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Can Agroforestry Enhance the Resilience of the Socio-ecological Systems in Central Highlands of Ethiopia?

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Abstract

The central highland of Ethiopia is characterised by severe soil degradation, forest resources depletion and human and livestock population increment. Despite the existence of these intertwined problems, less effort is made to enhance the ability of the community to withstand the shocks that arise because of the aforesaid problems. This paper tries to address how agroforestry practices (AFs) could be the stronghold for enhancing the resilience of the socio-ecological systems in the community. Within this context we discuss how AFs could be a tool to enhance the financial returns of farmers while providing wood and other social and ecological values demanded by a community living in Menagesha Suba area. To achieve this goal, three agroforestry land uses (small-scale woodlot [SSW], homestead tree and shrub growing [HTG] and boundary tree and shrub planting [BTP]) were compared against the dominant cereal farm (CF). The financial return analysis was done by using the benefit to cost ratio (BCR). A criteria-based participatory scoring was used to assess the social and ecological values. The results revealed that AFs have an excellent financial performance. It was found out that SSW > BTP > HTG > CF with respective BCRs of 16.95, 9.44, 2.54 and 1.21. This indicates the strong potential of AFs to reduce poverty through income generation which increases the household's potential to withstand unforeseen risks like yield losses, accidents and market price rise for consumables. For social and ecological values provision HTG > SSW > BTP > CF. AFs were the most preferred land uses for enhancing soil fertility, microclimate improvement and minimising soil erosion. Moreover, the wood produced by AFs reduces the intense pressure on the remnant forests due to wood products demand. Hence, AFs are essential tools to promote the conservation of the remnant forests. In general, this paper argues that AFs are reliable tools for enhancing the resilience of the socio-ecological systems in the study area. Hence, policy makers and agricultural experts should pay worth attention to the practices for inclusion into the agricultural landscapes so as to care for the society, the land and the environment concurrently.

Keywords: Agroforestry, Ecological Value, Financial value, Resilience, Social value

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