

# **DISENTANGLING LANDUSERS' PERSPECTIVES FOR THE ADOPTION OF SILVOPASTORAL PRACTICES: LESSONS FOR TARGETING CONSERVATION PAYMENTS IN THE TROPICAL FOREST FRONTIER**

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Aggregated small-scale, intensive cattle-farming in the tropical forest frontier is a threat to primary forests which are host for a vast biological diversity. Land use and livelihood decisions directly impact habitat conservation dynamics and the availability of local natural resources (Brock et al. 2009). However, household level decision-making to adopt sustainable practices interacts with various other livelihood activities to which farmers usually give preference. Insufficient motivation towards practices with high environmental gains in the long term, economic gains in the medium term, but an economic sacrifice in the short term is a common pattern hindering sustainable behaviour in other contexts. Literature addressing the causes for adoption of agricultural innovation is abundant (Pattanayak et al. 2003) but it is usually focused on isolated socio-economic characteristics which are measured independently and added up in posterior analyses. Theories of decision-making in Psychology shed further light on the behavioural motivations of farmers to adopt innovations. However it is argued that some of these may not necessarily apply to the adoption of conservation practices, due to the distinct rationale of the latter. Still, understanding what factors underlie these decisions is key to design effective and efficient conservation policies (Common & Stagl 2005).

This paper focuses on understanding the reasons behind farmers' decision to implement silvopastoral systems in a low income community in the buffer area of La Sepultura Biosphere Reserve in Chiapas, Mexico. The guiding questions are: *What perspectives condition small-scale farmers' adoption of silvopastoral systems? What features may be targeted to design policies which are more effective and capable of boosting a behavioural change?* In this protected mountainous tropical forest, non traditional farming entails an increasing risk of landscape degradation. However, tree cover restoration results are poor to date and the reasons behind the involvement in tree cultivation programmes are unclear. This is an adequate case for an in depth study for it is a simplified intervention in which the community has no traditional knowledge of ecosystem dynamics, where the effects of human activity are local and where the intended activity to adopt is simple.

Q methodology (Brown, 1980; Stephenson, 1953) is conducted using 26 statements sorted by 33 heads of household for which secondary data on the level of success in fodder tree cultivation is available. Statements cover topics that are key for individual decision-making on cultivating fodder trees, identified after expert consultation and after an extensive fieldwork on livelihoods. These are: environmental conservation and future perspectives; the role of subsidies in livelihood expectations; and benefits and resource use preferences directly related with cattle-farming. Three factors are extracted using PQMethod software, Principal Component Analysis and varimax rotation, which explain 54% of the variability. A novel analytic approach of bootstrap re-sampling is then implemented using R software. Thereby error values for each individual statement are obtained, showing their relative stability within each factor. This approach increases the validity of the interpretation.

Farmers' views are grouped into: *pragmatic, pioneer and self-sufficient; conservative and subsidies-dependent; and environmentally conscious*. None of these types are clearly prone to adopting silvopastoral practices. Rather, each type shows distinct features that may pull it to adoption, as well as features that may hinder it from adopting or either from maintaining the activity in the medium term. Whereas environmentalists' motivation to adopt may be normative concerns, pioneers may adopt if the practice is believed to be novel and with potential significant gains, despite their risks and without the need for it to have short term financial gains such as external payments. In contrast, the conservative may not adopt unless there is an external payment involved, or until he has seen that the practice actually gives gains to his neighbours.

This study shows that, in an a priori homogeneous community, the diversity of perspectives is distinct enough for it to be relevant for the design of payment based conservation policies aiming for a behavioural change. Arguably, a bigger emphasis on potential first adopters may have a boosting effect on getting the rest to adopt, without the need for initial additional financial incentives. Therefore considering these distinct subjective perspectives within a population of potential recipients may have important implications towards a more effective and efficient use of resources for conservation policies.