Tropentag, September 18-21, 2016, Vienna, Austria

"Solidarity in a competing world — fair use of resources"

How Quantitative Ethnobotany Involves Biodiversity Conservation: A Tested Approach on Wari Maro Forest Reserve (Benin)

Carlos Ahoyo[1], Houehanou Thierry[1], Alain YaoÏtcha[1], Marcel Houinato[2]

[1] *University of Abomey-Calavi, Laboratory of Applied Ecology, Benin*
[2] *University of Abomey-Calavi, Dept. of Sciences and Technics of Animal Production, Benin*

Abstract

How quantitative ethnobotany researches can contribute to guide biodiversity conservation is questionable in developing countries these last decades. This study proposed an approach that can aid to identify priorities species for local conservation by combining the popularity, the versality and the ecological availability of the useful forest tree resources. Such approach has been applied on Wari Maro forest Reserve in Soudanian zone of Benin. Indeed, woody species of such forest are being hardly destroyed and needing development of biodiversity conservation strategies. Thus, the present study aims to: (1) establish the use pattern popularity of woody species of the forest, (2) evaluating the versality of most useful species (3) evaluate ecological availability of useful tree species and (4) establish the local priority conservation of useful tree species. Ethnobotanical surveys were conducted using individual interview with 149 surrounding people of the forest composed mainly of Nagots, Baribas and Fulani.

Forty two (42) floristic surveys were conducted within the forest to assess the local ecological availability of used woody species. A Correspondence Canonical Analyze (CCA) was performed using the R software to establish the use patterns popularity of species in relation with ethnic groups. Afterwards a Principal Component Analysis (PCA) has been performed to characterise local conservation priority species using versatility and ecological availability indexes. In total 79 woody species have mainly been reported for six main types of use: timber (technology and construction) (48 %), traditional medicine (92 %), veterinary (16 %), food (30 %), forage (43 %), and energy (39 %).

The results of CCA showed a difference in the species use according to ethnicity. Among the most used species, *Adansonia digitata*, *Cussonia arborea*, *Kigelia africana*, *Milicia excelsa* and *Tamarindus indica* were not locally available. Also, *Khaya senegalensis*, *Afzelia africana*, *Daniellia oliveri*, *Annona senegalensis*, *Borassus aethiopum*, *Vitex doniana*, *Ceiba pentandra* and *Ficus* spp were much used with low local availability. Thus, by this ethnobotany approach the species such as *Adansonia digitata*, *Cussonia arborea*, *Kigelia africana*, *Milicia excelsa*, *Tamarindus indica*, *Annona senegalensis*, *Borassus aethiopum*, *Vitex doniana*, *Ceiba pentandra*, *Khaya senegalensis*, *Afzelia africana*, *Daniellia oliveri* and *Ficus* spp would be suggested to local priority conservation actions.

Keywords: Biodiversity conservation, ecological avaibility, popularity, quantitative ethnobotany, versatility

Contact Address: Houehanou Thierry, University of Abomey-Calavi, Laboratory of Applied Ecology, Cotonou, Benin, e-mail: houehanout@yahoo.fr