



THE ECONOMICS OF
LAND DEGRADATION

Policy Brief

Economic and Policy Implications of ELD Studies in Kenya under the ReGreening Africa Project

Executive summary

Land degradation and desertification (LDD) is a major environmental problem that affects the productivity of land for agriculture and other land-based ecosystem services that support the livelihoods of millions of people globally. The Sustainable Development Goal (SDG) 15 aims to “protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss”. Africa is particularly vulnerable to LDD and is the most severely affected region worldwide. In Kenya, estimates from the Land Degradation Assessment (LDA) study conducted in 2016 shows that about 61 per cent of the country’s land is at high risk of being affected by land degradation, especially from soil erosion. In addition, soil fertility losses and nutrient depletion present key constraints to food productivity in the country.

The government of Kenya has put in place policy and programmatic initiatives to address land degradation. These include the Kenya Strategic Investment Framework for Sustainable Land Management (SLM) 2017-2027 to guide investments in SLM in the country, the National Action Programme for Combating Desertification in Kenya 2015-2025 to meet the obligations of the United Nations Convention to Combat Desertification (UNCCD), and other sector-specific policies in forestry, water, and agriculture. Sustainable Land Management can contribute towards securing healthy and productive land by halting land degradation and promoting the restoration of degraded land, thereby enabling the government of Kenya to achieve the national Land Degradation Neutrality (LDN) targets in line with target 15.3 of SDG 15. Furthermore, SLM practices can improve the resilience of land users and local communities which enables them to better adapt to the impacts of climate change on agriculture and natural resources.

The Economics of Land Degradation (ELD) Initiative has supported three economic valuation studies in different agro-ecological regions of Kenya. The findings demonstrate that the benefits of SLM exceed the costs, providing evidence to policy makers that the costs of inaction – in the form of reduced food productivity and the loss of ecosystem services – are by far greater than the required current investments to address land degradation. The three studies were conducted in the Western (Siaya, Kakamega, and Bungoma counties), Central (Nyandarua county), and Northern regions (Isiolo and Samburu counties). This policy brief is based on the findings from these studies and outlines the key policy issues relevant to land degradation and SLM that were all-encompassing and thus broadly pertinent at the national level. The following six policy actions emerged from these studies:

- **Integrate comprehensive valuations of ecosystem services in development planning and project development processes.** There is a need to undertake ecosystem valuation to inform the preparation of development plans such as the County Integrated Development Plans (CIDPs) and County Spatial Plans (CSPs), and also in project planning processes such as the Strategic Environmental Assessments (SEAs) and Environmental and Social Impact Assessments (ESIAs).
- **Strengthen land tenure and promote incentives for the adoption of sustainable land management (SLM) practices and technology.** Well-defined land and resource tenure is critical in the adoption of SLM practices and requires better enforcement of statutes to secure property rights to land and rangeland resources, including formal recognition of customary institutions. Similarly, there is a need to promote incentives for the adoption of SLM practices and technologies by land users, including crop and livestock farmers working on private, communal, and public lands. Incentives can be implemented through institutional, technical, or financial instruments using



both public and/or private mechanisms and arrangements.

- **Promote soil testing and awareness of soil health conditions.** Policies that promote both public and private investments in soil testing infrastructure and expertise that enables farmers to undertake soils tests cost-effectively are required. In addition, consideration should be made in the national soil fertility management policy – currently under preparation – to include soil quality indicators in the fertiliser subsidy programmes.
- **Create awareness and share knowledge on the benefits of SLM technologies and practices.** Most farmers do not have adequate information on SLM practices and their associated benefits. Proper record keeping and documentation of the benefits of different SLM technologies and practices that are suitable for specific locations should be initiated. The enhancement and promotion of knowledge exchange and subsequent uptake of SLM practices can be facilitated by the use of demonstration farms where farmers can learn about the SLM practices. In addition, support to the Agricultural Innovation System (AIS) is urgently required in order to enhance interaction and learning among farmers and extension advisors using existing networks (such as Farmer Field Schools), projects, and institutions.
- **Harmonisation of policies and institutional coordination across sector policies relevant to SLM.** As land degradation is a cross-cutting issue that involves multiple sectors (land, environment, agriculture, forestry, and water), there is a need for policy harmonisation and institutional coordination in the preparation and implementation of policies and programmes at both county and national levels. The Kenya Strategic Investment Framework for Sustainable Land

Management 2017-2027 – once fully implemented – can establish committees at the national and county levels which can serve as a platform for consultation among the different sectors involved in SLM interventions.

