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Expertise of the scientific community in the Languedoc-Roussillon region (France)

Family farming

Fonio—a keystone for food security in West Africa

Over 7 000 plants are cropped worldwide but from a quantitative standpoint food security is based on just a few major species. Wheat, maize and rice account for over 50% of the world's food energy intake of plant origin. Underutilized species still represent an unexplored reservoir of diversity and potential despite incentives to foster



sustainable agriculture and consumption via crop diversification. Could these species be tomorrow's crops?

Fonio is promising in this respect. This small-grain cereal is cultivated and consumed in sub-Sahelian regions of West Africa, from Senegal to Lake Chad. Two fonio species are generally cropped, i.e. mainly white fonio (*Digitaria exilis* Stapf), as well as black fonio (*D. iburua* Stapf), which is primarily grown in northern Togo. Fonio is usually only grown on family farms. Farmers tend to differentiate varieties according to the length of their growth cycle. Seeds of short-cycle varieties ripen before the end of the rainy season and therefore serve to fill the hunger gap. Fonio is grown on small plots, often in womens' fields, and harvested every day for daily consumption. Seeds of varieties with a longer cycle, which tend to have higher yields, can generally be consumed and marketed. Fonio cropping thus depends on families' specific needs and uses, and thus on the social organization.

A workshop attended by different stakeholders was held to draw up a concerted list of needs regarding the assessment of available diversity (in a broad sense), improving cultivation procedures, marketing channels and postharvest procedures, including the

development of specific equipment. These aspects are being dealt with through different projects involving multidisciplinary approaches. UMR AGAP, DIADE and QUALISUD and African partners are focusing research on diversity with respect to agrosystems, species, know-how and associated techniques. Comprehensive approaches that do not dissociate the crop from its physical and social environment are applied in these projects. Methods and tools inspired from those used for major crop species are developed, along with new technological and methodological tools, particularly on the basis of preservation, marketing and processing strategies.

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▲ Bundling fonio after sickle harvesting and stacking.

▼ Early fonio harvested in Upper Guinea and stacked in the field before threshing and consumption.

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