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**Policy options and actions for expediting progress in
implementation: Land**

Report of the Secretary-General

¹ E/CN.17/2009/1.

Summary

Sustainable land management yields major local and global benefits. It simultaneously increases the long-term productive potential of land for agriculture and conserves ecosystems, helps to mitigate and adapt to climate change and prevents land degradation. Policies, programmes, tools and technologies for sustainable land management do exist, but their adaptation needs to be promoted in a manner that is consistent with the principles of sustainable development, including due recognition to cultural and institutional contexts. It is important to make land planning and administration processes accountable, transparent, responsive, equitable, participatory, consensus oriented, and efficient to provide the enabling conditions for sustainable development of land resources. A central requirement to achieve sustainable development and eradicate poverty is to ensure equitable access to land and other natural resources and land tenure security, including the recognition of customary tenure arrangements. There is a need to empower and provide access to land to marginalized people in order to eradicate poverty and ensure food security.

Contents

	<i>Paragraphs</i>	<i>Page</i>
I. Introduction	1 – 3	
II. Policies for Sustainable Land Management and Planning	4 – 46	
A. Sustaining and managing land resources	7 – 24	
B. Land administration and planning policies	25 – 33	
C. Access to and distribution of land and security of tenure	34 – 46	
III. Strengthening the Implementation Framework	47 – 60	
IV. The Way Forward	61 – 69	

I. Introduction

1. At its sixteenth session – the review session of the third implementation cycle 2008-2009 – the Commission on Sustainable Development conducted an evaluation of progress achieved in the selected cluster of issues of “Agriculture, Rural Development, Land, Desertification, Drought and Africa,” as contained in Agenda 21, the Programme for the Further Implementation of Agenda 21 and the Johannesburg Plan of Implementation. The Commission identified constraints and obstacles as well as new challenges and opportunities to implementation in the selected thematic cluster of issues.

2. At its seventeenth session – the policy session of its current implementation cycle – the Commission will take decisions on policy options and practical measures to expedite implementation in the selected cluster of issues. The Commission’s session will be preceded by its intergovernmental preparatory meeting that will prepare a draft negotiating document for consideration by the Commission.

3. The present report is a contribution to the discussions at the intergovernmental preparatory meeting on policy options and practical actions to expedite progress on land issues. It responds to the challenges and obstacles highlighted in the report of Commission’s 16th session. The cross-cutting issues, including the means of implementation, identified by the Commission at its eleventh session are addressed throughout the report. The report benefited from inputs received from Food and Agriculture Organization of the United Nations, United Nations Environment Programme, International Labour Organization, International Fund for Agricultural Development, United Nations Economic and Social Commission for Asia and the Pacific, United Nations Economic Commission for Africa, United Nations Economic Commission for Europe and the Major Groups. The report should be read in conjunction with the Secretary General’s reports on agriculture, rural development, desertification, drought and Africa, which will also be before the commission’s intergovernmental preparatory meeting. Where necessary, cross-references are made to these reports.

II. Policies for Sustainable Land Management and Planning

4. Land is becoming a more valuable resource than ever, and optimizing its use, while increasing access to land, as a basis for sustainable livelihoods is increasingly critical for ensuring human security. Policies and actions to provide incentives for sustainable land use and to empower land users will be central to changing land use patterns. Effective policies and institutions to manage land and related natural resources, as well as secure land rights are a prerequisite for stimulating investment in increased agricultural productivity and sustainable rural development.

5. Achieving sustainable development requires, inter alia, reversing land degradation trends. The loss of arable land due to urbanization, erosion and other processes leads to the decrease in availability of agriculturally productive soil with negative effects on livelihoods, food production

and environmental services derived from land². Managing land sustainably addresses the current challenges of land scarcity, water shortage, climate change and conflict, which currently threaten the livelihoods of millions of people worldwide. Land degradation processes are currently present in most countries, but affect in particular the poor. There is a need for policies that are adapted to the local context and address the direct and indirect drivers of degradation. One important aspect is to build capacities at all levels for sustainable land management practices.

6. Coherent land policies and intersectoral coordination are also central to meeting goals and commitments agreed upon in the United Nations Convention on Biodiversity (UNCBD), the United Nations Convention to Combat Desertification (UNCCD) and the United Nations Framework Convention for Climate Change (UNFCCC).

A. Sustaining and managing land resources

7. There is a recognized need for the integrated and sustainable management of land, an approach that takes into consideration all uses impacting land. Sustainable land management can conserve ecosystem functions, increase land productivity and enhance the resilience of farming systems. Land use is also a strong determinant for both the quantity and quality of water resources. Integrated soil and water management in land use activities can greatly increase land productivity, the resilience of farming systems and the availability of water resources³. The integrated management of land resources depends on good governance, transparent and equitable land policies, and the effective participation of all stakeholders. Traditional knowledge can inform new approaches and technologies for sustainable land management. Successful examples for such technologies are integrated pest management, conservation agriculture and related practices such as zero tillage. Greater recognition is needed of the fact that land provides ecosystem services that restore productivity, conserve soil, water and biodiversity, sequester carbon, regulate climate and provide landscape and cultural values.

8. Some of the effects of poor land-use practices result in declining agricultural yields, higher costs to maintain production levels and higher vulnerability to extreme events such as landslides and wildfires. The Global Environment Outlook⁴ states that “land degradation in the form of soil erosion, nutrient depletion, water scarcity, salinity and disruption of biological cycles is a fundamental and persistent problem”.

9. Incentives to foster the sustainable management of land, such as payment for environmental/ ecosystem services, have proven to support the adoption of sustainable land management practices. Valuation and award mechanisms such as Green Water Credits⁵ (as tested out in Kenya), payments for carbon sequestration, afforestation and reforestation (as established under climate change mitigation projects worldwide) are just some of the payment for environmental services instruments developed. An international network of individuals has been

² Millennium Ecosystem Assessment (2005) *Dryland Systems*; Chapter 22

³ UNDESA (2008) Trends in Sustainable Development, Africa Report, p.41

⁴ United Nations Environment Programme, Global Environment Outlook (GEO) 4 (2007)

⁵ International Soil Reference and Information Centre (ISRIC); Green Water Credits Policy Brief (<http://www.isric.org/isric/webdocs/docs/PolicyBrief11web.pdf>).

formed to promote, and improve capacity related to markets and payments for environmental/ecosystem services⁶.