- **Integrate gender needs in the promotion of SLM interventions.** Given the gender-differentiated roles and responsibilities in natural resource management, the integration of gender equality principles in interventions (policy, programs, and projects) on SLM practices and technologies should be ensured. The specific needs and opportunities of both women and men must be addressed so as to reduce inequalities, stimulate growth, and reverse land degradation.

Introduction

The Economics of Land Degradation (ELD) Initiative seeks to raise awareness of the financial and economic benefits of adopting SLM options to address land degradation and desertification (LDD). By focusing on cost-benefit analyses of SLM interventions using a total economic valuation (TEV) approach, the ELD methodology attempts to value the ecosystem services that land provides for individual landholders and society at large. The ELD Initiative supported three research studies on the economics of SLM in different agro-ecological regions of Kenya that were identified in the Kenya Strategic Investment Framework for Sustainable Land Management 2017-2027 as being susceptible to land degradation and where restoration could contribute towards meeting the national Land Degradation Neutrality (LDN) targets. These are in the Western (Siaya, Kakamega, and Bungoma counties), Central (Nyandarua county) and Northern regions (Isiolo and Samburu counties). This policy brief is developed based on the findings from these studies and addresses the relevant key policy issues that are applicable nationwide.

Method and approach

The studies used the ELD 6+1 step approach to guide the process of establishing scientifically sound cost-benefit analyses (CBA) for different ecosystems in order to inform decision-makers at both local and national levels of governance. A cost-benefit analysis of alternative SLM options (either singly or in combination) was undertaken for each SLM option. The latter included agroforestry, crop rotation, cover crops, vegetative strips, organic farming and terracing, rotational grazing, reseeding, rehabilitation of gullies, afforestation, terraces, removal of invasive species, and micro-catchment water harvesting systems.

Insights from the study findings

Common issues relevant to land degradation and SLM that emerged across the three studies include:

Land tenure: Land and natural resource tenure appear as a key issue that affects land degradation and SLM practices. In the Western Kenyan county of Siaya, SLM practices are more likely to be used where more of the farm is owned and more of the labour used is from the family members. In Northern Kenya, poor governance of communally-owned rangelands due to weak enforcement of customary rules and statutory laws is perceived by local communities as a leading cause of unsustainable practices which result in land degradation and conflicts among communities in accessing and using the scarce resources such as grazing land and water resources. The sub-division and individualisation of landholdings in rangelands is also contributing to land fragmentation and degradation.

Lack of soil testing facilities and low awareness of soil nutrient conditions: Very few farmers are aware of the soil conditions on their farms. This is a major concern because these farmers are not able to apply the nutrients required and practice appropriate soil fertility management practices on their farms, further contributing to low yields and productivity. In Western Kenya, only 15 per cent of the farmers interviewed practice soil testing and liming (testing soil pH and obtaining subsequent recommendations including the application of lime if required) and in Central Kenya only 3.2 per cent of the interviewed farmers report taking soil samples for nutrient analysis. Besides the low awareness among the farmers, a key challenge is the high costs of soil testing and the lack of locally available facilities.

Awareness and sharing of knowledge on the benefits of SLM technologies and practices: There is a lack of awareness and adequate information on SLM practices and the benefits associated with them for both farmers and decision-makers, especially at the local level.

Therefore, proper documentation of these SLM practices and their benefits can enhance and promote knowledge exchange and SLM uptake by farmers, as well as strengthening the capacity of extension services delivery at the community level, establishing demonstration farms, and supporting the Agricultural Innovation System (AIS) to enhance interaction and learning among farmers and extension advisors using existing networks (such as Farmer Field Schools), projects, and institutions.

