E

ARC/08/INF/5

June 2008

منظمة الأغذية والزراعة للأمم المتحدة | 联合国粮食及农业组织 | Food and Agriculture Organization of the United Nations | Organisation des Nations Unies pour l'alimentation et l'agriculture | Organización de las Naciones Unidas para la Agricultura y la Alimentación

TWENTY-FIFTH REGIONAL CONFERENCE FOR AFRICA

Nairobi, Kenya, 16 – 20 June 2008

CHALLENGES FOR SUSTAINABLE LAND MANAGEMENT (SLM) FOR FOOD SECURITY IN AFRICA

Table of Contents

1. FOOD SECURITY AND LAND RESOURCES IN AFRICA

1.1 Potential of land and water

1. Land resources are the basic capital to meet the needs for food, fuel, water, shelter and cash for almost 59 percent of African population who live in rural areas. Africa has diverse land resources (climate, soils, vegetation, water, and fauna), which could be exploited for enhancing livelihoods and environment health. The Table below shows the potential of land resources in the region.

1.1.1 Land resources

Regions	Arable lands (1000ha)	Permanent crops (1000ha)	Irrigated lands (1000 ha)
Africa	184,905	25,792	12,789
SSA	146,605	20,374	5,225

Table 1: Potential of land and extent of use

2. From this Table it appears that only 14 percent of the potential of more than 184 millions ha of arable lands, were used for cropping in 2002 in Africa.

3. It is known that most African‘s soils are poor, compared to soils in most other parts of the world. In addition to low inherent fertility, African soils nutrient balances are often negative indicating that farmers mine their soils (Bationo and al., 2006).

1.1.2 Water resources

4. The African continent has 230×10^6 hectares covered by natural water resources (FAO 1978) and has nine percent of the world’s total freshwater resources as compared to 28 percent in Asia and 15.5 percent in Europe. A Country like Gabon has the highest water availability where as other countries particularly in the north, east and south have low water availability.

5. Within SSA irrigated farming systems are generally the most productive, but cover a limited area (less than 10 percent of potential irrigable land). Households practicing irrigation typically have lower levels of poverty, greater food security, a wider range of food and cash crop options and reduced risk of crop failure.

6. Despite the potential in land and water a characteristic of the continent is the increasing numerous conflicts between settled farmers, herders and forest dwellers over access to land and water resources.

1.2 Food security

7. Food security is defined as access by all people at all times to the food needed for a healthy and active life. To achieve this goal three conditions have to be met, namely (i) ensuring adequacy of food supply or availability, (ii) ensuring stability of supply, and (iii) ensuring access to food. The major thrust of food security is to bring about a significant increase in agricultural production in a sustainable way and to achieve a substantial

improvement in people's entitlement to adequate food and culturally appropriate food supplies (FAO, 1994).

8. Africa is the only region in the world in which the average per capita food production has been consistently falling for the last 40 years, with as consequences a high level of poverty particularly in rural areas. In the coming decades Africa will have to feed a population that is expected to increase from 832 million people in 2002 to over 1.8 billion in 2050**.**

9. Almost 15 percent of the population (183 million) will still be undernourished by 2030 – by far the highest total for any region. Malnutrition is expected to increase by an average of 32 percent. In 2001, 28 million people in Africa faced food emergencies due to droughts, floods and strife, with 25 million needing emergency food and agricultural assistance. Hunger and malnutrition, degradation of land and water resources have increased susceptibility to life threatening diseases.

10. Land degradation is therefore a serious threat to the achievement of food security in the region.

2. LAND DEGRADATION IN SUB-SAHARAN AFRICA

11. Land degradation is generally defined as a severe loss of productivity and biodiversity. Some of the direct or human causes are: inappropriate management of the land for cultivation, deforestation, and/or overexploitation of local species, overgrazing, pastures, poor management and over use of surface and groundwater resources; and poorly planned and managed urban and industrial development.

12. The root causes are: i) poverty (poor people cannot afford to invest on land for the sake of long term sustainability), ii) lack of awareness of the consequences of land degradation, iii) population pressure iv) high input costs, v) low produce prices, vi) market failures (disincentives to investing in improved land management practices), vii) insecure user rights of land resources and less willing to invest in ensuring future productivity, viii) inappropriate development policies driven by short term output targets that ignore long term sustainability, and weak/non-existent advisory support services limiting land users' access to improved farm inputs.

