

HARNESSING NATURE'S MICROBES: SUSTAINABLE AGRICULTURAL SOLUTIONS FOR SUB-SAHARAN AFRICA

Locations Benin, Kenya, Zambia

Dates 31/01/2025 - 31/01/2027

Summary

Agriculture is a vital sector in sub-Saharan Africa (SSA). It contributes an average of 25% to the gross domestic product and provides sustenance for nearly 80% of the rural population. However, the region remains the most food insecure globally. Increasing agricultural productivity is the primary objective for SSA, but this goal is partly hindered by low crop yields caused by pests and declining soil productivity. Although several solutions are available, many prove ineffective against various challenges, particularly soil ones. They also pose many difficulties regarding their impact – biodiversity loss, food safety and soil productivity – all stemming from excessive use and unregulated application. These challenges can be addressed by developing low-risk and alternative products based on nature-based solutions that utilize beneficial soil microorganisms. CABI is collaborating with partners to increase the use of nature-based solutions in SSA's agrifood systems.

The problem

600 million people in sub-Saharan Africa (SSA) depend on agriculture. However, the agricultural sector in SSA faces chronic issues like low crop yields, pest outbreaks (both endemic and invasive), and soil degradation, which severely affect productivity and food security.

Pests cause almost 40% of pre- and post-harvest losses, while some soil-borne diseases, such as root rot and damping off, exceed 100% losses. While increasing agricultural productivity is a key objective for SSA, managing pest

problems is a significant challenges in achieving this.

Traditional chemical pesticides are frequently used to tackle pest problems, including soil inhabitants (fungal and nematodes). But, due to excessive and undisciplined use, major pest groups have become resistant to these traditional approaches. Furthermore, when applied, the pesticides often have a broad-spectrum effect that can jeopardise beneficial non-target microorganisms and contribute to environmental contamination, including biodiversity loss and other negative impacts such as food safety and the depletion of soil nutrients.

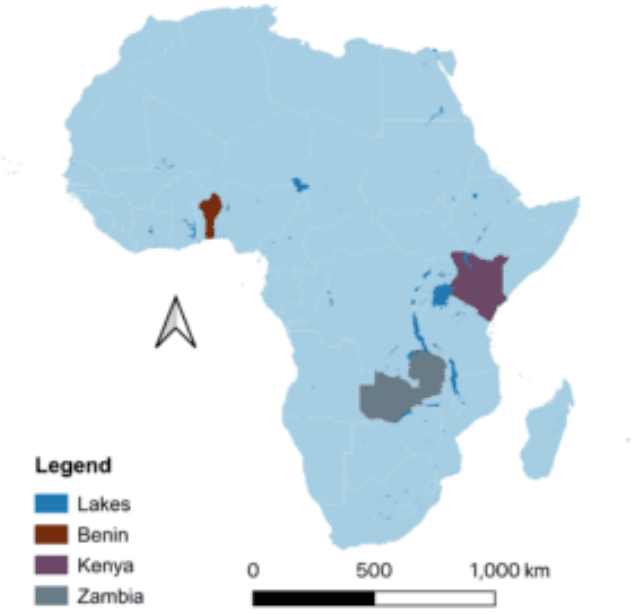
Deploying nature-based solutions offers a long-term, safe, sustainable and affordable option to address the indicated challenges. However, due to inadequate knowledge and awareness, particularly among farmers and distributors, high costs and poor accessibility of nature-based solutions, uptake in SSA is the lowest globally

What we are doing

The project aims to tackle significant agricultural challenges in SSA by promoting the use of nature-based solutions for pest management and soil health enhancement, therefore improving biodiversity conservation and consumer safety.

The main goal will be achieved through improving access to and reducing barriers to the availability of target nature-based solutions in the project locations of Benin, Kenya and Zambia; and improving knowledge, skills, and attitudes among agrifood system actors regarding nature-based solutions as safer alternatives in agrifood systems.

The project will focus on four nature-based products – in Benin, MycoBen, a biostimulant aimed to increase maize yields; in Kenya, the biopesticide, Xentari DF, to help manage lepidopteran pests in broccoli, and Remedier WP, currently used to control soil-borne fungal diseases will be extended to treat Fusarium spp. in carnations and tomatoes. In Zambia, there are plans to register VH Microorganisms, a probiotic stimulant used to improve yields of groundnuts, maize, soybean and fruit trees, for widespread use.



Project implementation countries

The project's objectives will be achieved by:

- Providing evidence-based data to support the extension of two products in Kenya to manage key pests in key value chains
- Providing evidence-based data to support the registration of new nature-based products in Benin and Zambia
- Developing communication materials to raise awareness about targeted nature-based management options
- Training key actors in targeted values chains on key targeted nature-based management options
- Raising awareness about target nature-based products among key actors
- Conducting studies to establish the contribution of the target nature-based solutions to agricultural productivity and farmer incomes
- Reviewing progress and utilizing lessons learnt through periodic monitoring, evaluation and learning.

CABI is the lead implementor of the project, overseeing the implementation of all project activities, however, some of the key outputs for CABI include delivering communication workshops and meetings and creating communication materials.

Results so far

A project launch is due to take place on 11th March and will be attended by key stakeholders, including, among other partners, partner and project donor, the International Centre for Genetic Engineering and Biotechnology (ICGEB).





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