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On-farm Tree Diversity Management for Livelihood Improvement and Enhanced Farm Based Diversity: Experiences from the East Mau Catchment, Nakuru, Kenya

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Abstract

Burgeoning population in Kenya is exerting too much pressure on the natural forests. The forests cover remains paltry <2% against the UN recommendation of $\geq 10\%$. Economic and political reasons are increasingly limiting re-establishment of natural forests. Consequently, the agricultural landscapes become increasingly important frontiers for biodiversity conservation and livelihood provisioning. Agroforestry is increasingly becoming a vital tool for achieving this goal. However, its potential and limits of contribution are insufficiently documented. Understanding of farmer strategies in the management of on-farm tree diversity is critical for the successful implementation of agroforestry programs. Using a sample of 60 smallholder households in the East Mau catchment an assessment of on-farm tree diversity was carried out. Contributions of the current farming systems to tree diversity and various constraints faced by smallholders in establishing agroforestry systems are highlighted. Results indicate that there over 100 species of domesticated trees and shrubs on the farms of which 73 are woody shrubs. Approximately 60% of trees inventoried on farms were deliberately planted. A number of shrubs were also maintained by farmers for a wide range of reasons: firewood, medicinal, timber and fencing. Most of the fruit trees (over 75%) are planted by farmers. Following three tree species are ranked in order of preference by farmers: *Cupressus lusitanica* (28%), *Grevillea robusta* (18%) and *Persea americana* (13%). The reasons cited for this preference are: good quality timber, fast maturity, multipurpose uses and soil fertility. Apart from deriving direct livelihoods through sale of firewood, timber and domestic energy farmers perceived trees on their farms to be attracting rains, moderating climate and conserving the catchment (70%, 4% and 3% respectively). The major reasons perceived for poor successes of on-farm tree planting are: drought, lack of appropriate seedlings, costly seedling and smaller land holdings. Efforts should thus be directed at supporting the development of more tree nurseries closer to the communities. Farmers should be trained on seed collection practices. This will ensure timely and cheap provision of seedlings. Furthermore sensitisation on the importance of trees is still vital for the farmers to develop a tree planting culture.

Keywords: Agroforestry, livelihood, multipurpose uses and soil fertility, tree diversity

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