

Land & Climate

The Role of Sustainable Land Management for Climate Change Adaptation and Mitigation in Sub-Saharan Africa

Climate change and land degradation are major threats to the survival and livelihoods of millions of people in Sub-Saharan Africa. The high dependence of the economies and rural people of Sub-Saharan Africa upon rainfed agriculture, the prevalence of poverty and food insecurity, and limited development of institutional and infrastructural capacities in this region make coping with natural climate variability a perennial challenge.

In the past several decades, the number of extreme weather events in particular sub-regions and the number of people affected by droughts and floods have grown dramatically. Many climate models predict negative impacts of climate change on agricultural production and food security in large parts of Sub-Saharan Africa. Land degradation can exacerbate and be exacerbated by these climate changes.

With regard to this situation, the issue paper “**The Role of Sustainable Land Management for Climate Change Adaptation and Mitigation in Sub-Saharan Africa**” addresses:

- **The linkages among climate change, land degradation and sustainable land management (SLM)**
- **The opportunities and constraints to promoting climate change mitigation and adaptation through SLM**
- **The policy and institutional options to overcome the constraints and realize the opportunities that are now or are becoming available.**

This paper was prepared by researchers of the International Food Policy Research Institute (IFPRI) and the World Agroforestry Centre (ICRAF) as part of the TerrAfrica work program, with the support of the World Bank and inputs from the members of the TerrAfrica Special Advisory Group on Land & Climate.

The paper includes a comprehensive executive summary, and various chapters propose an analysis of the aforementioned issues based on figures and statistics that support the paper’s key messages. A nine page bibliography lists the depth of research and literature review.

After demonstrating linkages among land degradation, sustainable land management and climate change, the paper explores opportunities of new policies and funding mechanisms that take into account the potential of SLM practices for climate change mitigation and adaptation in the context of the international and regional frameworks such as the United Nations Framework Convention on Climate Change (UNFCCC), the United Nations Convention to Combat Desertification (UNCCD), the Comprehensive Africa Agriculture Development Programme (CAADP) and TerrAfrica. The paper prioritizes policy changes and investments to support SLM activities at the national level in several African countries through the TerrAfrica Country Strategic Investment Frameworks (CSIFs) for SLM. Incorporating climate issues into the CSIFs will support integrated policies and investments that jointly address climate change, land degradation and economic development.



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Highlights from the document include:

The Challenge of Climate Change and Land Degradation in Sub-Saharan Africa

Severe land degradation—caused mainly by conversion of forests, woodlands and bush lands to agriculture, overgrazing of rangelands, unsustainable agricultural practices on croplands, and excessive exploitation of natural habitats—is reducing primary productivity on as much as 20 percent of the land in Sub-Saharan Africa, with the most severe impacts in drylands and forest margins.

Climate variability and change can contribute to land degradation by exposing unprotected soil to more extreme conditions and straining the capacity of existing land management practices to maintain resource quality, contributing to de-vegetation, soil erosion, depletion of organic matter and other forms of degradation.

These changes can cause land management practices that were sustainable under other climate conditions to become unsustainable, and induce more rapid conversion of forest or rangeland to unsustainable agricultural uses.

Land degradation increases the vulnerability of agricultural production and rural people to extreme weather events and climate change, as the fertility and buffering capacities of the land and livelihood assets are depleted.

The Role of Sustainable Land Management in Sub-Saharan Africa

Land degradation is not an inevitable result of climate variability and change, however. Much depends upon how land resource users respond to climate changes. Climate change can offer new opportunities for productive and sustainable land management practices, such as reforestation, improved water management, integrated soil fertility management, conservation agriculture, agroforestry, improved rangeland management and others as a result of changing biophysical or market conditions.

New opportunities for SLM are arising from regulations and emerging markets to mitigate global emissions of greenhouse gases (GHG). If payments for these carbon mitigation services were available, this could also provide large flows of funds (more than \$10 billion per year if only half of the potential reductions were achieved) to help promote SLM activities in Africa.

