



Promotion of rotation crops in the sesame dominated production and market systems

Case overview

Ever since the start of the programme in 2013, Benefit-SBN and its partners have promoted rotation crops in the sesame dominated production and market systems in the lowlands of Northwest Ethiopia. Three dimensions of the promotion of rotation crops are discussed in the note: sustainable agricultural production, income improvement and diversification and food and nutrition security and diversity. Lessons are shared and recommendations are formulated.

Background

At the start of the programme, it was clear that farmers mainly depend on sesame and sorghum, respectively for cash and food. Together these two crops accounted for more than 90% of the cultivated land. This situation creates different risks: (i) mono-cropping leading to soil depletion and increased pest and disease infestation; (ii) farmers' dependency on single cash crop that has a volatile market and (iii) a monotonous diet (low diet diversity score) for the population in the sesame zone. At first, the promotion of rotation crops was mainly fuelled by concerns about the sustainability of the farming system and the motivation to diversify the farming system. Later on, the orientation on marketing of rotation crops and the role they play in improving food and nutrition security and quality become more important.

GARC, HuARC, BoA and Benefit-SBN first put emphasis on the selection of best options for rotation crops and the adaptability of varieties to the conditions in the lowlands of Northwest Ethiopia. A strong focus was given to pulses, mainly mung bean and soy bean, as these can importantly contribute to soil fertility management and reduced incidence of pests and diseases. Pulses are furthermore providing proteins and have market potential.

Objectives

The promotion of rotation crops has three main objectives: sustainable agricultural production, income improvement and diversification, food and nutrition security and diversity. The specific focus was on the improvement of sorghum production and marketing and on the introduction of soy and mung bean in the sesame production zones.

What worked well and what are the achievements?

- In the first years, the focus was on piloting and demonstration. The recommended practices for sorghum, mung bean and soy bean were developed and consolidated.
- Three field guides for farmers were prepared and distributed (for sorghum in 2017, for mung and soy bean in 2019).
- The promotion of rotation crops was part of the collaboration agreements with BoA and ARCs. This institutional collaboration helped to make the promotion of rotation crops a success.
- Between 2014 and 2018, rotation crops were demonstrated at farmer training centres (FTC's) and in farmers' fields. Tens of

thousands of farmers observed these plots and were triggered to consider growing them. Feedback of farmers was used to set priorities for scaling out rotation crops.

- Farmers have been supported to grow and market sorghum, soy and mung bean. Quality seeds were made available. Farmers are now integrating the production of pulses in their farming systems. Mung beans are particularly important in Tigray and soy bean production is developing very well in Amhara.
- Short-cycle mung bean varieties were demonstrated and scaled out. These varieties are important in the context of climate change. When other commodities are not feasible, mung bean is still possible. Mung bean is becoming increasingly important as nutritious food to farmers and daily labourers.
- The adoption and expansion of soy bean is also very encouraging. Soy bean production in Amhara was linked to food and oil processing companies.
- Recipes using soy and mung bean were developed and shared, mainly with women, during training sessions.
- As they are easier to grow and have less labour requirements, many women are interested in soy and mung beans, especially as crops for sale.
- As of recent, the Ethiopian Commodity Exchange (ECX) included soy and mung bean in their marketing, as the production of these crops has been boosted.
- Concerning sorghum, a malt sorghum variety (Deber) was tested on field performance, as well as on its suitability for brewing. Unions were supported to enter in contract agreement with Diageo for the delivery of malt sorghum to malting factories.



Soya and mung beans are coming up

The result of the more than five-year rotation crop promotion campaign is diversification of the farming system. Year by year, the production of malt sorghum, soya and mung bean is steadily increasing, both in terms of acreage and number of farmers involved. Rotation crops are used both for local consumption and sales, contributing to more diverse farming systems, sources of farmer income, and food diets. If farmers and labourers' access and use pulses in addition to sorghum, it would be a huge contribution to food and nutrition improvement in the sesame zone.

What are challenges, what didn't work well?

- Both in terms of quantity and quality, the seed supply was not good enough. Seed supply depends on research centres. Seed producer cooperatives or private investors are not in place for seed multiplication. Some of the soybean varieties tested did not mature uniformly.
- Soy bean processing companies require a minimum seed size, which is not easy to produce in the lowlands.
- Without proper management, the storage losses of mung bean are very high. More attention for mung bean specific hermetic bags and storage and conservation practices could have helped.
- There was a good start in linking producers with buyers but did not continue; farmers defaulted because of price volatility.
- More attention could have been given to cotton as an existing alternative cash crop and to the farmers' adoption of sunflower, as a new emerging rotation crop.
- More attention could have been given to the specific demand for organic products.

Recommendations

- Explore, test and demonstrate a broad range of crops and varieties in collaboration with farmers and mandated research institutes and extension services.
- Give explicit attention to rotation crops that are most important for sustainable farming practices, that can be most easily integrated in prevailing food habits, that have market potential and most feasible and interesting for women and youth.
- Produce and share practical field guides explaining recommended agricultural practices to farmers.
- Plan the rotation crop promotion programme in collaboration with several stakeholders and make sure that required quality seeds and other inputs are timely available. In this context, ensure that the seed chain is operational, from (pre-) basic seed to farmers' seed.
- Look at both the production and market side, with due attention for storage and farmer-company relations. Play a facilitating role in connecting companies to sourcing areas, including the facilitation of the good understanding of delivery contracts. Invite companies to visit the production zone and discuss with farmers.