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WOMEN FARMERS ADAPT LOCAL VOANDZU VARIETY FOR CLIMATE RESILIENCE AND ECONOMIC EMPOWERMENT IN DANKASSARI, NIGER

"On 2 hectares, I produce 25 bags of 25 kg of Badanda in a normal year. Even in a year of poor rainfall I can produce 15 bags of 25 kg. Yields, on the other hand, are spectacular in years of very good rainfall compared to improved varieties." **Fassouma, largest producer of voandzou in Dankassari.**

The success story

Voandzou is an annual herbaceous plant species that is native to Africa and found in a number of countries, including Nigeria, Cameroon and the Central African Republic. The plant is also found in Madagascar, under the vernacular name of "voanjo", hence the name voandzou in French[1] . This drought tolerant leguminous plant is an important source of protein and carbohydrates[2]. In Niger, the development of voandzou represents one of the best alternatives for achieving food security for the population in the face of insufficient production of food crops such as millet, sorghum and wheat, among others.

In the rural commune of Dankassari, located in the Dosso region of Niger, voandzou is an important crop for women. Conditions here in the Sahelian zone are harsh, as climate change and desertification present numerous challenges to both agricultural production and social harmony. Here, women are custodians of the local variety of voandzou called *Badanda*. The Crop4Seed project, financed by SwissAid, is supporting farmers who are making efforts to utilise and conserve local seeds through the training of farmers' organisations in the Dosso region. This support is given within a framework of agro-ecology.

A case study to understand why farmers choose the *Badanda* variety of voandzou above all others, including improved[3] varieties, was conducted in this area. The cultivation of Voandzou *Badanda* is seen as a factor in women's empowerment in the Dankassari area.

1 Claude, M. M. L. (2017). Fertilizing effect of phonolite powder on the growth and development of Vigna subterranea (L.). Verdc. grown in pots, in the city of Ngaoundéré-Cameroon (Doctoral dissertation, University Of Ngaoundere).

2 Séraphin, D. K., Youssouf, K. K., Doudjo, S., Emmanuel, A. N., Benjamin, Y. K., & Dago, G. (2015). Biochemical and Functional Characterization of Seeds from Seven Cultivars of Voandzou [Vigna Subterranea (L.) Verdc. Fabaceae] Grown in Côte D'ivoire. European Scientific Journal, 11(27).

3 Improved varieties are bred for industrial agricultural systems. They have reduced genetic base compared with the high variability present in the genetic materials farmed traditionally.

The results of this case study showed evidence that the *Badanda* variety plays an important role in food and nutrition security through the improvement of household incomes as well as human and animal nutrition. Women farmers are aware of the need to conserve this seed and are developing strategies to ensure its conservation. The women's commitment to the cultivation and conservation of this local variety shows their satisfaction with SwissAid through the farmers' field school installed in the women's plots.

The many virtues of local voandzou according to farmers' experience

The local variety of voandzou called *Badanda* is a variety from Dendi that has been domesticated in Dankassari. It has a 3-month production cycle and is sown at the first useful rain to optimise production. The seeds and pods of *Badanda* are very large and the leaves are generally dark green. According to Fassouma, who is considered the largest producer of voandzou in the rural commune of Dankassari, production is high. On 2 hectares, she produces 25 bags of 25 kg of *Badanda* in a normal year. Even in a year of poor rainfall, she reports that she can produce 15 bags of 25 kg. Yields, on the other hand, are spectacular in years of very good rainfall compared to improved varieties.

Figure 1: Picture of Badanda seeds

Badanda is deeply rooted in the dietary habits of the people in the Dankassari area. The seeds are used to prepare an array of, culinary favourites, namely the vaondzou leg, Loubbatou and Dawala. Although all these specialities are also applied to all the other varieties present in the Dankassari zone, the women claim that the products of the *Badanda* variety are better than the improved voandzou varieties. Producers say that voandzou generally causes belly swelling. But the success in the eating habits of the *Badanda* population lies in the fact that putting a little sugar in the preparation will prevent the belly from swelling.

Badanda brings financial empowerment to women

The *Badanda* variety has a market appeal in the commune of Dankassari. The price of a 25 kg bag costs between 15,000 and 36,000 FCFA depending on the harvest period (September-October) and the lean season (May-July). For improved varieties, prices are lower and range between 12,000 and 34,000 FCFA depending on the period.

Apart from the seeds, the leaves of the *Badanda* variety have been marketed by women members of the Tsintsiya NGO group since 2015. The leaves and hulls are well eaten by animals and the marketing circuit extends to the markets in Niamey, the capital of Niger.

The production of the *Badanda* variety is a lever for the empowerment of women in the rural commune of Dankassari. With the income generated, the women are able to provide for their children's needs by insisting on health care, the purchase of school supplies and often even the payment of their children's public school fees. They buy animals, provide wedding trousseau expenses for their daughters and often even finance the marriages of their sons. When necessary, they claim to help their husbands with some of their daily expenses.

Farmers adapt *Badanda* to local conditions and changing conditions

The seed of the *Badanda* variety is very resistant to the effects of climate change compared to the improved varieties distributed by the projects. Its adaptation is mainly due to the fact that it is not very demanding agronomically. Women farmers say that it is tolerant to water stress and can grow even in poor soils. The training courses on agro-ecological practices carried out by SwissAid have played an important role in circumventing certain unfavourable climatic conditions and the poverty of the soil, as the women farmers testify. Also, if the seed of the *Badanda* variety has been able to adapt over the years, it is thanks to the effort of seed conservation by the women who are considered to be the guardians in terms of *Badanda* seed conservation. They practice massal selection, which entails selecting seeds from the plants that show good aptitude in the field at harvest time.