10. Success stories show that when the right policy instruments are put in place and when the local stakeholders are both authors and actors of the land management process and by taking cultural and customary rights into account sustainable land management can be achieved. It is possible to reverse the trend of land degradation through matching short term economic and longer term environmental goals. Moreover, improved land resources management measures should build on local innovation and knowledge and need to be locally tested and validated before being applied at larger scale or being transferred to other locations even in similar ecosystems.

11. Population growth is another important factor, which decreases the average availability of land per person globally. Between 2007 and 2050, the world population is expected to increase by 2.5 billion, passing from 6.7 billion to 9.2 billion. Most of the population growth is expected in developing countries, concentrated in cities and towns. Urban settlements are projected to grow both in area and population. These projections estimate 0.6 Billion fewer rural inhabitants in 2050 than today. However, global poverty is mainly concentrated in rural areas, with estimates affirming that poverty will remain rural in the foreseeable future⁷. At the same time, the UN-Habitat report “State of the World Cities 2008/2009” states that one billion people are living in slums and warned of unrest should governments fail to tackle the urban poverty crisis.

12. The functioning of urban settlements depends on land in the surrounding rural areas for food and water supply, waste disposal, recreational value and the growth of settlements. In order to sustain both urban and rural livelihoods and ecosystems there is a need for the sustainable management of the resources requirements of urban and peri-urban areas. Particularly in Small Island Developing States (SIDS) the limited availability of land poses challenges negatively affects ecosystems. Tourism, as pointed out in the Secretary-General’s Report on SIDS⁸, has posed challenges for SIDS, urgently requiring the development and extension of sustainable approaches to tourism.

13. The loss of valuable forests that protect fragile soils leads to a loss of habitats for wildlife and, consequently, reduced biodiversity. Deforestation also leads to an increased emissions of greenhouse gases as well as rises in landslide and flood risks. Political will to improve management of forests by revising forest policies and legislation and strengthening forestry institutions remains important⁹. Managing forests for multiple uses and valuing the conservation of soil, water, biological diversity and environmental services of forests¹⁰ can lead to a recovery of forested area, such as in parts of the East Asian and Pacific region (Figure 1).

Figure 1: Change in forest cover, by region, 1990 – 2000 and 2000 - 2005

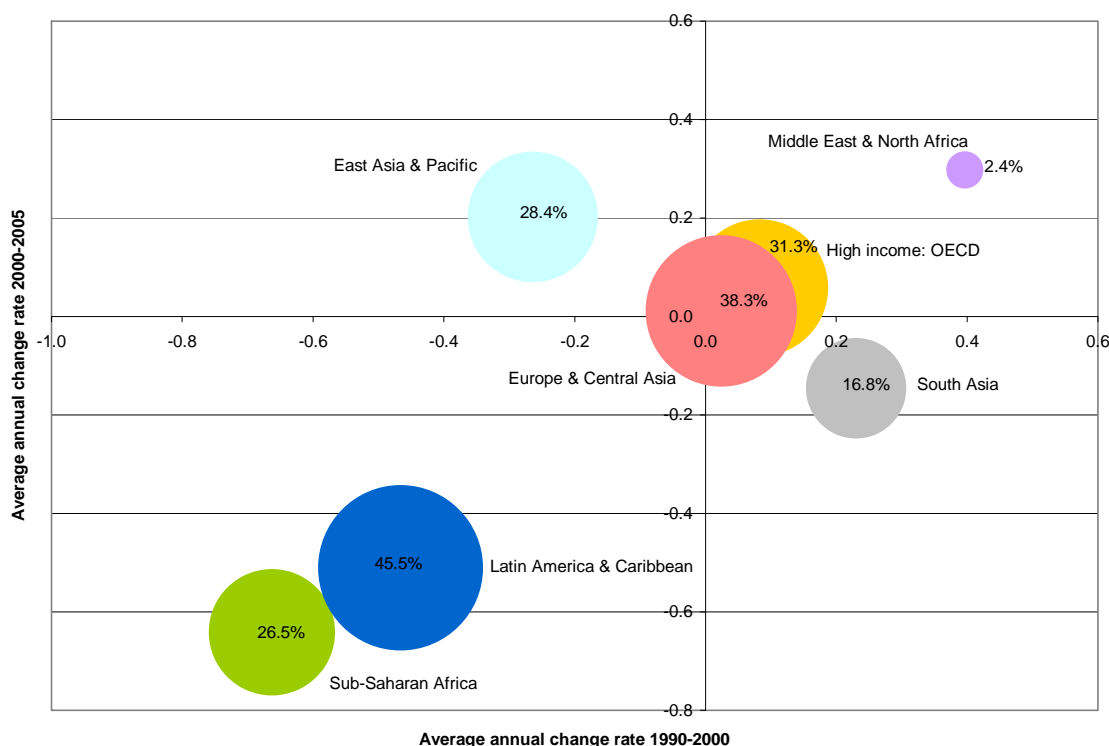
⁶ Katoomba Group <http://www.katoombagroup.org/>

⁷ Secretary General Report on Rural Development for CSD-17 (E/CN.17/2009/4)

⁸ Small Island Developing States - Report of the Secretary-General for CSD-16; E/CN.17/2008/9

⁹ A/RES/62/98 Non-legally binding instrument on all types of forests

¹⁰ E/2007/42 Report of the seventh session of the United Nations Forum on Forests



Source: World Development Indicators online database in Trends in Sustainable Development 2008-2009¹¹

Note: Size of bubbles corresponds to forest area as a percentage of total land area. Forest area is land under natural or planted strands of trees.

14. Each environmental and socioeconomic context requires adapted land use practices as pressures exceeding the carrying capacity of land resources diminish important ecosystem functions. There is thus a general need for an ‘ecological literacy’ in the agricultural sector, to avoid current tendencies to misuse ecosystems in the drive for short-term productivity gains, which are frequently resulting in long-term agricultural productivity losses. Targeted research and knowledge management is needed to reduce pressures on land resources. Such research can provide important insights and instruments to respond to land degradation, drought, biodiversity loss, water shortage, biofuels and urbanization.

