



Scaling '20 Steps' for improving sesame productivity in Northwest Ethiopia

Case overview

Since 2013 to date, Benefit-SBN, in collaboration with Gondar and Humera agricultural research centres, regional Bureaus of Agriculture, ATA and other stakeholders, has been rolling out a package of 20 important steps for improving sesame yield and quality across 13 woredas and 170 kebeles in Northwest Ethiopia. The scaling effort was based on a combination of strategies and extension methods. In this note, the main lessons learned are shared, with a focus on scaling and adoption.

Background

At the start of the SBN support programme in 2013 (since 2016 Benefit-SBN), the average sesame yield was found to be between 250-450 kg/ha, depending on seasonal conditions. Research and farmer plots showed that the productivity per hectare could double by applying best-fit agricultural practices. Although these practices induce additional costs, the application of improved practices would reduce production costs per quintal and hence contribute to farmer income improvement and increased export earnings. In 2014, the results of long-standing agricultural research and field level validation were translated in a practical field guide for farmers called '20 important steps to improve sesame yields and quality'. After the 2013 pilot year, the rolling out of the package started in 2014 with a focus on capacity development, scaling and institutionalization.

Objectives

The general objective is to reach an average yield improvement of 50% in the sesame production zone in the lowlands of NW Ethiopia and to reduce the cost price of production with 25%. Institutionally, the objectives are to establish stakeholder collaboration for effective roll-out of the '20 steps', leading to farmer ownership and further professionalization.

What worked well - summary overview of achievements

- Combination of different, complementary extension methods: sesame production guide in local languages (100,000 copies distributed), cascaded training system, farmer training centres (FTC's in most kebeles), demonstration plots at farmer level, organisation of field days throughout the season, , field level coaching and support by development agents, radio programmes, short films, posters and others).
- Collaboration agreements with Bureau of agriculture have led to a high level of institutional ownership of the 20 steps extension programme. Focal persons coordinate the programme at woreda level. At kebele level, more than 500 DA's are involved.
- Promotion of Interactive training methods for farmers, creating space for dialogue and own testing and assessment.

- Targeting of different farmer categories for training: smallholders, investors, women and youth.
- Increased role of farmers in the promotion of the 20 steps (farmer-to-farmer training and coaching).
- Testing and demonstration of a range of agricultural machineries, and attention for tailored solutions for different farmer categories (from small farmers to investors).
- High interest of farmers in row planting. Readiness to make the effort, using oxen, camels and donkeys. Start of purchase of row planters by cooperatives, unions, investor farmers and farmer services centres and modest start of machinery rental services.
- Farmers increasingly know the symptoms of major pests and diseases and are better able to prevent and control these.
- Promotion and very encouraging uptake of pulses (mung bean and soy bean) in the farming system to avoid monoculture and to reduce the risks of pests and diseases and soil depletion.
- Ongoing analysis of the the marginal rates of yield (MRY) and marginal rates of return (MRR) of the recommended practices and further fine-tuning and innovation of these practices.
- Annual planning sessions before the season and annual evaluation sessions after the season, with a broad range of stakeholders.
- The roll-out did not only concentrated on the technical side. Important supportive activities and achievements were the following:
 - Financial literacy training of farmers to enhance their entrepreneurial outlook and take informed decisions for farm level investments (15,000 farmers reached).
 - On-lending of marketing credit for cooperatives to members, allowing them to cover the costs of the last stages of the production season (22 cooperatives, > 5,000 farmers reached).
 - Bottom-up agro-economic planning, as from kebele level, to prepare better for the planning of agricultural inputs, training and agri-finance (experience in 55 kebeles).

The combined effect of these efforts and achievement, especially the strong collaboration with BoA and ARC's, 'shelved technologies' of research institutions were transferred to the extension service and have reached farmers. This has led to a significant level of farmer information and (partial) adoption, as shown in the table below (source: HH survey conducted among 916 farmers after the 2017 growing season in 50% of the kebeles of 8 woredas in Tigray and Amhara, reached by Benefit-SBN since 2013).