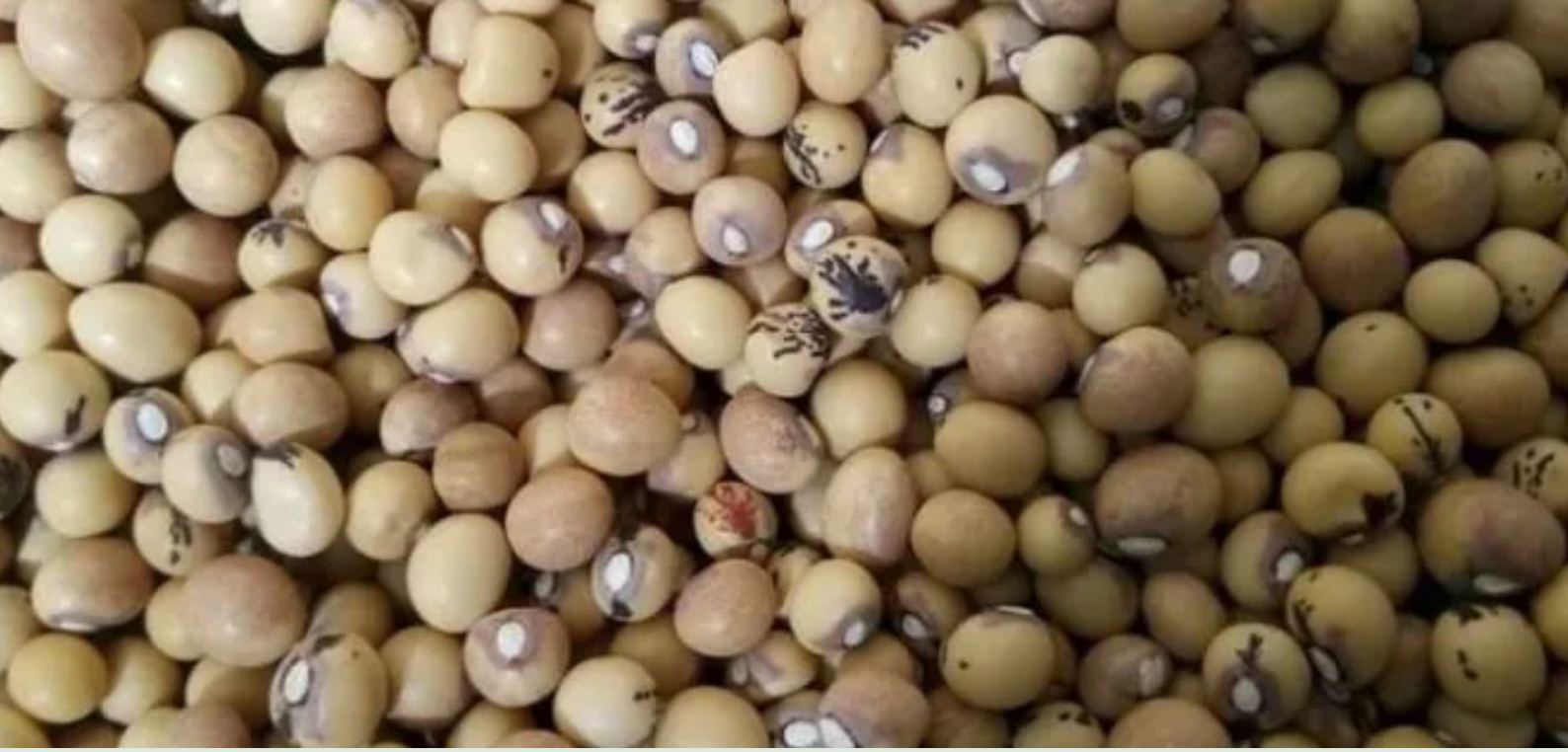
Farmers report that *Badanda* seed is more resistant than the seeds of other voandzou varieties in the Dankassari area. Although pest attacks are felt on all voandzou varieties, women farmers say that attacks are less severe on *Badanda* seed.

Figure 2 : a = Photo de la productrice Fassouma dans sa parcelle de Badanda en pleine opération d'entretien ; b = Photo de la productrice Fassouma montrant les fruits de Badanda

Key lesson

The cultivation of Voandzou *Badanda* is seen as a factor in women's empowerment in the Dankassari area. The results of this case study showed evidence that the *Badanda* variety plays an important role in food and nutrition security through the improvement of household incomes as well as human and animal nutrition. Women farmers are aware of the need to conserve this seed and are developing strategies to ensure its conservation.

The women's commitment to the cultivation and conservation of this local variety shows their satisfaction with SwissAid through the farmers' field school installed in the women's plots. It is up to the State and its partners to encourage such champions and guardians of local seeds by developing a value chain around these products and to ensure the sustainability of this seed. Research, for its part, must become more involved in documenting this evidence through extensive experimentation and forecasting to facilitate the inclusion of local seeds in national agricultural policies.



CROPS4HD

This document is an output of the CROPS4HD project (www.crops4hd.org): a consortium of SWISSAID, FiBL, and AFSA supported by the SDC and LED. CROPS4HD has three major components: production, market and policy advocacy.

AFSA, which is responsible for advocacy, is a broad alliance of civil society actors involved in the fight for food sovereignty and agroecology in Africa. Its members represent small-scale farmers, pastoralists, hunters/gatherers, indigenous peoples, faith-based organisations and environmentalists from across Africa. It is a network of networks, currently with 37 members operating in 50 African countries.

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