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Integrated management of natural resources in the Ecuador Highlands

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ABSTRACT

The Andean region of Ecuador is characterized by extreme poverty caused by low agricultural productivity, limited off-farm opportunities, and lack of access to markets. Poverty is related to degradation of natural resources as lagging agricultural productivity leads to incursions into fragile areas and use of erosive farming techniques on steeply sloped hillsides. Food production in fragile areas degrades soil and water resources, contributes to deforestation and loss of biodiversity, and reduces productive potential over time. This article discusses an agricultural development project designed to reduce the long-term downward development spiral in a watershed in Bolivar, Ecuador. The applied research program began with analysis of the state of soil resources, water, and biodiversity in the Chimbo sub-watershed. This information was used to design a plan with the input of local stakeholders to introduce environmentally friendly farming practices, soil and water conservation techniques, and various institutional innovations to promote resource conservation. This adaptive management program has been a solid success. This article describes the project, the challenges it faced, and how the process of adaptive management led to consensus among stakeholders about the appropriateness of sustainable management practices. We show how implementation of enhanced management practices contribute to reduced environmental vulnerability and improved welfare.

KEYWORDS

Component; Natural Capital; Micro-Watershed; Systems Approach; Adaptive and Integrated Watershed Management

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