

Private costs on water conservation: study case at Cantareira Mantiqueira Corridor Region

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One of the measures to minimize deadlocks caused by the need to guarantee the water supply in the metropolitan region of São Paulo (Brazil) is to enable the protection of forest remnants in the Cantareira-Mantiqueira corridor as a means to increase the supply of the ecosystem service of water supply. Payment for environmental services (PES), for example, have been identified as desirable in order to achieve this goal, especially when take into account the successful case of implementation of PES in the city of Extrema, in the state of Minas Gerais, located in the region of our study.

The problem is that the discussion on the measures for the protection of forests does not always come accompanied by appropriate considerations on the economic costs of such policies. In addition, often the social aspects that reflect the heterogeneity of the economic contexts of the populations that reside in a given area are not considered. It is true that the effectiveness of environmental policies is highly dependent on correct diagnoses regarding the socioeconomic and ecological reality of a given region. The appropriate balance between ecological and economic criteria is essential for the elaboration of a policymix able to ensure the preservation of biodiversity and the continual flow of ecosystem services.

This study aims to evaluate the private opportunity cost for an extensive forest recover program in the Cantareira-Mantiqueira Corridor Region and discuss its results focusing on three central questions: i. what is the private opportunity cost of forest restoration for the main land use activities in the Cantareira-Mantiqueira Corridor Region? ii. how the private opportunity costs varies throughout the region? iii. What are the most cost-effectiveness PES strategies available for the Cantareira-Mantiqueira Corridor Region? The survey's methodology was conducted collecting data in the field from production costs and revenues for the four most important agricultural activities in the Cantareira-Mantiqueira Corridor, and furthermore obtains the private opportunity costs using the net present value (NPV) analysis.

Besides the field investigation in the study area, we also built a typology of agricultural production units using factorial and cluster analysis. We identified seven main groups of agricultural production based on information from the Survey of Agricultural Production Units. Using estimates from the production revenue and expenditure of these groups, we have identified a high asymmetry in the distribution of average returns from agricultural activities in the region. Forestry exploration has the highest return

per hectare and total in the region, but the activity that prevails among the production units is still dual-purpose cattle. The results raise important questions about the best way to pay the owners in a policy of payment for environmental services.