not have a sufficient supply of or access to essential ecosystem services. The poor are generally those most vulnerable to the deterioration of

### Box 1:

### Four main findings of the MA-report:

1. Due to rapidly growing demands for food, freshwater, timber, fibre and fuel, humans have changed ecosystems faster and more extensively in the past 50 years than ever before. About 60 percent of the ecosystem services that support human well-being are being degraded or used unsustainably.
2. The degradation of ecosystem services could get significantly worse during the next 50 years. This will be a barrier to the achievement of the Millennium Development Goals.
3. The changes made to ecosystems have contributed to substantial gains in human well-being and economic development, but these gains have been achieved through the degradation of many ecosystem services, increased risks of abrupt changes, and increased poverty for certain groups of people.
4. Reversing the degradation of ecosystems while meeting increasing demands for their services is a challenge. It can be partially met in the future, but requires substantial changes in policy, institutions and practice.

# 4

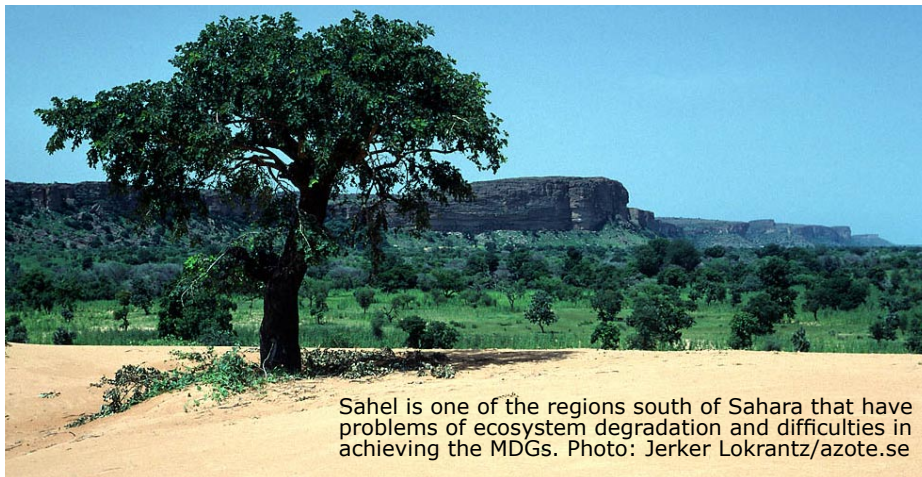
natural systems. The regions facing the worst problems of ecosystem degradation – sub-Saharan Africa, Central Asia, some regions in Latin America, and parts of South and Southeast Asia – are also those having the greatest difficulties in achieving the MDGs. For example, the number of poor people in Sub-Saharan Africa is predicted to rise from 315 million in 1999 to 404 million by 2015. The conversion of land to agriculture, for example, is unavoidable as the world faces a growing population. The impacts of this conversion will, however, depend on how it is carried out.

– Only by understanding the environment and how it works, can we make the necessary decisions to protect it. Only by valuing all our precious natural and human resources can we hope to build a sustainable future,” said UN Secretary General Kofi Annan, in a message when launching the MA reports.

All four future scenarios explored by the MA predict progress in eliminating hunger, but at too slow a rate to halve the number of people suffering from hunger by 2015. The improvements are slowest in South Asia and sub-Saharan Africa, where the problems are biggest. Environmental conditions, in particular climate change, soil degradation, and water availability, influences this goal through its effect on crop yields and

**“Ecosystems and the services they provide are economically far more significant than many realise”**

effects on the availability of wild food sources. Moreover, the MA warns that changes in ecosystems such as deforestation is going to influence the abundance of human pathogens like malaria and cholera, as well as the risk of emergence of new diseases. Malaria accounts for more than 10 percent of the disease bur-



Sahel is one of the regions south of Sahara that have problems of ecosystem degradation and difficulties in achieving the MDGs. Photo: Jerker Lokrantz/azote.se

den in Africa. Had it been eliminated 35 years ago, the continent’s gross domestic product would have been \$100 billion larger today.

**Nature’s capital on the balance sheet**

A striking result of the MA-study is that ecosystems and the services they provide are economically far more significant than many realise. To damage them is in the long run more or less synonymous to economic suicide.

