A revised sustainable development strategy for the EU: Vision, objectives, targets, instruments and indicators

July 13, 2005

A Contribution to the European Commission preparations from:

BirdLife International.
Climate Action Network Europe.
European Environmental Bureau
European Public Health Alliance- Environment Network
International Friends of Nature.
Friends of the Earth Europe
Greenpeace.
The European Federation for Transport & Environment
CEE Bankwatch Network
WWF European Policy Office

Editor: John Hontelez
Secretary General EEB
Boulevard de Waterloo 34
1000 Brussels, Belgium
hontelez@eeb.org

CONTENTS

THE GLOBAL CHALLENGE of the Sustainable Development Strategy

The Millennium Ecosystem Assessment is the most recent and severe warning that global sustainability is more than ever before under threat (see boxes at the end). A key objective for the EU is to "*Safeguard the earth's capacity to support life in all its diversity, respect the limits of the planet's natural resources and ensure a high level of protection and improvement of the quality of the environment."* The EU has a special role to play to ensure the maintenance and restoration of ecosystem functions and services, locally and globally.

The EU's sustainable development strategy should inherently contribute to global sustainability. The EU should reverse its current development path which harms people and the environment also in other parts of the world. This is a matter of solidarity, of self-interest and of realism. The EU is part of the global environment, and the persistence elsewhere of poverty, environmental degradation, exploitation of human beings will impede the realisation of the European Sustainable Development as well. The EU should aim at the full implementation of the Millennium Development Goals, recognising that achievement of MDG7 'environmental sustainability' is essential if all other MDGs are to be met.

Current consumption and production patterns in the EU are not sustainable. The per capita consumption of resources and energy in Europe is above any sustainable level. This has already led to grave consequences for the European as well as the global environment.[1] Improved environmental legislation in the EU is slowing down the deterioration in our own region, but in the given circumstances it is leading to an accelerated exploitation of environment outside Europe.

Future generations here, and current generations in developing countries, will not be able to copy the current EU pattern of resource use without degrading ecosystems and, ultimately, aggravating poverty. The EU must dramatically change its consumption and production patterns and must create space for others to enjoy the same, sustainable, consumption and production patterns of the future.

Making the EU the most energy and natural resource efficient economy in the world must be a key aim of the Sustainable Development Strategy. This should also guide the Lisbon Strategy, which started with the objective of making Europe the most competitive and knowledge based economy in the world – thus converting the Lisbon Strategy into a modern and forward-looking approach, contributing to innovation,

[1] The recently published WWF report "*Europe 2005 – The Ecological Footprint*" measures the EU Ecological Footprint, which compares people's use of nature with nature's ability to regenerate. With 7 per cent of the world population, the EU uses 17 per cent of the world resources supply. Its Ecological Footprint is 2.2 times as large as its own biological capacity, a figure that has risen by almost 70 per cent since 1961. This report is available on the web site www.panda.org/epo. The introduction is signed by José Manuel Barroso, President of the European Commission.

environmental protection, economic performance and job-creation in line with the sustainable development goal.

The SD Declaration adopted by the June 2005 European Council gives the broad principles to which EU policies should adhere in general. The **Sustainable Development Strategy** outlines the direction of changes with concrete objectives, targets, timetables, instruments, institutional arrangements and benchmarking. It must be in line with the objectives of the 6th EAP and the obligation under the Treaty to fully integrate environmental concerns into other policy areas. It must be a strategy with a regularly updated **implementation plan, progress reports** and monitoring and evaluation process connected to it. T he EU SDS needs to be interlinked to the national strategies for sustainable development. Member states should be committed to work and report on it in a manner comparable to the Lisbon Strategy National Reform Programmes.

THE SDS AS ROADMAP FOR THE EU

CLIMATE & ENERGY

Vision and overarching objective

A viable global regime to address climate change must be built on core principles of equity, fairness and social justice, sustainable development of all communities and protection of the global environment, and include an appropriate balance of rights and obligations.

In order to limit its environmental, social and economic impacts, global warming must remain below a peak increase of a mean two degrees Celsius (above pre-industrial times). From that peak the warming should be reduced as fast as possible.

The EU must lead the way internationally by committing to significant reductions in greenhouse gas emissions in line with scientific assessments of global emission pathways that will allow the world to stay below two degrees, taking into account the historical responsibility of Europe and its advanced levels of economic development.

