

Innovative Approach on Common Bean Based Technology Generation and Promotion for Improvement of the Livelihood at Lowland Areas of Ethiopia

Berhanu Amsalu Fenta^{1*}, Kassay Negash¹, Kidane Tumssa¹, Endeshaw Habte¹, Tigest Shiferaw¹, Dagmawit Tsegaye¹, Temesgen Wakessa¹, Rubyogo Jean Claude², Clare Mugisha Mukankusi³, Stephen E. Beebe⁴

¹ Ethiopian Institute of Agricultural Research, Melkassa research centre, P.O.Box 436, Ethiopia

² Pan Africa bean Research Alliance (PABRA), CIAT Africa, C/O Selian Agricultural Research Institute, P.O. Box 2704, Arusha

³Center for International Tropical Agriculture (CIAT), P.O.Box 6247, Kampala, Uganda

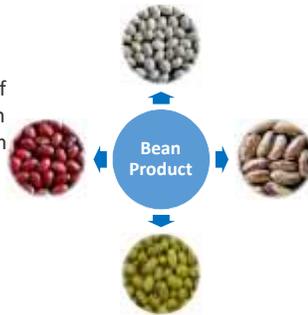
⁴Centro Internacional de Agricultura Tropical (CIAT), Cali, Colombia

Introduction

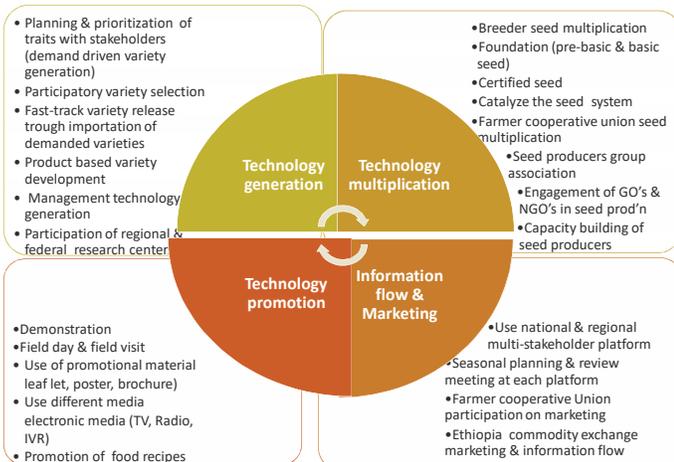
Common beans (*Phaseolus vulgaris* L), has a special place in Ethiopia farming system and national economy. It plays a significant role as a food security crop for smallholder farmers being a good source of protein and minerals. Further, it also enhances the income of growers and the foreign exchange earnings of the country. However, the production is constrained with several biotic and abiotic factors. Further, the producers are growing old varieties which are susceptible to these production constraints and the access of improved varieties is also limited. Thus, the common bean research program in Ethiopia aims at contributing to the improvement of the livelihoods of smallholder farmers through generation and promotion of improved common bean varieties which are demand driven, climate-smart, and tolerant to biotic and abiotic constraint thereby enhancing foreign currency earnings of the country. To achieve these goals the breeding program has been using different innovative approaches to generate and promote bean based technologies to improve production and productivity to improve the livelihood of growers and to improve the benefit from this crop for the value chain actors.

Methods

- To achieve the aim of, the breeding program has used different source of germplasm (hybridization , selection from advanced lines introduced from CIAT and other partners and use of local landraces.
- The program focuses on four major seed market classes (products)
 - Small/large white beans,
 - Speckled/sugar bean,
 - Small/large reds
 - Yellow/cream beans

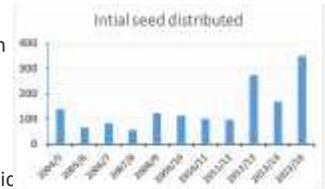


General Innovative approach has shown below:

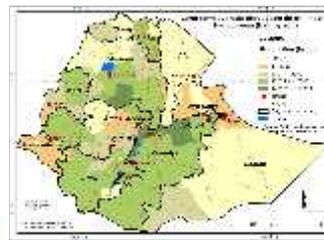


Results

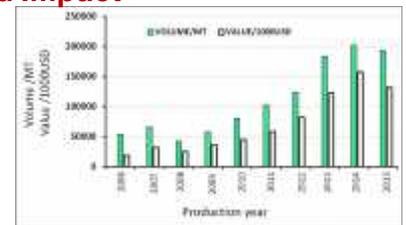
- For the last 10 years user preferred 21 bean varieties with wider choice in bean market class, which are adaptable to lowland agro-ecologies have been developed.
 - Complimentary bean management (disease, insect pest, weed & agronomic technologies and information have been also generated.
 - Seed system catalyzed and seed access improved
- Due to enhanced initial seed access in the seed system the number of growers using bean based tech increased.



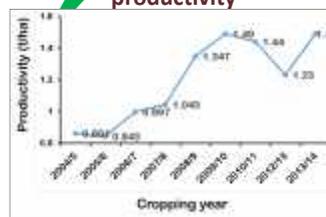
Major achievement and Impact



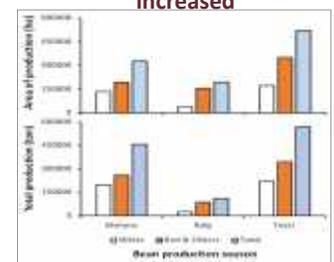
Production expansion



Bean Export increased



Increased productivity



Production increased

Conclusions

Generally, this innovative approach has significantly enhanced the productivity per unit area and area of production. Further the market in beans has impacted the livelihood of bean growers and the value chain actors like traders, processors in the country and the country has benefited from the export earning of this commodity. Thus, the demand led breeding and value chain approach using bean innovation platform can be used as a model system for other crops.