**“It is cheaper to conserve ecosystems rather than pollute and clean up afterwards”**

– I am not one of those who believe everything in this world should be boiled down to dollars and cents. But these estimated values are a good start and are a useful and additional reason to care for and respect natural capital alongside financial and human capital, said Klaus Toepfer, Executive Director of the United Nations Environment Programme (UNEP) when attending the launch of the MA in Beijing, China, last year.

The MA says the costs of degraded ecosystems can be high, and that it is

cheaper to conserve them rather than pollute and clean up afterwards. Intact and healthy ecosystems are often worth more than altered ecosystems optimised for production of one or a few goods or services. The private (market) benefits are, however, often greater from the converted ecosystem as the individual’s impacts on the ecosystem are rarely accounted for – this is the heart of the problem. The MA shows how an intact wetland can be worth \$6,000 per hectare whereas one cleared for intensive agriculture is worth only around \$2,000 per hectare. Similarly, a mangrove forests in Thailand is worth at least \$1,000 per hectare versus about \$200 per hectare when cleared for shrimp aquaculture.

**The future can be bright**

The media coverage of the MA has tended to emphasise its dark side, that the planet’s ecosystems are under a lot of stress, and that if things don’t change, we’re heading for disaster. But read again: *if* things don’t change. The study, is also positive and includes a chapter on scenarios for the coming fifty years. In fact, of the four scenarios, only one could be called really pessimistic.

Notably, no scenario represents business as usual. Big changes in consumption, better education, new technology and higher prices for exploiting ecosystems could reverse the degradation of many ecosystem services over the next 50 years. One of the main incentives for this to occur is to make world leaders recognise that nature’s services have a value, as protection of ecosystem services is unlikely to be a priority for those who see them as free and limitless. So, things are indeed bad, but not so bad that there’s nothing that we can do about it.

**/Fredrik Moberg & Miriam Huitric**

**More at:**

<http://www.greenfacts.org/ecosystems/>  
<http://www.maweb.org/>

**Box 2:**  
**Seven ways to safeguard Nature’s free services for the future according to the MA**

1. Increase the use of economic instruments and market-based approaches, e.g. user fees, payment for ecosystem services
2. Explicitly include ecosystem services in poverty-reduction strategies
3. Connect environmental management across ministries and sectors, instead of isolating it in a single ministry
4. Create co-managed nature reserves that are a part of the regional landscape rather than having only isolated reserves far from human activity
5. Include local and indigenous knowledge, as well as technical knowledge, in decision-making
6. Expand information available to individuals about how ecosystems affect them, and how their actions affect ecosystems
7. Expand environment-friendly technology, especially in the areas of agriculture (water, nutrient and land use), urban design, and energy efficiency

## “Invest in ecological infrastructure in poor countries”

**The world should invest in ecological infrastructure in poor countries and establish a periodic assessment of the benefits that people obtain from ecosystems, say economist Jeffrey Sachs, director of the Millennium Project, and ecologist Walter Reid, former director of the Millennium Ecosystem Assessment.**

Jeffrey Sachs and Walter Reid have written a joint policy forum in the scientific journal *Science* (May 19, 2006) “Investments Toward Sustainable Development”. They note that both projects have broad agreement about the need to integrate ecology and poverty alleviation. They recommend that the world invest in ecological infrastructure in poor countries and establish a periodic assessment of the benefits that people obtain from ecosystems. They write:

“The goal of the Millennium Project is to develop and to promote practical plans for achieving the U.N. Millennium Development Goals (MDGs) for ending poverty, eradicating hunger, achieving universal primary education, improving health, and restoring a healthy environment.

**“More than 70% of the 1.1 billion poor people surviving on less than \$1 per day live in rural areas, where they are directly dependent on ecosystem services”**

The Millennium Ecosystem Assessment (MA), in turn, examined the consequences of ecosystem change for human well-being and analyzed options for conserving ecosystems while enhancing their contributions to people. The MA and the Millennium Project reached strikingly parallel conclusions:

1. Environmental degradation is a major barrier to the achievement of the MDGs. The MA examined 24 ecosystem services (the benefits people obtain from ecosystems) and found that productivity of only 4 had been enhanced over the last 50 years, whereas 15 (including capture fisheries, water purification, natural hazard regulation, and regional climate regulation) had been degraded. More than 70% of the 1.1 billion poor people surviving on less than \$1 per day live in rural areas, where they are directly dependent on ecosystem services.

