

Improving soybean production using innovative digital and extension approaches

Project summary

Soybean is a key crop in helping to improve livelihoods and nutrition in Kenya. However, production only meets 10% of the market needs due to the effects of poor agricultural practice, pests and diseases. To address these issues, this project will provide a frontier system that integrates Earth Observation technology, pest modelling and best practice approaches in agricultural extension to increase soybean productivity and quality. The project aims to reach 30,000 farmers, of which support will be given particularly to women farmers in helping them to engage with this high-value commodity, access local markets and improve their livelihoods.

The challenge

While soybean is an important crop, 30% of total soybean production is rejected by buyers due to poor quality – exacerbated by the unavailability of seed, low productivity, pests and the lack of market access, credit facilities and a financial safety net. These challenges curb potential household earnings.

Pests are a significant problem, and can cause crop losses of 40-100% if they are not detected or treated. The bean fly, *Ophiomyia phaseoli*, for example, commonly referred to as Bean Stem Maggot, attacks soybean seedlings and develops rapidly in the crop, causing reduced growth and sometimes plant death.

Farmers are also faced with a lack of early warning of imminent pest attacks, few advisors, and an absence of practical pest management information. Farmers, therefore, sometimes spray insecticides indiscriminately, leaving unsafe chemical residues (MRLs).

Insurance would help farmers secure their livelihoods, and while a number of weather-indexed services exist, there is a lack of evidence-based pest and disease insurance, should farmers lose their crop. As a result, only 2-3% of Kenyan farmers are insured. Conversely, insurance providers lack data on pest risks which would enable them to develop fair, attractive and sustainable products.

The project

The goal of this project is to help at least 30,000 farmers, particularly women, successfully access a neglected food market so they can improve their livelihoods.

The project team will develop an integrated suite of services to help increase soybean yields and sales through improved production and access to high-value markets.

The project will train around 300 Village Extension Service Providers (VESPs) in soybean pest identification and management using integrated pest management (IPM)-based approaches.

Pest models will be developed to inform farmers when and where the soybean crop is most at risk of attack. These models will be validated across Kenya to determine if they can provide insurers with valuable data to inform 'basis risk' calculators – alerting them to the validity of forthcoming claims. The project will also extend and test an innovative picture-based insurance tool to speed up the uptake of pest insurance products in Kenya.

A comprehensive social support system will enable women farmers to engage with this high-value commodity in their local markets through entrepreneurship training, while detailed information on good agricultural practices and financial support (including direct access to micro-credit and novel pest insurance products) appropriate to climate-smart approaches, and risk management advice will be given.

Project partners

- CABI
- Agriculture and Climate Risk Enterprise Ltd
- International Food and Policy Research Institute
- Kilimo Trust

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www.cabi.org/improving-soybean-production