15. Due consideration to ecosystems and their services needs to be given in land management practises so that activities carried out to increase agricultural production do not have adverse effects on the environment. This includes the effective use of all resources related to land, soil, water, and air in an environment friendly way while maximizing income from land-use activities. Mainstreaming an ecosystems management approach into national agricultural and economic

¹¹ UNDESA (2008) Trends in Sustainable Development 2008-2009

development plans is critically important in addressing the long-term sustainability of land use systems in the face of climate change.

Box 1

The Economics of Ecosystems and Biodiversity

An EU-commissioned study titled "The Economics of Ecosystems and Biodiversity" (TEEB), puts the annual cost of forest loss at between \$2 trillion and \$5 trillion, thus dwarfing the costs estimated for the financial crisis in 2008. The first part of the TEEB report released in 2008 estimated that forest decline alone could be costing about 7% of global GDP. The figures of the TEEB study were derived by adding the value of the various services that forests perform, such as providing clean water and absorbing carbon dioxide. The TEEB report shows that current trends in the loss of ecosystem services on land and in the oceans demonstrate the severe dangers that biodiversity loss poses to human health and welfare. The report proposes a general framework for evaluating the loss of biodiversity and ecosystem services that acknowledges that not all values of biodiversity can be measured in economic terms. A second phase of the study, which will release its findings in 2010, will expand the scope to natural systems other than forests.

Source: <http://ec.europa.eu/environment/nature/biodiversity/economics/>

16. Land does not only provide a sink for carbon, but is also an important resource in efforts to adapt to the effects of climate change by for example planning land use systems to be less vulnerable and exposed to floods. Thus the sustainable management and planning of land resources can strengthen the resilience of communities affected by climate change.

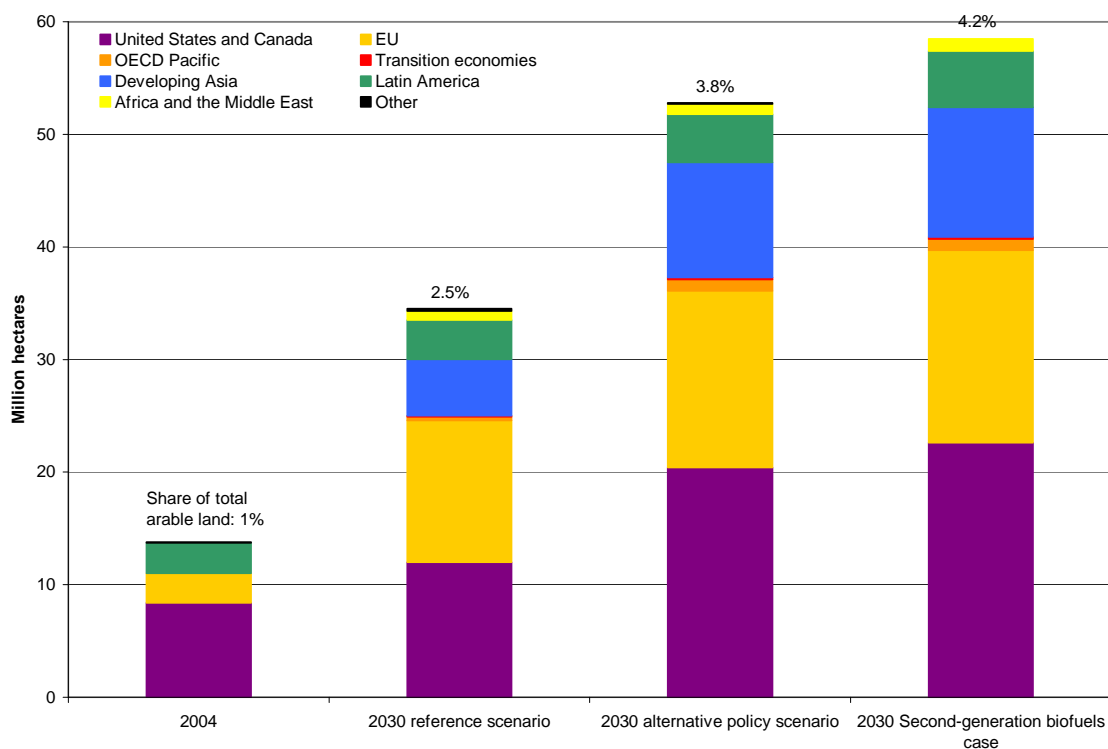
17. Communities in low-lying coastal areas, including particularly small island developing states are threatened by sea level rise. A clear understanding of the impacts of climate change at the local scale is crucial to devise adequate response options. In the light of uncertainty of the exact impacts of climate change approaches there is a need to explore further adaptive management approaches and borrowing from lessons learned in the field of risk reduction, such as discouraging settlements in areas prone to natural disasters and encouraging adapted land use technologies. The long term adaptation of land use systems has to be ensured to guarantee the resilience of livelihood systems. In light of a likely increase in extreme climatic events, such as droughts and floods, risk management tools, such as crop insurances, can strengthen the resilience for agricultural producers and vulnerable rural populations.

18. Soil carbon sequestration through the restoration of soil organic matter does not only help to mitigate climate change patterns but also helps to rehabilitate degraded land. Good land use and management practice (such as conservation agriculture) that also contribute to stabilizing or enhancing food production and optimizing the use of synthetic fertilizer inputs are also effective instruments for capturing carbon. Policies and incentives for sequestering carbon in soils and

reducing greenhouse gases from land could encourage smallholder farmers, herders and commercial farmers to adopt improved management practices that enhance productivity, reversing degradation and desertification and mitigating and adapting to climate change.

19. As highlighted in the Secretary-General's Report on Agriculture¹² and the FAO Report "The State of Food and Agriculture 2008"¹³, policies to support the sustainable production and use of biofuels need to take the competition for productive land between food and energy crops into consideration and have to reflect local circumstances. Environmental sustainability in the production of biofuels and the promotion of other renewable energy sources need to be pursued simultaneously. The different options in the energy mix have to be carefully evaluated to ensure most efficient and effective use of the input factors, without creating new problems in another sector. Allocating land for different uses in a manner that avoids competition of biofuel with food production and forested areas for scarce land resources needs to guide land use policies. Initiating independent studies on the impact of biofuel production on food security would shed further light on how the demands for food and fuel can be met sustainably. The High-Level Task Force on the Global Food Security Crisis has proposed to develop an international biofuel consensus, as a way forward to resolve this issue.¹⁴ Land tenure issues related to biofuel production need to be also carefully evaluated, as discussed in more detail later on in this report.