In order to achieve such reductions, profound, long-term structural changes are needed, especially related to the use of fossil fuels. We must build a sustainable European energy system that can power our energy needs without harmful social, environmental and climate impacts. This will require significant increases in energy efficiency and swift deployment of renewable energy technology. Nuclear energy cannot be part of such a system given its risks and production of hazardous waste.

Headline objectives

Short term:

- Meet Kyoto commitments for the EU of -8% reduction of greenhouse gas emissions from 1990 by 2008-12, with the vast majority of these reductions taking place in Europe.

- Meet and increase EU renewable energy targets: 12% green energy in gross domestic energy consumption by 2010, 21% of electricity should come from renewable energy sources by 2010
- 2.5% annual energy efficiency improvements; 3.5% for the public sector
- Strong EU leadership in negotiations for the second commitment period of an international climate regime that fosters emissions reductions to proceed fast enough to meet the goal of keeping climate change to below two degrees Celsius warming over pre-industrial levels

Medium term:

- At least 30% greenhouse gas emissions reductions by 2020 within the EU, compared to 1990 levels
- At least 25% green energy supply by 2020 for primary energy, and at least one third green energy in the electricity supply
- Reduce energy consumption by 20% by 2020 compared to the ongoing trend
- Implement an international regime that supports and fosters other parties to take on commitments amounting to real reductions in global emission levels

Long term:

- At least 80% reduction of 1990 EU greenhouse gas emissions by 2050, based on scientific assessments and global emission levels to avoid dangerous climate change
- By 2050 EU should have reached a fully decarbonised sustainable energy system.

Main Instruments

- Implementation and expansion of the European Climate Change Program (ECCP) resulting in concrete policy proposals, which ensure emission reductions in the EU are achieved in line with targets for 2010 - 2020 - 2050.
- Comprehensive policy framework to ensure green energy targets are being met (expansion of directive for renewable electricity, new legislation to support renewable heat and cooling, sustainable biomass).
- Environmentally effective implementation and strengthening of the EU Emissions Trading System for large stationary sources that deliver real emission cuts over historic levels and induces long-term decarbonisation.
- Binding requirements and incentives for energy efficiency.
- Phase out of subsidies to fossil fuels and nuclear energy production and consumption by 2010.
- Introduce price mechanisms in all transport modes, reflecting real environmental and economic costs.
- Support sustainable energy use and transitions in developing countries, encouraging the use of renewables and clean technology.
- Phase out fluorinated greenhouse gases

Indicators

- Total and per capita emissions of CO_2 and other greenhouse gases (CH_4, N_2O, HFCs, PFCs, SF6)
- Total energy consumption and share of renewable energy
- Energy efficiency of the economy

- Direct and indirect subsidies to fossil fuel and nuclear energy production and consumption
- % of energy related overseas aid committed to sustainable energy solutions

PUBLIC HEALTH

Vision and overarching objective

The well being and health of EU population is central to sustainable development as well as a fundamental right for all citizens including the more susceptible and vulnerable. Public health preventative policy highlights the need for better integration of environmental, economic and social objectives in order to reach a high level of human health protection. EU citizens should be able to enjoy a maximum number of healthy life years, independent of social status and geographical location.

The protection of public health via measures to avoid or limit pollution and poisoning as result, direct or indirect, of human activities, as well as the creation of healthy natural environments, are therefore essential parts of sustainable development.

Headline objectives

Short term:

- The adoption of a strong EU chemicals regulatory system.
- Reduce the burden of disease (lifestyle and environmentally-related) and increase the health and quality of life of people living in Europe.
- Set up an EU wide monitoring system to deal effectively with current and emerging non-communicable diseases related to the environment.

Medium term:

- Halve consumption of harmful chemicals by 2010 compared to 1995.
- Reductions of 84% for SO_2, 55% for NOx, 29% for NH_3 and 60% for VOC and 80% of PM 2,5, compared to 1990 levels by 2010
- Reduce exposure to unhealthy noise levels and reduce traffic accidents significantly

Long term:

- By 2020 eliminate human made releases of harmful chemicals (obliged by OSPAR and HELCOM)
- Achieve good air quality within 30 years. Ensure critical loads for pollutants and the WHO air quality standards with respect to human health are no longer exceeded.

