UNEP’s Strategy on Land Use Management and Soil Conservation

A Strengthened Functional Approach
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With the exception of the Indo-Malay “orang laut” people, who live exclusively on and from the sea, most of the rest of the world live on and from the land.

The way people cultivate their land has always been a decisive factor for economic success. History is littered with examples of cultures that have prospered as a result of sustainable land use management. The Sumerians and Babylonians in Mesopotamia, the Maya and Inca in Central and South America, the Phoenicians, Greeks and Romans in the Mediterranean all expanded their empires at least partly because of highly productive agricultural systems.

Conversely, unsustainable land management, leading to problems such as soil salinity, erosion and siltation, has caused many agricultural systems to fail and ultimately have contributed to the decline of societies. The most celebrated and extreme case being the Easter Islanders whose reckless management of the land eventually triggered the extinction of their culture.

Soil as one of the main components of land, is - next to water and air - the very base of our life. The larger part of all potentially arable land is currently under cultivation. Measured against the total land area is the percentage of arable land relatively small and essentially not extendable. This is one reason why soil and land are considered limited, non-renewable resources. Also, soil-forming processes take centuries to millenniums. Lost soil cannot easily nor costly be replaced.

The UN Millennium Declaration states “nearly 2 billion hectares of land, an area about the combined size of Canada and the United States, is affected by human-induced degradation of soils, putting the livelihoods of nearly one billion people at risk. Each year an additional 20 million hectares of agricultural land either becomes too degraded for crop production, or becomes lost to urban sprawl.”

In Africa and Asia about 60% of the area are affected by land degradation, while in Europe about 11% and in North America approximately 8% of the total area are considered degraded. Land degradation is no longer a regional problem; it is – in all its different facets – a global problem.
OBJECTIVES

1. The loss and degradation of land resources need to be seen in the context of policy, socio-economic conditions and the environment. The impact on agriculture and food production, as well as on the ecological and protective functions of natural and managed ecosystems is, however, universally recognised. Recently, the UN Millennium Declaration, the UN Millennium Development Goals and the World Summit for Sustainable Development (WSSD) Plan of Implementation recognised the maintained integrity and restoration of land resources as a critical factor in achieving economic and ecological sustainability. To meet these challenges, new and innovative approaches are required.

Box 1

Millennium Development Goals as directly or indirectly relevant to sustainable land use management and soil conservation

In September 2000, at the United Nations Millennium Summit in New York, world leaders agreed to a set of time-bound and measurable goals and targets for combating poverty, hunger, disease, illiteracy, environmental degradation and discrimination against women. Placed at the heart of the global agenda, they are now called the Millennium Development Goals (MDGs). The Summit’s Millennium Declaration also outlined a wide range of commitments to human rights, good governance and democracy. Out of the eight goals four are relevant in the context of sustainable land use management and soil conservation.

Eradicate extreme poverty and hunger

- Target for 2015: halve the proportion of people living on less than a dollar a day and those who suffer from hunger. 1.2 billion people still live on less than $1 a day. But 43 countries, with more than 60 per cent of the world’s people, have already met or are on track to meet the goal of cutting hunger in half by 2015.

Promote gender equality and empower women

- Targets for 2005 and 2015: eliminate gender disparities in primary and secondary education preferably by 2005 and at all levels by 2015. Two-thirds of the world’s illiterates are women, and 80 per cent of its refugees are women and children. Since the 1997 Microcredit Summit, progress has been made in reaching and empowering poor women, nearly 19 million in 2000 alone.

I hope that this publication proves to be a useful source of information for our constituency, partners and interested public and will stimulate innovative ways in addressing land degradation.

Klaus Töpfer
Executive Director,
United Nations Environment Programme
The objective of this document is to define UNEP’s role in land use management and soil conservation under its functional approach following Decision 21/1 of the Governing Council. This document is to serve as the framework for UNEP’s activities in the field of land use management and soil conservation, which will be further specified in UNEP’s biennial programmes of work. The development and implementation of a strategic approach is focused on the medium-term.

Develop a global partnership for development

- Develop further an open trading and financial system that includes a commitment to good governance, development and poverty reduction – nationally and internationally.
- Address the least developed countries’ special needs, and the special needs of landlocked and small island developing states.
- Deal comprehensively with developing countries’ debt problems.
- Develop decent and productive work for youth.
- In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries.
- In cooperation with the private sector, make available the benefits of new technologies – especially information and communications technologies.

Too many developing countries are spending more on debt service than on social services. New aid commitments made in the first half of 2002 alone, though, will reach an additional $12 billion per year by 2006.

Box 1 (continued)

Ensure environmental sustainability
- Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources.
- By 2015, reduce by half the proportion of people without access to safe drinking water.
- By 2020, achieve significant improvement in the lives of at least 100 million slum dwellers.

More than one billion people still lack access to safe drinking water; however, during the 1990s, nearly one billion people gained access to safe water and as many to sanitation.

Box 2

World Soils Policy – World Soil Charter

At its 12th meeting in April 1980, UNEP’s Governing Council requested an active collaboration with FAO, UNESCO and other relevant international organizations to ensure preparation and adoption of a soils policy which would bring the issue of soil and land degradation to the level of international environmental policy action, acknowledging soil as a non-renewable resource.

A group of high-level experts met in Rome in 1980 to develop principles and a plan of action for soil policy, which were incorporated in the World Soil Charter. The 21st Session of the FAO Conference, in November 1981, adopted the World Soil Charter. The World Soil Charter established a set of principles for the optimum use of the world’s land resources, for the improvement of their productivity, and for their conservation for future generations.

The Charter calls for a commitment on the part of governments, international organizations and land users in general to manage the land for long-term advantage rather than for short-term expediency. Special attention is called to the need for land-use policies, which create the incentives for people to participate in soil conservation work taking into account both the technical and socio-economic elements of effective land use.

The Charter provides 13 principles and guidelines for action by governments and international organizations. (Principles and guidelines can be accessed at http://www.fao.org/docrep/TS059E/TS059E06.htm)


BACKGROUND

3. From the outset in 1972, UNEP’s land-related activities have focused on medium- to long-term solutions for desertification /1/. UNEP contributed significantly to the implementation of the UN Plan of Action to Combat Desertification (UNPACD), which subsequently led to the ratification process of the United Nations Convention to Combat Desertification (UNCCD). Since then UNEP’s role has gradually changed from global co-ordination of UNPACD to supporting the implementation of the UNCCD /2/. This is most visible in UNEP’s mandate as the taskmanager for Chapter 12 of Agenda 21 and its UNEP-GEF project portfolio in land degradation.

4. In the 1980s, UNEP developed the World Soils Policy which recognised the fact that soil is a finite resource, and that continuously increasing demands are being placed on this resource to feed, clothe, house and provide energy for a growing world population and to provide ecological sources: Implementing the Millennium Declaration by the UN Department of Public Information, October 2002, and the UN Secretary-General’s 2003 Report on Implementation of the UN Millennium Declaration.

Sources: Implementing the Millennium Declaration by the UN Department of Public Information, October 2002, and the UN Secretary-General’s 2003 Report on Implementation of the UN Millennium Declaration.
balance. Governments agreed in the World Soils Policy that the use of soils should be based on the sound principles of resource management in order to enhance soil productivity, to prevent soil erosion and degradation, and to reduce the loss of good farmland to non-farm purposes.

5. In cooperation with the UN Food and Agriculture Organization (FAO), UNEP contributed to the World Soil Charter and assisted developing countries to formulate their national soil policies. At the international level, those instruments have contributed to raising the profile of soil conservation as a major international environmental issue.

6. UNEP, in cooperation with international partners, carried out global and regional assessments in the early 1990s in order to gain fast and reliable data on the global status of human-induced soil degradation. These assessments still serve as the main reference on the global extent of land degradation.

