Tackling Soil Acidity in Ethiopia and Beyond

Project Location:	Africa / Ethiopia
Project Period:	May 2024 ~June 2025
Project Funding:	USD 235,000 (CHF 199,920)
Theme:	Green Investment
Project Code:	ET32

Implementing Partners

Ethiopian ATA Agricultural Transformation Agency

EIAR Ethiopian Institute of Agricultural Research

Resource Partner

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Agency for Development and Cooperation SDC

Project Summary

Tackling Soil Acidity in Ethiopia and Beyond project will develop a policy framework, including a novel financing mechanism, to enable large-scale reclamation of acidic soils through liming. Soil acidity is a major constraint on agricultural productivity in Ethiopia and in many other African countries. Applying lime can significantly improve yields, but widespread adoption is hampered by various factors.

The goal of the project is twofold: 1.) to increase agricultural output and 2.) reduce pressure on forests by minimizing the need for agricultural expansion. This project will specifically focus on creating the policy framework and conducting an initial pilot phase to test its feasibility. A subsequent project will then take over, implementing the pilot's findings and scaling up the liming program across the country. This project, therefore, is the crucial first step, establishing the policy and proving the concept before wider implementation.

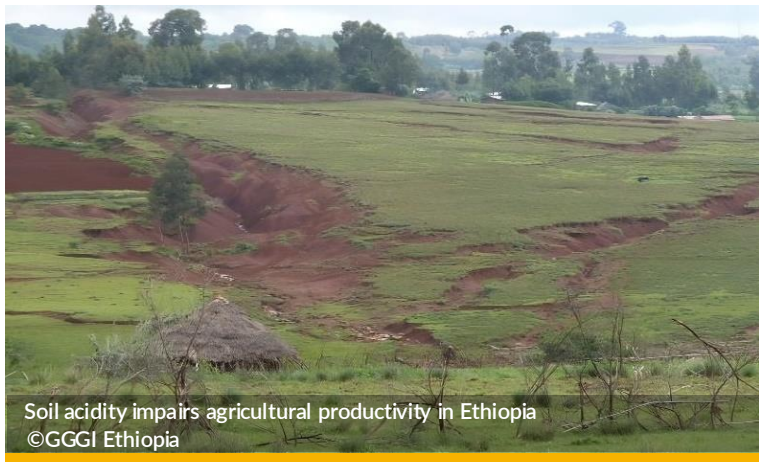
Project Goal and Objectives

The project aims to achieve the following:

To develop a policy framework that includes a financing mechanism based on Ethiopia's national banking system, thanks to which the significant investment requirements to tackle soil acidity can be financed. The development process involves intense stakeholder consultation and exchange at the technical level with relevant public sector institutions and private sector representatives.

To adapt the policy framework to the respective contexts of other countries in Africa affected by soil acidity based on stated interest.

To mobilize more financial resources to make the liming policy framework ready for implementation in a dedicated program.



Soil acidity impairs agricultural productivity in Ethiopia
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Application of lime to reduce soil acidity
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Reclaiming acid soils requires significant investment
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Context and Background

About four million hectares of agricultural land in Ethiopia suffer from severe acidity with another 10 to 20 million hectares being affected by moderate activity. In many other African countries, the situation is equally challenging. The consequences of soil acidity are significant losses in agricultural output. Applying lime is an effective way to mitigate soil acidity. As research by the Ethiopian Institute of Agricultural Research (EIAR) has shown, lime is able to increase yields by up to 75 percent if combined with other methods of Integrated Soil Fertility Management (ISFM).

Reclaiming acid soils requires significant investment. EIAR estimates that lime production, transport, and distribution come to about ETB 25,000 (USD~500) per hectare. Comparing with yield increases, lime investment pays off within one year. Profitability thus is guaranteed thanks to the significant increase in soil productivity following lime application. Nonetheless, the high initial investment including high transport costs, creates a challenge for farmers as well as for the establishment of a comprehensive distribution system of lime. The cost-benefit structure in other African countries is analogous.

The Agricultural Transformation Institute (ATI), EIAR, GIZ, and the Global Green Growth Institute (GGGI) have developed and endorsed a financing mechanism for lime application, which overcomes the financial bottleneck represented by high initial investment requirements. The mechanism proposes the set-up of a lime investment fund, which is endowed by new money arising from the issuance of a loan from the Ethiopian banking system. Through this approach it is possible to scale up finance for liming to any amount required and, therefore, to remove the current funding constraints due to dependence on resources from the treasury and international donors.

In addition to the mentioned implementation partners, CIMMYT, an agricultural research institution, and the Gates Foundation provide technical inputs to the project's technical outputs and support outreach to other countries in Africa.

Project Outcomes

The project by developing the liming policy framework and financing mechanism, intensive stakeholder consultation, and outreach to countries beyond Ethiopia, shall achieve the following outcomes:

- Improved institutional capacities of governments of selected African countries to set up a financing scheme for lime application
- Improved access to donor funding to set up a financing scheme for lime application in one African country
- Experience in implementing policy frameworks for lime to share best practices across countries

Application of lime to reduce soil acidity
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Seedlings prepared in a nursery site
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Dr. Basil Oberholzer,
Project Manager, Senior Economic Officer, GGGI

"Tackling soil acidity is a unique opportunity to increase farmers' incomes, make agriculture more sustainable, reduce deforestation, and improve food security."

A landscape view of a rural village in Ethiopia.
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