

# Innovative Chickpea Seed and Technology Delivery Systems in Eastern and Southern Africa (ESA)

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## Introduction

- Chickpea is a very strongly autogamous (self-pollinated) plant.
- Farmers therefore find it easy to save their own seed.
- This limits the rate of seed replacement, leading to erratic demand.
- Thus, chickpea seed business attracts limited attention by the private sector.
- Besides, there are bottlenecks in the supply of quality, timeliness and quantity of early generation seed (EGS).
- As such, high quality seed of improved varieties takes long to reach the end users.
- Our objective was to improve seed availability and thus adoption of new varieties.

## Methods

- Local level awareness of new varieties was done through participatory variety selections and field days.
- Scaling up done through on-farm variety demos with integrated crop management (ICM) packages and field schools.
- Breeder and foundation seed were produced based on seed roadmaps and demand for farmer-preferred varieties.
- Commercial class (certified, quality declared seed (QDS), community seed, etc) seed production programs were customized to local needs.
- Seed delivery approaches (seed loans, mini-packs contractual, schools, churches) were designed and customized to local needs.

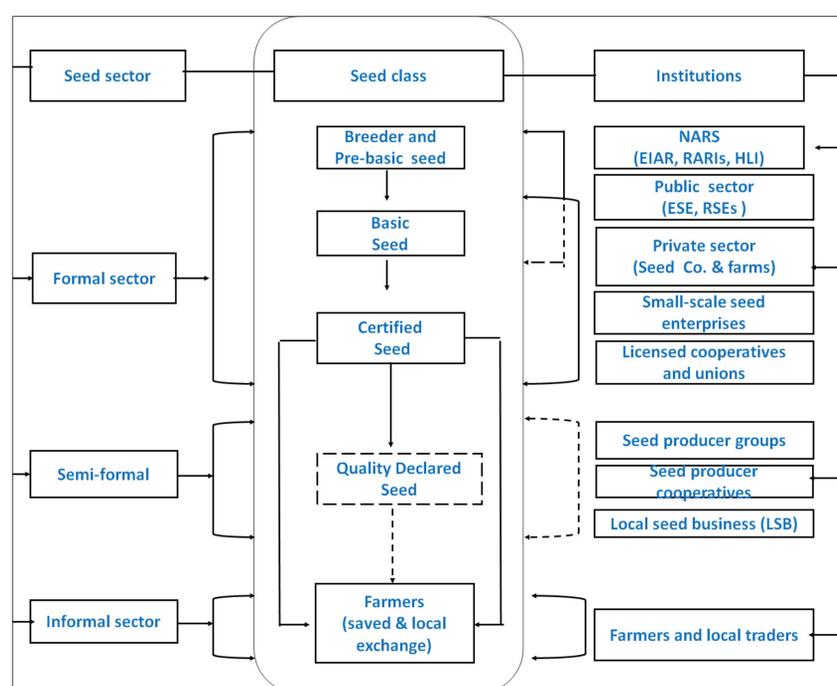


Figure 1. Integrated approaches and institutional partnerships in seed production and supply.

## Results

- 328 FPVS trials were conducted in Ethiopia (136), Tanzania (107) and Kenya (85).
- 40 released or pre-released varieties (Ethiopia–15, Tanzania–12, Kenya–13) were used in FPVS.
- 2,392 field demonstrations (Ethiopia–2209, Tanzania–11, and Kenya–172) were organized.
- 16,782 farmers (Ethiopia 10,461, Tanzania 4,102, and Kenya 2,219) participated.
- Between 2007-2014, 111.5 t breeder, 1,036.5 t basic and 15,328.5 t certified seed of improved varieties was produced in Ethiopia, Tanzania and Kenya.
- A total of 6,445 small to large size seed packs (2–30kg) were distributed to farmers in Ethiopia, Kenya and Tanzania.

- In Ethiopia, 18 farmer seed growers' associations were formed and their capacities enhanced for quality seed production
- In Ethiopia, one farmer seed growers' association was strengthened into a full-fledged seed company\*
- In Tanzania, seed delivery was done in partnership with private companies through contracting schemes and with NGOs
- In Kenya, links were made with the private sector, farmers' cooperatives, farmer field schools, NGOs and CBOs.

### Amount (t) of quality seed chickpea produced in ESA (2007-2014).

Country	No. varieties	Breeder	Basic	Certified	Total
Ethiopia	11	41.9	715.8	12,454.7	13212.4
Tanzania	4	42.0	303.8	1,412.9	1,758.7
Kenya	7	27.6	16.9	1,460.9	1,505.4
Total	22	111.5	1,036.5	15,328.5	16,476.5

### \*Individual seed producer → Seed producer association → Seed company

Ameha Abraham, a farmer from Adaa woreda in central Ethiopia, has been growing improved desi and kabuli chickpea varieties since 1995. Ameha and other farmers in the region started by selling seeds individually to seed producers' associations. In 2009 Ameha and his colleagues were supported to form a seed growers' cooperative with 119 members. In 2012 Ameha and a fraction of the association set up a private seed company – Amuari High Yielding Varieties & Agricultural Products PLC. The initial funding of ETB 100,000 (US\$5000) was in the form of share capital of ETB 10,000 each from 10 founding members.

Our company has diversified from chickpea and in 2014 we produced teff seed on 57 ha, wheat on 50 ha and chickpea on 31 ha. We estimate a total seed potential of 500 tons of seed from four districts. The average chickpea productivity of the company is 3.5 to 4.5 t/ha much higher than the national average of 1.9 t/ha. We dare to grow really big!



The company sells seeds to the Ethiopian Seed Enterprise (which is the national seed procurement agency), research centers and buyers from other areas. Currently it rents seed cleaning machines, but plans to purchase its own machines soon. Facing a lack of space to store seed, the company recently built a small storage space and is looking to expand. The company plans to tap the export market once they have sufficient production. Ameha and team dream of setting up a big company dabbling in seed production, dairy, poultry, apiculture, etc.

## Conclusions

- Small scale chickpea farmers require complementary functional seed and product markets if sustainable seed production is to be achieved.
- Selection of chickpea variety by farmers is largely influenced by consumer demand and market superiority.
- Participatory variety selection enhances cost effective testing and increases chances of varietal adoption.
- Market pull is key driver for success in Ethiopia which resulted in stakeholder participation and government's policy support.
- Involvement of policy makers is crucial for quick dissemination of proven technologies (eg, Ethiopia).

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