Box 3 GEO-3
The UNEP Global Environmental Outlook (GEO) report is a response to the Agenda 21 request for comprehensive environmental reporting on the global state of the environment. Its third version, GEO-3, which was published in 2002, places major emphasis on providing an integrated assessment of environmental trends over the 30 years since the 1972 Stockholm conference. GEO-3’s analysis of environmental trends takes into consideration the widest possible range of social, economic, political and cultural drivers and root causes.

For the last 30 years increasing pressure on land has been exerted through the growing need for higher agricultural yields to feed the increasing world population. Compared to the 1970s, 2.23 billion more people need to be fed today.

The main land and soil related features in Africa and in Latin America and the Caribbean include increasing loss of agricultural area through severe land degradation as well as inappropriate and inequitable land tenure systems. In Africa particular problems include a decline in soil fertility, soil degradation, unsustainable land management and conservation, gender imbalances in land tenure, and conversion of natural habitat to agricultural or urban uses. Land degradation and desertification continue to be the most significant environmental issues in West Asia, Asia and the Pacific. For Asia and the Pacific other critical land issues include land use change and soil contamination. In Europe and North America, key issues associated with degradation of land resources include urban sprawl, soil contamination and erosion. The Polar regions face serious land degradation in the form of soil erosion through resource exploitation and infrastructure measures.

Box 3 (continued)
GEO Outlook 2002-32: Four Scenarios
GEO-3 also attempts a look into the next 30 years by applying a forward-looking and integrated analysis, which is based on four basic scenarios:

- Markets First: A market-oriented approach adopting the values and expectations prevailing in today’s industrialized countries.
- Policy First: Government initiatives like policy measures, regulatory frameworks and planning processes prevail.
- Security First: A world of striking disparities where inequality and conflict prevail.
- Sustainability First: A visionary state of affairs with new, more equitable values and institutions, which supports sustainability.

With respect to land degradation the different scenarios vary in their impact. In Africa, the risk of increased land degradation and desertification is omnipresent. In the Policy First and Sustainability First scenarios, easier access to support services will help farmers to manage land resources better and policies based on integrated land management become commonplace in the region. At the other end of the spectrum, in a Security First scenario the high concentration of people elsewhere is expected to contribute to severe land degradation and soil erosion, while reasonable conditions are maintained in the protected areas serving the land-owning elite. Similar problems arise in the Markets First scenario as more, better quality agricultural land will be taken over for commodity and cash crop production.

Land and forest degradation as well as forest fragmentation are expected to remain among the most relevant environmental issues in Latin America and the Caribbean in all scenarios. Significant loss of forest area may occur in a Markets First scenario. In a Security First world, the control over forest resources by transnational companies that create cartels in association with the national groups in power, might promote the growth of some forest areas, but this is not thought to stop net deforestation. More effective management can ameliorate some of these problems under a Policy First scenario. Unsound deforestation stops almost completely in a world of Sustainability First.

KEY ISSUES
7. Land and soil degradation. In his report to the eighth meeting of the Commission for Sustainable Development (CSD) the UN Secretary-General stated that land related issues “are likely to be the most important factor of global change in terrestrial ecosystems over the next few decades” /2/. The UN Millennium Declaration further states that “nearly 2 billion hectares of
land, an area about the combined size of Canada and the United States, is affected by human-induced degradation of soils, putting the livelihoods of nearly one billion people at risk. [...] Each year an additional 20 million hectares of agricultural land either becomes too degraded for crop production, or becomes lost to urban sprawl.

8. Poverty. Land degradation is both a cause and an effect of poverty. The spiral of impoverishment and environmental decline is driven by external factors, namely commercialisation, civil strife, displacement and natural hazards, and internal factors, such as population growth, governance and existing poverty. People in marginal lands are especially vulnerable. General perceptions on the impact of environmental degradation on poor people conclude that: a) poor people are more vulnerable to loss of biological resources, b) extreme environmental stress can force the poorest to migrate, c) inequality reinforces environmental pressure, and d) global and national policies can create or reinforce a vicious cycle of poverty/environmental degradation.

9. Land tenure and public participation. Inadequate care of land resources, and related poverty, is often directly linked to issues of land tenure and in turn impacts on the use or over-use of these resources. While secure land ownership and rights do not always provide a guarantee for sustainable land use management they are, however, a necessary prerequisite. Unsustainable practices of land resource management are directly related to the level of awareness and, consequently, to the level of public participation in decision making on environmental issues. Awareness raising, education and training provide an important but often missing link in the mitigation and control of land degradation.

10. Environmental impact of agriculture. The main pressure on land resources is to increase food production for a growing global population despite unprecedented growth in agricultural productivity over the past three decades. On a global average, current food production should satisfy the world’s population as many regions have a surplus of agricultural produce through intensified industrial production. However, strong regional differences occur, with some regions being net importers of agricultural goods, and requiring further extension of arable land.

The intensification of agricultural production lessens the need for

Graphic 1: Extent and Severity of Land Degradation

reclamation of natural areas, but often requires an increased use of herbicides, pesticides, and fertilisers resulting in a decline of environmental quality and biodiversity. The impact of land use and soil management techniques on soil biodiversity and its functioning is of increasing importance. Pesticides may cause health hazards if applied and disposed of inappropriately. Unregulated fertiliser input, often subsidised, causes water pollution, biodiversity shifts and health threats. The potential impact of the increasing use of genetically modified plants on biosafety is, as yet, largely unknown. The extension of farming into barely productive, marginal lands through, for example the conversion of forests, wetlands, and mountain slopes causes rapid fertility decline featuring erosion and nutrient loss. It affects environmental services such as water supply and microclimate, and often creates related hazards such as land slides or desertification.

Graphic 2: A different view of the world - Global Poverty Map

Graphic 3: Undernourishment by country (% of population undernourished)

Vulnerability to hunger is reflected in this map of the global state of undernourishment. Undernourished people are unable to obtain the food they need from production or imports, either because it is not available or because they cannot afford it.


11. Water and land use management. Agriculture is responsible for about 70% of all freshwater withdrawals, of which 70% is wasted. Inefficient irrigation schemes lead to unsustainable water logging and irreparable salinisation and alkalisation of soils, especially in the case of groundwater withdrawal. Estimates of up to 80% of global marine and freshwater pollution is derived from land-based activities such as contamination from municipal and industrial waste and agricultural fertilisers and pesticides. Water erosion and sedimentation further aggravate the situation, as does the loss of productive wetlands and floodplains and the anticipated global changes in climatic and hydrological patterns.

12. Environmental emergencies and land use. Unsustainable land use practices, especially on marginally productive lands, or the increasing use of unsuitable and unsafe lands such as steep slopes and river banks, are a major factor in the increasing frequency and severity of certain natural disaster types. These can have severe impacts on people and ecosystems. People depending on marginal lands are more vulnerable to the effects of disasters such as hurricanes, floods, droughts, earthquakes, and land slides.

Graph 4: Land utilization (percentage of total land area): Asia and the Pacific

[Graphic showing land utilization by region with percentages for crops and pasture]


Graphic 5: Numbers of great natural disasters per year, 1950 - 2001

[Graph showing increasing trend in frequency of ‘great’ natural disasters. Catastrophes are classed as great if the ability of the region to help itself is overtaxed, making inter-regional or international assistance necessary, as is usually the case when thousands of people are killed, hundreds of thousands made homeless or when a country suffers substantial economic loss.

13. **Urbanization.** Urbanization, including infrastructure development, causes an increasing loss of limited natural resources and habitats, soil sealing, slope instability, erosion and river siltation, diffuse and local soil and groundwater contamination through industrial waste, chemicals and air pollutants. Urban agriculture, though an essential aspect of urban life in many developing country economies, providing food and income, causes additional air, water and soil pollution from improper use of fertilisers and pesticides. The urban poor, who cannot afford expensive remediation or a move to cleaner areas, suffer the most from loss of resources and health threats.