13. Land degradation is an increasingly serious problem in Sub-Saharan Africa, with major implications for the region's economy, health and natural environment. About 65 per cent of Africa's population and an area of about 16.1 million km^2 are affected by land degradation and agricultural production is falling at about 3 per cent per year as a result. The loss in gross annual income due to land degradation is estimated at USD 9 billion and about two-thirds of arable land in Sub-Saharan Africa could be lost by 2025 (TerrAfrica, 2006). Land degradation has resulted in a significant reduction in the economic, social and ecological benefits.

14. Soil nutrient depletion in the SSA's small-scale farmers croplands is very severe, resulting in negative nutrient balance at a rate of 8 million tons of NPK/year, up to 70-80 kg NPK/ha/year (IFDC, 2006). During the last 30 years, soil fertility depletion has been

estimated at an average of 660 kg N ha^{-1}, 75 kg P ha^{-1} and 450 kg K ha^{-1} from about 200 million ha of cultivated land in 37 African countries. At least 4 million tons of nutrients are removed in harvested products compared to the 1 million tons returned in the form of manure and fertilizer. Soil fertility degradation is considered the single most important food security constraint in SSA.

15. According to Thiombiano and Tourino (2007): (i) "hot spots" of land degradation are largely predominant at continental level, compare to the "bright spots" of very low to low degradation; (ii) there is an increasing trend of severity and extend of land degradation from the humid zones of the Congo and Zambezi basins (24 percent to 29 percent) to the dry areas of the Nile, Niger and Lake Chad basins (78 percent to 86 percent); (iii) the interrelation and cumulative effects of water and wind erosion are also increasing along these agro ecological zones.

16. With about 30 percent of the GDP coming from the agriculture sector, continuing land degradation is a major factor to the region's underdevelopment. As land productivity declines, yields from croplands, rangelands and forests/woodlands also diminish. Increasingly households are finding their livelihoods adversely affected by land degradation and climate change. A variety of scientific reports confirm that the quality and productivity of SSA's land resources is declining while the number of poor people and the land derived goods and services are increasing dramatically. The future welfare of Africa's rural population therefore requires urgent action to halt and reverse this decline. At the same time, the population is growing at a rate of 2.1 percent per year, which will only place further demands on already diminishing and vulnerable resources.

17. Forest and rangeland degradation also has economic consequences. Deforestation in SSA is at a rate of 3.7 million ha/year (0.7 percent/year) (FAOSTAT, 2004**).**

18. Rangeland degradation involves reduced forage productivity and quality, water cycling effectiveness, and resilience to drought. In years with unfavorable rainfall, this has often led to massive livestock loss.

19. Furthermore, climatic changes impacts are expected to present severe challenges to rural production systems throughout Africa.

20. Illustration of the types and extent of land degradation in SSA is given in Table 2.

Table 2: Type, severity and extent of land degradation in SSA

Types of land degradation	Dominant on	Regions affected in SSA	Severity of the problem
Soil erosion by water	Sloping lands, areas with high rainfall, light soils, lands with low ground cover	About 2/3 of SSA, except with low rains and flat terrains	Very severe
Soil erosion by wind	Flat arid and semi arid lands	About 1/3 of SSA	High
Nutrient depletion	Eroded lands and lands with chemical degradation	All, but more severe in the sloping highlands	High
Salinization	Semi-arid/arid climates with high evaporation rates and low leaching	Semiarid and arid parts of Africa	Severe
Acidification	In high rainfall areas	Highlands	Moderate
Salinity and alkalinity	Irrigated fields	Lowlands	Severe
Physical degradation	Sealing, compaction, reduced permeability	Lowlands and highlands	moderate
Biological degradation	Loss of organic matter, decomposition of organic matter	All	High

21. In this general context within the continent, Sustainable Land Management (SLM) is necessary to reverse the trends, and thereby address a major obstacle to economic growth and sustainability.