Main Instruments

- New Action Plan on Environment and Health to address these issues.
- New EU Health and Consumer Protection Programme Strategy to put sustainable development concretely on the map of the health community and citizens.
- The implementation of a strong EU REACH
- Monitoring, controlling and awareness raising of the health impacts of hazardous substances, particularly in relation to health effects on vulnerable groups such as children and older people.

- EU wide human bio-monitoring pilot project.

Indicators

- Healthy life years at birth by gender
- Incidence and prevalence of EU Environment and Health Action Plan four priority diseases: asthma and respiratory diseases; childhood cancer,; neurodevelopmental disorders; disease related to the endocrine system.
- An index of used hazardous substances weighted according to human and eco toxicity (to be developed) Interim indicator: % of the OSPAR chemicals still on the European market for unknown or open system application.
- Emissions of 5 pollutants (SOx, NOx, NH3, VOCs, PM)
- Human exposure to toxic chemicals and air pollution
- Number of disabilities and deaths due to road traffic accidents
- Number of EU countries who have implemented the Children´s Environment and Health Action Plan[2]

NATURAL RESOURCES

Vision and overarching objective

The right type of economic development, combined with fair and equitable sharing of benefits derived from natural resources, access to resources and markets is necessary to alleviate poverty and increase human well-being. But the world needs to avoid a dramatic increase in resource use as that exceeds environmental limits. Sustainable resource use will serve the stability and prosperity of our social and economic system. The EU will for example be less vulnerable for increasing resource prices on the world market and will lower its dependence on imports from unstable regions. The EU needs to limit the impact of its resource use in the EU and abroad to a level which does not exceed the carrying capacity of the natural environment.

The global populations' demand on the world's resources is rapidly increasing, estimates suggesting a fourfold demand by 2045. Combined with estimates that the global population currently already needs 1.2 planets[3], a global eco-efficiency increase of resource use of a factor 5 for that period is required for sustainable resource use. For the EU, given its resource-use is far above world average, a **factor 10** needs to be the political orientation for the long term. In this way, the EU would create the conditions for a fairer and more equitable distribution of resource use globally, while staying within the Earth's carrying capacity.

This general objective will have to be translated into more specific reduction targets and intermediate targets, depending on the resource, their properties and impacts - in relation to the estimated carrying capacity and inter- and extra-generational equity. Based on options for reducing impacts and availability of substitutes, a mix of reducing

[2]Fourth Ministerial Conference on Environment and Health Budapest, Hungary, 23 25 June 2004 Children s Environment and Health Action Plan for Europe EUR/04/5046267/7 25 June 2004 ORIGINAL: English

[3] See WWF report "Europe 2005 – The Ecological Footprint" and 'Architecture of Environmental Engineering' by Henrik Wenzel and Leo Alting, Department of Manufacturing, Engineering and Management, University of Denmark, 2004.

impacts and reducing resource use will need to be employed. Efficiency, eco-innovation and sustainable practices need to become inherent to our production and consumption patterns, while serving the well-being of people.

Headline objectives

Short term:

- stabilisation of waste generation at 1985 levels (an actual reduction) (existing 5th EAP objective)

Medium term:

- In 2020, for the EU, an average factor 4 lower primary non-renewable material use. (To aim at a factor 4 increase in resource productivity in 2 - 3 decades was in1997 at the UN Rio+5 summit the formal EU position on this issue).
- Halving adverse impacts of total EU resource use.

Long term:

- By 2030 - 2050 an average factor 10 lower primary non-renewable material use, with material recycling and re-use above 95%, resulting in aim of zero untreated waste going to landfill.
- Total resource use impact below estimated carrying capacity, per resource category.

Main instruments

- Economic instruments such as: energy taxes, virgin material tax, tax deductions for secondary materials, public (and company) procurement awarding tenders for lowest total impact of products/services over the lifecycle.
- Developing, setting and applying criteria for the sustainable management of all major resources – combined with introducing mandatory labelling of the products/materials derived from these resources, starting with resources with highest impacts.
- Trade policy instruments, in particular the introduction of ppms (production and processing methods) and life-cycle assessments as guidelines for trade policy.
- Support for developing countries to meet EU standards and labelling requirements so they do not become a *de facto* barrier to trade.