14. **Global Climate Change.** Natural systems can be especially vulnerable to climate change and some of these systems may undergo significant and irreversible damage. Also, many human systems are sensitive to climate change and some are vulnerable. Impacts will depend on the adaptive capacity of natural systems and the resource availability of societies. For non-irrigated agriculture in drylands, yield declines of as much as 30% are expected during this century. In turn, land use change has direct and significant implications on the global carbon cycle. Land use change, mainly deforestation, accounts for approximately 33% of all global anthropogenic carbon emissions over the past 150 years. As land degradation almost always implies a loss of carbon, much attention is given to land use management options that restore organic matter and soil fertility through carbon sequestration.

15. **Trade and environmental externalities.** Trade liberalisation and trade related policies often bring about a tendency to concentrate on the increase of economic returns and may consequently lead to overexploitation of water and nutrient resources and the dismissal of sustainable practices such as fallow periods and crop rotation. However, trade liberalisation and trade related policies may also imply positive effects on the environment by introducing environmentally friendly technologies or policies. Generally, the degradation of land resources involves direct and indirect costs. Environmental externalities and long-term implications of land degradation are often more severe than direct costs of forgone income. Inefficient governance and capacity deficiencies in many developing countries are equally important factors contributing to increasing land degradation.

**CHALLENGES**

16. The prevention and mitigation of land degradation through the promotion of sustainable land management is a global challenge. To address the identified key issues in land use management and soil conservation within a development oriented approach poses challenges to all stakeholders and requires integrative solutions across the policy, socio-economic, and environment sectors. The relevant framework for tackling these challenges is set in Agenda 21, the UN Millennium Declaration and the WSSD Plan of Implementation.
UNEP in particular, is challenged to address the environmental dimensions of land use management and soil conservation as they relate to the overall objectives of sustainable development and poverty reduction. UNEP is further challenged to support governments and civil society in achieving environmentally sustainable land use. Consequently, UNEP is to develop and apply environmentally focused and development orientated policy guidance in close cooperation with governments, civil society and fellow UN and international organisations. UNEP must also work with all of these entities to ensure that laws at the international, regional and national level that govern land use management and soil conservation are fully implemented.

GOALS

18. UNEP’s ultimate mandate is to contribute to sustainable development and poverty reduction by focusing on specific environmental dimensions. Based on the identified key issues and challenges as well as on UNEP’s expertise and its renewed mandate as in the Nairobi Declaration 22/, UNEP’s primary goals with regard to land use management and soil conservation are identified as follows:

a) An ecosystem approach for land use management and soil conservation applied and interlinkages and synergies within and across relevant sectors developed;

b) A global land cover monitoring process and assessment of the state of land resources in partnership with other UN organisations and partners developed and implemented;

c) Environment focused and development orientated policies on sustainable land use management and soil conservation developed and implemented. To be achieved through capacity building, information management and public participation, response to environmental emergencies, development of legal instruments, regional co-operation and the development, implementation and execution of GEF projects;

d) Cooperation with scientific centres of excellence extended in order to strengthen science-policy interaction and knowledge systems through partnerships with governments and civil society; and

e) Further support to the implementation of the UN Convention to Combat Desertification and specific support to Africa in regard to land degradation through the NEPAD Environment Initiative.

19. The identified goals are in line with the action areas in the WSSD-Workinggroup on Water, Environment, Health, Agriculture, and Biodiversity (WEHAB) Framework of Action on Agriculture, namely to a) increase agricultural productivity and sustain the natural resource base contributing to efforts to eradicate poverty and ensure environmental sustainability; b) encourage knowledge generation, c) establish innovative public-private partnerships to stimulate joint implementation of sustainable agriculture and natural resource conservation, and d) develop enabling policies, associated institutional reforms and regulatory frameworks. Equally, the identified goals are in line with the WEHAB Frameworks of Action on Water and Biodiversity.

STRATEGIES AND INTENDED ACTION

A. Ecosystem approach for land use management and soil conservation

20. The ecosystem approach is focused on the integrated management of land, water and living resources and promotes conservation and sustainable use of resources in an equitable way 23/. It is tailored to reflect the various aspects of land use management and soil conservation in a functional, cross-sectoral and integrative manner underlining the ecological and socioeconomic functioning of land resources 24/. Through the ecosystem approach a direct link is made between environmental land and soil issues and sustainable development and poverty reduction. As the ecosystem approach has been developed from an environmental perspective it is important to identify the degree of conformity with other, more ‘productivity’ orientated concepts 25/.

21. Applying the ecosystem approach to environmental land and soil issues requires establishing stronger links to other relevant UNEP focal areas as defined in Governing Council decisions, and strengthening land and soil components in context.
The WEHAB initiative was launched by UN Secretary-General Kofi Annan as a contribution to the World Summit on Sustainable Development (WSSD). WEHAB seeks to provide focus and impetus to action in the five key thematic areas of Water, Energy, Health, Agriculture and Biodiversity. These key areas are integral to a coherent implementation of sustainable development and are among the issues reflected in the Summit’s Plan of Implementation.

WEHAB’s Framework for Action on Agriculture focuses a new spotlight on the role agriculture, agro-biodiversity, and integrated natural resource management can play in national, regional and global development sustainability. At the same time it is acknowledged that for fostering environmental sustainability, agriculture’s large and growing ecological footprints need to be reduced.

Graphic 7: Examples of the Critical Role of Agriculture in WEHAB Priority Areas:

Agriculture and Energy
- Potential role in climate change mitigation
- Bioenergy for land rehabilitation
- Biomass for energy services

Agriculture and biodiversity
- Dependence on landraces and genetic variety for breeding programmes and subsistence
- Monocultural production contributes to biodiversity loss

Agriculture and Health
- Contribution to improved maternal health
- Globalization of animal diseases
- Impacts of pesticides on humans and the environment
- Genetic research

Agriculture and Water
- Agricultural practices degrading water sources
- Agricultural productivity gains through irrigation threatened by increasing water scarcity


Box 4

A. 1. Environmental land and soil issues as relevant to UNEP’s portfolio

Many focal areas within UNEP’s portfolio relate directly or indirectly to land degradation, land use management and soil conservation. Direct links exist to Governing Council decisions on forest-related issues 16/, on chemicals 27/, on water 28/, on climate change 29/, and on trade 30/. Land and soil issues are also reflected in UNEP’s activities with regard to support to Africa and others 17/, environmental emergency prevention 18/, International Environmental Governance (IEG) 19/, and the work of the Global Environment Facility (GEF) 20/.

22. Many focal areas within UNEP’s portfolio relate directly or indirectly to land degradation, land use management and soil conservation. Direct links exist to Governing Council decisions on forest-related issues 16/, on chemicals 27/, on water 28/, on climate change 29/, and on trade 30/. Land and soil issues are also reflected in UNEP’s activities with regard to support to Africa and others 17/, environmental emergency prevention 18/, International Environmental Governance (IEG) 19/, and the work of the Global Environment Facility (GEF) 20/.

23. The majority of multilateral environmental agreements (MEAs) relate either directly or indirectly to land and soil issues 22/. Agreements of direct relevance include inter alia the United Nations Convention to Combat Desertification (UNCCD), the African Convention on the Conservation of
Nature and Natural Resources, the ASEAN Agreement on the Conservation of Nature and Natural Resources, and the Alpine Convention Soil Protection Protocol. Both direct and indirect links to land and soil issues are found within the biodiversity related MEAs, including inter alia the Convention on Biological Diversity (CBD) and the Ramsar Convention on Wetlands, the chemistry related MEAs, including inter alia the Stockholm Convention on Persistent Organic Pollutants, and the atmosphere related MEAs, including inter alia the UN Framework Convention on Climate Change (UNFCCC), the Kyoto Protocol and the Convention on Long-Range Transboundary Air Pollution.

24. Identifying such synergies at all levels of UNEP’s core areas including environmental assessment, policy development and implementation contributes to the efficient and coherent implementation of multilateral environmental agreements.

A. 2. Relating land and soil issues to other environmental focal areas

A. 2. 1. A complementary UNEP land and water policy

25. Integrated land and water management is a key principle of successful water management. This is due to the many interactions between land use and water management. Environmentally sustainable land use management and soil conservation is essential for achieving environmentally sustainable water use in terms of both quantity and quality. Effective frameworks such as Integrated Water Resource Management (IWRM) already exist and need to be built upon.

