

Sorghum diversity for sustainable cropping systems in marginal environments in the deep south of Madagascar

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For many specific marginal environments or cropping systems variety needs are not considered by national or international public programs or private seed companies because of resources limitations for the former or insufficient market for the latter. Nevertheless, farmers and other stakeholders are in demand of a new diversity in order to adapt to climate change and, or to move towards more sustainable cropping systems. The Androy region, in the south of Madagascar experiences extremely seasonal irregularity and recurrent famines. Maize is the dominant cereal but crop failures under the current conditions are recurrent. According to farmers traditional sorghum varieties were too late maturing to adapt to the changing climate. In this context, the CTAS and GRET (a Malagasy and French NGO) introduced new sorghum varieties from India and Sahelian countries, for their in-situ evaluation in locally designed agroecological cropping systems. The association of these two types of innovations provided impressive results for farmers and a large-scale adoption of an early sorghum variety (IRAT 204 "RASTA"). In the framework of a new rural development project supported by the EU, Cirad, together with the national Agricultural Research Institute FOFIFA is supporting these NGOs with the aim to broaden sorghum varietal diversity.

The main goal is to evaluate with farmers diverse varieties and segregating progenies bringing improved agronomic and/or quality traits. On-farm participatory evaluations allowed to identify new selection criteria and preferences, such as traits to reduce bird damage, tillering capacity, sweet stem. Preferred new ideotypes, are ranging from early guinea to bold-grain durra types, adopted by farmers with some documented seed exchange with neighbors.

The Sorghum international community needs to share and demonstrate more experiences of cases where targeted breeding has been limited but where access to appropriate diversity could greatly improve livelihoods for farmers managing specific cropping systems and environmental conditions.

References:

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