**“Investing in environmental assets and management are vital to cost-effective and equitable strategies to achieve national goals for relief from poverty, hunger, and disease”**

2. Investing in environmental assets and management are vital to cost-effective and equitable strategies to achieve national goals for relief from poverty, hunger, and disease. For example, investments in improved agricultural practices to reduce water pollution can boost coastal fishing industry. Wetlands protection can meet needs of rural communities while avoiding costs of expensive flood control infrastructure. Yet these investments are often overlooked.

3. Reaching environmental goals requires progress in eradicating poverty. More coherent and bolder poverty reduction strategies could ease environmental stresses by slowing population growth and enabling the poor to invest long term in their environment.



**Walter Reid and Jeffrey Sachs call on the rich countries to establish a Millennium Ecosystem Fund to enable poor countries to incorporate environmental sustainability into national development strategies.**

We recommend the following measures in 2006. First, we call on the rich donor countries to establish a Millennium Ecosystem Fund to give poor countries the wherewithal to incorporate environmental sustainability into national development strategies.

The fund would support work that focuses on how poverty reduction can enhance environmental conservation (e.g., by giving farmers alternatives to slash and burn) and how environmental sustainability can support poverty reduction (e.g., watershed management to maintain clean water supplies). It would also support national ecosystem service assessments to help decision-makers factor the economic and health consequences of changes in ecosystem services into their planning choices |...|

**“More coherent and bolder poverty reduction strategies could ease environmental stresses by slowing population growth and enabling the poor to invest long term in their environment”**

Second, the United Nations should establish a cycle of global assessments modeled on the MA and similar to the climate change reports produced at 4- to 5-year intervals by the Intergovernmental Panel on Climate Change (IPCC). The MA and IPCC cost roughly \$20 million, and each mobilized in-kind contributions of that magnitude.

A global network of respected ecologists, economists, and social scientists working to bring scientific knowledge to decision-makers and to the public can clarify the state of scientific knowledge, help to mobilize needed research, and defeat the obfuscation led by vested interests.”

/Garry Peterson

This is a slightly modified version of an article previously published on the Resilience Science weblog:  
<http://resilience.geog.mcgill.ca/blog/>

#### More at:

The *Science* Policy Forum article by Jeffrey Sachs and Walter Reid can be downloaded at:  
[http://www.unmillenniumproject.org/documents/ScienceMag\\_19-05-06.pdf](http://www.unmillenniumproject.org/documents/ScienceMag_19-05-06.pdf)

## “The future for ecosystems and human well-being can be bright”

**The Millennium Ecosystem Assessment (MA) developed four global scenarios for the future of humans and ecosystems for the coming fifty years. Interestingly, only one of the scenarios could be called really pessimistic. But all positive scenarios require big political changes.**

How do we best manage the planet’s ecosystems so that they continue to supply humans with fish, fruits, medicines, timber, clean water, clean air, climate moderation, and beautiful scenery? These were the major questions behind the four global scenarios of the MA-study. A scenario is a plausible description of how the future may develop, based on a set of assumptions about key driving forces (e.g., rate of technology change, prices) and relationships. As such, scenarios are neither predictions nor projections.

### Business as usual is no option

The MA-study explored two possible development paths for the futures of ecosystems and humans, one in which globalisation increases and another where the world becomes increasingly regionalised. The scenarios were further divided into two different approaches for natural resource management: *reactive*, meaning that most environmental problems are addressed only after they become obvious, or *proactive*, meaning that policies seek to maintain ecosystem services for the long term. Notably, only one out of the four scenarios, “Order from Strength” can be called really pessimistic.

No scenario, however, represents business as usual. Huge changes are needed in order to reverse the degradation of

ecosystems, according to the MA-scenarios. Required changes include altered consumption patterns, better education, new technologies and higher prices for exploiting ecosystems.

### Strategies for a range of possible futures

The basic problem with scenario-building is that we live in a world of changes. During the 20th century the human population on Earth quadrupled, the economy grew 14 times, emissions of carbon dioxide increased 17 times, and water consumption increased nine times. The resulting changes in climate, technology, trade and societal values are making the future more and more unpredictable.

How do we advise our children when we can’t know what sort of society they will live in? How do we deal with environmental change and build strategies to cope with it? Dealing with complex and ever-changing ecosystems that depend on decisions taken by humans in likewise unpredictable societies means that our expectations will often be proved wrong.