THE ECOSYSTEM APPROACH

A summary of the elements and rationale of the Ecosystem Approach contains the above elements, however it is not limited to them. The operational implementation of the ecosystem approach foresees the implementation of all principles of the ecosystem approach together. The application of it should be adapted to specific situations and frame conditions.

Multilateral Environmental Agreements (MEA) as relevant to land use management and soil conservation

Soil has an image problem. Many people perceive land and soil degradation falsely as a local rather than global issue, which is limited to poor developing countries, particularly African countries. In the absence of a strong political commitment to the issue, the international regime for land and soil conservation remains relatively weak and fragmented. Meanwhile, climate change, biodiversity, international waters, hazardous chemicals, wetlands and forests have more easily gained political standing as global environmental issues. Importantly, each of these issues contains a strong land and soil component.

Multilateral Environmental Agreements which DIRECTLY address land and soil issues

<table>
<thead>
<tr>
<th>Level</th>
<th>Legal Instrument</th>
<th>Some Key Objectives</th>
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<tbody>
<tr>
<td>International</td>
<td>UN Convention to Combat Desertification (UNCCD) (1994)</td>
<td>Prevention and reduction of land degradation; rehabilitation of partly degraded land; reclaim of desertified land particularly in Africa and in countries that experience serious drought.</td>
</tr>
<tr>
<td>International</td>
<td>African Convention on the Conservation of Nature and Natural Resources (1990)</td>
<td>Conservation and improvement of soils, combat soil erosion, and misuse soil; establishment of land use plans based on relevant science, including ecological, pedological, economic and sociological factors.</td>
</tr>
<tr>
<td>International</td>
<td>Convention on Establishing a Permanent Inter – State Drought Control Committee for the Sahel (1976)</td>
<td>Intended to address inter – state drought control as a major causal agent of soil degradation.</td>
</tr>
<tr>
<td>Regiona</td>
<td>ASEAN Agreement on the Conservation of Nature and Natural Resources (signed 1985)</td>
<td>Development and coordination of national conservation strategies that include the role of soil in the functioning of natural ecosystems; intends to undertake soil conservation measures to rehabilitate eroded and degraded soils, establish soil policies, control soil erosion, and improve soil fertility.</td>
</tr>
<tr>
<td>International</td>
<td>Alpine Convention (signed 1991); Soil Protection Protocol (ACSSP) (signed 1998)</td>
<td>Reduction of the quantitative and qualitative damage to soil through the use of appropriate agricultural and forestry land use methods; encouragement of minimal interference with soil, soil erosion control, restrictions on the sealing of soil, and soil rehabilitation; safeguarding and preservation of the functions of soil (including natural functions, cultural functions, and land use functions) in order to maintain an ecological balance in the region and soil diversity for future generations; intends to take legal and administrative measures to protect soil which apply the precautionary principle; consideration of the objectives of the ACSSP in other policies – nature protection, agriculture, coordination of forestry; intends to ensure cooperation between institutions and territorial authorities to develop synergies for soil protection.</td>
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Multilateral Environmental Agreements which INDIRECLTY address land and soil issues

<table>
<thead>
<tr>
<th>Level</th>
<th>Legal Instrument</th>
<th>Some Key Objectives relevant to land and soil</th>
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<tbody>
<tr>
<td>International</td>
<td>The Convention on Biological Diversity UNCED (1992)</td>
<td>Incorporates soil as a key habitat for many of the world’s species, making them worthy of protection, conservation and sustainable use.</td>
</tr>
<tr>
<td>International</td>
<td>The Ramsar Convention on Wetlands (1971)</td>
<td>Protects land and soil as habitat through conservation and wise use of wetlands by national action and international cooperation as means to achieving sustainable development throughout the world.</td>
</tr>
<tr>
<td>International</td>
<td>Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere (1940)</td>
<td>Regional preservation and protection of wildlife habitat and natural resources.</td>
</tr>
<tr>
<td>International</td>
<td>Convention for the Protection of the Natural Resources and Environment of the South Pacific Region (1986)</td>
<td>Regional protection of the South Pacific’s natural resources and environment.</td>
</tr>
<tr>
<td>International</td>
<td>Convention on the Conservation of European Wildlife and Natural Habitats (1979)</td>
<td>Intends to undertake soil conservation measures to rehabilitate eroded and degraded soils, establish soil policies, control soil erosion, and improve soil fertility.</td>
</tr>
<tr>
<td>International</td>
<td>Bonn Convention on Nature Conservation and Landscape Protection (1982)</td>
<td>Intends to foster the international flow of information on hazardous chemicals, guaranteeing better monitoring of trade in such substances, and therefore, indirectly conducive for soil protection from chemical pollution.</td>
</tr>
<tr>
<td>International</td>
<td>Basle Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1989)</td>
<td>Relates to important aspects of soil protection and soil rehabilitation by promoting and regulating the responsible treatment and disposal of hazardous wastes.</td>
</tr>
<tr>
<td>International</td>
<td>Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (PIC) (1998)</td>
<td>Intends to foster the international flow of information on hazardous chemicals, guaranteeing better monitoring of trade in such substances, and therefore, indirectly conducive for soil protection from chemical pollution.</td>
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Known for their genetic diversity within species, rather than for species variation or “species richness”. Improved interlinkages between biodiversity management and the prevention and mitigation of land degradation may include improved reporting, coherent scientific and technical advisory processes and capacity building across and within the CBD and UNCCD.

Integrated Water Resource Management (IWRM)

One of the challenges of water management is to accelerate the shift from mono-dimensional water managing water approaches – such as water for cities or water for agriculture – to integrated water resource management in order to meet a variety of needs.

Increased water and chemical use in irrigated agriculture has benefited farmers and the poor. But increased water and chemical use that fueled the Green Revolution has also contributed to environmental degradation, and threatened the resource base upon which we depend for food and livelihoods.

Rapid deterioration of water quality in many areas poses a serious threat to the sustainability and the safety of food production systems. Pollutant loads have increased enormously due to increased industrial, urban and agricultural uses. Degradation of dry lands is an urgent global problem placing people mainly in developing countries at risk. In highly industrialized regions ameliorating soil contamination and combating acidification are priorities. Millions die every year as a result of diseases caused by contaminated water.

Integrated management of water for hydropower, domestic use, agriculture and for nature demands the identification of environmental requirements in a first step. The second step is to match the temporal quality, quantity and demand patterns of various sectors. It is insufficient and unwise to allocate an annual quantity of water to the environment. Natural systems have demands for water that vary enormously in time and space. In fact, floods and droughts may be more beneficial than average flows, which are highly prized in agriculture. Recognizing these temporal requirements, it should be possible to allocate water to nature, and distribute it in a manner when its value for nature is highest, while at the same time meeting the demands of agriculture.

A classical IWRM framework contains a national water policy, strategies and legislation; an information system; allocation scenarios and action plans, either at the national or basin level; co-ordination, financing and monitoring mechanisms to implement the plans; governance mechanisms to ensure transparency and accountability; and a unique organization responsible for the whole thing. Without such a framework, pollution and disputes over limited and vulnerable water resources will continue to develop between rural, industrial and urban users, with the aquatic environment and human development continuing to suffer as a result.


Activities for the implementation of UNEP’s Water Policy and Strategy are highly relevant to land-related issues. It is therefore necessary that complementary land and water activities be developed and implemented, particularly in relation to the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, to freshwater management and to relevant regional processes.

Intended action (paragraphs 25-26)

iii) To develop practical policy and management guidance on integrated land and water management following existing approaches such as IWRM,

iv) To develop joint land-water initiatives for integrated and coherent national and transboundary assessment, policy development and implementation on land use and water management.

A. 2. 2. Land use management, biodiversity and forests

The integration of the sustainable use and conservation of biodiversity is among the most prominent challenges for biodiversity policies and the land use sector. This is particularly true for drylands, which are well

known for their genetic diversity within species, rather than for species variation or “species richness”. Improved interlinkages between biodiversity management and the prevention and mitigation of land degradation may include improved reporting, coherent scientific and technical advisory processes and capacity building across and within the CBD and UNCCD.

