



Advancing knowledge on the costs and benefits of sustainable soil fertility management: An Economics of Land Degradation (ELD) Study in Western Kenya (Siaya, Kakamega and Bungoma Counties)

Project Brief

Project Implementing Organisations: the University of Leeds (UK) in collaboration with the Stockholm Environmental Institute (SEI) Africa Centre (Kenya) and the Kenya Agriculture and Livestock Research Organisation (KALRO)



About the ELD Project

This study was commissioned and funded by the GIZ through the Economics of Land Degradation Initiative (ELD Initiative: www.eld-initiative.org). The purpose of the study is to provide empirical economic evidence to inform the development of a new National Soil Policy for Kenya based on case studies in three counties in Western Kenya (Siaya, Kakamega and Bungoma) which are part of the GIZ programme on “*Soil Protection and Rehabilitation for Food Security*” that aims to address the factors hindering the broad application and sustainable and effective promotion of improved soil, water and vegetation management practices.

The study addresses the problem of soil degradation, which includes, but is not limited to loss of soil fertility, nutrient depletion, wind and water erosion, and deforestation etc. Degradation is a major concern because it negatively affects people’s livelihoods, especially those of smallholder farmers. Soil degradation also contributes to low food production and increases vulnerability to food insecurity by limiting the range of farming activities that farmers can undertake and the range of ecosystem services provided by the land. Very little is known about the economic costs of land degradation and the benefits of sustainable soil management practices in western Kenya. The ELD study therefore focuses on crop production and farmer yields to assess and quantify: 1) the economic benefits of sustainable land management interventions and 2) the costs of inaction (the dangers of ‘business as usual’). It will answer questions of whether the benefits outweigh the costs (which is expected), and if so, identify by how much, by when and for whom.

Study sites and timeframe

The ELD study for western Kenya will be implemented in the Counties of Siaya, Kakamega and Bungoma, beginning December 2015 and ending June 2016.

Methods and data collection

The study will use both secondary and primary data. The study team has compiled secondary data, mainly from the existing data on soil fertility, farming yields and margins collected as part of on-going work by the Kenya-German cooperation programmes '*Food Security and Drought Resilience*' (FSDRP) and '*Soil Protection and Rehabilitation for Food Security in Kenya*' as well as from other sources such as KALRO. We will also undertake primary data collection, carrying out a questionnaire survey with selected farmers (model and non-model farmers) and conducting interviews with field (ward) extension officers.

Interviews with Farmers: We will carry out interviews with farmers in 10 Wards in the three counties during the period from 16th February to 10th March 2016 (see table below for a tentative interview Schedule and list of wards identified). In the ELD study, we are restricting our analyses to farms lying in the "LM" (Lower Midlands) type of agro-ecological zone (the type that covers the majority of the land area across the three counties). This choice was made to ensure that we are able to accurately capture the farming systems of the dominant agro-ecological zone given the limited time and resources available for conducting household survey interviews on the ground.

We selected the 10 wards using a stratified random sampling method. We stratified our sample by the area of each county covered by the "LM" zone and restricted which wards could appear in our sample according to whether or not a ward lay entirely within the "LM" zone. Wards were then selected randomly from those in each county so that the final list of wards was proportional to the area of each county covered by the "LM" agro-ecological zone.

In each ward, we aim to conduct 6-8 farmer questionnaires interviews, targeting small scale farmers (with farm area between one to 10 acres). We will aim to interview about 1-2 model farmers (under the GIZ project) and 6-7 non-model farmers. We aim to conduct interviews with individuals that are actively involved in farming and whose farming profile is broadly representative of the variation in the ward, for instance in terms of farm size, crop mix, and average income (from all on-farm and off-farm activities).

The data that we will seek from the farmers to be interviewed include household information (age and gender of household head, size of household, income, farm size and production levels in 2015); farming practices (crops grown and livestock kept, yields, and labour); and soil and water conservation practices applied, including their benefits and costs to the farmer.



ELD Economics of Land Degradation (ELD) Study in Western Kenya		
Interview schedule for Farmers and Ward Extension Officers		
County	Period (dates)	Wards to be covered
Siaya	16 th to 25 th February 2016	<ol style="list-style-type: none"> 1. Central Alego 2. West Alego 3. Ukwala 4. South Sakwa
Kakamega	26 th February to 6 th March 2016	<ol style="list-style-type: none"> 1. Shirugu-Mugai 2. Lusheya/Lubinu 3. Butsotso South 4. Idakho South
Bungoma	7 th to 10 th March 2016	<ol style="list-style-type: none"> 1. Khalaba 2. West Sang'alo

Interviews with Ward Extension Officers: We plan to conduct interviews with the ward extension officer (WEO) in each of the 10 wards. The information that we seek from the WEO will be on the major crops grown in the ward and their market prices, the labour costs, the animal and tractor hire costs, the hand tool requirements, the cost of farm inputs (fertilisers, seeds etc.), and livestock. We will use a questionnaire to gather this information.

Scoping and workshop: The ELD study team carried out a scoping visit to the three Counties in December 2015 during which we met with and briefed the Heads of Agriculture Ministries and in the three Counties (the County Chief Executive Committee member for Bungoma and the County Director for Agriculture for Siaya and Kakamega) and other stakeholders (the National Land Commission, NEMA, and WARMA). We also held a regional workshop with stakeholders in Kisumu on 4th February 2016 during which we presented the ELD study project concept and collected preliminary data from workshop participants. We will be following up with selected participants to undertake more in-depth interviews.

Policy contribution

The ELD study will inform policy at both County and national level. At County level, we will generate evidence that can inform the implementation of the agriculture component of the County Integrated Development Programmes (CIDP) for Siaya, Kakamega and Bungoma. At national level, the ELD study will inform development of a new Soil Policy for Kenya by providing empirical economic evidence to support the policy. We have already consulted members of the national soil policy task force who attended an ELD information workshop hosted on the 3rd February 2016 at ICRAF in Nairobi. The study will support the soil policy process and provide further insights on the implementation pathway while providing a deeper understanding of the economic aspects of land degradation. Sound arguments will support the envisioned policy advice with justifications for political support and sufficient governmental budget allocation.



Contacts for additional information

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