Indicators

- Total material use (Total Material Requirement) and waste production incl. percentage of reused or recycled material.
- Total resource use impact, and impact x use per resource for at least a top 20 of priority resources
- Resource efficiency of the economy *Interim indicator: waste production with recycling percentages.*
- Ecological Footprint of the EU and individual member states.

MANAGEMENT of BIOTIC RESOURCES :

biodiversity, fisheries, water, agriculture and land use

Vision and overarching objective

The EU is committed to protect and restore habitats and natural systems and halt the loss of biodiversity by 2010 within the EU and globally. Within the EU, forestry, fisheries and agriculture sectors will incorporate protection and restoration of biodiversity in their management practices. Through eco-system based integrated water resource management, the EU and its member States will achieve environmentally sustainable use of its water resources.

Similar objectives apply to all other relevant sectors, such as transport, tourism, construction and built development, where sustainability criteria will have been developed through open and transparent participatory processes, involving all stakeholders.

In 2015 and 2020, biodiversity should have seen significant increases compared to 2010 levels. The majority of products and services should be meeting the EU sustainability criteria.

In 2030, the management of natural resources and their products should be fully compliant with agreed sustainability criteria, comparable to criteria applied in organic agriculture and FSC forestry. The EU should have effectively implemented a sustainable and coherent EU marine policy which ensure that current and future generations enjoy and benefit from biologically diverse and dynamic oceans and seas that are safe, clean, healthy and productive. The EU further should have improved fisheries management to reverse the decline in stocks and ensure sustainable fisheries and healthy marine ecosystems, both in the EU and globally. In 2020, marine products should be meeting sustainability criteria and eco-labelling standards.

Globally, EU policies and actions affecting the wider world must apply significant safeguards and impact assessments to ensure the EU will not have a negative impact on other countries' biodiversity and natural resources through ill-thought through economic development or trade programmes and policies.

Headline objectives

Short term:

- A halt to habitat decline and the loss of biodiversity in the EU by 2010 (as agreed by the Gothenburg summit and laid down in the 6th Environmental Action Programme)
- 40 % reduction in the treatment frequency of pesticides within 10 years
- No fish catches outside safe biological limits
- Appropriate safeguards and impact assessments applied to trade and economic development policy and programmes.

Medium/ long term:

- Significant reversal of biodiversity loss and restoration of fish stocks within safe biological limits by 2015.
- No use of pesticides that are not allowed for organic farming by 2020.
- All water bodies, including marine waters, reaching good/high status or equivalent, or in the case of heavily modified water bodies good/maximum

ecological potential and good chemicals status, if defined in the Water Framework Directive by 2015.

- The objectives of the emerging Marine Framework Directive – to protect and conserve the marine environment – achieved within an ambitious timeframe
- Net stabilisation of non built-up (unsealed) areas by 2010, allowing for some mitigation and exchange between different areas

Main Instruments

- Immediate Effective implementation of the EU Biodiversity Strategy and Biodiversity Communication, as well as the Message from Malahide and the Bergen op Zoom conclusions 'Reinforcing our commitment to safeguarding Europe's wild birds and their habitats'.
- Stepwise introduction of mandatory sustainable management criteria for products from agriculture, forestry, fisheries and aquaculture.
- Further reduction in the capacity of the EU fishing fleet to a level that matches the availability of marine resources.
- The adoption of, effective compliance with and enforcement of the emerging Marine Framework Directive, with the aim to develop a robust and effective framework for the protection of Europe's seas translating existing global commitments into real action;
- At a broader level, ensure that a robust European Marine Strategy forms the basis for any future decision-making on the marine environment internally and in areas beyond the jurisdiction of the European Union, including the high seas, without jeopardising possibilities for future stricter or more aspirational regional standards.
- Immediate compliance with and enforcement of the Water Framework Directive, including immediate enforcement of the non- deterioration principle.
- Evaluation of the implementation of the Environmental Liability Directive and its revision at the earliest possible opportunity to provide a strong incentive for commercial operators to avoid damage to natural resources.
- Increased funding for biodiversity.
- Effective impact assessment procedures on basis of sufficient resources and competent staff.