Multilateral Environmental Agreements which INDIRECTLY address land and soil issues

<table>
<thead>
<tr>
<th>Level</th>
<th>Instrument</th>
<th>Some Key-Objectives relevant to land and soil</th>
</tr>
</thead>
<tbody>
<tr>
<td>International</td>
<td>UN Framework Convention on Climate Change UNFCCC (1995)</td>
<td>Seeks to reduce global greenhouse gas emissions, in particular CO₂, through promoting clean energy production and increased energy efficiencies.</td>
</tr>
<tr>
<td></td>
<td>Kyoto Protocol (1997)</td>
<td>Soil and vegetation are addressed as globally significant carbon pools, utilising their ability to temporarily sequester and release carbon.</td>
</tr>
</tbody>
</table>


26. Activities for the implementation of UNEP’s Water Policy and Strategy are highly relevant to land-related issues. It is therefore necessary that complementary land and water activities be developed and implemented, particularly in relation to the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, to freshwater management and to relevant regional processes.

Intended action (paragraphs 25-26)

iii) To develop practical policy and management guidance on integrated land and water management following existing approaches such as IWRM,

iv) To develop joint land-water initiatives for integrated and coherent national and transboundary assessment, policy development and implementation on land use and water management.

A. 2. 2. Land use management, biodiversity and forests

27. The integration of the sustainable use and conservation of biodiversity is among the most prominent challenges for biodiversity policies and the land use sector. This is particularly true for drylands, which are well

known for their genetic diversity within species, rather than for species variation or “species richness”. Improved interlinkages between biodiversity management and the prevention and mitigation of land degradation may include improved reporting, coherent scientific and technical advisory processes and capacity building across and within the CBD and UNCCD.
Conservation and Sustainable Management of Below-Ground Biodiversity

Under the co-ordination of the Tropical Soil Biology and Fertility Institute of CIAT a consortium of research institutes from seven countries (Brazil, Mexico, Cote d’Ivoire, Uganda, Kenya, India and Indonesia) are working together with the wide spectrum of stakeholders to develop methods for valuing below-ground biodiversity and its services and identify the necessary conservation actions.

In order to allow these countries to address this challenge the Global Environment Facility through the United Nations Environment Program is supporting a five-year project. The objective of this project is to enhance awareness, knowledge and understanding of below-ground biological diversity (BGBD) important to sustainable agricultural production in tropical landscapes by the demonstration of methods for conservation and sustainable management. The project will explore the hypothesis that, by appropriate management of above- and below-ground biota, optimal conservation of biodiversity for national and global benefits can be achieved in mosaics of land-uses at differing intensities of management and furthermore result in simultaneous gains in sustainable agricultural production.

Expected Outputs:
1. Internationally accepted standard methods for characterization and evaluation of BGBD, including a set of indicators for BGBD loss.
2a. Inventory and evaluation of BGBD in benchmark sites representing a range of globally significant ecosystems and land uses.
2b. A global information exchange network for BGBD.
3. Sustainable and replicable management practices for BGBD conservation identified and implemented in pilot demonstration sites in representative tropical forest landscapes in seven countries.
4. Recommendations of alternative land use practices and an advisory support system for policies that will enhance the conservation of BGBD.
5. Improved capacity of all relevant institutions and stakeholders to implement conservation management of BGBD in a sustainable and efficient manner.

For more information please refer to: http://www.tsbf.org

Brandon, Colorado: Farmer Burl Scherler pours dry soil prone to wind erosion. A two-year drought in the region has farmers like Scherler worried about their livelihoods.
29. Land use includes forests. UNEP’s policy action on forest-related issues includes inter alia the relationship between forest management, deforestation and biodiversity, the promotion of protected forest areas, the promotion of common issues and needs of low forest cover countries, trade and environment in relation to forest products and services, and trade-offs between forest production and environmental services.

Intended action (paragraphs 27-29)

v) To promote integrated management of and equitable access to biodiversity, and to sustain biological diversity in agriculture and drylands by developing policy guidance and supporting implementation as based on relevant decisions by CBD, UNCCD and other multilateral environmental agreements,

vi) To support the implementation of the Intergovernmental Panel on Forests (IPF) and the Intergovernmental Forum on Forests (IFF) proposals for action on sustainable forest management and to strengthen UNEP’s role in the implementation of the UN Forum on Forests (UNFF) and the Collaborative Partnership of Forests (CPF) in the context of the WSSD Plan of Implementation.

A. 2. 3. Land use management and climate change

30. The implementation of the UNFCCC and the climate change related sections in the WEHAB Framework of Action require the development of concepts which identify, evaluate and interrelate vulnerability, adaptation and mitigation measures in natural resource management. Vulnerability assessments and related capacity building, especially in regions and sectors most likely to be affected, are prerequisites for effective adaptation measures. The efficient mainstreaming of adaptation concepts into sectoral planning processes requires a focus on the identification of no-regret options and synergies with objectives of sustainable development and poverty reduction.

31. Terrestrial carbon sequestration is one option for the mitigation of greenhouse gas emissions. The implementation of land use, land use change and forestry related (LULUCF) activities in the context of the Kyoto Protocol provides both challenges and opportunities. A strong enabling context at the national and international level will be required to implement environmentally sound and socially equitable climate change mitigation projects in the land use and forestry sectors. Also, synergies between mitigation and adaptation measures in the land use and forestry sectors are likely to provide opportunities for improved concepts in addressing the anticipated impacts of global climate change.
Multiple stresses make most of Africa highly vulnerable to environmental changes. Climate change will increase vulnerability of an already stressed continent. Graphic 11 on page 33 highlights findings of published studies; local impacts are even more dramatic and varied. As countries continue to submit national communications, there will be more documented cases, as well as proposals for adaptation measures.

Intended action (paragraphs 30-31)

vii) To assess the vulnerability of land resources in relation to climate change and climate variability and to develop and support the implementation of effective adaptation measures in the context of sectoral planning processes 42/.

viii) To develop and support the implementation of frameworks for environmentally integrated, economically viable and socially equitable carbon sequestration concepts by strengthening links to objectives in, for example, dryland management, biodiversity conservation, forest landscape restoration, water use management and rural livelihood development.

A. 2. 4. Land and soils as impacted by chemicals, industrial waste and urbanization

32. Increasingly, a significant proportion of the decline in land resource quality is caused by industrial waste, mining, diffuse and spot contamination involving heavy metals, acids, pesticides, herbicides et al. as well as soil sealing through urban sprawl 43/. Additionally, the environmental impacts from the agri-food production and consumption cycle require international and national assessment and response. UNEP is well positioned to encourage technologies, practices and behaviour that are less polluting and make more efficient use of natural resources.

Intended action (paragraph 32)

ix) To assess the environmental impacts throughout the agri-food chain including the trade of agricultural products and to develop responses to key issues through MEAs, information exchange, policy guidance on and implementation of remedy options.


Box 9

Vulnerability and Climate Change


Graphic 11:

Box 9 (continued)

Increasing temperatures threaten some crop varieties. In Uganda, the total area suitable for growing Robusta coffee would be dramatically reduced with a temperature increase of 2 degrees Centigrade. Only higher areas would remain suitable for coffee production, the rest would become too hot to grow coffee. This study shows the vulnerability of developing countries, whose economies often rely heavily on one or two agricultural products.


The global carbon cycle, showing the carbon stocks in reservoirs (in Gt C=10¹⁵) and carbon flows (in Gt C yr⁻¹) relevant to the anthropogenic perturbation as annual averages, 1989 – 1998 (Schimel et al. 1996; Watson et al. 2000). Terrestrial ecosystems play an important role in the global carbon cycle. Around one-third of global anthropogenic carbon emissions in the past 150 years resulted from land-use change, namely forest clearing in the tropics and elsewhere. On an annual global basis, land-use change results in emissions of 1.6 ± 0.8 gigatonnes of carbon (Gt C). This accounts for around 25 percent of emissions from fuel combustion and cement production. These and other findings were assessed by the UNE/World Meteorological Organisation (WMO) Intergovernmental Panel on Climate Change (IPCC). Its Special Report, published in 2000, conclude that land-use, land-use change, and forestry can contribute to the reduction of greenhouse gas emission by avoiding deforestation and increasing carbon uptake through afforestation, reforestation and improved management of forests, crops and grasslands.


