

F4: Grain Legumes Seed Systems: Annual Report 2016

1. Introduction

ICARDA is implementing bilateral projects in Ethiopia, Iran and selected countries in West Asia and North Africa region with financial support from USAID, Government of Islamic Republic of Iran and EU-IFAD support, respectively. In Ethiopia, two projects on faba bean and chickpea entitled '*Deployment of malt barley and faba bean varieties and technologies for sustainable food and nutritional security and market opportunities in the highlands of Ethiopia*' and *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* were implemented in four major fab bean and chickpea growing areas of the country with financial support from USAID. In Iran under the project *Increasing the Productivity of Cereal-based Systems to Enhance Food Security* was started in 2016-17 with financial support from the Government of Islamic Republic of Iran with focus in rianfed areas of four provinces i.e East Azerbaijan, Kermanshah, Kurdistan and Lorestan provinces. The EU-IFAD project, entitled *Enhanced small-holder wheat-legume cropping systems to improve food security under changing climate in the drylands of West Asia and North Africa*, NARS was implemented in selected target countries from West Asia and North Africa Region (Algeria, Egypt, Morocco, Tunisia and Egypt).

Under the bilateral projects, NARS partners and key stakeholders of target countries together with national seed suppliers, agricultural extension services and farmer groups were involved in the several variety and seed related activities including popularization and demonstration of integrated crop management to create awareness and demand for new legume technologies and engaged in early generation seed multiplication (breeder, pre-basic and basic) as well as certified/quality seed production through formal or farmer-based seed production schemes and small seed pack distribution for scaling-up legume technologies. For example, in Ethiopia, the project partnered with federal and regional NARS; federal and regional seed enterprises; seed producer cooperatives and Bureaus of Agriculture of target districts in four major faba bean and chickpea growing regions in Amhara, Oromia, Southern Nations, Nationalities and Peoples (SNNPR) and Tigray. For faba bean the project was implemented in 62 districts of 21 zones of four major regions working with 28 licensed and 7 non-licensed seed producer cooperatives. For chickpea, the project was implemented in 42 districts of 14 zones of four major regions working with 20 licensed and one non-licensed seed producer cooperatives.

The following key areas were covered primarily under bilateral projects of USAID, EU-IFAD, and ICARDA-Iran projects:

- Faba bean seed system study jointly with CRP-DS (including DNA finger printing) to analyze varietal adoption, farmer's perception, seed sources, etc to understand systemic constraints and recommend solutions in Ethiopia
- Accelerated early generation seed production (breeder (G₀), pre-basic (G₁-G₃) and basic/elite (G₄) seed) by NARS and farmer seed producer cooperatives particularly for basic seed in Ethiopia during the main season and off-season using irrigation
- Small seed pack distribution for on-farm quality seed production and scaling-out of grain legume technologies through revolving seed scheme in Ethiopia

- Popularization and demonstration of new grain legume technologies like new improved varieties and integrated crop management technologies including bio-fertilizers in Ethiopia
- Strengthening capacity of NARS partners, stakeholders and farmers for acquiring knowledge and skills for effective project implementation and provision of facilities where feasible
- Characterizations of farm households to establish benchmarks and measure the impact of the project on adoption and impact on food and nutritional security.
- Forging an effective partnership existing public, private and farmer-based actors for effective project implementation.

2. Distribution of bio-fertilizers of faba bean and chickpea

Rhizobium inoculants are important biological inputs which reduce inorganic fertilizer use thereby minimizing risks of environmental pollution while improving the productivity of faba bean and soil fertility and health for succeeding cereal crops. Rhizobium inoculants are also important in cereal-legume cropping system for improving fertilizer use efficiency and productivity of succeeding cereal crops. Within the integrated crop management, the use of bio-fertilizers for production of grain legumes was demonstrated with express purpose of popularization and demand creation among farmers.

Rhizobia inoculant distribution for faba bean (strain EAL-110) and chickpea (strain EAL-029) was organized in partnership with Menagesha PLC. In total 30,703 packs of biofertilizers i.e. 21,951 for faba bean and 8,752 for chickpea was distributed reaching 17,881 farmers. About 10,360 faba bean farmers (1036 female farmers, 10%) and 7521 (785 female farmers, 10.4%) benefitted from the rhizobia distribution.