3. OVERVIEW OF PAST AND CURRENT EXPERIENCE IN SUSTAINABLE LAND MANAGEMENT

22. Sustainable Land Management (SLM) is defined as ‘the use of land resources, including soils, water, animals and plants, for the production of goods to meet changing human needs, while simultaneously ensuring the long-term productive potential of these resources and the maintenance of their environmental functions (UNEP, 1992). SLM is a knowledge-based procedure that helps integrate land, water, biodiversity, and environmental management including input and output externalities to meet rising food and fibre demands while sustaining ecosystem services and livelihoods (World Bank, 2006).

23. One of the most important aspects of sustainable land management is the critical merger of agriculture and environment through twin objectives (TerrAfrica, 2006):

(i) Maintaining long term productivity of the ecosystem functions (land, water, biodiversity); and
(ii) Increasing productivity (quality, quantity and diversity) of goods and services, and `particularly safe and healthy food

24. A number and diversity of programs, policies and initiatives have taken place during the past few decades to combat land degradation and enhance natural resources management.

3.1 SLM Country Programs and Initiatives

25. Some of these include: Soil, Water and Forest Conservation Programs, Agricultural Water Management and Irrigation Schemes, Watershed Management Programs, Livestock Development Programs, Capacity Building for Soil and Water Conservation and Community based natural resources management Programs. A number of National government institutions were (are) created including: Ministries/Agencies, Commissions / Bureaus/ Departments (Agriculture, Forestry, Land use, Water Resources, and Livestock), Land user communities and NGOs, Research Institutions and Universities who are major actors on sustainable land management.

Box1.
Country Partnership Program for Sustainable Land Management (CPPSLM) is an emerging program seeking to strengthen alignment and harmonization of approaches and practices to realize SLM principles, objectives and framework in SSA. A national platform for coordinating and overseeing the CPPSLM is being established in SSA countries in line with the TerrAfrica and GEF SIP framework. Countries in SSA such as Ethiopia, Ghana and Burkina Faso are now fully engaged in implementing the initiatives of CPPSLM with technical and financial assistance from the World Bank / GEF, other multilateral and bilateral (GTZ, SIDA, CIDA) organizations, UN organizations (UNDP, FAO, WFP, GM), NGOs and civil societies in the respective countries.

3.2 Regional/ international initiatives

26. A number of international donor institutions, UN Agencies, bilateral and multilateral organization provided financial and technical support. In the mean time, many national, regional and international initiatives and conventions were adopted and/or ratified in various domains. They include:

(i) *The Comprehensive Africa Agriculture Development Program* (CAADP) of NEPAD which Pillars 1 and 4 are related to the need to improve and to extend arable lands and water resources sustainable management.

(ii) *The NEPAD Environment Initiative* with several Action Plans related to the fight against desertification and land degradation as well as the sustainable management of natural resources in transboundary river basins and watersheds.

(iii) *The Maputo Declaration* to invest at least 10 percent of National budgets in agricultural production by 2008 for which land and water management constitute the essential capital to be taken care.

(iv) *The African Fertilizer Summit* of June 2006 with its important Abuja Declaration calling for the Africa Green Revolution. As an important step for the implementation of the 23rd FAO Africa Regional Conference Resolution on Fertilizers development, adopted in Johannesburg in 2003 fertilizers both organic and inorganic have been declared strategic commodity. The *Africa Summit on Food Security* held in Abuja in December 2006 with its subsequent Resolution strengthened the need to boost agricultural production while protecting natural resources capital.

(v) *The ratification of diverse Conventions* relevant to the sustainable use and management of land in the framework of combating desertification (UNCCD), protecting the biodiversity including soil rich fauna (CBD), the adaptation and mitigation to climate change with increasing focus on the need to consider soils resources as important reservoirs for carbon sequestration (UNFCCC), the protection of water resources against erosion and sedimentation caused by mismanagement and by both water and wind erosion (International Waters Convention); the protection and sustainable development of wetlands at watersheds management scale, through the Ramsar Convention.

