

SCALING OUT MALT BARLEY AND GRAIN LEGUME TECHNOLOGIES IN THE HIGHLANDS OF ETHIOPIA



Overall Goal

ICARDA is implementing two USAID funded projects¹ on scaling out malt barley, faba bean and chickpea technologies with the overall goal of improving the livelihoods of smallholder farmers in the Ethiopian highlands.

Project Locations

The projects are implemented in the major production districts of Amhara, Oromia, SNNP and Tigray Regional States, Ethiopia.

Project Achievements

The project focused in its first year of implementation on scaling up malt barley, faba bean and chickpea technologies, creating and increasing demand through awareness raising, strengthening public-private partnerships and capacity development activities.

Main achievements are linked to:

Adaptation of chickpea to droughts and climate change

Due to the severe drought conditions that Ethiopia is facing, the project advised via a multi-stakeholder information campaign to set up the planting time for chickpea in early July. The dissemination of the information included a behavior change approach, as farmers' practices are different. Farmers in northern Ethiopia normally plant chickpea in late August, but this would have led to complete crop failure. The project advised on changing the planting time, and as most farmers followed the advice, one can consider the success of the early planting technique as a significant achievement in adaptation to climate change.

Integrated Faba

Project Objectives

- Popularization and demonstration of improved crop varieties and associated integrated crop management technologies
- Accelerated multiplication of early generation seed (breeder, pre-basic and basic seed) to increase availability of source seed both for formal and informal seed production,
- Community seed production and marketing with farmer seed producer groups to avail seed of new crop varieties
- Capacity development of the National Agricultural Research System and key stakeholders through training and provision of equipment
- Increased understanding of malt barley, faba bean and chickpea seed and grain value chains.



Bean Galls Disease and Orobanche Management

The Faba Bean Galls disease has developed epidemic conditions in Ethiopia with significant implication on the production of Faba bean and the country's economy. The project applied an integrated faba bean gall disease management (introducing the disease tolerant faba bean variety "Walki" and fungicide spray).

Another approach was linked to controlling "Orobanche", which are parasitic herbaceous plants, by introducing the tolerant variety "Hashengie" in addition to nitrogen fertilizer and a low dosage of glyphosate. This enabled to reintroduce a healthy faba bean production in the Northern and Central highlands of Ethiopia, a region where faba bean was abandoned for a long time. The two faba bean cultivars were released by NARS partners as ICARDA international public goods.

¹ "Better livelihoods for small holder farmers through knowledge based technology interventions in the highlands of Ethiopia: Increasing the productivity of chickpea in wheat-based cropping system"

"Deployment of Malt Barley and Faba Bean Varieties and Technologies for Sustainable Food and Nutritional Security and Market Opportunities in the Highlands of Ethiopia"



Achievements at the farmers' level

After one year, the number of farmers applying improved technologies of malt barley, faba bean and chickpea has reached to 4,851. About 15% are women. An area of 1,252 ha is covered with improved technologies, which includes seed multiplication fields as well.

Ten field days were organized with a total of 1,566 participants of which about 9% were women. Participants included farmers, farmer cooperatives and union leaders, development agents, agricultural extension experts, rural advisory services, leaders from district and zonal offices, public and private seed producers, seed certification experts from zonal offices, breweries, malt factories and researchers from NARS and CGIAR centers.



Scaling out improved technologies through public-private partnerships

About 111.5 tons of seed of improved varieties of chickpea, faba bean and malt barley were provided to the farmers in seed producer cooperatives and farmers' groups.

NARS and 31 seed producer cooperatives in 27 districts were engaged in malt barley, faba bean and chickpea seed production of different categories and collectively produced about 1,826 tons of seed which can cover 14,860 ha in 2016.

Currently, irrigated seed production is implemented on about 40 ha of land. Established linkages with on-going partner projects and organizations create synergies for approaches in using chickpea for rotational use. This helps in sustainable intensification of wheat-based cropping systems with pulses.

Market linkages were established throughout the value chain – from certified seeds to product marketing. The public sector represented by NARS was linked to private seed enterprises with the aim to boost large-scale certified seed production. Linkages with district bureaus of agriculture and farmers' groups were also established for the improvement of quality seed production and certification. NARS, public and private seed enterprises, malt factories, breweries and farmers were brought together to innovate the marketing for quality seed.

Capacity development

The project provided training to 2,053 farmers, of which 16% were women. Also, development agents, agricultural extension experts, rural advisory services and leaders of seed producing cooperatives as well as researchers participated in the trainings. The topics covered benefits of agricultural technologies for the introduction of improved varieties, integrated crop management, seed production and marketing.



A SUCCESS STORY

Bizuayehu Keberhu (43) is a family man. After his sister's death, he has raised her four daughters before he got married himself, just a year ago. Today, he has a baby on his own and his wife cooks for him, but she does not have what she needs, as Bizuayehu can only afford to rent one hectare land from other, wealthier farmers. "I only plant wheat" Bizuayehu says. "My wife likes to cook with chickpea, but the soil I have is not good enough – and I do not have money to buy the fertilizer." We convince him to come with us to the farmers' field day and check the new varieties that the USAID chickpea project has released. Bizuayehu is impressed. "This chickpea can grow also on soils in bad conditions, even on my land," he says. The farmers' field day allows people from the Lemi area in the highlands of central Ethiopia to evaluate the work done by the project and connect with partners. Bizuayehu links up



with seed producers and farmer friends. "We have decided to produce our own seeds and compost, so we are depending less on the fertilizer prices from the agro-input dealers", he says at the end of the day. "Next year I certainly will plant chickpea, so my wife can cook the food of her choice."

-The Chickpea Project Team, ICARDA, Addis Abeba, Ethiopia

Conclusion

The achievements of the first project year are very promising for its expansion throughout the next two years, with the aim to achieve the overall goal.

- In the next two years the project will focus on:
- Increased demonstrations and scale up activities in target project areas,
- Decentralized early generation seed production systems in NARS for enhancing and strengthening their seed supply capacity,
- Strengthening and establishing seed producer cooperatives,
- Expanding certified seed production by public and private seed enterprises and farmers,
- Strengthening linkages,
- Capacity development of NARS and smallholder farmers.

