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Is Multistrata Agroforestry a Viable Alternative for Small Farmers in Peruvian Amazon?

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Abstract

One of the major causes of deforestation in the Peruvian Amazon is small-scale slash-and-burn farming. As a viable alternative, we have designed and evaluated the *multistrata* agroforestry system during the implementation of a development project around the fast-growing jungle town of Pucallpa (Ucayali). Our target group was chosen according to a study identifying factors that affected system acceptance. Based on the results, we are focusing on small and middle-sized farms, where the farmers already grow a larger variety of crops. The target group is low and middle-income families who do not focus on livestock ranching. From 2006 till 2009, a total of 65 plots (average size 0.5-1 ha) were established in eight villages around Pucallpa, most of them on deforested and severely degraded soil infested by weeds (*Imperata* sp.). As at the end of 2009, altogether 41 plots (adoption rate around 60%) were successfully maintained by the farmers. The system is based on the cultivation of fast-growing indigenous fruit tree species guaba (*Inga edulis*) combined with other native fruit and timber species. The key component acid-soil tolerant leguminous tree guaba, is traditionally used to shade perennial crops, provide firewood, control noxious weeds and produce a sweet pulp. During the early years of establishment, farmers intercrop the trees with their own staple crops such as cassava, maize and rice. In subsequent years, tree-growing prevents farmers from annual cropping, but there is room to grow shade-resistant crops such as pineapple. The preferred incentives were based on providing farmers with quality tree seedlings, organizing communal exchange work and continuous technical assistance. The system has proven to be a viable alternative for local conditions: it is able to restore and maintain fertility on degraded soil and provide farmers with useful marketable produce. In the initial years, they can harvest annual crops, later valuable fruits and (we estimate) ten years to harvest timber trees. The economic performance of the systems is also promising. In ten economically-evaluated plots the net present values and cost-benefit ratio has been much higher, compared to traditional slash-and-burn plots.

Keywords: *Inga edulis*, multistrata, native fruit, Peruvian Amazon, slash-and-burn, small farmers