To tackle such problems, ecologists have started to learn from the business community and the use of a process called Scenario planning. It was developed by companies that have to make expensive long-term decisions in uncertain situations. Contrasting scenarios are envisioned to identify strategies that can be successful across a range of possible futures. Hence, every scenario is a depiction of a possible future, not a prophecy.

### Bet-hedging instead of maximising production

Another strategy being used in order to prepare for change and uncertainty in ecosystem management is to concentrate on ecosystems’ resilience – their capacity to cope with environmental change and disturbances. That is, instead of

focusing on maximum current gain from ecosystems a bet-hedging approach is adopted where ecosystems are managed to sustain variation and diversity.

In this context, a high biodiversity provides insurance and spreads risks so that the capacity of ecosystems to produce desired goods and services can be maintained even if environmental conditions change.

The MA has used this kind of scenario planning in its search for a better management and understanding of the world’s ecosystems. The third Global Environmental Outlook (GEO3) from UNEP is another large sustainable development project that has used scenario planning.

/Fredrik Moberg

### More at:

<http://www.greenfacts.org/ecosystems/toolboxes/scenarios-go.htm>

#### Box 1:

### The four global MA-scenarios for 2050



**1 Global Orchestra:** a globalised world focusing on trade and economic liberalisation. Succeeds in promoting economic growth and lifting many people out of poverty. International institutions deal well with global problems such as climate change and fisheries. However, the reactive approach to environmental problems makes people vulnerable to surprises (e.g natural disasters) arising from delayed action.



**2 Order from Strength:** a regionalised and fragmented world focusing on security and protection. Takes a reactive approach to the environment. Economic growth rates are the lowest of the scenarios. Problems of global climate change, international fisheries, and trade in endangered species are not dealt with properly. Many developed countries cope with local problems by exporting them to poor less developed countries.

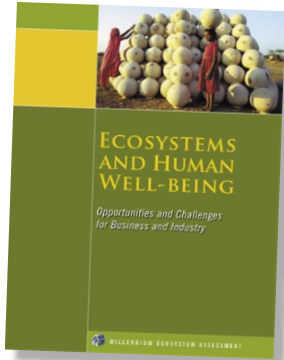


**3 Adapting Mosaic:** a regionalised world with a proactive approach to environmental problems. Local ecosystem management strategies are strengthened. Investments in human and social capital is large and emphasise knowledge about ecosystems. The local focus leads to failures in managing global environmental impacts, but eventually people develop networks among communities, regions and nations to better tackle these global problems.



**4 TechnoGarden:** a globalised world focusing on new technologies to deal with ecosystem degradation. Highly managed and engineered ecosystems deliver ecosystem services. The well-being of many of the the world’s poor is improved when the supply of ecosystem services is improved, but the reliability of the services is low. Technological solutions often creates new problems and not every problem can be solved through technological innovation.

**Companies who use the Earth's ecosystems more wisely are likely to see bigger profits and enjoy more stable business in the near future. In doing so they will also conserve the life support systems upon which human development depends and provide new income flows to overcome poverty. This is the conclusion of the fourth Millennium Ecosystem Assessment (MA) report.**



– It is an invaluable resource for business leaders who think long term and seek to understand the threats and opportunities that will shape the economies of the future, says Professor Jane Lubchenco, one of the scientists behind the new report.

This is especially true for developing countries as these are home to much of the remaining natural capital, including genetic diversity and the materials and services underpinning tourism and developments in the food,

pharmaceuticals and tourism industries. Companies who invest in ecosystem care and conservation are likely to enjoy enhanced profits, improved reputation with customers and new business opportunities. They will also be better placed to respond to sudden "shocks" such as higher oil prices, dramatic falls in the availability of raw materials or implementation of greener laws.

Up to now, the free services nature provides have been taken for granted. These ecosystem services include: production of fish and timber, purifying air and water and pollination. Environmental consideration has so far dealt more with saving en-

ergy and materials to lower costs and improving customer image rather than analyzing what ecosystem services the company is dependent upon. The new MA report shows that around 60 % of the studied ecosystem services are eroding or unsustainably used. When nature can not provide us with these services, the prerequisites for doing business change dramatically.