Indicators

- Biodiversity indicator currently under development by the SEBI2010 initiative, based on the set of indicators adopted at the Malahide meeting in 2004. Interim indicator: BirdLife/EBCC's Pan-European Common Bird Index
- % of original indigenous species extinct or under threat.
- Pesticides usage (active ingredients weighted according to human and eco toxicity, to be developed) Interim indicator: treatment frequency excluding those pesticides agreed for organic farming methods
- Fish catches outside safe biological limits
- Percentage of all water bodies, including marine waters, reaching the good/high status or equivalent, or in the case of heavily modified or artificial water bodies good/maximum ecological potential and good chemical status as defined in the Water Framework Directive.
- Amount of built-up area compared to total area.

- Total area used by the EU outside EU related to the impacts of this use.

TRANSPORT

Vision and overarching objective

A sustainable transport system that minimises consumption of non-renewable resources emissions, land use, impacts on ecosystems and human health, and limits waste, emissions en renewable resources within the absorption capacity of the planet. This system is socially inclusive, by providing access for all citizens to the most essential goods and services, offering choice of transport mode, and protecting vulnerable user and other groups from safety risks, health risks and nuisances caused by transport.
In a sustainable transport system, users instead of taxpayers pay for their infrastructure use and environmental, safety and congestion.
The users, not the taxpayers, pay for their infrastructure, environmental damage and safety impacts so that they get incentives for smarter travel choices.

EU external support should support sustainable transport planning, initiatives and programmes in developing countries, including the upgrading and maintenance of rail systems, rather than focusing on funding new roads.

Headline objectives

Short term:

- In 2010 a transport and infrastructure pricing system in place which reflects the real costs to society and give sufficient incentives to start reversing current trends, decoupling transport growth from GDP growth.
- Halting construction of new infrastructure that harms ecosystems or is not viable from a socio-economic point of view.

Long term:

- In 2030 halving of total energy consumption by this sector compared to 2000 levels

Main instruments

- Transport pricing to manage transport demand and its externalities – abolishing direct and indirect subsidies which increase transport.
- Full transparency and quality of information on the economic, environmental and social impacts of EU-sponsored transport projects.
- Stop EU funding of transport projects which are not viable from a socio-economic perspective, in the EU and abroad.
- Stop EU funding of transport projects that harm designated nature areas, in the EU and abroad.
- Prevent decline of national railway networks with adequate maintenance in the EU, as well as supporting and encouraging this in developing countries,
- Use cohesion funds for sustainable transport only

- Address the environmental impact of aviation and shipping
- Introduce and tighten CO2 standards for cars and vans, tackle emissions from diesel-powered vehicles and strengthen emission regulations to have a bigger impact 'on the road'.
- Land-use planning to integrate transport conservation and safety

Indicators

- Total passenger- and ton-kilometres travelled, per euro GDP (decoupling)
- Total energy use by transport sector
- Emissions by the transport sector
- Casualties and loss of healthy years caused by transport accidents and emissions
- Degrees of cost internalisation of various transport modes
- Direct and indirect subsidies to motorised transport; public investments by mode
- External costs of transport
- Citizens access with sustainable transport index per city, per urban area (to be developed)

EU EXTERNAL POLICIES

Vision and overarching objective

The EU's Sustainable Development Strategy should systematically promote sustainable development also in the rest of the world. It should show how far the EU takes its responsibilities for equitable, social, environmental and economic development seriously at a global level. The Strategy should therefore have a specific external dimension, but also integrate external impacts in its more internal focussed parts.

No less than one third of the total resources used in the EU are imported from other countries. Access to and use of natural resources even become *the* main issue of sustainable development for poor countries which development is heavily dependent on the extraction and trade of natural resources based product. All relevant EU policies and instruments should, also addressed to the internal market, need to be consistent with the objective to assist poor countries in achieving sustainable development.

Internal policies, as has been done to some extent for fisheries, should adopt strategies including a fully developed set of sustainable development commitments, with deadlines, milestones, and reporting and review mechanisms for assessing current impacts on developing countries or for promoting their sustainable development.

External policies show declarations of intent through Council conclusions focused on supporting environmental policies in developing countries but these should be followed by efficient commitments and means for environmental integration in the sector along with social and economic pillars. As in few positive thematic or geographical initiatives, integrating environmental considerations into external relations' policies and instruments should be institutionalised in the policy dialogue with third countries programming and in the programming decision process of aid.

