Tropentag, September 17-19, 2018, Ghent

"Global food security and food safety:
The role of universities"

Empowering Women Farmers and Providing Nutritional Benefits to Households through Degraded Landscapes Regeneration in Niger

Dougbedji Fatondji[1], Alphonse Singbo[2], Ramadjita Tabo[1], Anthony Whitbread[3]

[1] *International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), West and Central Africa Research Program, Niger*

[2] *Laval University, Canada*

[3] *International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Innovation Systems for the Drylands, India*

Abstract

Degraded lands in a landscape are used mainly for grazing and firewood harvesting. They have low agricultural production potential. Such areas have become degraded through overuse and removal of surface cover and associated erosion processes. The soil surface is crusted following alternate exposure to rain and sun, which causes high runoff and soil erosion, minimises water infiltration and hinders seedling emergence. These soils have high clay content, which offers the advantage of high cation exchange capacity (CEC) and water holding capacity. They have the potential to re-establish agricultural production if the compacted layer is broken and some organic fertiliser added. Farmers in the Sahel countries have developed water harvesting-based technologies (zai pits or half-moons) to bring back into production the degraded lands.

The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) has developed a gender sensitive system approach named "Bio-reclamation of Degraded Land" or BDL, that combines indigenous or improved water harvesting technologies (planting pits, half-moon and trenches), the application of composted organic residues and plantation of high value fruit trees (*Moringa oleifera*, *Ziziphus mauritiana*) and annual indigenous vegetables like okra (*Abelmoschus esculentus*), roselle (*Hibiscus sabdarifa*) and *Senna obtusifolia*, that are resilient to drought.

Knowing that leafy vegetables harvested during the season are mainly used for household consumption, we have monitored potential individual total gain from the allocated 200 m^2 plot in a BDL site during the 2017 wet season in the districts of Mayahi (Maradi region) and Kantche (Zinder region) in Niger . The data showed contrasting results depending on the level of effort the women participants made to care for the sites. In Mayahi, a maximum gain of 383 $US could be obtained if they were to market all the production. In Kantche the maximum obtained was 340 $US. The result also shows a large variability in the production effort of participants.

BDL implementation can be seen as a solution to sustainably improve the livelihood and health of poor women farmers through the supply of highly nutritious vegetables and fruits, and improve the resilience of community facing the adverse effect of climate change

Keywords: Bio-reclamation of degraded land, indigenous vegetables, women empowerment

Contact Address: Dougbedji Fatondji, International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), West and Central Africa Research Program, P.O. Box 12404, Niamey, Niger, e-mail: d.fatondji@cgiar.org