**Pioneering companies will have a competitive advantage**

– Business as usual is not acceptable any longer. On the other hand, pioneering companies that come up with new innovative strategies and technology that predicts or meets ecosystem change will have a competitive advantage, says James Griffiths of the World Business Council for Sustainable Development, a collaborator of the MA study.

Professor Carl Folke, Stockholm University, coordinator of the Swedish "sub-global assessment" of the MA-study says that environmental consideration is no longer a question of value. It is a matter of fate.

– This is fundamental to the development of our society and economy. We are interlinked with the biosphere and are dependent upon functioning ecosystems. We need to manage our ecosystems in order to meet change in the future and maintain our capacity to develop.

Even though the MA study paints a rather dark image, the researchers maintain that it is not too late to act and that it is businesses in particular that have the best chance to do so. Contrary to governments, companies use ecosystem services more directly, and have the resources needed to be both innovative and swift enough to adapt to change.

/Caroline von Post Carlsson

**More at:**

<http://www.millenniumassessment.org/en/article.aspx?id=36>

## Linking local knowledge with global science

**International scientific assessments have often ignored the enormous knowledge of local and indigenous peoples. In March 2004, however, about 200 scientists and local and indigenous experts met in Alexandria, Egypt, for a Millennium Ecosystem Assessment (MA) conference on the importance of indigenous knowledge in improving public understanding of environmental processes.**

The conference "Bridging Scales and Epistemologies- linking local knowledge with global science in multi-scale assessments" was held in the new library in Alexandria in Egypt. The aim of the MA-studies is to link existing local knowledge about local ecosystems with scientific knowledge about ecosystem health on a global scale. The long term goal is to use these results in order to create a global panel on ecosystems, similar to the IPCC, Intergovernmental Panel on Climate Change.

– Environmental changes affect people globally and locally. Yet, international scientific assessments often ignore the vast knowledge and expertise of local and indigenous peoples, said Dr. Walt Reid, executive director of the Millennium Ecosystem Assessment. "This ranges from detailed records of species diversity to stories of species migration and weather patterns that are passed down through village elders, hunters, and farmers."

**Scientific scenarios presented in a play**

It is still too early to say whether the MA-study will have an impact on decision-makers on the global level or not, but the conference did give a couple of examples on interesting processes that have been started. One study focused on scenarios for the future livelihood of farmers in a South African village. Instead of only reporting the results back to the scientific community, the researchers presented the villagers with their results



Researchers and local community members in Quechua, Bolivia, discuss the benefits and techniques of a project. Photo: FAO

in the form of a play. A drama group reflected three scenarios based on the villagers' views of their future. The play made it clear to themselves that they were all waiting for the government to save them from poverty, something that the government will never do. If they want out of poverty, they have to take action themselves.

There are of course many challenges with using traditional knowledge, since it is a blend of local practices, beliefs and myths inherent to the culture. For example, how does one judge whose knowledge really counts? What is "good" and useful knowledge and what is superstition? When both conservation of nature and culture is needed, is there a risk that also suppression, ignorance and superstition is conserved?

/Christina Schaffer

**More at:**

<http://www.millenniumassessment.org/en/article.aspx?id=36>

## "Local stewardship of Nature key to fighting poverty"

**Soils, forests, water and fisheries must be managed at the local level if you really want to fight poverty, says the World Resources Institute (WRI). Their latest biennial publication *World Resources 2005* was based on the results of the Millennium Ecosystem Assessment.**

Natural resources managed at the local level are often the most effective way to create wealth for the world's rural poor. This is one of the main conclusions in yet another attention-grabbing report from the World Resources Institute (WRI), *World Resources 2005: The Wealth of the Poor: Managing Ecosystems to Fight Poverty*.

Here the Washington-based environmental group stresses the urgent need to look beyond aid projects, debt relief and trade reforms and focus on local natural resources to address the global poverty crisis.

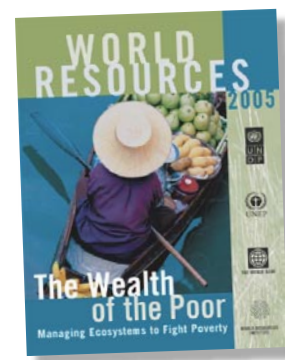
– Traditional assumptions about addressing poverty treat the environment almost as an afterthought. This report addresses the stark reality of the poor: three-fourths of them live in rural areas; their environment is all they can depend on, says Jonathan Lash, WRI president.

