The importance of precision and targeting in Copan Ruinas watershed, Honduras

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Key Message: The Rio Copan watershed PES scheme provides effective incentives for farmers to shift to sustainable activities.

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1. What is the problem?

The Río Copán watershed lies in extreme western Honduras, on the border with Guatemala. The majority of families in the region rely heavily on natural resources for food and fuel. Land is cleared for agriculture and the remaining forest fragments are heavily influenced by the extraction of fuelwood and by cattle grazing, particularly during the dry season. Over-exploitation of the natural resource base has eroded the capacity of the landscape to provide critical hydrological services and has exacerbated the fragmentation of the pine-oak woodlands that once dominated the landscape. The major land uses in the area are cattle ranching, milpas (small plots of corn, beans and squash) and coffee in the higher elevations (Pilz, 2009).

2. Which approach was taken?

This Honduran pilot project illustrates how both targeting and the use of precise proxies can be used to enhance the effectiveness and efficiency of a PES system. Approximately 1,000 families in two watersheds in the municipality of Copán Ruinas, Honduras (or Copán) get drinking water from three local water points: El Malcote, El Escondido, and Don Cristóbal. The quality and quantity of the drinking water is reduced by human activities such as illegal logging, fires, the application of agrochemicals and unsustainable agricultural land use practices. A PES initiative aims to mitigate these impacts (Pilz 2009; Madrigal y Alpízar 2008).

3. What ecosystem services are considered, and how?

Water provision from the rivers is the primary ecosystem service considered. The Río Copán watershed, a 617 square mile landscape, contains diverse topography and vegetation, with elevations ranging from 600-1600 meters. Native habitats include pine-oak forest, a globally threatened ecosystem, as well as dry and moist broadleaf forests (Pilz 2009). A well-designed PES program can help to restore the condition of the rivers.

4. What input was required?

To ensure that the PES program would have a significant impact, program administrators used a two-step approach to target sites where the provision of ecosystem services is both high and under threat. First, they ranked water sources based on the number of households they service, current levels of water extraction, and the number of potential future households using the sources. Second, they ranked sites in the drainage areas of these water sources based on their potential for providing watershed services and their vulnerability to reductions of these services. In doing this, they took into account rock type, presence of soil fractures, soil texture, slope, land use, organic cover, and pollution sources. After targeting the program to high-benefit, high-risk sites, the next step was to precisely measure the hydrological services of these sites (Alpizar et al. 2007; Madrigal and Alpízar 2008). An index of 15 combinations of land use and land management practices commonly observed in Copán primary forest was developed. Thirty international experts in the field constructed the index during a two-day workshop organized for this purpose alone. Finally, a method was developed for basing payments on the level of ecosystem services provided by each site. For a land-use change such as coffee to forest, payments are based upon the estimated opportunity cost (for example, forgone profit from coffee). For a shift amongst management practices within a land-use category, for example from shade coffee to organic coffee, payments cover the cost of obtaining an organic certification (ibid). 24 farmers benefit from PES, most of them from a Mayan Indigenous Community (Chortí Community). Nearly US$ 2000 annually has been paid to the farmers. There has also been a shift from agriculture to more sustainable land management practices, and around 150 hectares of land-use change has occurred in this regard.

5. What was the policy uptake and what were the conditions for this effort to influence public management?

Copán Municipality is actively promoting the definition of an additional water fee to exclusively finance the PES described. These funds will ensure the long-term financial sustainability of the incentive. Technical criteria supports the feasibility of increasing actual water fees to finance PES up to a maximum of one additional dollar per household (Cisneros et al. 2008).

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