

Utilization of woody plants during times of food scarcity from selected drylands of Iringa district, Tanzania

Tairo, Vendeline Emmanuel

Date: 2011

Abstract:

Communities inhabiting marginal drylands are the most vulnerable to the impacts of drought and climate change. In order to survive they utilize various woody plants as food sources in times of food scarcity. This study was undertaken to assess the utilization of woody plants in times of food scarcity from the drylands of Iringa District, Tanzania. Information on plant use was collected by using semistructured and informal interviews in six randomly selected villages. Inventory of woody plant resources was done in six woodland sites and a total of 120 rectangular plots were assessed. The families were identified, Fabaceae, Rubiaceae, Anacardiaceae and Combretaceae were the most diverse families. Among the studied woody plants, 66 species were used as food and were distributed in 28 families. The preference ranking process showed that *Adansonia digitata* L. and *Sterculia Africana* (Lour.) Fiori were most preferred by the local communities as sources of oils. *Opilia amentacea* Roxb. and *Maerua angolensis* DC were preferred woody plants for vegetables whereas *Vangueria infausta* Burch. and *Vitex mombaseae* Vatke were preferred as a source of fruits. Ecological study of the most preferred woody species revealed that *Opilia amentacea* had the highest average number of individuals per ha accounting for 29% of all individuals followed by *Vangueria infausta* Burch. with 26%. *Opilia amentacea* Roxb. had highest average number of seedlings per ha amounting to 28,733 followed by *Adansonia digitata* L. with 27,999 seedlings per ha. Samplings were also enumerated and the results showed *Opilia amentacea* Roxb. leading with 4,788 saplings per ha compared with other species. The preferred species had rare to low range of occurrence, with frequency from 0-40 %. The studied most preferred plants were within the DBH size class of 10-20 cm and this revealed that the diameter size class distribution of species and individuals decreased with increase in diameter size classes. These results suggest that the population of large diameter size classes is decreasing and thus conservation of low diameter size classes should be given priority. Nutritional analysis showed that the edible parts of *Vangueria infausta* Burch. and *Adansonia digitata* L. contain high percentage of carbohydrate of 77.07% and 70.74% respectively. *Maerua angolensis* DC which is commonly used as vegetables had highest crude protein amounting to 33.21% followed by *Sterculia Africana* (Lour.) Fiori with 25% and 27.55% of crude protein and crude fiber respectively, which make it a good source of energy for human nutrition. The fruit and vegetable plants had high values of Potassium ranging from 747.26 ± 7.2 to 3590.51 ± 0.5 . Additionally, wild food plants contain anti-nutritive factors including tannins and phenols but they were below the toxic levels acceptable for daily intake. Furthermore, results revealed that *Adansonia digitata* L., *Bauhinia kalandia* Harms, *Tamarindus indica* L. and *Vitex doniana* Sweet were the edible woody plants that have high prioritization scores. Therefore, these species require an urgent need for conservation because they are currently overutilized by the local communities. Based on nutritive value, preferences and ecological status of woody plants it can be concluded that edible woody plants make a major contribution to dietary intake of rural people in the drylands of Iringa District during times of food shortage. Consequently, food plants

that are most preferred need to be conserved either in their natural habitats or farmlands. Therefore both in situ and ex situ conservation practices are of vital importance in this scenario.