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Distribution of beehives in relation to tree species and forest cover in coffee landscape of Gera woreda, southwest Ethiopia

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This study was carried out in the Gera woreda in the southwest of Ethiopia. The study landscape is dominated by shade coffee agricultural practices but there are also cultivated fields with annual crops which foster livelihoods. Although honey production is practiced by the local communities, the influences of distance from large patches of managed coffee forest on tree diversity which are used for beehive hanging and bee forage in the surrounding agricultural matrix are not known. The current study therefore investigates a factor that determines spatial distribution of beehives across different land uses in the study area; assesses the common tree species used for hanging beehive and bee forage and assesses the socio-economic importance of honey production in the area. Three line transects of 4 km long were laid in the West-East direction used to collect ecological data. The first line transect is at the edge of managed coffee forest and there are 350 m distance between each of them. Data on trees, land use types and beehive distribution were collected within 200 m width of the line transects. Interview, questionnaire and survey were used to generate socio-economic data. R-statistical packages and SPSS were used to analyze the data. Diversity of tree species used to hold beehive and farmers preference for hive site selection were found to determine the spatial distribution of beehives. A total of 12 tree species with beehives were recorded in all transects. The diversity of the tree species with beehives and the density of beehives decreased from forest edge to far distances from forest. From the pooled data for agricultural land, 39% of all trees with beehives were found standing in croplands and the rest were distributed among grazing land, home gardens and shade coffee stands but the largest mean number of beehives per tree was found in shade coffee. Beekeeping in the area was found to play important roles in the socio-economy of the local communities such as generating income as traditional medicine for cultural and social values and pollinating flowers. Socio-economic factors like skill of beekeepers and preference of beekeepers for selective tree species affect honey production in the area which also affects beehive distribution. Conservation of forests and trees and planting of tree species in different land use types is recommended.

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