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Characterisation of managed ecosystems in buffers zones of the Dja biosphere reserve: Implication for tree domestication and biodiversity conservation

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Abstract

Improving and maintaining landscapes that provide ecosystem services has been identified as a critical goal for sustainable natural resource management and conservation. This study was conducted with the aim of identifying priority plants species whose domestication would contribute most to the sustainable management of wood resources and to the improvement of the well-being of local communities'. Plots have been realised for the inventory of the forests and the agroforests and also for the description of trees, shrubs and regeneration. Socio-economic and ethnobotanical surveys provided information on agroforestry systems established, the level of integration of agroforestry and the different plants used. Results indicate that 100 % of agroforestry households use a complex agroforestry system based on cocoa and banana. 70 % of respondents believe that the practice of agroforestry has a positive impact on production yields. Populations harvest the majority of non-timber forest products (NTFPs) for food and medicinal purposes in forests with 53 % of harvests made exclusively in forest, 41 % in both forests and agroforests, and only 6 % in agroforests. 82 % of respondents believe that domestication of NTFPs and their integration into agroforestry plots would be essential for their wellbeing. Plants are mainly used for food (46 %) and medicinal (30 %) purposes. *Baillonella toxisperma* is the most used plant in the village. The most common species in the forest is *Petersianthus macrocarpus*, followed by *Heisteria pavifolia, Plagiostyles africana*. Forests have a diametrical structure in the form of a decreasing exponential function characteristic of tropical dense forests. The shanon index shows us that the diversity of Somalomo forests is close to that of agroforests. The priority index (PI) for domestication taking into account ethnobotanical and ecological data was calculated. Priority woody species, whose domestication would contribute to the conservation of biodiversity in the study area are: *Alstonia boonei* (PI=72), *Dichapetalum* sp (PI=68), *Strombosia pustulata* (PI=68), and *Baillonella toxisperma* (PI=67).

Keywords: Biosphere reserve, ethnobotany, non timber forest products

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