A. 3. Land use policy, trade and poverty reduction

33. Assessments of the static and dynamic interlinkage between different economic sectors, different economic agents and the environment are important in order to identify the impact of trade liberalisation and trade-related policies on the environment. The integrated treatment of policies underpinning economic development may do much to enhance the viability of policies directed towards the environmental and social aspects of sustainable development. Measures identified to alleviate environmental, economic and social problems include a mix of sector-specific policies, broader macro-economic policies and environmental policies.
The whole agri-food chain, which involves the production of agricultural products, of food transformation, food distribution by the retail chain, and consumption have major environmental impacts. UNEP is addressing these issues through its main work programmes e.g. DTIE, in co-operation with other relevant UN Agencies.

Depletion and contamination of natural resource occurs throughout the agri-food chain. Pollution and food contamination related to the use of production technologies and processes, as well as from the use of the products aimed at increasing agricultural yields and facilitating food conservation, also have important environmental consequences. Bio-safety and food safety are as well important issues.

Key environmental impacts in agri-food production include depletion of natural resources like water, fisheries, forests and the loss of bio-diversity, land degradation resulting from unsustainable agricultural practices and from deforestation, land contamination and possible crop contamination resulting from uncontrolled use of fertilizers and pesticides contaminated with heavy metals, ground water contamination by nitrates and pesticides resulting from uncontrolled use of fertilizers and pesticides and intensive life-stock production, CO2 and air emissions stemming from energy use throughout the agri-food chain, hazardous and urban waste generated from intermediary products e.g. containers for holding pesticides and food packaging, and food and bio-safety issues related to the increased use of land for agriculture and the use of genetically modified organisms.

UNEP responds to the impacts through better assessing and understanding of environmental impacts throughout the agri-food chain including the trade of agricultural products, through developing responses to key issues through international environmental agreements, voluntary initiatives, policy guidance, and information exchange, through assisting in the implementation of those responses, and through monitoring and evaluating of trends.

To respond to recent needs of information for decision making and to facilitate stakeholder initiatives through on-line and open communications, UNEP developed an online information system, the Sustainable Agri-food Production and Consumption Forum, www.agrifood-forum.net.

Source: www.uneptie.org

Box 10

Agri-food Production and Consumption

The whole agri-food chain, which involves the production of agricultural products, of food transformation, food distribution by the retail chain, and consumption have major environmental impacts. UNEP is addressing these issues through its main work programmes e.g. DTIE, in co-operation with other relevant UN Agencies.

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Source: www.uneptie.org

34. Land resources contribute to human wellbeing in many ways and must not be seen as a mere commodity. The ecosystem services that are provided by land resources include a) provision of the production base for food, fibre etc, b) regulation of the fluxes of water, nutrients and other substances and c) enrichment by providing cultural and religious services 4/. While all people depend on these services, poor people are more heavily dependent on them. The environmental integrity of land use management and soil conservation can only be ensured if these services of land resources are balanced. However, as these functions often represent the non-market sector,
they are as yet underestimated and undervalued in their importance for poverty reduction.

**Intended action (paragraphs 33-34)**

(i) To explore positive and pro-active commitments between trade and sustainable land resource management,  

(ii) To identify, evaluate and integrate the ecosystem services of land resources in the UNEP poverty-environment nexus.

**B. Global land cover monitoring and assessment**

35. A reliable assessment of the status and trends of global land cover is a prerequisite for adequate environmental policy development and implementation. It requires a scientifically qualified global land cover monitoring process in cooperation with competent partners including FAO and others. Key issues are to be integrated into environment assessment and early warning processes, in particular UNEP’s Global Environment Outlook (GEO).

36. UNEP’s assessment strategy supports the development and strengthening of regional and national capacities for collection, harmonisation, analysis and reporting of land and soil data as a base for a coherent global assessment system. The strategy further includes development of improved access to land assessment products and information, for example through the land/soil portal of UNEP.Net.

37. Integrated land and soil assessments require further development of cross-sectoral, science-based indicators, especially as growing evidence shows that current concepts are partly misleading, resulting in ineffective remedy policy concepts.

**Intended action (paragraphs 35-37)**

(iii) To develop and implement a global decadal land cover monitoring process focusing on environmentally sensitive areas and the strengthening of national and regional capacities for environmental assessment data and information management.

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**Box 11 Poverty and Environment - Applying the Ecosystem Approach to Drylands**

UNEP is developing the application of the ecosystem approach to environmental management of drylands as based on improved understanding of the links between human action, ecosystem processes and human well-being.

Drylands - as much as other land types - offer a wide range of ecosystem services, whose maintenance is essential for human well-being. These services can broadly be distinguished into a) provision, b) regulation, c) support and d) culture. In many cases human action results in a strong trade-off between increased provisioning services and reduced regulating, supporting and cultural services.

**Examples of ecosystem services of land and soil resources**

**Provisioning Services**

- Human food (plant and animal products, livestock fodder), fibre, timber
- Fuels (woodfuel, fossil fuels)
- Minerals (metal ores, construction stone, gem stones)
- Fresh water

**Regulating Services**

- Purification of water and air
- Hydrological regulation
- Detoxification and decomposition of wastes
- Crop pest control
- Maintenance of biodiversity
- Climate regulation

**Cultural Services**

- Aesthetic values
- Spiritual and social values
- Intrinsic values

**Supporting Services**

- Primary production
- Soil formation
- Pollination of plants
- Nutrient cycling
- Provision of habitat

**Main elements of the Ecosystem Approach in drylands include the following:**

- Work with, rather than against, the diversity, variability and transition that characterize drylands using adaptive management approaches;  
- Improve understanding of the trade-offs between dryland ecosystem provisioning services and regulating, supporting and cultural services;  
- Consider maintenance and freedom of access to ecosystem services as important elements for poverty reduction and increased human capability;  
- Maintain the functioning and productivity of drylands through adaptive management strategies that provide flexibility in the face of the high spatial and temporal variability and continual transition that typify drylands;  
- Participate on consensus building on use of ecosystem services.

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38
40. Policy implementation focuses on several issues including: a) pilot project development, b) capacity building in cooperation with governments and civil society, c) response to environmental emergencies through preparedness, prevention, mitigation and response, and d) cause analysis and identification of possible policy implications at national and global level, e) development of tools and guidelines, and f) awareness raising, education and training through, for example, UNEP’s Best Practices and Success Stories Global Network (BSCN).

41. Regional cooperation is essential for relating policy development and implementation into governmental and intergovernmental dialogue. Additionally, regional cooperation links priorities with respect to land and soil issues within regional ministerial fora, existing regional networks and centres of excellence. Regional and sub-regional cooperation will further enhance the need for transboundary land resource management and emergency strategies. It will catalyse support for the implementation of multilateral environmental agreements (MEAs), namely the UNCCD.

38. Policy development and guidance to prevent and mitigate the environmental and social impacts of land degradation requires: a) the identification of constraints and barriers in policy, administration and culture, b) creation of an enabling environment, including capacity building and institutional arrangements for participatory public-private partnerships, c) creation and access to public information systems and d) the provision of technical support to governments and civil society for decision-making and e) to mainstream land and soil related issues into development policies.

39. Supporting national and regional legal processes and structures for the integration of the environmental dimension of land use management and soil conservation is a key component of policy development. UNEP’s third Montevideo Programme has as its objective support to governments in improving the conservation, rehabilitation and sustainable use of soils by promoting the development and implementation of laws and policies for enhancing the conservation, sustainable use and, where appropriate, the rehabilitation of soils.