Environmental mainstreaming in sector policies is essential to promote coherence between internal and external policies. Ownership of the sustainability issue in the Council committees and Commission directorates is needed to improve consistency.

Headline objectives

- The EU's SDS should be in line with the concept of conserving and enhancing natural capital (establishing the minimum requirements for ecological sustainability).
- The EU SDS will support the Millennium Development Goal of environmental sustainability and contribute towards the maintenance of the natural resource base on which we all and particularly in the short-term the poor, depend.
- Create an institutional framework for sustainable development: the EU commitments to deliver on MDGs, WSSD targets and support developing countries to implement MEAs call for the adoption of new measures to strengthen institutional arrangements for sustainable development at international, regional and national levels.
- The EU needs to bring forward proposals for global institutional changes in this sphere.
- The process for developing the EU Sustainable Development Strategy should be based on widespread and meaningful consultation of relevant stakeholders,
- including the European Parliament, national parliaments, and, importantly, all those affected by EU policies which therefore includes countries to which EU is a donor or with which it has trading or other agreements.

Main instruments

- The Commission should apply sustainability impact assessments to external as well as internal impacts of EU policy proposals.
- Overall EC development aid policy and other EC external policies should enable adequate recognition of poverty-environment structural interdependencies and define aid intervention and policy priority dialogue according to it. This implies the following:
  (1) a binding time frame for the increase of EU official development assistance (ODA), which at least lives up to the proposal of the UN Secretary General for ODA to reach 0.5% of gross national income (GNI) by 2009 and 0.7% of GNI by 2015;
  (2) the establishment of a transparent monitoring mechanism of subsidies regimes, lending and grant mechanisms from European policies and actions impacting developing countries' environment and their capacity to manage natural resources on the basis of good governance.
  (3) Integration of conservation and sustainable use of natural resources into the principal national and international mechanisms for poverty reduction and development; increase of effectiveness of EC aid through common assessment of socio-economic environmental challenges ("Country Environmental Profile") to tackle through common intervention strategic tools (Country and Regional Strategy papers).
  (4) Continuation of the promotion of pro-poor environment-related initiatives and policies for sustainable development to achieve MDGs and WSSD targets, closing financing gaps.

(5) Development aid policy definition and programmes must address the question of coherence with other policies regarding impacts on developing countries' environment and increase local capacities for sustainable resource management, access to resources, and participation in environmental governance and decision making by the poor at local, national, regional and international level

EU trade policy:

- Prevent subsidies that have immense negative implications for developing countries. It should be asserted that 'trade distortion' is not the right means to discriminate between legitimate and illegitimate subsidies. Legitimate payments should be focussed narrowly on legitimate developmental and environmental goals, without prejudging the levels of payment that may be required in pursuit of such goals;
- In decisions on the extension of market access provisions balance on the one hand, the need to distinguish between goods on the basis of how they are produced and used, with, on the other, the needs of developing country exporters. This will require intergovernmental agencies other than the WTO to identify market access measures which promote trade in goods and services in those instances where these have positive sustainable development impacts (considering both short-term and long-term needs);
- Promote international agreements to deal with global problems (such as Cotonou or Multilateral Environmental Agreements), and insist it is legitimate
- for these, where necessary, to include trade provisions in such a way as to balance long-term and short-term concerns.

Indicators

Further work is needed on defining and monitoring sustainable development indicators to capture the impacts of EU policies outside its borders.

Millennium Ecosystem Assessment:

Four Main Findings:

1. 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. 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 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. 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 tradeoffs or that provide positive synergies with other ecosystem services.

Millennium Assessment:

Most changes to ecosystems have been made to meet a dramatic growth in the demand for food, water, timber, fibre, and fuel.

Some ecosystem changes have been the inadvertent result of activities unrelated to the use of ecosystem services, such as the construction of roads, ports, and cities and the discharge of pollutants.

But most ecosystem changes were the direct or indirect result of changes made to meet growing demands for ecosystem services, and in particular growing demands for food, water, timber, fibre, and fuel (fuelwood and hydropower).

Between 1960 and 2000, the demand for ecosystem services grew significantly as world population doubled to 6 billion people and the global economy increased more than sixfold. To meet this demand, food production increased by roughly two-and-a-half times, water use doubled, wood harvests for pulp and paper production tripled, installed hydropower capacity doubled, and timber production increased by more than half.