The foreword highlights the connection to the Millennium Ecosystem Assessment (MA): "Thanks to the MA, we finally understand, in terms even the most hard-bitten economist or banker can appreciate, the economic value of our natural capital account. And like the banker or economist, we now understand that we must manage that capital account—a trust fund, if you will—so that it not only provides for our needs today but also for the needs of future generations. This volume documents that such stewardship of nature is also an effective means to fight poverty."

The report highlights a number of case studies revealing how local stewardship of ecosystems can be key to fighting poverty. For example, the Sukuma people of Tanzania was given control over restoring 700,000 local acres of denuded forests and graz-

ing lands and now have higher household incomes, better diets, and improved status of tree, bird and mammal species. Likewise, the report describes how community control over a watershed led to a nearly six-fold increase in the cash value of crops grown in Darewadi Village, India.

While the last decades have witnessed substantial gains in human well-being and economic development in many parts of the world, large groups of people in rural areas have experienced increased poverty. Three-quarters of the world's poor people, which live on less than \$2 per day, live in rural areas and depend overwhelmingly on nearby natural areas for their income.



### Lack legal rights to ecosystems

– Unfortunately, the poor often lack legal rights to ecosystems and are excluded from decisions about ecosystem management. Without addressing these failures through changes in governance, there is little chance of using the economic potential of ecosystems to reduce rural poverty, says Ian Johnson, vice president of sustainable development, The World Bank.

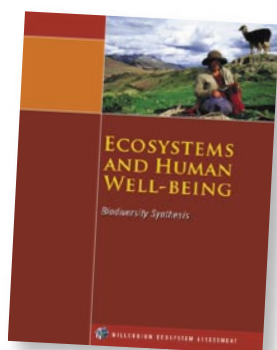
The 2005 report is number 11 in a series of reports on global environment and governance. It is a natural follow-up to the two previous editions: *World Resources 2000-2001: People and Ecosystems* and *World Resources 2002-2004: Decisions for the Earth*. The World Resources Institute, the World Bank, the United Nations Development Programme, and the United Nations Environment Programme publishes the series jointly.

/Fredrik Moberg

### More at:

<http://population.wri.org/worldresources2005-pub-4073.html>

## "Biodiversity is our future life insurance in a changing world"



**The second Millennium Ecosystem Assessment report, released May 2005, shows that many people have been lifted out of poverty during the last 50 years, but at the price of a loss of biodiversity.**

**If we continue down this road, we will put the well-being of future generations at risk, says the new report.**

– Biodiversity is life insurance for our changing world, said Hamdallah Zedan, Executive Secretary to the Convention on Biological Diversity when the second Millennium Ecosystem Assessment report, was launched. It is called *Biodiversity and Human Well-being: A Synthesis Report for the Convention on Biological Diversity* and shows how human actions have the last 50 years changed the diversity of life on the planet more than at any other time in history.

Many people have been lifted out of poverty during the same period, but at the price of a loss of biodiversity. If we continue down this road, we will reduce biological diversity and put the well-being of future generations at risk, says the new report.

Biodiversity provides the materials we need for food, clothing and shelter, and gives us security, health and freedom of choice.

"Loss of biodiversity is a major barrier to achieving development goals, and poses increasing risks for future generations," said Walter Reid, Director of the Millennium Assessment. "Management tools, policies and technologies do exist to dramatically slow this loss."

### More at:

Download the report at:

<http://www.maweb.org/proxy/document.354.aspx>

### Box: Key findings of the report

Changes in biodiversity due to human activities were more rapid in the past 50 years than at any time in human history

Humans have increased species extinction rates by as much as 1,000 times over background rates of extinction

Some 12 percent of birds; 23 percent of mammals; 25 percent of conifers and 32 percent of amphibians are threatened with extinction

The world's fish stocks have been reduced by an astonishing 90 percent since the start of industrial fishing

## "We need to value ecosystem services more comprehensively – and take decisions accordingly"

**Healthy ecosystems are fundamental for alleviating poverty, claims the Millennium Ecosystem Assessment (MA). But what do people working with poverty alleviation think of the study? We asked Maria Berlekorn, Programme Director of The Swedish International Biodiversity Programme, SwedBio.**

### 1. What is the most important outcome from MA?

Most of the particular issues and findings raised in the MA are not new per se. What is new and important is the comprehensive framework – showing how biodiversity, ecosystem services and human well-being – are interlinked, the thorough



**"MA has provided me – and others working with biodiversity from a livelihood and poverty alleviation perspective – with very good arguments for our case"**

review and analysis of status and trends, the authority obtained from the broad scientific involvement including not least the sub-global assessments, and the comprehensive stakeholder buy-in.

