

# Payments for Watershed Services

Maintaining natural forest cover and ensuring clean water supplies with payments for ecosystem services in Ecuador

In Ecuador, farmers are currently receiving payments to maintain the natural forest cover and ensure clean water supplies. The payments are intended to discourage activities that have historically damaged the environment and degraded water quality such as slash-and-burn agriculture, timber harvesting, and cattle ranching.

## Why are Payments for Watershed Services Necessary in Pimampiro?

The municipality of Sao Pedro de Pimampiro is a small town in the state of Imbabura in northern Ecuador. It is located along the Pisque watershed, which feeds into the Chota River, the main water source for the state. The region has a history of water shortages, exacerbated by the fact that much

of the available freshwater is polluted by agricultural runoff. Pimampiro is primarily interested in protecting the watershed to ensure that local residents and industries have access to clean and adequate water supplies. However, they are also interested in preserving the biodiversity because the area serves as a buffer zone for the Cayambe Coca Ecological Reserve (RECA). In addition, the region contains important indicator plant species such as “sigse” (*Cortaderia nitida*) and “surros” (*Chusquea* spp.) that only grow when there is an ample water supply. The presence of certain megafauna such as the Andean bear (*Tremarctos ornatus*) is also an important indicator species.



State of Imbabura in Ecuador. Source: [www.hostsanjorge.com.ec/english/album2c.html](http://www.hostsanjorge.com.ec/english/album2c.html)

## How Do Payments for Watershed Services Work in Pimampiro?

In 2001, the municipality established a pilot project entitled Water Regulation for the Payment of Environmental Services for Forest and Páramo Conservation. US\$15,000 was allocated towards a fund that would be used to subsidize the project. The municipal government collects an additional US\$500 per month through a water tariff. Approximately 1,350 households and commercial establishments pay an annual tariff of US\$0.96 and US\$2.16 respectively for the use of 17 cubic meters of portable water. The funds are then distributed to members of the Nueva America Autonomous Association for Agriculture and Livestock (NAAAAL), located in the parish of Mariano Acosta, 32 kilometers upstream from Pimampiro. In 2004, twenty of the association's twenty-four members received payments for the preservation of approximately 300 hectares of land. Members of the association receive between US\$11.00 to US\$16.00 per hectare per year. Payments are made on a quarterly basis and vary by land category. Between January 2001 and September 2002, a total of \$6,870.70 was paid to NAAAAL members. (Echavarria et al., 2004)

## What Were the Social Benefits of Payments for Watershed Services in Pimampiro?

In 2004, the International Institute for Environment and Development published a study on payments for watershed services in Pimampiro. They suggest that a tax managed by municipalities can benefit the poor while leveraging funds for environmental protection. However, they believe that more information is needed about the hydrological functions of particular ecosystems and the value of watershed services to ensure the successful replication of similar projects elsewhere. (Ibid)

## Why are Payments for Watershed Services Successful?

The Pimampiro watershed program is successful in part because of the presence of outside actors who ensure that payments are channeled directly from buyers to sellers. The project is overseen by the

*Desarrollo Forestal Comunitario* (DFC) and its subsidiary, the Ecological Corporation for the Development of Renewable Natural Resources (CEDERENA), and the Inter-American Foundation. In addition to providing the payment mechanism, these organizations also help to plan priority management activities such as agro-forestry and soil management, facilitate community management, and promote local government action.

It should be noted that federal legislation in Ecuador does not give water rights to landowners. Since the terms of the agreement cannot directly mandate that farmers maintain water quality, the city of Pimampiro runs the risk that the Association will fail to comply with the terms of the agreement. Although control over natural resources is generally necessary for the successful implementation of PES, this program has been successful due to the willing participation of NAAAAL members. (Ibid)

#### For Additional Information:

- CEDERENA, Municipio de Pimampiro y Fundación Interamericana (2001). Boletín No. 1 Mayo. Ibarra, Ecuador: CEDERENA.
- Echavarria, Marta et al. Joseph Vogel, Montserrat Albán, Fernanda Meneses (2004). "The impacts of payments for watershed services in Ecuador: Emerging lessons from Pimampiro and Cuenca." *Environmental Economics Programme*.  
<http://www.iied.org/pubs/pdf/full/9285IIED.pdf> <http://www.iied.org/pubs/pdf/full/9285IIED.pdf>
- Municipalidad de Pimampiro (2001). Convenio de Cooperación para Protección de Fuentes Hídricas y Pago por Servicio de Protección entre el Ilustre Municipio del Cantón Pimampiro y la Asociación Agrícola Ganadera Nueva América. Pimampiro, Ecuador: Municipality of Pimampiro.
- Pagiola, S, J. Bishop and N. Landell-Mills eds. (2002). *Selling Forest Environmental Services: Market-based mechanisms for conservation and development*. London, UK: Earthscan.



This report was researched and written by Aimee Barnes, Matthew Ebright, Emily Gaskin and William Strain from the Master of Public Administration in Environmental Science and Policy program of the School for International and Public Affairs at Columbia University.



This work was made possible by the generous support of the American people through the Leader with Associates Cooperative Agreement No.EPP-A-00-06-00014-00 for implementation of the TransLinks project. The contents of this report are the responsibility of the Wildlife Conservation Society, Forest Trends and the Earth Institute in collaboration with the TransLinks partnership and do not necessarily reflect the views of the United States government.