Harmonisation of policies and institutional coordination of SLM activities: Policies to control land degradation and to promote SLM technologies and practices are scattered among different sectors (agriculture, water, land, forestry, and natural resources) and require harmonisation to reduce policy conflicts. Institutional coordination among actors responsible for policy implementation is also necessary to reduce duplication of effort and conflicts during implementation. The poor coordination among the actors and ministries responsible for addressing land degradation (such as land, agriculture, water, and natural resource management) is a key challenge at both national and county levels.

Role of gender in SLM practices: The findings from the studies show that gender plays a critical role in SLM practices. In three counties of Western Kenya, farms where the head of the household is female are more likely to take up any particular SLM practices, especially intercropping. In the Northern Kenyan counties of Isiolo and Samburu, the findings show that gender inclusion in governance is a key determinant of the sustainability of rangeland practices such as rotational grazing, construction of gullies, and removal of invasive weeds, among others.

Policy implications and options

The ELD studies in Kenya have demonstrated that SLM technologies and practices can contribute to reversing land degradation. Overall, the major policy implications from these studies emphasize the need to integrate comprehensive valuation of ecosystem services in development planning and project development processes. Currently, there is no provision for undertaking such comprehensive valuations. Ecosystem valuations can inform the preparation of development plans such as the County Integrated Development Plans (CIDPs) and County Spatial Plans (CSPs). Economic evaluations should also be considered in project planning processes such as the Strategic Environmental Assessments (SEAs) and Social and Environmental Impact Assessments (SEIAs). The National Action Programme for Combating Desertification in Kenya 2015-2025 already includes provision for natural resource valuation in the Arid and Semi-Arid Lands

(ASALs) which can inform policy decisions addressing LDD in the ASALs. The existing National Guidelines for Strategic Environmental Assessment in Kenya do not provide for comprehensive ecosystem service valuations and this should be a major consideration during its revision.

Other specific policy implications and options for SLM technologies to control land degradation include the following:

Strengthen land and resource tenure and promote incentives for adoption of sustainable land management (SLM) practices and technology. Well-defined land and resource tenure is critical in the adoption of SLM practices, which calls for better enforcement of statutes to secure property rights to land and rangeland resources, including formal recognition of customary institutions. Similarly, there is a need to promote incentives for the adoption of SLM practices and technologies by land users, including by crop and livestock farmers working on private, communal, and public lands. The incentives are especially critical for practices such as agroforestry which have higher initial investment costs that are mainly incurred by land users but provide both private and public benefits after a long period of time. Incentives can be implemented through institutional, technical, or financial instruments using both public and/or private mechanisms and arrangements.

Promote soil testing and awareness of soil fertility conditions. Soil testing facilities are generally not available locally, making it costly for smallholder farmers to test soils on their farms. Therefore, the majority of farmers are not aware of the soil fertility conditions of their farms which leads to inappropriate application and use of fertilisers, contributing further to low crop yields and poor farm productivity. Policies that promote both public and private investments in soil testing infrastructure and expertise to enable farmers to undertake soils tests cost-effectively are needed. In addition, consideration should be made in the national soil fertility management policy that is currently under preparation to include soil quality indicators in the fertiliser subsidy programmes. The private sector has an opportunity to facilitate farmers' access to soil nutrient measuring kits. This will reduce costs and logistics of transporting the soil far from home and minimise time delays between sampling or testing and reception of results.

Awareness and sharing of knowledge on the benefits of SLM technologies and practice. Most of the farmers do not have adequate information on SLM practices and their associated benefits. To enhance and promote knowledge exchange and uptake of SLM practices by farmers, there is

a need for proper record keeping and documentation of the benefits of different SLM technologies and practices that are suitable for specific locations, for demonstration farms where farmers can learn about the SLM practices, and for support to the Agricultural Innovation System (AIS) to enhance interaction and learning among farmers and extension advisors using existing networks (such as Farmer Field Schools), projects, and institutions. Additionally, increased investments in research and technology development for land management and dissemination of research findings on SLM technologies and practices are needed.

