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The Effect of Natural Resource Management Projects on Farm Income — Evidence from Peasant Farmers in Central America

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Abstract

Central American countries have witnessed a severe deterioration of their natural resources. This problem, stemming from poor management, manifests itself in many ways, including losses in productivity and reductions in farm income. Moreover, this deterioration puts at risk the sustainability of economic growth and development in the region, given that Central American economies are highly dependent on natural resources. In order to address this problem, several international development agencies have been financing natural resource management projects in Central America. In general, these projects have endeavoured to reduce the deterioration of renewable natural resources in watersheds while improving the socioeconomic conditions of the low-income rural population of the affected areas.

Although these projects can play a significant role on the development of rural economies, studies that evaluate their impacts are rare. This paper intends to contribute by providing an empirical analysis of four different natural resource management projects funded by the Inter-American Development Bank in Central America. In doing so, a farm income model is developed in which the impact of the projects is captured by their role in motivating the farmer to adopt new technologies and to diversify production.

Household level data for 764 producers randomly selected, collected between November 2000 and August 2001, are used in the econometric analysis. The main results of the study indicate that the technologies proposed by the projects have, in general, positive and significant effect on agricultural income. In addition, farm diversification is found to have a positive and significant effect on farm income. These findings are important in analyzing the sustainability of environmental projects in Central America, because some technologies can be extremely efficient in decreasing environmental risk, but their adoption could be very limited if they do not bring economic tangible benefits to the farmers.

Keywords: Central America, crop diversification, farm income, natural resources, technology adoption