

Evaluating fonio field trial<mark>.</mark> Photo credit: Bettina Haussman

West Africa Community of Practice



Project Partners

Association des producteurs de fonio de Producteurs de fonio des producteurs de fonio de N'Garalo

Local des Producteurs du Cercle de Tomir Association des producteurs de fonio de N'Garalo

National Ag Research Center University outside of Region START HERE

Farmer Organization

Coopérative Benkaditon

Breeding Pipeline: Fonio 2011-2017

Farmer access to high quality, diverse seed varieties

2017: **Seed requirements increasing:** farmers from 3 districts requested over **3000 kg of 11 different ecotypes** of seed that would would cover 120 ha. Farmers chose based on gender, objectives, and agroecology based on previous trials.

More appropriate variety testing under targeted conditions

2017:29 mother trials and **386 baby trials** were undertaken on station and in **12 villages**. Objectives were to evaluate **fonio varieties** and **fertilization options**.

Promoting equity through

Gender

investments that favor the disadvantaged and vulnerable

Provision of fonio decortication equipment has strengthened the fonio processing cooperatives in the Mandela and Torah villages: Since 2013, the quantity of shelled paddy fonio passed from 5,850 kg to 13,600 kg; which is a growth rate of about 231%. Husking lightens women's work and adds value.

Make the research process
empowering: build social, technical, end methodological capital through the farmer-researcher co-creation process

Capacity building seed production; Farmer managed seed production

2015: The associations who are members of the Mandela women's **cooperative** were **trained in seed production** techniques and then produced **173 kg** of 4 different varieties of fonio seed.

2017: training in 3 additional districts,68 fonio seed production plots were installed in **14 villages** on 37 ha with **13 varieties.**



 Look for intersections and interactions among multiple, interrelated pathways of change

Stakeholder participation; Varietal testings; Multi-functional varieties

2014: A **multi-location analysis** revealed **highly significant differences** between ecotypes in terms of yield and earliness.

Farmers selected 6 fonio ecotypes of interest in demonstration plots:

- 4 of them have **yields 21-40% higher** than the local check variety.
- 2 are **early maturing.** Flowering periods are between 55 and 90 days, which allows each **farmer to choose** the variety which is compatible with her or his **cultural calendar.**
- The producers also identified genotypes with big grains. The thickness of grains is a favorable characteristic on the market.

Characterizing agrobiodiversity; modern breeding tools

50 Malian Fonio accessions were **genotyped by sequencing.** A Principal Component Analysis (PCA) revealed that the analysed samples mainly **clustered into 3 groups** that largely corresponds to geographic origin:

Value heterogeneity: build on and enhance diversity

Context

Fonio Digitaria exilis Stapf,) is one of the **oldest cereals** in Africa. It grows well on degraded land and is usually grown at the **end of the crop rotation cycle**, providing farmers, particularly **women**, with both **self-provisioning** and income generation opportunities. Only a few fonio varieties are usually cultivated in Mali. Yields vary from 400-600 kg/ha. Farmers lack access to information about **new seed varieties**, agronomical advice, and cost-efficient processing options. There has been renewed interest in consuming fonio in the urban centers, as it is a suitable dietary alternative for people suffering from diabetes or obesity.



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