Harmonisation of policies and institutional coordination across sector policies relevant to SLM. As land degradation is a cross-cutting issue that involves multiple sectors (land, environment, agriculture, forestry, and water), there is need for policy harmonisation and institutional coordination in the preparation and implementation of policies and programmes at both county and national levels. The Kenya Strategic Investment Framework for Sustainable Land Management 2017-2027 provides for the establishment of coordinating organs that can promote improved planning and coordination. At the national level, these include the IMCC (Inter-Ministerial SLM Coordination Committee) and the IMTC (Inter-Ministerial SLM Technical Committee). At the county level, the CSLM (County SLM Committee) and the WSLM (Watershed SLM Committee) are mandated to promote the coordination process.

Gender considerations need to be integrated in interventions to promote SLM. Given the gender-differentiated roles and responsibilities in natural resource management, consideration should be given to ensure the integration of gender equality principles in interventions (policy, programs, and projects) on SLM practices and technologies. There is a need to address the specific needs and opportunities of both women and men so as to reduce inequalities, stimulate growth, and reverse land degradation. This can be done by empowering both men and women and supporting self-organised groups at the community level by the county governments with support from civil society organisations and international organisations working at the local level.

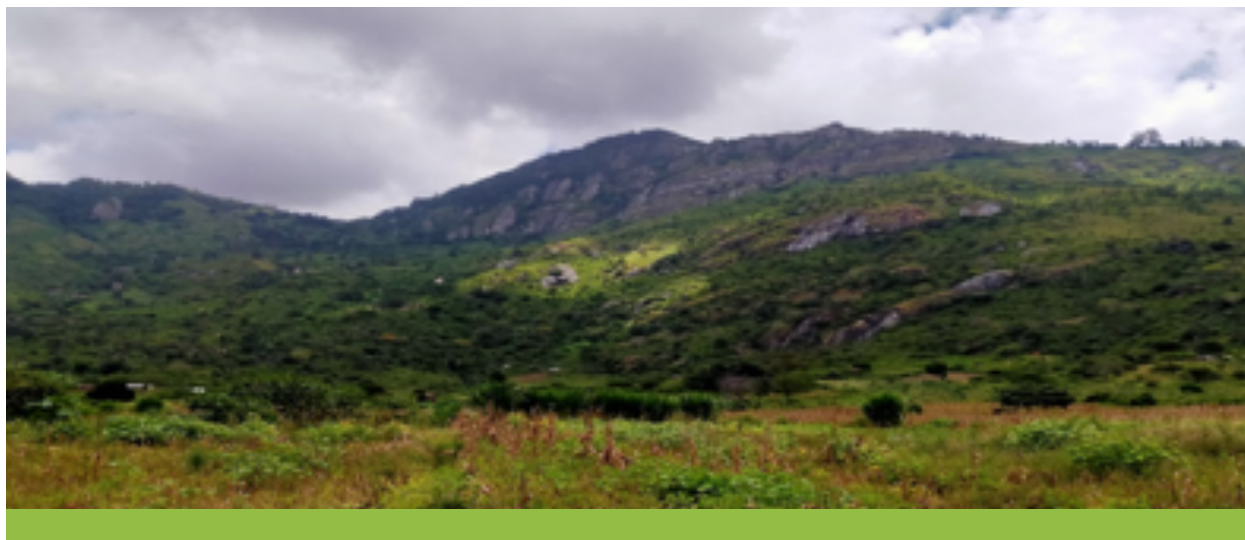
References

Dallimer M., Stringer L.C., Orchard S.E., Osano P., Njoroge G., Wen C. (2016). Economics of Land Degradation (ELD) Kenya Study. Costs and benefits of sustainable soil fertility management in Western Kenya. Report for the Economics of Land Degradation Initiative. 40 pp: https://www.eld-initiative.org/fileadmin/pdf/ELD-SR_Western-Kenya_120dpi.pdf

Gichua M.K., Muriuki C., Wahome K., Shatete M., Eregae J., Yatich T. (2020). Economics of Land Use Management on

Ecosystem Services in Aberdare Water Tower In Nyan-darua County, Kenya. Report for the Economics of Land Degradation Initiative.

Lutta I.A., Wasonga V.O., Karanja R., Saalu F., Njiru J. (2020). Economics of Land Degradation (ELD) Kenya Study, Costs and benefits of sustainable rangeland management practices in Northern Kenya. Report for the Economics of Land Degradation Initiative.



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