THE IMPACT OF DEMOGRAPHIC AND SOCIO-ECONOMIC FACTORS ON WOODY PLANT BIODIVERSITY: A CASE STUDY OF MUKOGODO FOREST, LAIKIPIA DISTRICT, KENYA

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ABSTRACT

Poverty is predominantly a socio-economic phenomenon. Many of the disadvantaged groups are found in the rural areas of the country. For this reason, the study was designed to basically establish, among other issues, the relationship between poverty and forest resources in Mukogodo that is considered the poorest division in Laikipia District of Rift Valley Province of Kenya. To this end, the study therefore, investigated the relationship between household level of income and the rate of forest utilisation. In addition, the study examined the influence of inmigrants on the forest plant biodiversity. The study further analyzed the significance of household size on the rate of use of forest resources in the area. The study also examined the relationship between household proximity to the forest and the intensity of forest biodiversity utilization in the survey area. The study was carried out between April and September, 2005.

A sample of 293 households from the four community ranches consisting of Makurian, Kurikuri, Ilingwesi and Lekurruki was selected using stratified sampling. Since the population size for each of the four strata (ranches) was known, the method of proportional allocation under which the sizes of the samples from the different strata are kept proportional to the sizes of the strata was applied (Kothari, 1990). Random sampling was then performed within each stratum using systematic sampling technique. The household head (or any household member above 18 years in case of absence of the head) was interviewed using a standard questionnaire.

The Point Centred Quarter Method (PCQ) was employed in the study to analyse area woody plant biodiversity. Two transects measuring 1000m and 2000m long were established in each of the four ranches with the aid of a GPS whereby each sampling point was divided into four quarters within a radius of 10m. The nearest woody species in every quarter was considered. Thus, important parameters including height, local uses (e.g., medicinal, food, forage, firewood), were recorded. Data analysis involved both use of regression and Chi-square analysis with the help of SPSS.

The findings of the study suggest that poverty was a serious problem among 59.4% of the Mukogodo population and the minimum financial resources required to eliminate poverty coming to approximately Ksh.6,711,411.60 per year for the whole population. It was found that household level of income influenced the rate of utilisation of forest resources. The study also revealed that the issue of forest destruction in Mukogodo was largely more external than internal. In this case, it was found that more inmigrants than the natives engaged in activities such as charcoal production and fuelwood extraction and selling which were very detrimental to the forest. The results also showed that size of the household was an important determinant in forest exploitation level.

Finally, it emerged from the study findings that proximity to the forest played an important role in determining the intensity of utilisation of forest resources by households in the study area. It was established that poverty levels in Mukogodo remained high with over half the population classified as very poor. As a result, the majority heavily relied on the forest resources to survive. Therefore cases of charcoal burning, extraction of herbal medicine, extraction and selling of fuelwood, among other resources were rampant in the area, thus threatening the Mukogodo forest biodiversity conservation.

It was established that in order to ensure that the forest was saved from the mounting pressure of poverty, the latter ought to be tackled at all levels in the area by both the government and non governmental organizations by initiating economically profitable projects aimed at uplifting the living standards of the residents. This could be achieved by ensuring that the locals are empowered to increase production and participation in development through training for skills and financial assistance to start income generating activities, which would lead them and their families to better standards of living.