Figure 2: Current and projected land requirements for biofuel production in main producing countries under three different policy scenarios



¹² Secretary General Report on Agriculture for CSD-17 (E/CN.17/2009/3)

¹³ <http://www.fao.org/docrep/011/i0100e/i0100e00.htm>

¹⁴ High-Level Task Force on the Global Food Security Crisis (2008) Comprehensive Framework For Action; pp. 24 - 25; available at <http://www.un.org/issues/food/taskforce/cfa.shtml>

Source: IEA (2006) in Trends in Sustainable Development 2008-2009

Note: Alternative policy scenarios include policies currently under consideration around the world to promote production and use of biofuels, second-generation biofuels case assumes large-scale introduction of lingo-cellulosic technologies, raising biofuels share in transport demand to 10 per cent globally by 2030.

20. Land is among other issues a key component in solving the food crisis as pointed in the Comprehensive Framework for Action¹⁵ of the High-Level Task Force on the Global Food Security Crisis. Although a short-term response in providing food aid is very much needed, the improvement of production systems and the improved utilization of land resources are imperative in all approaches. Structural factors involving access to land resources by smallholder farmers and incentives to invest in the maintenance of land resources are needed and will be further discussed in the ensuing sections of this report and the Secretary General reports on agriculture¹⁶ and rural development¹⁷.

21. There have been successes in developing new technologies for sustainable land management that deserve future investments to provide an enabling environment for their wider adoption. A technical workshop by the FAO and partners in 2008 on 'Investing in Sustainable Agricultural Intensification - the Role of Conservation Agriculture' led to a Framework for Action and concluded that there is ample evidence of the successes of conservation agriculture under diverse agro-ecological conditions to justify a major investment of human and financial resources when and where conditions permit¹⁸.

22. Conservation agriculture is based on the principals of minimal soil disturbance, organic residue retention, and crop rotations and combinations. This approach marks a shift away from resource intensive conventional tillage based production systems. Conservation agriculture has proven to lead to large savings in machinery and energy use and in carbon emissions, restoration of soil organic matter and biotic activity, reduced carbon emissions and erosion, increased crop water availability. It thus leads to an increased resilience against droughts, improved recharge of aquifers and reduced impact of unreliable weather patterns associated with climate change. Systems employing the principles of conservation agriculture have shown to reduce production costs, lead to more reliable harvests and decrease the risks of a failed harvests especially for small landholders. Its widespread adoption has in some places been inhibited by initial investment costs, a resistant to change well-established production systems, as well as misaligned policies, which provide incentives for unsustainable production practices.

23. Measures to ensure that land management is in line with sustainable development goals include integrating ecosystem approaches into land management and development planning. Successful approaches have made use of the linkages between agro-biodiversity, ecosystems functioning and ecosystem resilience as well as the delivery of ecosystem services. Examples include techniques of Integrated Pest Management, agroforestry and the already mentioned

¹⁵ <http://www.un.org/issues/food/taskforce/Documentation/CFA%20Web.pdf>

¹⁶ Secretary General Report on Agriculture for CSD-17 (E/CN.17/2009/3)

¹⁷ Secretary General Report on Rural Development for CSD-17 (E/CN.17/2009/4)

¹⁸ http://www.fao.org/ag/ca/doc/proposed_framework.pdf

conservation agriculture practices. Increased awareness of the important linkages between natural resources and agricultural production are to be simultaneously implemented with the assistance to farmers with small holdings. As pointed out in the Secretary General's Report on Rural Development¹⁹, improving access to education in rural areas, especially for girls, is a vital building block to achieve the sustainable management of land resources for future generations.

24. Improved access to information technology and systems could contribute to improved land management and planning in many countries. Updating data to assess the extent of land degradation and assess the quality of soils would have positive effects on land use planning and management and support efforts to rehabilitate degraded land. Enhancing the technical capacity in sustainable land management techniques and technologies would assist in the sustainable utilization of land. Hence, improvements in the dissemination of new and existing technologies and adapted sustainable agricultural practices to farmers in developing countries deserve greater attention.

Box 2

The Global Land Tool Network

A network of stakeholders, including several United Nations entities and facilitated by UN-Habitat, has developed the Global Land Tool Network (GLTN). It aims to (a) to increase global knowledge, awareness and tools to support pro-poor and gender sensitive land management; and (b) to strengthen capacity in selected countries to apply pro-poor and gender sensitive tools to improve the security of tenure of the poor.

GLTN identifies five themes where tools are needed (1) land rights, records and registration, (2) land use planning, (3) land management, administration and information, (4) land law and enforcement, (5) land value capture. It aims to develop pro-poor gendered land tools; unblock existing initiatives and to add value; research, documentation and dissemination; strengthen global comprehensiveness in line with the Paris Declaration on Aid Effectiveness; improve security of tenure for the poor through the global campaign on secure tenure; and contribute to the achievement globally agreed goals and targets. The numerous tools that have been developed can be accessed on the GLTN website. In 2008, for example, GLTN advanced the process of establishing evaluation criteria for testing the gender-responsive land tools through an e-discussion.

Source: <http://www.gltn.net/>

¹⁹ Secretary General's Report on Rural Development for CSD-17 (E/CN.17/2009/4)

B. Land administration and planning policies

25. Land planning needs to take the complexity of achieving truly sustainable land management and planning into account and can no longer rely on a fragmented approach. Competition for land and water, deforestation and the loss of biodiversity, which is partly reflected in the recent increase in food prices, can be mitigated by land planning approaches that are sustainable. Awareness is increasing that a holistic and transdisciplinary approach to land planning and management is needed.

26. There is an urgent need for national policies and action plans that pay more attention to land use policy and administration that prevent land degradation and loss of agriculturally productive lands through processes such as erosion, salinization, pollution and urbanization. These policies and plans also need to aim at mitigating the effects of natural disasters such as landslides, floods and the depletion of water resources. In this context land planning policies play a crucial role in adapting to climate change. For example settlements in areas prone to the effects of climate change can be prevented through zoning laws. Land use and planning are also important to prevent pollution of freshwater and of the oceans. Policies need to be context specific, adapted to the ecological, socioeconomic and cultural context while building on local cultural values and knowledge systems.

