The African baobab tree

The potential of indigenous fruit trees remains largely untapped as little attention has been given to their nutritional or economic value. Yet, many underutilised wild fruits can contribute to food security, health and to livelihood diversification. One such example is the iconic African baobab (*Adansonia digitata* L.), a wild fruit tree of the savannahs, scrublands and semi-deserts of sub-Saharan Africa.

Baobab products have great potential to support local communities in vulnerable dryland ecosystems and in the face of climate change. The baobab is a majestic tree that produces highly nutritious fruits. The most important food from baobab is the fruit pulp, which is rich in vitamins and minerals. It can provide far higher amounts of vitamin C, calcium and iron than more common tropical fruits such as mango and orange (Kehlenbeck et al., 2013b).

However, there is a large variability in levels of vitamin C in fruits of individual baobab trees – from 126 – 509mg per 100g edible portion (Stadlmayr et al., 2013). Still, even the lowest figure identified is far higher than that for many other fruits.

In addition to the fruit pulp, baobab also produces leaves that are eaten as vegetables in western Africa. The tree also produces edible seeds from which oil is extracted for cooking and cosmetics.

Baobab products offer a great opportunity for income generation, particularly for women, the main group involved in collection, processing and marketing of these products. In Kenya, the most important marketed baobab product is *mabuyu*, a sweet made from the pulp-covered seeds. Producing and selling *mabuyu* is a profitable business whose main actors are women.

In addition to domestic markets, baobab products as a type of new, healthy “super food”
are in high demand in Europe and the USA after baobab was officially accepted as a novel food by the European Union (EU) in 2008. Due to its high nutrition potential and increasing demand, research is going on in East Africa to identify populations of baobab, its distribution across landscapes and variation in genetic characteristics as well as nutritional content.

First results from studies by the World Agroforestry Centre (ICRAF) in Kenya showed a high variation of fruit shapes and sizes between the surveyed individual trees, with fruit lengths ranging from 9 to 30cm and fruit weights ranging from 60 to 630g.

Fruits collected from the coast - Malindi, Kilifi and Diani - were significantly larger than those from the inland collection locations of Voi, Mtito Andei and Kibwezi. Nutritional characterisation of baobab fruit pulp is going on and grafting experiments of baobab has just started at ICRAF, showing positive first results.

Information on the mentioned characteristics may facilitate the selection of superior mother trees for baobab domestication programmes. This would provide farmers with improved, grafted baobab planting material for increasing food and nutrition security and income generation.

The way forward

While baobab is only one example, there are hundreds of other wild fruit trees in Africa with similar potential for food and nutrition security. However, the number of indigenous fruit trees is said to be decreasing in many parts of sub-Saharan Africa due to changes in environmental factors and land use, intensified agriculture, unsustainable harvest and increasing urbanisation, among others.

This may result in shifts of species distribution, altered pest and disease occurrences, lack of rejuvenation of fruit tree populations and finally, loss of valuable tree species. To enhance the place of indigenous fruits in the improvement of nutrition and livelihoods in the region, there is need to focus on the following:

- Occurrence of priority indigenous fruit tree species should be established to identify the most valuable populations for conservation and future use as seed sources.
- More rigorous nutrient content analysis should be undertaken for indigenous fruits, and databases of information developed and disseminated.
- Nutrient-sensitive fruit processing techniques need to be developed and disseminated to maintain valuable nutrients and to extend the shelf-life and availability of nutrient-rich fruit products for consumption during off-seasons.
- Markets need to be developed for new fruit products and processors linked to domestic and international markets to further improve livelihoods by farmer engagement in value chains and for meeting consumer needs.
- Domestication and increased cultivation of the most important indigenous fruit tree species should be promoted. This will contribute to diversification of farming systems and may help to both conserve natural tree stands and to provide rural communities with better livelihood options.
- Farmers and consumers should be sensitised and made aware of the important nutritional contribution indigenous fruits can make to sustainable and healthier diets.

(References for this article can be obtained from the Miti Editor.)

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