

Supporting Sustainable Agricultural Productivity in Ethiopia

Strengthening the seed sector in Ethiopia

Context

The agricultural sector employs around 70% of the working population and is an important pillar of the economy, accounting for 38% of the gross domestic product. However, the low productivity of Ethiopian agriculture cannot ensure food security for the rapidly growing population and is unable to provide an impetus for the necessary economic transformation. To meet these challenges, Ethiopian agriculture must become more productive. The use of resistant and high-yielding seeds is one of the key factors that will increase agricultural productivity in Ethiopia. Currently, certified seed of improved varieties are only used on about 20% of the arable land. Demand from farmers for certified seed of adapted varieties that achieve stable yields through resistance to common plant diseases is high, but the lack of availability limits their use.

Objective

Improved conditions for the production of pre-basic and basic seeds to strengthen the seed sector in Ethiopia and thus contribute to increasing agricultural productivity.

Approach

Achieving an increase in agricultural yields requires expertise, organisation and high-quality seed. The project is aiming at making well-performing crop varieties and high-quality seed available to small farmers. To this end, the project is working together with Ethiopian research and public administration institutions, helping them to forge links with strong partners from the German private and public sector.

We work to strengthen the seed value chain with a particular focus on (1) development of new well-performing crop varieties, (2) effective variety testing, release and protection, (3) efficient production of high-quality early generation seed (EGS) and (4) conducive legal and institutional frame conditions for the Ethiopian seed sector. The project combines political dialogue with technical advice to improve

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Commissioned by	German Federal Ministry of Food and Agriculture (BMEL)
Lead executing agency	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
Ethiopian partner Organisations	Ethiopian Ministry of Agriculture (MoA) Ethiopian Institute for Agricultural Research (EIAR)
German partner organisations	Federal Plant Variety Office (BSA) Seed companies: KWS Saat SE & Co. KGaA and NPZ KG Association of Plant Breeders (GFPI e.V.)
Duration	01/2021 to 12/2023 (Phase III)
Budget	EURO 2,1 million

processes of variety development, testing and EGS production to support the government in the transformation of the Ethiopian seed sector.

Variety development: The seed companies KWS, NPZ and the German Association of Plant Breeders GFPI, assist the Ethiopian Institute of Agricultural Research (EIAR) in breeding locally adapted barley and faba bean varieties with better yield, resistance and quality.

Variety testing and release: In cooperation with the German Federal Plant Variety Office (BSA), the project promotes the application of international standards in seed quality control and variety release. Farmers will gain access to the best varieties if all varieties are tested in competitive and rigorous process and only the best performing varieties are released, multiplied and offered on the market.



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Variety protection: The project supports its partners to establish a royalty system to generate investments for variety development to maintain resistance and stable yields of crop varieties in the long-term.

Early generation seed (EGS) production: The project works to increase the availability of EGS as a key bottleneck to farmers' access to improved seeds. The project assists selected private seed producers and EIAR to significantly increase the quantity and quality of pre-basic and basic seed of non-hybrid varieties of cereals and pulses.

Legal & institutional frame conditions: With the project's support, the Ministry of Agriculture (MoA) creates enabling frame conditions for a resilient seed sector by implementing the National Seed Policy (2020), coordinating public, private and development partners and supporting a transition to a market-oriented production of early generation seed.

Results achieved by Supporting Sustainable Agricultural Productivity (SSAP) Project

Results of the current phase (2021-2023)

- Precision of breeding trials increased by 40% through improved machinery, data capturing and analysis.
- Faba bean breeding cycle shortened from 10-12 to 6-4 years by using the Belg off-season for breeding.
- EIAR's Faba bean breeders are provided with the necessary equipment to electronically collect data. From Meher season 2021, data collection is fully digitalized and the time from data collection to analysis and selection decisions is shortened by at least 4 weeks.
- 12 ha additional land for breeding trials available through land levelling at Debre Berhan Agricultural Research Center.
- International protocols for variety testing - Distinctiveness, Uniformity and Stability (DUS) and Value for Cultivation and Use (VCU) - Protocols adopted for barley and wheat.
- The legal basis for effective variety protection created with the new Plant Breeder's Right (PBR) proclamation (2018) and the PBR directive (2021).
- Three private seed producers started production of early generation seed of teff and faba bean in 2021.
- 42 contracts between suppliers and users of early generation seed were facilitated.

Results of previous phases (2015-2020)

- The project's advice to improve strategic legal framework conditions in collaboration with the German Federal Plant Variety Office contributed to:
 - The ratification of a National Seed Policy in 2020
 - The endorsement of the new proclamation on Plant Breeder's Right in 2018.
 - Approval of Standards for Quality Declared Seeds (for 17 crops).
- The national and four regional seed laboratories use improved equipment and apply at least two seed quality standards set by the International Seed Testing Association.
- EIAR has increased fourfold the number of effective crosses made annually in barley breeding. As a result, newly introduced quantitative breeding parameters have significantly improved. At least one new barley variety is expected to be released in 2021.
- 1,300 farmers organized into nine seed producer cooperatives have increased their annual production of barley and wheat seeds to 1,200 tons per year (2020). As a result, circa 64,000 farmers are supplied with improved seeds.
- 46 additional tons of early generation seed produced by EIAR as part of Covid-19 emergency seed response in 2020.



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In cooperation with: Ethiopian Ministry of Agriculture (MoA)
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