ABSTRACT

Forest ecosystems have been a valuable source of economic wellbeing of human populations for centuries, particularly to the forest adjacent communities. The relationship between human wellbeing and ecosystems consist of complex systems that are mostly nonlinear, uncertain and often not clearly understood. To enhance forest sustainability, the deliberate evaluation of ecosystem services, human interactions and appropriate ways to involve the public in management is imperative. However, little has been done to demonstrate how forest ecosystem services and public participation could contribute to forest conservation and socio-economic development of forest-dependent communities. This study therefore evaluated forest ecosystem services and socio-economic factors that influence community participation in forest management to enhance forest conservation while improving livelihoods. To achieve this objective, the study interviewed local communities bordering Aberdare forest ecosystem. The study was based on semi-structured questionnaires administered to a stratified random sample of 202 households, six focus group discussions and benefit transfer method. The data was analyzed using Chi square, Spearman's rho correlation and regression analysis. The findings of this study showed that the net annual benefit of ecosystem services was approximately KES 36.8 (US$ 0.37) billion where regulating services constituted 98%. The communities lost KES 172 (US$ 1.7) million annually to wildlife. The net annual return from forest conservation was higher as the opportunity cost of forest land conversion was approximately KES 4.2 (US$ 0.04) billion. The significant factors included forest management approach ($\chi^2 = 17.551$, $p < 0.001$), distance to the Forest Reserve ($\chi^2 = 29.071$, $p < 0.001$), distance to the National Park ($\chi^2 = 27.303$, $p = 0.008$), gender of household head ($\chi^2 = 10.719$, $p = 0.002$), land tenure ($\chi^2 = 34.313$, $p < 0.001$) and sources of income ($\chi^2 = 31.353$, $p < 0.001$). Economic factors that included farm size, household size, annual income, land tenure, and importance of the forest ecosystem were found to significantly influence the regression model with R2 being 0.703. It can be concluded that if only provisioning ecosystem services are considered, there is a net loss arising from conservation. Therefore, it is imperative to encash all the ecosystem services to decrease forest conversion and depletion based on economic forces. Further, increasing economic benefits to the community will positively influence participatory forest management. This study recommends that to fully engage the community in participatory forest management, there is need to consider their basic livelihood strategies as well promote forest products availability on the farmlands to reduce pressure on the forest ecosystems.

Keywords

management in Aberdare forest