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Ecological and Socio-economic Trade-offs of a Yerba Mate Agroforestry System in Atlantic Forest Remnants

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Abstract

The Mbaracayu Forest Nature Reserve in Paraguay is the only significant remnant of Atlantic Forest left in the country. In the buffer zone of this reserve an NGO has worked with local producers to establish an organic yerba mate agroforestry system (AFS) to provide an incentive for farmers to keep forests within their land to serve as corridors between the reserve and smaller forest patches. The most lucrative land uses in the area are cattle ranching and industrial soy plantations; yet, farmers still choose to invest in this forest crop and other land uses. Through a mixed methods approach, using qualitative and quantitative data, ecological and socio-economic trade-offs between five land uses (crop, pasture, yerba mate AFS, forest, and soy) were explored. Semi-structured interviews were carried out with farmers to understand their reasoning behind incorporating the AFS into their farms and keeping their forest remnants; as well, as to understand their perception on ecosystem services received from their forests. Soil samples were collected, tree diversity surveys were done, and carbon storage was calculated for each land use. A workshop was done with producers to understand and discuss their perspective on choosing between the before mentioned land uses. This case study will serve as an insight of the scope of using an AFS for biodiversity conservation in communities adjacent to natural protected areas pressured by industrial crop production. Once these trade-offs are recognised, new strategies can be used to address issues and approach farmers with revised incentives to halt forest loss and improve livelihoods.

Keywords: Land use, Mata Atlantica, pasture, soy

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