Abstract

The study focused on assessing the impact of farming systems and land use change on dryland biodiversity and documented the views, knowledge and practice of the farmers on the role of biodiversity in the semi-arid midlands of Eastern Kenya. A descriptive survey design was employed to collect data on famers' views, knowledge and practices from 120 respondents from four locations in Mwala and Yatta Sub Counties in Machakos County. Nested Quadrat method was employed to determine levels of loss of plant live forms in the cultivated and uncultivated areas in the four locations. The collected data was then analyzed using simple descriptive statistical such as percentages, frequency and means. Other methods used in the analysis included Logistic regression, Pearson Chi-square and t-tests. The study established that Households in the study areas understand the benefits of non-crop tree species (100%) and therefore grow the tree species (72%) and also conserve the indigenous species (88%). Results from multivariate logistic regression analysis further showed that the age and level of education of the respondents were the strongest statistically significant factors affecting the farmers' knowledge on above ground biodiversity and its relevance to crop production ($p < 0.005$). It was also established that mixed farming system was the main farming system practiced by 98% of the households in Mwala and Yatta sub counties, with crops and livestock on the same farm. It was established that average population of plant live forms (grass, shrubs and trees) in the study sites was found to be significantly different between cultivated and uncultivated zones in the four locations ($p <0.005$). It is concluded that human activities such as farming increases loss of plant live forms and interferes with above ground biodiversity and reduces the effectiveness of crop-livestock integration in the production systems due to reduced grazing areas.