Practices	Farmer households		
	<i>Mentioning practice by themselves</i>	<i>Having tested (1st application)</i>	<i>Continuing the practice</i>
Use of improved variety	48%	57%	42%
Row planting	34%	40%	25%
Two times ploughing	49%	51%	44%
Thinning	32%	65%	56%
Fertilizer application	48%	57%	42%
Three times weeding	54%	75%	71%
Pest scouting	41%	75%	71%
Large hilla for drying and threshing	29%	64%	60%
Plastic sheet	4%	10%	6%
Hermetic bag	2%	4%	3%

What didn't work well – summary overview of main challenges

- Prevailing habits of farming and farm management have proven to be hard to change. Most small farms, investor farms and cooperatives are poorly managed. Financial literacy training of farmers and business activities of cooperatives and unions (cleaning, processing, marketing) are slowly changing this situation.
- Even though farmers are informed and accept most of the recommended practices, access to input finance remains the major bottleneck for effectively adopting the recommended practices.
- Training methods are still largely based on lecturing of experts to large groups. Although, more interactive training methods were introduced, these could have been wider and better applied.

- Farmers in distant sub-kebeles (gots) are less exposed to information and receive much less training and support from DA's.
- Except for some exceptions, most investor farmers maintain conventional practices and generally have lower yields than smallholders.
- Some of the 20 steps, like the use of plastic sheets for sesame stacks (hillas), were hardly adopted. This needs further investigation and awareness raising on post-harvest losses.
- Soil fertility management recommendations could have been more tailored to local agro-ecological and socio-economic conditions. Farmers were reluctant to buy and apply fertilizer because of the relatively high costs of fertilizer and previous Government pressure to farmers to use fertilizers.



- Farmer seed multiplication (seed producer cooperatives and private investors) were established but they are few and do not meet the needs for improved sesame and rotation crop seeds.
- The number of row planters is still very limited and far below the required number. The recent abolition of VAT on agricultural machinery may be an incentive.
- Farmers perceive pests and diseases as one of the major challenges. More could have been done to improve the capacities of farmers and input dealers for prevention and control.
- Adaptation to changing climate conditions is also seen as an important challenge by farmers. More farmers could have been reached with weather forecasting services and related agricultural advice.

Recommendations for rolling out best-fit agricultural practices

- Give the lead role to mandated institutions for agricultural research and extension. Establish collaboration agreements at the indicated institutional level (regional directors)
- Translate research and field-testing results in easy to understand field guides in local language, and make these accessible to farmers.
- Have a farming systems perspective, even if the main orientation is on a specific commodity.
- Combine different, complementary extension methods and communication channels.
- Avoid top-down, instruction-style training and promote interactive training methods that create a safe learning environment and space for dialogue.
- Adapt extension and scaling strategies and methods to the realities of different farmer categories: smallholders, investors, women and youth.
- Involve farmers and their organisations, such as cooperatives, as much as possible in the extension programme. Transfer roles and responsibilities with the aim to move towards farmer-to-farmer training and coaching.
- Organize planning for the agricultural season in a bottom-up manner, starting at kebele level, with involvement of the key actors (local administration, DA, micro-finance and farmer representatives).
- Continue the tailoring, fine-tuning and innovation of recommended agricultural practices. While monitoring the results of recommended practices, look at both the extra yield (MRY) and the extra income (MRR) the recommended practices generate for farmers.
- Communicate all the time with farmers (in fields, cooperatives, meetings, focus group discussions, adoption surveys, ...), to learn about their (real) appreciation of recommended practices, bottlenecks for adoption and reasons for non- and dis-adoption.
- Not only demonstrate machineries, but look also at factors affecting the purchase of machinery, after sales service and maintenance, and development of machinery rental services.
- Promote multi-stakeholder planning, implementation and monitoring & evaluation. Create space for Information sharing and networking with aim to promote stakeholder collaboration (research, extension, cooperatives and unions, banks and MFI's, ...).
- Bring up strategic challenges to decision-making levels so as to change policies and incentive systems.
- And last but not least: work together with financial institutions. Share key information on the production and marketing realities and cash flows of farmers with banks and MFI's and train and support farmers to be more eligible to loans.