(vi) *TerrAfrica Platform* which draws lessons from past initiative such as the Soil Fertility Initiative aims to provide a collective approach to the problem of unsustainable land management and its consequences, with a framework based on a new business model. TerrAfrica was launched in October 2005 at the 7th conference of the parties to the UNCCD in Nairobi, Kenya and at the NEPAD Comprehensive African Agriculture Development Program's donor retreat in Pretoria, South Africa in 2006. This Platform aims at aligning and mobilizing resources for sustainable land management focuses on three key Activity Lines, namely: coalition building, knowledge management and investments**.**

(vii) *The GEF Strategic Investment Program for SLM in SSA (SIP)* which constitutes an important financial and partnership mechanism to boost sustainable land management in the region. Through TerrAfrica Platform the Global Environment Facility is investing 150 millions US dollars in 28 countries in domains ranging from river basin natural resources management to local communities capacity building in the areas of better land care.

(viii) *The Green Wall for the Sahara Initiative* launched in December 2006 by the African Union and developed by the AU Commission in collaboration with ECA, FAO, UNEP, UNCCD, SSO and CEN-SAD. The major goals among others are to slow the advance of the Sahara desert, control land degradation, and promote integrated natural resources management.

(ix) Several important Programs related to: the *Land Degradation Assessment in Drylands (LADA)* implemented by FAO in partnership with countries and other institutions at the request of the UNCCD; the *Kagera Transboundary Agro-ecosystems Management (TAMP)* with

Rwanda, Burundi, Tanzania and Uganda in collaboration with FAO, the *Alliance for a Green Revolution in Africa (AGRA)* supported by the Rockefeller Foundation and the Bill and Melinda Gates Foundation, the W*orld Overview of Conservation Approaches and Technologies (WOCAT)* database which provides a wide range of best practices and the *Atlas of African Soils* in preparation with the strong contribution of the African Soil Science Society, the World Soil Museum, the Joint Research Center of the European Union and FAO which will contribute significantly in better knowledge building and advice to policy makers in view of sustainable use of land and waters.

(x) Finally several *sub-regional initiatives* initiated and supported by the Regional Economic Organizations (ECOWAS, SADC, ECCAS, IGAD...) are strongly participating in the process of building partnership, developing better policy awareness and more investments in land and water management.

27. Despite these efforts, at various policy makers and stakeholders' levels as well as spatial scales, the global trend remains toward increasing land degradation and decreasing agricultural production.

28. Therefore, feeding an increasing population and thereby ensure food security for All, in the continent, while preserving natural resources capital for the current and forthcoming generations remains a challenge. In this context, addressing the major challenges of sustainable land and water resources management is the key for the achievement of halfing the number of hungry people (MDG1 and WFS; WFS+5) and protecting the environment (MDG7).

Box 2.

The Horn of Africa (HOA) Initiative on Food Security: The major trust of this initiative is Sustainable Land and Water Management (SLM) and Enhanced Productivity. The HOA initiative perceives that SLM is about "scaling up" mechanisms for best practices and what works on the ground. The main assumption being that whilst there is ample scope for improvements, the range of SLM related initiatives that work represent already a formidable starting point for scaling up demand driven and integrated SLM interventions in large parts of the HOA
Over 20 million food insecure people exist in the HOA. Nevertheless, efforts are underway by the governments of the countries to enhance growth for a larger number of people living below the half a dollar per day threshold and who are considered vulnerable. This population is also at risk of becoming food insecure following subsequent shocks and the steady deterioration of the natural resources base (HOA initiatives, 2007). The initiative seeks to support The National Sustainable Land Management frameworks being prepared.

4. CHALLENGES

4.1 Insufficient enabling policy environment to boost sustainable land management and scale up success stories of projects and communities efforts

29. These include:

- Essential national policies and regulations as well as international commitments exist but their implementation and enforcement in the field remains very weak
- Land resources are usually taken for granted and therefore incentives (including subsidies for improved access to inputs) for better land care programs development do not constitute a priority in most African countries
- The level of National budget investment in sustainable land management is very low and in some cases represent only 0.4 percent of the country's budget
- Policies for effective decentralization of land and natural resources management at community and sub-national levels are insufficient and /or lack enforcement
- Incentive policies for better access to land resources through appropriate land tenure systems providing the right to land particularly to vulnerable people are lacking or insufficient

