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## COOPERATIVE-BASED SEED MULTIPLICATION SYSTEMS

**AVAILABILITY, QUALITY, ACCESSIBILITY AND AFFORDABILITY OF HIGH-QUALITY SEED IS CRITICAL TO THE LIVELIHOODS OF FARMERS IN ETHIOPIA. COMMUNITY-BASED SEED PRODUCTION AND MARKETING (CBSM) IS A WAY FOR FARMERS' SOCIAL ORGANISATIONS TO PRODUCE GOOD QUALITY SEED AT HOUSEHOLD LEVEL TO SELL.**

### BACKGROUND

Quality seed is one of the most fundamental yield-enhancing inputs for crop production. Achieving sustainable increases in agricultural productivity is dependent, to a large extent, on the availability of and access to quality seed. A well-developed seed sector is one of the requirements to boost crop productivity and production. Yet, the seed sector in Ethiopia is constrained by institutional, organisational, technical and infrastructural factors. For instance, less than 20% of the seed used by farmers is supplied by the formal seed system, and of the 1,198 released crop varieties, only 10% are commercially produced<sup>1</sup>. Hence, the seed sector is not responding satisfactorily to increasing demand for seed from farmers from diverse agro-ecology and farming systems.

These challenges have driven Self Help Africa to promote innovative approaches to solving bottlenecks to the development of seed sectors in the country in collaboration with a range of stakeholders (particularly the Bureau of Agriculture of SNNPR and Hawassa Agricultural Research Center). This led to the establishment of seven primary seed multiplying cooperatives operating in two administrative zones in SNNPR's Siltie and Guraghe zones to produce certified crop seeds. Later on, the number of primary cooperatives producing certified seeds increased to twelve. However, these cooperatives faced shortages of basic seed to produce the certified seeds, and lacked the capacity to undertake marketing and post-harvest operations such as processing, packaging and storing. To address their common challenges and bridge these gaps, the twelve primary cooperatives established a seed cooperative union, the Edget Farmers' Seed Multiplication and Marketing Cooperative Union (FSMMCUCU) in 2009 - the first formal cooperative of its kind in Ethiopia<sup>2</sup>. The certified seed production by Edget Seed Union had also been further challenged due to limited availability basic seeds.

## CLIMATE-SMART AGRICULTURE

The five-year Improving Smallholder Livelihoods through Climate-Smart Agricultural Economic Development project aimed to alleviate poverty and build resilient, sustainable livelihoods in Ethiopia's SNNP and Oromia regions.

Funded by Irish Aid, a consortium of SOS Sahel Ethiopia, Self Help Africa, Vita and Farm Africa worked with more than 50,000 households, with a particular focus on poor farmers, women, children and landless youth. This booklet is one of a series of seven focusing on each of the project's key components:

1. Small-scale irrigation
2. Cooperative-based seed multiplication systems
3. Mango value chain development
4. Ecosystem-based adaptation to climate change
5. Engaging women in entrepreneurial farming businesses
6. Promoting CSA through revitalising Farmer Training Centres
7. Promoting fuel-saving stoves

With financial support from Irish Aid, a project piloting on-farm early generation seed (EGS) production (breeder, pre-basic and basic seeds) was conducted that demonstrated production of all class of seeds by farmers. Edget Seed Union has made remarkable progress and opened the door to the establishment of many other seed producer cooperatives and unions in the country. The evidence it presented influenced policymakers to enact a new seed proclamation to address and overcome policy bottlenecks with financial support from Irish Aid and the European Union. The experience of the Edget Seed Union demonstrates that helping seed multiplying farmers to thrive in the seed business, ensuring strong governance and leadership of their primary and secondary cooperatives, and addressing the entire seed value chain underpins Early Generation Seed self-sufficiency.

SHA-Edget model has also been successfully supported by the Seed Proclamation enacted in 2013 (Proclamation No. 782/2013) and further scaled up by other development partners, including the Agricultural Transformation Agency (ATA) and Vita. For instance, ATA has recently established 11 more seed unions in four regions.

## PROJECT APPROACH

With climatic change, agriculture and food production are more vulnerable than ever due to increasing temperatures and rainfall variability as well as increased incidence of pests and diseases. This instability puts livelihoods, farmers' incomes and ecosystems at risk as it reduces agricultural productivity. As farmers struggle with the effects of climate change, crop and varietal diversification can be an effective adaptation strategy. It is important that farmers are able to access quality seeds of well-adapted varieties to enable them to diversify the crops they grow and better cope with the effects of climate change.

The CSA project supports the seed producer union and cooperatives to address the key bottlenecks in the seed value chain by creating an enabling environment, and increasing access to a diverse variety of crops. With the support of the CSA project, SHA and Vita has continued to build the farmers' seed system in SNNPR to improve smallholder farmers' access to quality seeds, thereby ensuring food security and improving livelihoods. They also offered pest and disease diagnosis and advice services to help farmers improve their plant health and reduce crop losses, thereby increasing food security and poverty alleviation and improving livelihoods.