27. Changes in land administration need to pay attention to the poor to enable them to be a critical part of the decision making process. A number of instruments have been successfully used with a pro-poor dimension. These instruments include:

- Integrated land and water management, including avoided deforestation and the rehabilitation of degraded lands, as for example the in the report explained payment for environmental/ecosystem services programmes
- Capacity strengthening in land management and planning at the regional, national and local level

29. New methods and technologies have proven useful to account and reduce the transaction costs such as:

- Improved temporal and spatial resolution of geographic land planning and management support systems
- Better methods to assess tradeoffs between among land uses and transfer benefits among land users
- Empowering communities with knowledge and access to technologies, such as early warning systems, decision support systems, incentives for relocation and infrastructure development.

29. Specific policy actions to improve the institutional and legal capacity for land planning and administration need to include effective intersectoral mechanisms and capacity building for land use planning at all levels. Particularly corruption in land administration processes needs to be addressed proactively. Land use planning and administration needs to take into consideration the merits and demerits of current practices in the titling and zoning of land. Environmental assessment methods at the policy, programme and project level are useful techniques to inform

decision-makers and involve all relevant stakeholders if done in a scientifically rigorous context with the support and commitment of the relevant authorities. Land planning processes need to strive to enable land tenure security and avoid conflicts about land access and use. The issue of land tenure security in view of increasing demands on land will be discussed in more detail in the next section of this report.

30. In recent years, carbon trading, demand of land for biofuel or other mono-crop plantations, growth of large scale foreign direct investment in agriculture have shown to increase the scarcity and economic value of land, as well as the competition for and access to land. These changes may have negative impacts, such as losing customary land rights with no or unfair compensation for customary users, but may also offer new opportunities, such as wealth and resources for public investment. Land use planning is becoming a necessity to balance and identify the best options. These options need to be evaluated in their application at various temporal and geographical scales, taking into account the range of stakeholders alongside the social, economic and environmental trade offs and externalities.

31. Employing a participatory approach to land use planning involving all relevant stakeholders helps to ensure that the views and needs of important but often less powerful land user groups such as women, landless labourers and indigenous peoples are not overlooked in the planning process and subsequent decision-making. Particular emphasis must be given to the empowerment of rural women as agents for promoting sustainable rural development. The collection and production of gender disaggregated statistical data of human, social and natural capital will facilitate further research and strengthen the currently mainly anecdotal evidence collected so far.

32. Mechanisms for transferring evidence from research on land degradation indicators, trends and impacts and adapted remedial measures to decision-making structures are also required to guide priority setting and investments. These actions need to build land users' and institutional capacities for sustainable land management.

33. Information technology systems are more and more widely applied and have replaced paper based manual titling systems in industrialized countries. The long process of land titling in many countries is a sign that processes can be shortened and made more succinct and easy to follow in order to suppress high transaction costs.

C. Access to and distribution of land and security of tenure

34. Land tenure security and equitable access to land and natural resources are a central aspect of the equation for sustainable development and poverty reduction. A major role of land tenure policies, regulations and related planning processes will be to maximize opportunities to provide an enabling environment for economic growth benefiting particularly the poor. Policies and institutions guided by principles of good governance should also contribute to resolve conflicts over scarce resources and reduce the vulnerability to natural disasters, climate change

and food insecurity. Successful examples have included multi-stakeholder and decentralized processes for local empowerment and conflict resolution among user groups.

35. Tenure arrangements need to be based on the principles of good governance (transparency, equity, accountability, respecting rule of law, participatory, consensus oriented, effectiveness and efficiency) and existing formal and informal property rights. They need to strive to achieve: (i) promoting secure access to land rights for communities or individuals, taking into account the rights and needs of marginalized groups such as indigenous peoples and women, as well as cultural and customary rights; (ii) setting up a transparent land administration to promote the efficient use of land and sustainable management of natural resources; and (iii) reducing inequity and corruption.

36. Pro-poor approaches to land are needed. Particularly the recognition of customary rights is often a pro-poor measure. Customary rights may be directly registered without conversion into introduced land tenure forms in Uganda, Tanzania and Mozambique. To further strengthen pro-poor efforts the International Land Coalition was formed as a global alliance of civil society and intergovernmental organizations working together to promote secure and equitable access to and control over land for poor individuals through advocacy, dialogue and capacity building. This coalition aims to empower the rural poor by increasing their access to productive assets and by increasing their direct participation in decision-making processes at all levels on issues affecting their livelihoods. Their Land Reporting Initiative seeks to support collaboration between civil society, international organisations and governments to improve the monitoring of land rights issues and the evaluation of land policy.

37. Policies relying largely on market forces to redistribute land have been applied with limited success to achieve their objective to increase productivity while at the same time ensuring the redistribution of land. In light of these lessons learned, a new approach to land redistribution is being advanced, in which smallholder farmers and the use of the productive potential of land along with principles of good land stewardship is promoted. The conservation of land and biodiversity can have very positive effects on ecosystem and economic development if sustainable livelihood opportunities are a strong component of the conservation efforts. While implementing land redistribution policies the involvement of all affected stakeholders is crucial for their success.

38. Property registration institutions and cadastres are the pillars for a functioning housing market because they provide government and private agents with essential information to engage in economic transactions. Efficient registration is also a precondition to guarantee security of tenure and promote the development of mortgage credit. Reliable and transparent registration procedures are important factors in ensuring private sector investment. At the same time registering land is the basis for designing a land value tax. Such a tax should be designed with a pro-poor approach in mind and reward sustainable land management. Revenues from this tax can pay for infrastructure, thus benefiting the land users.

39. Traditional land use forms such as extensive pastoralism and community based land use systems may not lend themselves to individual private property rights. Often these land use systems have been adapted over centuries to their ecosystem and are now threatened by a

growing population and policies, which do not consider the social, economic, environmental, institutional and cultural contexts. Traditional land use types need to be provided with a framework that discourages overuse by providing incentives for the sustainable use of available land resources. Examples of measures providing such incentives to conserve environmental services is the PAS²⁰ programme in Costa Rica, which has developed mechanisms to charge the users of environmental services, particularly on water, for the services they receive.