4.2 Weak capacities at institutional, community and various stakeholders levels

30. They refer to:

- The level of awareness of policy and decision makers including private sector, in the domain of sustainable land management need to be strengthen for better and wise policy toward increasing investments.
- Database development and research activities for scaling up best agricultural production and environmental resources use and preservation practices need to be undertaken
- Extension services and actors (NGOs) capacities are insufficient in the area of scaling up the success obtained at local level. Therefore appropriate training curricula need to be developed to strengthen their intervention capacities in the field.
- Farmers, herders, agro-pastoralists and traditional foresters ingenious land management systems are at risk of disappearing and/or in conflict with certain modern management systems. This traditional systems should be strengthened, conserved and improved through appropriate training curricula

4.3 Insufficient partnership, coalition building and investments in land and water management

31. The multi-dimensional scale and aspects of land management call for more coordination and cooperation in planning and decision making among different government agencies, especially those responsible for agriculture, livestock, forestry, land and water resources, environment, science and technology, finance, planning, and legislation. Therefore coordination and harmonization of SLM objectives and initiatives through better mainstreaming within national budgets, medium term expenditure frameworks, poverty reduction and rural development strategies and development plans is essential.

32. Effective SLM requires multi-stakeholder partnerships to bring together indigenous and scientific knowledge, and to reconcile different stakeholder interests and needs, within both the public and private sectors, including community based and non-government civil society organisations (CBOs, NGOs).

33. At international levels partnership among donors, UN Agencies, Governments, local communities and chiefs/rulers is essential to align, harmonize and create more synergy among the various stakeholders interventions, to ensure the success in scaling up SLM best practices with appropriate and coordinated investments (example of TerrAfrica platform).

34. The current level of investment both from National Governments and international community and donors have been limited in scale and scope compared to the severity and extent of land degradation. Therefore there is need for strong campaign to mobilize sufficient resources to boost investments in land management including provision of subsidies for fertilizers and improved seeds

35. Most interventions in Land management are project based and phase out before the intended goal for sustainable development in land management is realized. There is an urgent need to move toward long term program based approach, rather than maintaining project based investments.

36. Recent years, emergence of a range of new market based opportunities such as the payments for environmental services, Eco-tourism, bio-energy / agro-fuels, Green/Organic labels and, certification among others could be harnessed for promoting and funding SLM.

37. The interrelation between climate change and land degradation provides opportunities for building larger and stronger coalition to boost investments in sustainable land management to address the challenges of adaptation and mitigation to droughts and floods.

5. RECOMMENDATIONS

38. Formulate and/or mainstream and implement proper policy interventions; enforcement of the existing rules and regulations in the areas of land use planning, land

tenure, developing smart market and fertilizers subsidies at local, national and sub-regional levels.

39. Support the scaling up of best technologies and human /institutional capacities for effective sustainable land management at river basin and watersheds levels.

40. Enhance land management options toward the implementation of NEPAD's CAADP (Pillars 1 and 7) and EAP.

41. Strengthen partnership by building a common action-based SLM framework with governments, donors, NGOs and UN agencies under a Country Partnership Program (CPP) for SLM.

42. Increase investments in SLM by devoting significant national budget resources in accordance to Maputo Declaration, the Abuja Declaration on Africa Green Revolution, the Abuja Resolution on Food security and in line with commitments for the achievements of MDGs 1 and 7 notably.

43. Mobilize international funding to boost investments in SLM for more income diversification and increasing and livelihood support.

44. Seize the opportunity of emerging range of new market based opportunities (payments for environmental services, eco-tourism, bio-energy/agro-fuels, Green/Organic labels and, certification) to harness the promotion and funding of SLM.

45. Seize the challenges to address climate change impacts to mainstream SLM activities and boost investments in the sector.

6. CONCLUSION

46. Africa diverse and important land resources should be used for enhancing livelihoods and environment health. However, in the current context, the mismanagement of these resources manifested in land degradation has resulted to a loss of gross annual incomes with direct relation to food insecurity, in the region.

47. A number of key lessons have been learnt from reviewing past failures and opportunities in Sustainable Land Management (SLM). Paramount, scaling up SLM is necessary to reverse degradation trends and thereby address a major obstacle to economic growth and agricultural sustainability.

48. Major challenges for SLM in the achievement of food security have been identified for which several recommendations were proposed and are related to: (i) Insufficient enabling policy environment to boost sustainable land management and scale up success stories of projects and communities efforts (ii) Weak capacities at institutional, community and various stakeholders levels; (iii) Insufficient partnership and coalition building to boost investments in land and water management.