4041
42. The GEF operational programme on sustainable land management aims to mitigate the root causes and negative impacts of land degradation on terrestrial and aquatic ecological systems through sustainable land management. Key elements of UNEP’s GEF strategy on land degradation include: a) assessments of land degradation to better evaluate the interlinkages between land degradation and other GEF focal areas, b) development of tools and methodologies for sustainable land management, c) targeted research focusing on developing models for the sustainable use of ecosystems within the managed landscape, d) management of transboundary land and water resources including the implementation of UNCCD Regional and Subregional Action Programmes and other regional frameworks, and e) development of capacity for natural disaster preparedness focusing on mitigation of land degradation caused by drought and flooding.

Box 13
Success Stories in Desertification/Land Degradation Control Initiative at UNEP
For more than 20 years, UNEP has been actively involved in worldwide efforts to combat dryland degradation and until the adoption and entry into force of the UNCCD in 1998, had a special programme, the Desertification Control Programme Activity Centre (DCPAC), promoting and supporting desertification control initiatives globally, regionally and even at national levels through assessment, awareness raising and institutional capacity-building. It was under DCPAC that the Success Stories in Desertification / Land Degradation Control Initiative was implemented in 1994.

The initiative aims at publicising successful projects and community-based initiatives in desertification control to raise global awareness that land degradation in the drylands can be both prevented and corrected, as well as to build confidence in community responsibility for the local environment and in local abilities to solve land management problems.

The UNEP success stories initiative is helping to develop capacity through the replication of best practices. It is a global programme coordinated from UNEP headquarters, but implemented in close collaboration with UNEP Regional Offices, NGOs and civil society in the regions.

Between 1995 and 1999, 25 case studies evaluated around the World won the UNEP “Saving the Drylands Award”. These success stories from Africa, Asia, and Latin America and the Caribbean address not only the biophysical but also the socio-cultural-economic issues in all its development stages, thus ensuring long-term sustainability.

Source UNEP 2002, Success Stories in the Struggle Against Desertification; www.unep.org/desertification/successstories

Box 14
GEF Operational Programme #15 - Sustainable Land Management
The main objective of OP #15 is to mitigate the causes and negative impacts of land degradation on ecosystem stability, functions and services through sustainable land management practices as a contribution to improve people’s livelihoods and economic wellbeing. Within OP#15 GEF support to sustainable land management activities can be provided with regard to:

Capacity building
- Mainstreaming of sustainable land management into national development priorities
- Integration of land use planning systems
- Agreements and mechanisms for management of transboundary resources

On-the-ground investments
- Sustainable agriculture
- Sustainable rangeland/pasture management
- Forest and woodland management

Targeted research
- Better understand the policy and institutional failures that drive land degradation
- Facilitate the refinement and adoption of innovative Sustainable Land Management practices and technologies, including early warning and monitoring systems

Intended action (paragraph 38-42)

xiii) To prevent and mitigate the environmental and social impacts of land degradation through policy guidance, capacity building, response to environmental emergencies and regional cooperation.

xiv) To support the development and implementation of legal instruments for national and multilateral integration of environmental aspects of land use management and soil protection.

xv) To support governments and partners in the development, implementation and execution of GEF projects, in particular with reference to the GEF operational programme on sustainable land management and other related GEF operational programmes and in reflection of internal expertise.
Improved science-policy interaction and knowledge systems

43. Given its specific mandate and expertise, UNEP, as the global environmental body of the UN, plays a complementary role within the UN system in addressing the environmental aspects of land and soil policies in relation to sustainable development. Existing processes including the Environment Management Group (EMG) and UNEP’s IEG process provide appropriate channels to ensure efficient and coherent strategies in cooperation with governments and fellow UN organisations.

Improved science-policy interaction is required in order to strengthen and extend knowledge systems as outlined in the WSSD Plan of Implementation and WEHAB framework for action. UNEP can achieve this by strengthening and extending its partnerships with scientific centres of excellence in the area of land use management and soil conservation.

Continued compilation and dissemination of information on best practices in land use management, including the development of databases, is another important component in supporting policy implementation.

45. Strengthening cooperation with civil society and enhancing public-private partnership is at the core of UNEP’s mandate. UNEP’s strategy on enhancing civil society engagement in its work stresses the importance of close cooperation with civil society for substantive input into, and ownership and implementation of, environmental policy. Modalities for civil society’s input entail capacity building and a continuous dialogue on key issues including land use management, environmental services and poverty reduction.

Intended action (paragraphs 43-45)

xvi) To strengthen the cooperation with scientific centres of excellence and governments on the environmental aspects of land use management and soil conservation,

xvii) To develop partnerships with civil society in order to enable dialogue and capacity building in relation to environmental aspects of land and soil policy development and implementation.
E. Implementation of the UN Convention to Combat Desertification and support to Africa

46. The UNCCD highlights the fact that “desertification is both a primary cause and a consequence in the environment-poverty nexus”. The UNCCD recognises that the “harmonisation of multilateral environmental agreements and their effective inclusion into poverty reduction strategies” is required for successfully integrating policies \( \Xi / \). In this context UNEP supports the implementation of the UNCCD on a global, regional and sub-regional level \( \Xi / \), in particular in relation to: a) major assessment processes \( \Xi / \); b) survey and evaluation of existing networks, institutions, agencies and bodies for information on and implementation of the UNCCD \( \Xi / \); c) implementation of UNCCD regional and subregional action plans \( \Xi / \); d) linkages between scientific and technical advisory processes of conventions and other MEAs for improved information management also within the UNEP-led process on IEG \( \Xi / \).

47. Support to Africa is one of UNEP’s five areas of intervention. Therefore, UNEP strongly supports the Environment Initiative of the New Partnership for Africa’s Development (NEPAD) \( \Xi / \). An identified first priority area for intervention of the NEPAD Environment Initiative is to combat

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**Graphic 16**

### Impacts of climate change

- **Max-Planck Institute of Meteorology model ECHAM4 for 2080: Country-level climate change impacts on rain-fed cereal production potential on currently cultivated land.** Source: Fischer et al. 2002.
The 1972 Stockholm Conference on the Human Environment, which led to the founding of UNEP, was the result of the unprecedented role played by NGOs in shaping the global environmental agenda. Agenda 21 strongly advocated the need for new forms of participation in support of common efforts for sustainable development. Successive UNEP Governing Council decisions and World Summits have emphasized the need for working with the widest possible range of public organizations.

In 2000, the Malmö Ministerial Declaration reaffirmed the critically important role played by civil society in addressing environmental issues. It highlighted the need for national governments and for UNEP and international organizations to enhance the engagement of civil society organizations in their work on environmental matters.

The challenge for UNEP and its partners is to mainstream civil society participation in UNEP’s global governance and programmes of action.

For this reason, UNEP developed a "Strategy paper on enhancing civil society engagement in UNEP.” This strategy has now been finalized and was presented to the 22nd Governing Council, in Nairobi, Kenya, February 2003. The strategy is based on the following key plans:

I. Strengthening institutional management: to facilitate transparent and meaningful communication between civil society and UNEP, especially through internet-based technologies. This includes the development of environment-related databases, networks and environmental knowledge centres in the regions.

II. Engagement at the policy level: to involve civil society expertise and views on the development of UNEP’s work programme and discuss emerging environmental issues.

III. Engagement at the programmatic level: to cooperate with civil society on the implementation of UNEP’s work programme.

For more information and the Practical Guidebook for Civil Society Engagement within UNEP, please refer to http://www.unep.org/dpdl/cso.

F. Mechanisms for implementation and resources

48. Under its functional approach and within its institutional structure, UNEP has already embarked on enhancing its cross-divisional cooperation. Mechanisms for a cross-divisional and functional implementation of the land and soil strategy require internal identification, development and technical linkages to the CBD, UNFCCC and other MEAs.

49. To assist African governments in developing and implementing stated priorities within the NEPAD Environment Initiative, with particular reference to combating desertification and addressing land degradation issues.

