Tropentag, September 17-19, 2018, Ghent

"Global food security and food safety:
The role of universities"

Role of Participatory Potato (*Solanum tuberosum*) Innovation System Development: From Hunger to Food Security in Northwestern Ethiopia

Yihenew Gebresilassie[1], Asresie Hassan[2], Alemu Worku[3]

[1] *Bahirdar University, Dept. of Natural Resource, Ethiopia*
[2] *SNV - Ethiopia, Ethiopia*
[3] *Amhara Regional Agricultural Research Institute, Potato Breeding, Ethiopia*

Abstract

Potato plays an important role in addressing the seasonal food deficit experienced during the months of August through September because of its short crop cycle (90–120 days). Potato has high yield potential, huge demand for local market and high nutritional value. However, several constraints including traditional potato production system, high incidence of disease and pest; shortage of seed for adaptable and disease tolerant varieties, low productivity of local varieties, limited knowledge on post harvest handling and management, lack of skill on food preparation and utilisation and poor innovative technology transfer systems are the major ones. The capacity building for scaling up of evidence based best practices for Ethiopia (CASCAPE) project, funded by The Royal Netherlands Embassy, focused on developing potato innovations systems (2011–2014) which has been scaled up since 2015. The logical processes included seven major steps. 1) Participatory evaluation and demonstration of improved potato technologies. Seven different released varieties against a local check were evaluated in a field experiement by men and women farmers and researchers in South Achefer and Burie districts. Based on yield and cooking quality, *Belete* variety was selected. 2) Participatory informal seed multiplication and dissemination. Based on the first year result of evaluation, seed of *Belete* variety was multiplied since the tuber seeds are not multiplied by government and private firms. 3) Pre-extension demonstration. Farmers' practice and the improved package were compared side by side to convince farmers that the later was better than the former. 4) Scaling-up the potato production package to other farmers' fields. The multiplied seed was distributed to selected larger group of farmers in the two districts. Around each farmer, 20 famers were organized. 5) Construction of diffused light store (DLS). Farmers received training and constructed DLS to store seed tubers. 6) Training on food preparation. Farmers were given training on balanced food preparation from potato by trained development agents. 7) Linking with the market. Large tubers were sold to the market or consumed by farmers themselves while small sized tubers were stored in DLS for next year panting. Following this approach potato production expanded, its yield raised from 7 tons with farmers' practice to 50 tons ha-1 using improved package, and their livelihoods improved. This approach can be scaled up to other similar agro-ecologies and farming systems.

Keywords: Belete potato, CASCAPE, diffused light store, potato innovation system, scaling up

Contact Address: Yihenew Gebresilassie, Bahirdar University, Dept. of Natural Resource, Bahirdar, Ethiopia, e-mail: yihenewgs@gmail.com