Another thing that merits considerable attention is the conclusion that present work and solutions to address biodiversity loss and maintenance of ecosystem services are not enough. We have to re-think the whole way decisions are taken and on what basis. The MA's strong call for significant changes of governance, institutions, economic policies and incentive frameworks is very important and must be prioritised.

This includes for example the need for valuing the ecosystem services more comprehensively – and take decisions accordingly. Not least the evidence showing that sustainable management of natural resources, such as forests and coastal areas, from a macro economic perspective is economically more sound than extractive use is important.

It also includes acknowledging the rights and roles of local communities in ecosystem management and understanding that

local control and "voice" may actually function as key incentives for sustainable ecosystem management.

### 2. Has MA facilitated the work of practitioners in developing countries?

I think it is still too early to expect many changes – yet – on the ground. Both because the MA is so broad, and fairly general in its scope, and not in itself a "manual" for field-level work, and because it is still early days. Main impacts so far are probably mainly in the scientific discussions, in some national and international policy fora, and generally more on a "guideline" or policy level rather than practical level.

MA has certainly provided me – and others working with biodiversity from a livelihood and poverty alleviation perspective – with very good arguments for our case. It is only to hope for that MA will not become yet another shelf-warmer but actually *will* have the substantial influence it needs to.

### 3. In what ways will you in your daily work contribute to the implementation of MA?

My organisation, SwedBio, is increasingly using the MA framework, findings and arguments as a fundamental starting point for our work. We base our long- and short-term planning on the MA-findings. We will specifically – with the external funds we receive from Sida – support the MA-follow up internationally, focusing on the links between biodiversity – ecosystem services and opportunities for poverty alleviation.

We will also actively try to disseminate the MA-findings and encourage policy-dialogue – as well as concrete actions and follow-up – based on the MA-recommendations. Our latest staff member has been recruited specifically to work on supporting MA-follow up.

#### More at:

<http://www.swedbio.org>

## Sustainability School: Ecosystem Services

**Ecosystem Services** are a crucial concept of the Millennium Ecosystem Assessment (MA). These services are environmental functions that benefit humans, like water and air purification, flood control, erosion control, generation of fertile soils, detoxification of wastes, regulation of climate, pollination, and aesthetic and cultural benefits. Another important ecosystem service is the maintenance of biodiversity, which is critical to agriculture and many industries including pharmaceuticals. The MA-study concludes that out of 24 evaluated ecosystem services 15 (60 %) are being damaged.

Unlike ecosystem goods like seafood and timber, most ecosystem services are not traded in economic markets. Nevertheless, they are crucial to human well-being and economic development. The value of ecosystem services should therefore be incorporated into decisionmaking processes, argues the MA-study.

The MA-study divides the ecosystem services into four different categories:

**1) Provisioning services** are the products obtained from ecosystems, including, for example, genetic re-

sources, food and fiber, and fresh water.

**2) Regulating services** are the benefits obtained from the regulation of ecosystem processes, e.g. regulation of climate, water, and some human diseases.

**3) Cultural services** are the non-material benefits ecosystems provide, e.g. spiritual enrichment, cognitive development, reflection, recreation, and aesthetic values.

**4) Supporting services** are the services that are necessary for the production of all other ecosystem services, e.g. biomass production, production of oxygen, soil formation and water cycling.

#### More at:

"EcosystemServices: Benefits Supplied to Human Societies by Natural Ecosystems" by G.C. Daily and 10 others. <http://www.esa.org/issues.htm>



**Pollination is one type of ecosystem service.**  
Photo Jakob Lundberg



The Sustainable Development Update focuses on the links between ecology, society and the economy. It is produced by Albaeco, an independent non-profit organisation, in cooperation with the Center for Transdisciplinary Environmental Research (CTM) and the Department of Systems Ecology, both at Stockholm University; the Beijer International Institute of Ecological Economics; the Resilience Alliance; and the Stockholm Environment Institute (SEI). It is produced with support from Sida, the Swedish International Development Cooperation Agency, Environment Policy Division. **Feedback:**

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