Breeding Pipeline: Seed Systems 2006-2016

Souleman Ballo, showing sorghum grain stored by the Jigi Seme cooperative in Mpessoba
Photo credit: Yalaly Traore

West Africa
Community of Practice

Mali

Project Partners

ICRISAT — IER

AOPP — ULPC

- National Ag Research Center
- Farmer Organization
- International Ag Research Center

Reflective practice, using the adaptive cycle

Connect to other development institutions & initiatives

Farmer managed seed production and dissemination

"You have to know well the one who offers you new seeds", says Souleman Ballo, a respected elder from Mpessoba/Koutiala, Mali. As the president of the local farmer cooperative Jigi Seme, Souleman knows how important good seeds are for the farmer's wealth. The cooperative, made up of 65 families, produces sorghum, maize, and legumes. In 2015 they secured a contract from the World Food Program's "Purchase for Progress (P4P)" scheme to sell sorghum grain. There are now 30+ cooperatives engaged in seed production and dissemination in Mali.

Build trust based on shared interests & honest interactions

More resilient and productive cropping systems

(2015) Farmers using quality seed produced through project interventions achieve yields between 1,000-1,500 kg/ ha compared to the national average of 800 kg/ ha

Effective communication to a variety of audiences

Share information on varieties and seed quality

"Technical variety descriptors" that were on the mini-seed packs were replaced by "promotional fiches" which contain the **photos of the variety and seed producer and key information. including culinary information**, as suggested by cooperatives. This information is collected by farmers in the field using tablets, and can transferred to sellers' phones. Seed sellers have mentioned the effectiveness of these new tools in seed selling in 2015, so ULPC has used this packaging in 2016.

Farmers rely on trust relationships and networks when purchasing or obtaining seed

(2015) Farmer seed sellers (n=37) indicated that speaking of one's **own experience**, and knowledge was most effective at **convincing** others to buy seed. The seed buyers also reported that information from someone they personally knew about a variety was the most important factor in purchasing it.

Leverage and create networks to circulate seed

(2012) 980 **mini-packets** -- small amounts of seed with varietal information on the label-- were sold, 30% via **mobile boutiques.** The percentage of **female buyers** was much higher at the motorized shops (approx. 48%) than at the regular shops (approx. 32%). **Repurchasing** rates are steady though low.

Gender

More appropriate variety testing and release systems that test varieties under targeted conditions

2012: 3,687 kg of seed of **29 Sorghum varieties** and male parents for hybrids & 5,237 kg seeds of 10 Sorghum hybrids were produced. The best performing hybrids Fadda and Sewa showed **average yield superiorities (37%)** over Tieble (check). There was not a single case in farmer trials where either Fadda or Sewa had grain yields significantly lower than Tieble.

2014: 32 varieties being tested by **24 farmers in two regions,** and the advanced testing by village level groups (2 step procedure)

2015: Farmers' associations produced over **30 tons of sorghum OPVs seed, 10 tons of hybrid seed.**

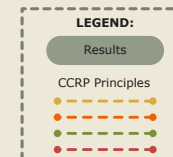**Participatory research**

Value heterogeneity

Share information on varieties and seed quality

(2012) Spots on local **radio** stations involving interviewing farmers who had successfully grown the hybrids.

(2012-2014) **Demonstrations plots**

(2015-2017) seed cooperatives organize **visits to exemplary fields** of seed buyers

Effective communication to a variety of audiences

The Need

While sorghum has many advantages over high-input needing crops like cotton and maize in the Sudan savanna, it does not have the breeding, seed system and credit support that those crops do, thus only 13-30% of arable land is planted in sorghum, despite being essential for food security. (Smale et al 2018).

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