

Farmer-led Research Networks (FaReNe) Phase II in Burkina Faso and Mali

Narrative Report: Year 1 (2019–20)

1. Progress towards project goal and objectives

Progress up to 31 May 2020 towards the project goal and objectives can be evaluated in different research activities:

- Joint experiments conducted in Fambougou and Niatia, Municipality of Cinzana, Ségou Region, Mali as well as in Gomposom in Burkina Faso allowed farmers to select their preferred production options based on intercropping. A total of five joint experiments were carried out: three in Burkina Faso and two in Mali. In Burkina Faso, they were based on intercropping, improved varieties of sorghum and cowpea and application of organic fertilizer. In Mali, joint experiments focused on two types of intercropping based on sorghum and sesame.
- In addition to joint experimentation, an innovation observation study was carried out in Burkina Faso at the Manni site. This study focused on activities related to soil protection and restoration (DRS in French) and soil and water conservation (SWC) by constructing anti-erosion structures such as stone bunds, filtering dikes, assisted natural regeneration (ANR), half-moons, bunds, hedges, mulching and *zai*. Farmers often combine several of these technologies to benefit from their synergistic effects.
- In Manni and Coalla, a typology study was conducted to categorize farmers according to their socio-economic status based on local criteria of prosperity. The aim is to achieve household food security and improved agricultural income.
- Several farmers' initiatives based on sheep fattening for income generation and manure production to improve soil fertility were funded in Fambougou and Niatia in Mali.
- In Mali, ten members from the Fambougou network and ten members from the Niatia network were trained in leadership on the following concepts: social identity, direction alignment and commitment on the one hand and the management of local innovation funds on the other hand.

2. Main research results

- In Mali, the yield advantages in terms of Land Equivalent Ratio (LER) ranged from 1.0 to 1.45 indicating that more than 45% more land in sole cropping is required to produce the results obtained in intercropping in Fambougou Village.
- The alternated rows (3 of cowpea for 1 of sorghum) recorded the highest yield of cowpea pods and grain, equivalent to 114 and 115% of its production as sole crop. This result is very important in terms of land economy in the context of land scarcity.
- In Niatia, in the *CSM 63 E* sorghum variety, two sorghum lines and one groundnut or cowpea line were the best performing treatments for both grain and straw production. The yields obtained with these two options represented 88% and 83%, respectively, of the yield of the sole crop.
- The monetary advantages of the sorghum-based intercropping options evaluated in Niatia Village varied between 238,000 F CFA and 347,000 F CFA compared to 194,000 F CFA and 230,000 F CFA for monoculture.
- In Burkina Faso, the results obtained within the framework of the joint experimentation in Gomposom, Northern Region, were:
 - ✓ At the qualitative level, the tests have enabled collaborating farmers to better understand the technologies for developing and recovering packed and / or tamped fallow soils through deep plowing with suitable equipment; to master the dosage of fertilizers necessary for very poor

soils; to know the periods of appearance of crop predators and the mode of treatment to be applied with biopesticides and dual-impact biofertilizers such as EM (effective microorganisms) in solid and liquid substrates on rainfed crops; and to know the favourable period for each variety or type of crop according to the isohyets.

- ✓ In the test, the yield obtained with the improved variety of sorghum (Kapèlega) was superior to the yield of the local variety (Boukayandé). The improved cowpea variety (KVX-745-11P) had the best forage yield, while the local cowpea variety (Bengraaga) gave the best grain yield.
 - ✓ In the observation study at Manni, the results obtained show that the technologies and practices used by the great majority by farmers are *zāī* and half-moon. Then comes the fertilizer application using organic manure and compost, kraal manure and mulching.
 - ✓ The results of the typology study indicated that farmers practise these technologies to restore soil fertility and improve crop productivity. These areas constitute a factor of discrimination between the categories of producers.
- In Mali, twenty proposals from local committees for funding through the local innovation support fund (LISF) were submitted and evaluated by the national committee.
 - A total of twenty sheep were paid for twenty producers (10 per village) through the LISF. The final results (benefit and amount of manure produced) will be reported in the Year 2 report.
 - In Mali, the training in LISFs allowed the improved formulation of fund requests by the trained members. The leadership training received by the members facilitated the fund request process.

3. Changes due to new knowledge

- As the results of improved knowledge in cereal and legume intercropping, local radio broadcasts by network members allowed a wide diffusion of the best intercropping options within the community.
- In Burkina Faso, two women processors of non-timber forest products (NTFPs) – members of the farmer innovators network – were selected by the environment services to participate in the regional fair in Bogandé. The women were able to display their products and make business contacts with the other participants.
- Two study trips (one per country) focused on agro-ecological intensification. In Burkina Faso, the study trip involved the network of farmer innovators of the project and 24 farmers from the “Association Nourish without Destroying”. In Mali, it involved farmers from Niatia and 22 farmers working with World Vision.

4. Future plans with unspent funds from Year 1

- Development of a methodology for collecting observational study data adapted to the context of innovative farmers in the municipality of Manni (diversity and specificity of farmer innovators in collaboration with the Research Methods Support team in Burkina Faso)
- Funding of farmers’ initiatives selected in Burkina Faso through the LISF
- In Mali, evaluation of nutritional improvement in children and women based on cereal and legume combinations
- Conducting joint experiments in the intervention areas of local partners involved in the project, particularly those of Gomponsom in the North Region of Burkina Faso
- Continuing to build the capacities of farmer innovator networks through training and experience exchange visits in Burkina Faso
- Monitoring and evaluation of the planned activities in the two countries.