40. Land also plays an important part of people's cultural identity. Alternative approaches to conventional formal land titling programmes are needed to ensure access for poor farmers. Although customary land rights differ from statutory rights in their origins and forms of documentation, they can be equally secure. Options on how customary land rights can be recognized in law needs further evaluation. Efforts to recognize and codify customary tenure provide an opportunity to rectify negative aspects such as gender and inter-generational exclusion. It is necessary to devise equitable, consensual policies and coherent new legal frameworks incorporating a plurality of forms of tenure that secure property rights for rich and poor alike, recognize secondary and collective rights.

41. Ensuring that displaced people have access to land and do not interfere with other land users requires efficient and effective institutions. Particularly in post-conflict situations there is a need to reconcile different interests over land and ensure the equitable allocation of land to prevent the recurrence of conflicts. Land distribution is also an important factor in preventing and resolving conflicts.

42. There are fundamental needs to extend the coverage of cadastral systems and accessible land registration and documentation procedures particularly in parts of Africa, Asia and Latin America. There is a global trend to integrate mapping, cadastre and registration systems into one centralized unit. Simplicity and transparency with inexpensive registration procedures are found to be effective to reduce costs for individual customers. In the most economically advanced countries, registration systems have been constantly modernized through the introduction of digital technologies, achieving high degrees of complexity as a result of improvements in the move towards e-government. Electronic technologies could facilitate market exchanges for real estate and enhance the long-term stability of land registration. However, constraints such as the initial investment costs and capacities to maintain such a system pose real constraints to their widespread application, particularly in developing countries

43. Methods of land valuation have also become more sophisticated through the introduction of geographic information systems (GIS), which allows governments to make use of mass property valuation methods, and thus improve the design of property taxes in the real estate sector. In many countries, however, the Government owns large areas of lands and have not assigned them to their most productive and efficient use.

44. Duplication of functions in state agencies can be reduced, public-private partnership can be strengthened and in some countries the private sector could become more involved in administrative processes. These measures could help to reduce the demand for public resources

²⁰ PAS is the Spanish acronym for Payment for Environmental Services

and state budget. At the same time the private sector would benefit from a more efficient and transparent administrative system.

45. In many countries with economies in transition, governments have promoted privatization of real estate with some degree of success, but the refurbishing of the housing infrastructure has often lagged behind. The very uneven quality of dwellings of commonly owned areas were the outcome of (i) a legacy of non-profitable housing stocks in the hands of local governments; (ii) the sudden privatization of units, which have hardly been profitable in the past; and (iii) inadequate administration and legislation. In Western Europe, for example, this issue has been solved through the enactment of legislation that establishes specific obligations for different actors in the land market.

46. The development of informal settlements poses a challenge that will continue to affect all countries because of increased economic integration. The prevention of future informal settlements formation is critical and could be achieved, inter alia, through sustainable urban management and spatial planning. Addressing social inequalities related to unequal spatial distribution of wealth is also a prerequisite to any sustainable approach to this challenge. In the short run, solutions for existing settlements will often involve legal acts to regularize and upgrade informal settlements, but also resettlement plans need to be carefully considered and assessed.

III. Strengthening the Implementation Framework

47. Practices of good land administration will often require integrated approaches to address challenges in the legal, financial, institutional and technical aspects of land management. The assessment of land use impacts on broader areas such as social housing, energy efficiency or spatial planning will need to be considered. Unless holistic guidelines are embraced, there is a risk that solutions to one challenge may lead to difficulties in others. A dynamic assessment of the economic, social and environmental impact that different types of land-use and land development measures can create will help accentuate the progress that has already been achieved in spatial planning policies.

48. In the light of the recently witnessed food crisis it is vital that the public and policymakers are informed about the environmental context within which sustainable food production can take place. Key challenges to current and future food production need to be discussed in the context of sustainable development, which has proven to be helpful in identifying sustainable options for maintaining the productive capacity of land resources while at the same time ensuring food security. Such an approach needs to be responsive to changes in climatic and socio-economic patterns including humanitarian aspects and the vulnerability of the poor.

Box 3**The Land Policy Initiative**

The Land Policy Initiative (LPI) process was initiated in 2006 by a consortium of three Pan-African organizations including the African Union, the African Development Bank and the United Nations Economic Commission for Africa. The rationale for this initiative is that 60% of the African population derives its livelihood and income mainly from farming and related activities. Land issues have thus been recognized as a core element in the formulation of development policy in Africa. Population growth, migration and urbanization furthermore present challenges in the availability of land. The initiative is in the process of developing a framework and guidelines on land policy, with guiding principles to support African countries in undertaking and harnessing land policy reforms to achieve poverty reduction, peace and security as well as sustainable development goals.

48. As discussed in the Secretary General's Report on desertification²¹, the 10-Year strategic plan and framework to enhance the implementation of the United Nations Convention to Combat Desertification (2008-2018) (UNCCD, COP 8, Decision 3) provides a renewed commitment to the Convention. A prioritization of investments in land and sustainable land management to prevent and reverse land degradation and desertification contribute to achieving the Millennium Development Goals. Given the importance of land issues, United Nations entities should engage both within and outside the United Nations systems in a collaborative manner to support an effective response to land degradation and its crosscutting impacts.

49. National Action Plans for combating land degradation, conservation of biodiversity and climate are frequently incoherent with related strategies such as National Sustainable Development Strategies and Poverty Reduction Strategy Papers. Thus their actual implementation is limited. The immediate relation of land degradation, biodiversity conservation, climate change, and sustainable land management has been recognized as a major operational programme of the Global Environment Facility (GEF), which advocates a programmatic approach through, for example, the TerrAfrica Sustainable Land Management in Sub-Saharan Africa (SIP) initiative and the Middle East North Africa Regional Investment (MENARID) Program. The aim is to overcome the barriers and constraints and promote the wide adoption of sustainable land management.

