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"Resilience of agricultural systems against crises"

Developing New Fair Trade Markets Based on Local Wild Perennials: *Boscia senegalensis* (hanza) at the Base of a New Emerging Food Chain in Niger Republic

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Abstract

Niger Republic is battling food insecurity and malnutrition for decades. The battle at farming system level however is still mainly done from traditional agricultural perspectives like improving crops, applying (chemical) fertiliser, mechanising and irrigation. Unfortunately, dependence of the annual crops on yearly rainfall is high with harvest failures occurring regularly.

A resilient farming system in Niger takes into account its extreme dry and variable climate. It should be a low input system with crops well adapted to the climate and being able to produce in years with poor rainfall. Local wild perennials are well adapted to the dry climate and are able to survive the long dry season.

Hanza (Boscia senegalensis) is a little-valued perennial in Niger and its seed generally considered a famine food. Yet it is highly productive, nutritious and could be a key element in making Niger self-sufficient in staple foods. Currently the seeds are consumed on a large scale in many of Niger's rural areas, but they have served as staple food for numerous people in the rural area during prolonged periods.

The hanza bush is able to thrive in extensive parts of Niger. Being drought resistant, it yields well even in years of insufficient rainfall ($<100\,\mathrm{mm}$), when no other crop is successful. Untreated seeds are rarely attacked by insects or diseases and neither cattle is interested in them due to their bitter taste. To make hanza seeds edible they need to be soaked in water. Debittering efficiency is researched to find optimal debittering methods whilst keeping water consumption to a minimum. Processing hanza seeds on a larger scale will open the possibility to sell it off on the urban markets of Niger providing rural population with a new source of income. An efficient logistical chain has to give the finished product competitive prices, whilst offering a worthwhile compensation to the rural population. Access to an outlet for the products will encourage the rural population to protect these plants. The economical value of the hanza bush improves with a growing demand for products made from it.

Hanza fits in a natural farming system with a biodiversity of local wild perennials producing food during different harvest seasons even in years with poor rainfall and without the need of irrigation or fertiliser.

Keywords: Africa, food security, new markets, poverty reduction, rural development