SLM can also reduce vulnerability and help people adapt to climate variability and change. Many SLM practices can simultaneously achieve both adaptation and mitigation goals, especially those that increase soil organic carbon. SLM represents a preventative approach to climate change that can reduce the need for costly ex post coping measures, like changing crops and livelihoods, and clearing new lands for agriculture and migration.

Many SLM practices reduce the variability of agricultural production, while others can help to diversify agricultural income. A combination of SLM practices can be used to combat the different manifestations of climate change.



Policies and Strategies to Promote Climate Change Mitigation and Adaptation in Sub-Saharan Africa through SLM

There are many policy frameworks, strategies, institutions and programs to promote climate mitigation and adaptation through SLM in Sub-Saharan Africa, but the impacts of these are so far quite limited. Among the potentially most important mechanisms are the Clean Development Mechanism (CDM) of the UNFCCC, the voluntary carbon market, various climate mitigation and adaptation funds, the UNCCD, the CAADP of the New Partnership for Africa's Development (NEPAD), TerrAfrica, and regional, sub-regional and national policy processes linked to these.

NEPAD's CAADP and TerrAfrica are working in partnership to promote upscaling of SLM in Africa, with increasing focus on climate change mitigation and adaptation. TerrAfrica has mobilized \$150 million in funds that are expected to leverage an additional \$1 billion to support this goal. CAADP and TerrAfrica are working with African governments to develop and support Country Strategic Investment Frameworks for SLM. Integrating strategies and programs to promote SLM and address climate change with each other and with national development strategies and policies is a major challenge. Addressing this challenge is a major emphasis of the CSIFs.

There are opportunities to promote climate change mitigation and adaptation through SLM in Sub-Saharan Africa through existing mechanisms, as well as major new opportunities that may arise as a result of development of a cap and trade system in the United States and inclusion of reduced deforestation and forest degradation (REDD) and a broader set of agriculture, forestry and land use (AFOLU) activities in the post Kyoto climate framework.

However, many challenges and constraints may prevent realization of both these existing and new opportunities, most of those constraints being either economic or political.

Based on the review presented in the paper, the authors identify eight options to help take advantage of the opportunities and overcome the constraints to increased use of SLM in Sub-Saharan Africa to mitigate and adapt to climate change:

- 1. Advocate improvements in the post-Kyoto agreement that address these opportunities and constraints, including:**
 - **Expanding eligibility in the CDM** to include all activities that sequester carbon or reduce emissions of GHGs, including REDD and AFOLU activities;
 - **Agreeing to national targets for GHG levels of developing countries, and use a full GHG national accounting approach** to credit reductions relative to baselines (approach could be pilot tested in a few countries and for a specific set of activities first); and
 - **Increasing funding for adaptation measures.**
- 2. Simplify and improve the procedures to access funds under the CDM, adaptation funds and other relevant funds.**
- 3. Explore existing opportunities to increase participation in voluntary carbon markets.**



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4. **Expand knowledge generation and outreach efforts** on the problems of climate variability and change, land degradation, their linkages, and options for solution.
5. **Improve coordination of efforts to address climate and land degradation and integration with key government strategies and processes.**
6. **Expand investment in strengthening technical, organizational and human capacity** relevant to climate and land management issues in Sub-Saharan Africa.
7. **Engage community leaders, farmers and other resource users** in program and project development.
8. **Address specific policy, institutional and other constraints to SLM and climate change mitigation and adaptation at national and local level in the context of Country Strategic Investment Frameworks.**

To achieve success in the first two options, stakeholders concerned about SLM issues in Sub-Saharan Africa, including African governments, the UNCCD, NEPAD, the TerrAfrica partnership, and civil society organizations must be actively involved in advocating a continuation of the CDM, inclusion of AFOLU and REDD projects in the CDM, and expansion of adaptation funds.

The remaining options are not closely bound to the UNFCCC process and can be addressed within the context of the NEPAD/CAADP and TerrAfrica process to develop CSIFs for SLM in each country. To achieve effective synergies with climate change issues in these processes, it will be important to involve key stakeholders from the climate change community in these processes where they are not yet involved.

TerrAfrica is a partnership that aims to address land degradation in Sub-Saharan Africa by scaling up harmonized support for effective and efficient country-driven sustainable land management (SLM) practices.



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