²¹ Secretary General Report on Desertification for CSD-17 (E/CN.17/2009/7)

50. Addressing land issues implies also a good understanding of the legal environment and regulatory institutions, which perform an important role for economic development. In November 2008 Members of the Group of 20 agreed on strengthening regulatory regimes to ensure that “all financial markets, products and participants are regulated or subject to oversight, as appropriate to their circumstances”²². Depending on the economic development different measures are needed to implement and stimulate housing markets. A solid legal system securing property rights and contractual freedom as well as anti-fraud and anti-corruption mechanisms form an important pillar of any housing markets. In least developed countries the provision of basic services such as drinking water, sanitation and electricity need to be of primary importance. More developed regions are developing modern systems of supervision of banking soundness, safeguards for creditors and effective foreclosure procedures.

51. Weak institutional capacity does not only affect transparency in the housing sector, but it could also act as a hindrance to private sector development, preventing economic diversification. An independent justice system and reliable civil servants are essential to guarantee transparency. Transparency is also a prerequisite for equitable policies and remains vital to attract long term foreign direct investment. Institutional reforms need to be also promoted to improve the financial and technical aspects of social housing, promote clear and effective land valuation methods, and develop micro-finance projects to assist the poor. Ongoing events affecting the housing market show that there is a clear connection between obscure regulations for financial markets and the rise of housing-price bubbles.

52. Land resources can only be planned and managed effectively if countries are knowledgeable of land use change and the status and trends of land resources and ecosystems. Various guidelines and tools are available to help countries evaluate the land resources and to plan their rational use (e.g. FAO agro-ecological zoning, land evaluation and land use planning guidelines). Methods and tools for land degradation assessment at global, national and local levels are currently being developed and validated by FAO with six pilot countries and institutional partners under the Land Degradation Assessment in Drylands (LADA) project. Under the same project regional training capacities will be developed to promote their wider use by countries and development partners²³. United Nations agencies, funds, programmes and conventions are also collaborating with research bodies and projects that are developing methods and tools for monitoring and assessing land resources using remote sensing. Examples are the sensing soil condition project by the World Agroforestry Centre²⁴; land degradation indicators by the Desertlinks²⁵ and the DESIRE projects²⁶; as well as the impact monitoring of sustainable land management practices by WOCAT²⁷. These projects, which deliver data and knowledge on ecosystems, land use and land resources, are essential for the development of perspective studies and scenarios at regional and national scale. The models produced can guide decision making on

²² Declaration of the Summit on Financial Markets and the World Economy
<http://www.whitehouse.gov/news/releases/2008/11/20081115-1.html>

²³ <http://www.fao.org/nr/lada/>

²⁴ <http://www.worldagroforestrycentre.org/sensingsoil/index.html>

²⁵ <http://www.kcl.ac.uk/projects/desertlinks/>

²⁶ <http://www.desire-project.eu/>

²⁷ World Overview of Conservation Approaches and Technologies (WOCAT) <http://www.wocat.org/>

adaptation and mitigation to climate change; on the development of lands for biofuels; on the planning and regulation of urban expansion and wetland development; as well as provide insight for sustainable watershed and floodplain management.

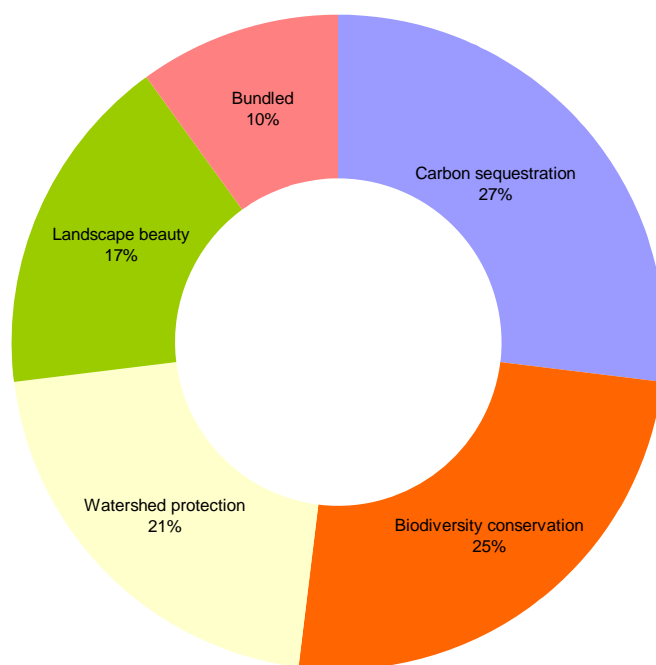
53. At the national level, progressive institutional change in land sector agencies needs to be integrated and carried out within the wider processes of public sector reform. In this respect, land administration institutions need to be strengthened to provide their services, with the flexibility to recover their own administrative and technical costs from those users who are able to pay. Land governance needs to be decentralized and appropriate capacity-building and technical assistance provided to countries and local authorities in the region. There needs to be a clear definition of roles and responsibilities amongst land actors.

54. Financing is required to provide the initial start up costs, which are often not within the reach of small-scale farmers to acquire sustainable land management technologies and shift to sustainable land management practices. Technical assistance needs to complement financing to ensure that capacity is built to make most effective use of funds and avoid shortfalls of the past. Assistance provided needs to promote the provision of access to land and opportunities for sustainable livelihood activities for marginalized groups. It needs to strengthen the role of women in decision-making related to land management and planning as well as access to land. Overall there is an increased recognition that a larger share of Official Development Assistance (ODA) should be directed to the agricultural sector and in particular to smallholder farmers²⁸.

55. Financial incentives to conserve land resources and account for its services have been applied, as discussed earlier. The further use of innovative instruments to address land degradation and its root causes has increased, as detailed in figure 3 on payments for environmental/ ecosystem services. There is a need to strengthen this positive trend in an effort to recognize the value of sustainable land management for watersheds, biodiversity conservation and carbon sequestration.

Figure 3: Payments for forest ecosystem services around the world by service

²⁸ World Development Report 2008: Agriculture for Development <http://econ.worldbank.org/wdr/>



Source: Landell-Mills and Porras (2002) in Trends in Sustainable Development 2008-2009

Note: The breakdown is based on a total of 287 cases

56. Accelerated efforts for capacity building in the following areas of land management remain a priority: (1) land tenure and land administration; (2) land use planning, and (3) sustainable land management, with a focus on integrated ecosystems approaches. Building capacities of local and national institutions has proven to foster synergies and increase their impact.