The New Partnership for Africa’s Development (NEPAD) adopted by the African Heads of State and Government as a framework for sustainable development in Africa calls for a coherent action plan and strategies to address the region’s environmental challenges while at the same time combating poverty and promoting socio-economic development. Chapter eight of the Plan of Implementation of WSSD reiterates Africa’s commitment to addressing the continent’s environmental challenges. In response, an action plan for the environment initiative of NEPAD covering the first decade of the twenty-first century has been prepared through a consultative and participatory process under the leadership of the African Ministerial Conference on Environment (AMCEN) and in close cooperation with the Secretariat of NEPAD and the African Union as well as with the support of the United Nations Environment Programme (UNEP) and the Global Environment Facility (GEF).

The action plan for the environment initiative of NEPAD focuses on various programmatic areas, such as: combating land degradation, drought and desertification; conserving Africa’s wetlands; preventing, control and management of invasive alien species; conservation and sustainable use of marine, coastal and freshwater resources; combating climate change; cross-border collaboration and management of natural resources including forests, biodiversity, plant genetic resources and cross-cutting issues of health and environment, poverty and environment, assessment and early warning for natural disasters as well as biosafety issues. An integral component of the action plan is a capacity building programme for its effective implementation.

The action plan provides an appropriate framework for the establishment of a strong partnership for the protection of the environment between Africa and its partners based on the commitments contained in the United Nations Millennium Declaration.

Box 16

UNEP and Civil Society

The Environment Initiative of NEPAD

The action plan provides an appropriate framework for the establishment of a strong partnership for the protection of the environment between Africa and its partners based on the commitments contained in the United Nations Millennium Declaration.
Evaluation of flexible, efficient and effective structures and processes. Additionally, regular reviews on progress toward the stated goals are required as an integral part of the implementation mechanism.

The mobilisation of additional financial, institutional and human resources is crucial for the implementation of UNEP’s land and soil strategy. This is particularly in view of the overall contribution to the WSSD Plan of Implementation and the WEHAB Framework for Action on Agriculture, Water and Biodiversity. UNEP’s functional approach can ensure a more cost-efficient development and implementation of policies. The integration of sponsoring governments and, increasingly, the private sector in the early stages of programme and project development through improved information exchange is crucial. The WSSD Plan of Implementation and WEHAB Framework of Action underline the importance of resource mobilisation to achieve jointly agreed goals.

**Intended action (paragraphs 48-49)**

xx) To strengthen cross-divisional coherence on land and soil issues for efficient implementation of the strategy within UNEP’s institutional structure,

xxi) To mobilise additional resources for the implementation of UNEP’s land and soil strategy through specific partnerships with governments and the private sector.

Desertification vulnerability map of Africa locates 46 per cent of the area at risk, of which 55 per cent is at high or very high risk. Source: Reich et al., 2001, Land resource stresses and desertification in Africa; in UNEP 2002, GEO-3.
CONCLUSIONS

50. The key environmental issues as related to land use management and soil conservation are complex. They range from land use change and unsustainable management to industrial pollutants, decreasing agricultural productivity, contamination of marine ecosystems and health threats. Each of these issues has a strong policy, socio-economic and environment component.

51. UNEP’s challenge to relate environmental aspects of land use management and soil conservation to the objectives of sustainable development, in particular poverty reduction. UNEP’s expertise in environmental assessment, policy guidance and implementation is key for an improved integration of environmental land and soil aspects across other environmental focal areas and in international, regional and national development processes, in particular the UN Millennium Development Goals and the WSSD Plan of Implementation.

52. UNEP’s strategy on land use management and soil conservation requires close cooperation with governments, civil society and fellow UN and international organisations to ensure a broadly acceptable and efficient implementation, as well as the necessary additional financial, institutional and human resource support.

List of Abbreviations

- AEO: Africa Environment Outlook
- ASEAN: Association of Southeast Asian Nations
- BGBD: Below Ground Biodiversity
- BSGN: Best Practices and Success Stories Global Network
- CBD: Convention on Biological Diversity
- CGIAR: Consultative Group on International Agricultural Research
- CFP: Collaborative Partnership of Forests
- CSD: Commission for Sustainable Development
- DCPAC: Desertification Control Programme Activity Centre
- DMP: Desert Margins Programme
- EMG: Environment Management Group
- FAO: Food and Agricultural Organisation of the United Nations
- GEF: Global Environment Facility
- GEO: Global Environment Outlook
- GLCN: Global Land Cover Network
- IEG: International Environmental Governance
- IFF: Intergovernmental Forum on Forests
- LADA: Land Degradation Assessment in Drylands
- LUCID: Land Use Change Analysis as an Approach for Investigating Biodiversity Loss and Land Degradation
- LULUCF: Land Use, Land Use Change and Forestry
- MDG: Millennium Development Goals
- MEA: Multilateral Environmental Agreement
- NEPAD: New Partnership for Africa’s Development
- NGO: Non-Governmental Organization
- UN: United Nations
- UNCCD: United Nations Convention to Combat Desertification
- UNEP: United Nations Environment Programme
- UNESCO: United Nations Educational, Scientific and Cultural Organization
- UNFCCC: UN Framework Convention on Climate Change
- UNF: UN Forum on Forests
- UNPACD: United Nations Plan of Action to Combat Desertification
- WEHAB: Working Group on Water, Environment, Health, Agriculture and Biodiversity
- WSSD: World Summit for Sustainable Development
ENDNOTES

1. The terms 'land' and 'soil' are used complementarily to each other. Soil degradation inevitably causes land degradation while vice versa land degradation, for example a change in the biota, does not necessarily result in soil degradation. Land and land resources are normally defined as a physical entity in terms of its topography and spatial nature; a broader integrative view also includes natural resources: the soils, minerals, water and biota that the land comprises. (e.g. chapter 10, Agenda 21, A/CONF.151/26/Rev.1). Soils can be defined as the matrix of mineral and organic material, forming the physical and chemical base for plant growth, water retention, soil fauna, and so forth.

2. General Assembly resolution 28/3054 of 17 October 1973 and General Assembly resolution 29/3337 of 17 December 1974, which vested primary responsibility for the preparations for the United Nations Conference on Desertification (UNCOD) to UNEP.


5. UNEP in co-operation with the International Soil Reference and Information Centre (ISRIC) carried out the Global Assessment of Soil Degradation project (GLASOD) and co-initiated the World Soils and Terrain Digital Database (SOTER) project.

6. United Nations Secretary-General in his report on integrated planning and management of land resources to the eighth session of the Commission on Sustainable Development. E/CN.17/2000/6, section II, paragraph 5


22. Governing Council decisions 19/1.
Ecosystem is defined as the "dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit", see United Nations Convention on Biological Diversity, Article 2.

See CBD decision on Ecosystem Approach (UNEP/CBD/COP/V/12), and CSD 8 Decision 8/3 on Integrated Planning and Management of Land Resources, also World Resources 2000-2001, World Resource Institute, April 2000 (also www.wri.org/wr2000/ecosys_approach.html), and "An ecosystem approach to drylands - Building support for new development policies", World Resource Institute, Information Policy Brief No.8.

See for example the Integrated Natural resource Management (INRM) approach (http://www.inrm.cgiar.org) or the FAO-initiated Sustainable Agriculture and Rural Development (SARD) approach.

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Elements of a GEF Operational Program for the prevention and control of Desertification and Deforestation through Sustainable Land Management, GEF/C.20/8, September, 2002

Tools and methodologies include a) the identification and testing of best practises in land management, b) participatory approaches, tools and methodologies for natural resource management and c) development of policy instruments for management of shared natural resources.

Nairobi Declaration, Governing Council decision 19/1 of 7 February 1997.


UNCCD Ministerial and High-Level Interactive Dialogue, ICCD/COP(5)/11/Add.1/Annex


see UNCCD decision 19/COP.5. Reference to the FAO-UNEP led Land Degradation Assessment in Drylands (LADA) and Millennium Ecosystem Assessment (MA).

see UNCCD decision 13/COP.5

see UNCCD decision 3, 6 and 8/COP.5

see UNCCD decision 7/COP.5