ANNEX 1

List of Acronyms

CAADP	*Comprehensive Africa Agriculture Development Programme*
CBD	*Convention on Biological Diversity*
EAC	*East Africa Community*
EAP	*Ecological Agriculture Projects*
ECCAS	*Economic Community of Central Africa States*
ECOWAS	*Economic Community of West African States*
FAO	*UN Food and Agriculture Organization*
GEF	*Global Environment Facility*
IGAD	*Inter-governmental Authority on Development*
MDG	*Millennium Development Goals*
NEPAD	*New Partnership for Africa's Development*
SADC	*Southern Africa Development Community*
SLM	*Sustainable Land Management*
SSA	*Sub-Saharan Africa*
UNCCD	*United Nations Convention to Combat Desertification*
UNFCCC	*United Nations Framework Convention on Climate Change*
WFS	*World Food Summit*

ANNEX 2

Documents consulted

Awlachew et al. 2006. Best Practices and Best Practices and Technologies for Small agricultural Water Management in Ethiopia

Bationo Andre, Hartemink Alfred, Lungu Obed, Naimi Mustapha, Okoth Peter, Smaling Eric and Thiombiano Lamourdia. 2006 .African Soils: their productivity and profitability of fertilizer use. Background paper presented for the African Fertilizer Summit 9-13th June 2006, Abuja, Nigeria

Dejene, A. 2003, Integrated Natural Resources Management to Enhance Food Security, The case for community-based approaches in Ethiopia, FAO, Rome

EFAP. 1994. The Ethiopian Forestry Action Program, Addis Ababa

FAO, 1986. Strategies, Approaches and systems in integrated watershed Management, conservation Guide, 14

FAO, 1994. Special Programme for Food Security

FAO, 2002. Land Degradation Assessment Project: World Soil Resources Report, 97

FAOSTAT, 2004: Statistics on Agriculture

FAO, 2004. Soil Carbon Sequestration for Improved Land Management. World Soil Reports Resource, 96.

FAO, 2007. The Vision for Sustainable Land Management in Sub-Saharan Africa (SSA)

ICIMOD. 2006. Participatory forest Management: Implications for Policy and Human Resources

ICIMOD, 2004. Biodiversity and Livelihoods in the Hindu Kush-Himalayan Region, ICIMOD, Newsletter, NO. 45

Jon Hellin. 2006. From Soil Conservation to Holistic Land Management, NH, USA

Liniger H.P et al, Where the land is greener: Case Studies and Analysis of Soil and Water Conservation Initiatives Worldwide Pender J. 2006. Strategies for Sustainable Land Management in the East Highlands

MOWR. 2005. Integrated Water Resources Management Plan for the Nile River Basin, Addis Ababa

NFIA. 1998. Proceedings of the Soil Fertility Management Workshop, Addis Ababa , Ethiopia

NEPAD. 2006. Second TerrAfrica Regional Preparation Workshop for the Strategic Investment Program for SLN (SIP), Midrand, South Africa.

RSCU, 1993. Management of Natural Resources and Environment in Uganda: Policy and Legislation Land marks

Thiombiano L. and Tourino N., 2007- Status and trends in land degradation in Africa. In Sivakumar and Ndiang'ui (Eds). Climate and Land Degradation. Springer

Thomas.D.B et al. 1997. Soil and Water Conservation Manual for Kenya, Nairobi, Kenya

Sonneveld B.G. 2002. Land under Pressure, The Impact of Water Erosion on food Production in Ethiopia, A PhD Thesis

TerrAfrica Secretariat. 2006. Regional Sustainable Land Management Brochure, Washington DC

TerrAfrica, 2007. A vision paper on sustainable land management in SSA

TerrAfrica, 2007. Policies for Scaling Up Sustainable Land Management: A Resource Guide for Policymakers

UN water. 2007. Copenhagen Initiative on Water Development: A general Roadmap for Implementation of IWRM Plans

WB, 2000. Soil Fertility Management Initiatives

WOCAT, 2002: The World Overview of Conservation Approaches and Technologies. Newsletter