57. Education is important for harnessing and adapting and extending knowledge. Indigenous knowledge can provide important inputs to address today's challenges. At the same time findings from the latest research can help to adapt indigenous knowledge system to today's challenges. Implementing best practices with social participation is the key to effectively promoting sustainable land and water management issues, combating desertification and mitigating the effects of drought.

58. Water security, as a cross-cutting issue, addresses basic needs such as food security, poverty eradication and adaptation to climate change. Water policies are therefore closely linked to policies and strategies on sustainable agriculture and land management. The limiting and, at the same time, enabling role of water in human life and livelihoods needs to be re-examined by considering 'water security' aspects. This consideration needs to build on water policy discourses and human security concepts. Water resources management policies should remove and mitigate water-related barriers and risks such as insufficient access to sustain human life, access to water of poor quality, limited water supplies for basic productive activity, and shocks

induced by droughts and floods. Water policies should also strive to maximize the potential for water to spur human achievements – and to further expand human capabilities through food production and the generation of energy.

59. The need to guarantee food security for millions of people, against the backdrop of increasing fuel and food prices, is widely recognized as a complex issue of agricultural development, including resources management in addition to well targeted social protection measures and carefully formulated trade policies. Appropriate policies are necessary to ensure eco-efficient use of natural resources for inclusive, sustainable socio-economic development. Reliable water supplies are critical for food production, increasing yield, reducing agricultural risk, and stabilizing farm incomes. Water reliability and availability affect food security, but the ‘equation’ linking food to water security is neither linear nor transparent. External factors, such as the relationships between water users and their entitlements, play an important role in determining the links between water and food. In the past decade in many countries the agricultural sector has been neglected, questionable subsidy and tax policies have dominated and sustainable water resources management has also been sidelined in national agendas. It is more urgent than ever to reinstate adequate legal and institutional frameworks that encourage sound water management, help increase land productivity and thus enhance food security.

60. Many regions have started to develop their own centres of excellence in land policy, tenure and management in order to supply the knowledge and expertise necessary for the implementation of new land policies and development of land institutions to support economic development and renewal of governance systems in the 21st Century. For example the idea of a pan-African framework for land policy and land reforms to strengthen capacities on related policy issues is being discussed.

IV. The way forward

61. Competition for land is high and increasing due to population and economic growth, expanding settlements and infrastructure, development in tourism, bioenergy production and efforts to promote agricultural development. This competition calls for implementing actions that will address both the equity and efficiency aspects related to land allocation, planning and management. To compensate for reduced land availability, efforts need to be directed at enhancing the productivity of land, especially in Small Island Developing States.

62. Providing land tenure security and equitable access to land and natural resources is central to achieve sustainable development and to reduce poverty. In this regard, policies that encourage granting land rights or the provision of long-term leases offer opportunities to promote sustainable land use practices. New infrastructure development leading to relocation of traditional landowners should be guided by sound feasibility analysis, in which social and political considerations must be considered along with the sustainable development criteria.

63. Implementation of effective land reform policies can pave the way for reducing social disparities in terms of access to land, while making important contributions to reducing rural

poverty, stimulating economic growth in rural economies, and reducing rural-urban migration. However, it is important that such policy reforms in addition to meeting their intended objectives, should contribute to the protection of land resources from degradation. Engaging stakeholders effectively at all levels of land policy development, administration and implementation will ensure that policies are owned at the local level and implemented in their true spirit.

64. Land distribution or land management models differ in terms of their social and economic effectiveness. These differences essentially emanate from socioeconomic background of the society, cultural traditions and historical perspectives on land use and management, among others. This highlights the need to examine new and innovative approaches to resolve land issues in countries at peace and in countries dealing with conflict and post-conflict situations. Good coordination and continuous interaction between national and local actors and across sectors is vital to achieve security of tenure to promote sustainable land management and planning.

65. Improvements in land governance capacities in formal land administration and customary tenure arrangements are required to avoid or alleviate the adverse consequences of poorly governed systems. Such improvements could take the form of adequate protection of land rights, provision of incentives for investing in land management, strengthening technical and institutional capacities of public land administrations, and improving data quality and information management systems. In instituting policy reforms, promoting the adoption of pro-poor approaches that actively seek the participation and empowerment of vulnerable sections of societies in particular women and indigenous people must receive priority. Available evidence suggests the need for empowering women to exploit the full potential of land resources.

66. Sustainable land management is central to avoid land degradation and reclaim degraded land for its productive use and for reaping the benefits of crucial ecosystem services and protecting biodiversity. It also helps in mitigating and adapting to climate change. Adaptation to climate change, which will include sudden extreme weather events, requires implementing adequate response options in the form of risk reduction and enhancing coping capacities of people at risk. These response options need to include the long term adaptation of land use systems and mechanisms that guarantee resilience of the livelihood systems. The use of local knowledge should be encouraged since it can provide insights into proven adaptation techniques and contribute to the design of early warning systems for extreme events. At the same time, research and innovative approaches (such as actions to strengthen livelihoods and early warning systems) can contribute towards enhancing risk mitigation measures and reducing the vulnerability of livelihoods to extreme events.

67. Tools and technologies do exist for efficient land management and administration, but their adaptation needs to be promoted and application expanded. A large number of human livelihoods and ecosystems can benefit from these tools and techniques since these yield multiple benefits. For example soil carbon sequestration holds great potential for increasing carbon content in the soil and also for benefiting soil biodiversity, soil fertility and soil water storage capacity and hence agricultural productivity. Disseminating and scaling up the implementation of sustainable land management approaches will, however, need to be backed up by mobilizing strong political will and financial resources.

68. Policies and actions such as payment for ecosystem services should promote balanced ecosystem approaches that use ecosystem services and contribute to the maintenance of ecosystem functions. Similar policies will be needed to safeguard common resources (e.g., forests, wetlands, water resources in lakes, river basins and the oceans).

69. Capacity building and technology transfer efforts should encourage and enable rural populations to frame their actions within the context of a sustainable and integrated land management approaches. Towards this aim, policies and institutions need to ensure that increasing and competing demands for land and water can be sustainably met, while supporting the development of vibrant and equitable farm and non-farm sectors in rural areas.