### Edget Union seed production in tonne per hectare (2010 -2018)



**EDGET union is now able to meet up to 20% of the wheat seed demand in SNNPR**

**Employment created**  
 - 13 permanent jobs  
 - 40 contract jobs



## Project activities included:

- Producing diversified varieties of quality seed for climate-resilient crops
- Providing training to smallholder farmers in seed production and marketing, seed inspection, cooperative leadership and post-harvest handling
- Facilitating the establishment of new seed producer cooperatives and supporting the development of their business plans
- Constructing seed storage facilities
- Constructing cooperative offices
- Supporting and strengthening Edget Seed Union's seed marketing strategy
- Establishing and equipping community-based plant health clinics

## KEY RESULTS

- The project promoted climate-smart seeds adapted to the local environment and farmers' needs. Drought-tolerant and short maturing Kingbird and Ogolecho wheat varieties and mung beans were successfully introduced.
- The project supported 25 seed multiplier farmers' cooperatives and two unions working on the multiplication of seeds of major crops including teff, maize, wheat, haricot bean, malt barley, pepper, chickpea and mung bean. These cooperatives produced and sold a total of 60,441 quintals of basic and certified seeds to different buyers, between 2015 and 2018.
- Fifteen of them are new seed multiplier farmers' cooperatives established in Gurage and Gamo Gofa Zones in South Nation Nationality Peoples' Region (SNNPR) in collaboration with the District Bureau of Agriculture and cooperative offices. Self Help Africa has facilitated and supported the establishment of ten of these seed producer cooperatives (five of them were engaged in malt barley production in Gumer woreda and five in Abeshge woreda). The project introduced malt barley production and provided 100 quintals of malt barley traveller seed to cooperatives in Gumer woreda, which multiplied the seeds and distributed them to other farmers in the woreda. A total of 32,160 quintals of traveller malt barley is now produced on about 802 hectares of land, which account for 80% of hectares covered by malt barley and 96% of malt barley production in Gumer woreda. The malt grain was sold through a linkage created to Habesha and Zebidar breweries. Recently, another new malt barley variety (50 qt of Eboni variety) has also been introduced. The five cooperative in Abeshge produced a total of 14,880 quintals of teff, haricot beans and chickpeas over three years. The project helped solve part of the seed marketing problem by supporting the development of Edget Seed Union's marketing strategy.
- The establishment of an additional five farmers' cooperatives was supported by Vita in Arba Minch Zuria Woreda (Kola Shellie, Kurpayo Chano Dorga, Ocholo Lante Green, Baso and Andinet farmers' seed producing cooperatives). These cooperatives produce mung bean, haricot bean, hybrid maize and teff seeds. The annual seed production capacity is over 2,053 quintals of certified seed, which is about 10% of Gamo Gofa zone's annual demand.
- The project piloted the production of hybrid maize. This was brought to the attention of the SNNPR regional Government bureau of Agriculture, who expanded the works in collaboration with ATA to produce maize seed on 40 hectares of land. However, it was not successful and the strategy of time isolation maize planting needs to be revisited.
- Vita successfully supported the seed producer cooperatives to produce quality hybrid BH140 maize seeds, which is suitable to lowland areas. Vita also introduced mung bean seed production, which is a drought-tolerant crop that performs well under conditions of low soil moisture.
- Leveraging the Capacity Development for Agricultural Innovation Systems (CDAIS) Project, the CSA project supported Edget Seed Union and facilitated dialogue with regional policy makers to establish enforceable contracts with districts for seed marketing. Policy dialogue meetings were organised to address the community-based seed marketing problems for improved and unrestricted seed marketing systems. Finally, the SNNPR Bureau of Agriculture and Natural Resource Development approved the Directives on Seed Producers and Buyers Contractual Agreement on 8 March 2019.
- A total of 20 community-based plant health clinics were established with a tripartite partnership agreement made between Self Help Africa, the Ministry of Agriculture and Natural Resource (MoANR), and CABI (Centre for Agriculture and Biosciences International) to scale the Plantwise community-based plant clinics in SNNPR.
- The development agents who managed the farmer training centres were trained to use Plantwise methods and called "plant doctors" after completing the training. The plant health clinics were equipped with standard working manuals, disease diagnosis tool kits and basic data recording formats.
- Self Help Africa presented a paper on *Closing the hunger gap through improved seed access: The case of SHA-EDGET Model* at this year's Committee on World Food Security (CFS) side event organised by the FAO in October 2019 in Rome, Italy.

## KEY LESSONS

- Community seed production schemes foster a pluralistic seed system and play an important role in increasing food production and farmers' incomes.
- Farmers' seed enterprises can produce quality seeds of all classes and contribute to seed security.
- The seed unions and cooperatives played a decisive role in producing, collecting, inspecting, processing (seed cleaning) and marketing quality seeds.
- Cultivating an enabling environment for cooperative-based seed production and marketing, contributes to removing the bottlenecks preventing farmers from accessing quality seeds.
- The seed union and cooperatives also created permanent and contractual employment opportunities.
- There is still more work to do due to the existence of unmet seed demand, particularly for high-volume, low-profit crop seeds.

## KEY ISSUES THAT NEED ATTENTION

- There is need for a proper seed demand assessment based on farmers' responses.
- Links between different actors involved in seed systems need to be strengthened.
- Linking research centres adaptation trials with nearby farmer training centres could enhance the speed of technology adoption by seed producer cooperatives.
- The provision of incentives for seed producers could speed up investment in seed marketing infrastructure and associated issues.

<sup>1</sup> Ministry of Agriculture. 2019. Transforming the Ethiopian Seed Sector: Issues and strategies.

<sup>2</sup> Dawit Alemu. 2011. Farmer-Based Seed Multiplication in the Ethiopian Seed System: Approaches, Priorities and Performance. Future Agricultures. Working Paper 036. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.434.8754&rep=rep1&type=pdf>

