

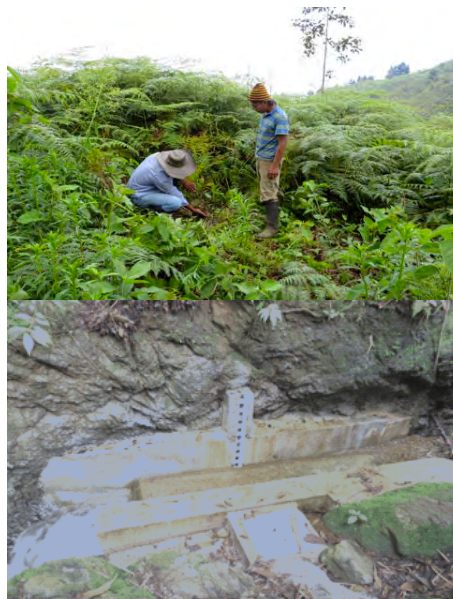
# Evaluating the Impacts of Water Funds on Ecosystems and People

Water Funds, conservation mechanisms that link downstream water users to upstream communities and land managers, are rapidly growing in popularity around the world. They are of particular significance in Latin America, where 17 Water Funds are in operation and many more are in their planning stages. These programs hold great appeal for their potential to present ‘win-win’ opportunities for conservation and human well-being. However, we lack robust empirical evidence of the social and ecological outcomes of Water Funds, in terms of their impacts on biodiversity, ecosystem services, and human well-being. Demonstrating the impacts of Water Funds is critical to ensuring continued financial, political, and social support for these programs, as well as to contributing to their adaptive management and improvement over time. Accordingly, the Natural Capital Project, in collaboration with The Latin American Water Funds Partnership and others, is working to strengthen socio-economic and biophysical monitoring and impact evaluation programs for five distinct Water Funds in Latin America, and to provide guidance to other Water Funds and similar programs, to help them evaluate their progress in a robust and cost-effective manner.

## Evaluating and demonstrating the impacts of Water Funds is critical to ensuring their continued success

The Nature Conservancy, in collaboration with the Natural Capital Project, published a primer on *Monitoring in Water Funds, providing principles and guidelines for monitoring hydrological ecosystem services, biodiversity, and human well-being*. Critical steps include:

- defining the program and monitoring objectives and identifying key questions;
- selecting indicator variables; and
- designing and executing monitoring in such a way that addresses attribution of changes to Water Fund activities or to other sources.



The Natural Capital Project is working closely with Water Funds on the ground to develop an approach to address challenges associated with each step. This includes working with Water Funds to outline expected or potential changes in the supply, service, and value of targeted ecosystem services, an approach for participatory indicator selection, and a methodology to select control watersheds in data scarce regions.



## Why Monitor Impacts?

Monitoring allows managers to:

- Stay ‘keyed in’ to what’s happening on the ground, continually improving the Water Fund and adapting it to a changing world.
- Demonstrate the positive impacts (and mitigate any potential negative impacts) of the Water Fund on biodiversity, hydrological services, and socio-economic factors.
- Increase support for Water Funds, by showing that they deliver on their indicated benefits.

The Natural Capital Project is collaborating with 5 Water Funds and INECOL to support monitoring and impact evaluation.

### Example 1: Fondo Agua por La Vida y la Sostenibilidad (FAVPS) (Valle de Cauca, Colombia)



FAVPS aims to maintain dry season baseflow and decrease sediment concentrations for Valle del Cauca’s downstream agricultural water supply, while also protecting biodiversity and improving the livelihoods of upstream communities and landowners. The Natural Capital Project is collaborating with TNC, Cenicaña, and FAVPS, to link hydrological and socio-economic monitoring in an integrated manner. In addition to sediment and baseflow monitoring, the team is working to develop a participatory framework for indicator selection by carrying out a pilot social monitoring project using cell phone text messaging, household surveys, and focus groups.

### Example 2: AquaFondo (Lima, Perú)

AquaFondo aims to improve water quality and quantity in Lima’s watersheds, strengthen governance of water resources, and promote a culture of water conservation. As a recently launched Water Fund, the Natural Capital Project is collaborating with CONDESAN, TNC, AquaFondo, and Forest Trends to monitor the social and hydrological outcomes of a community-based highland grassland conservation project. This involves a Before-After-Control-Impact (BACI) design to evaluate impacts on baseflow, coupled with a Social Impact Assessment to link land management to ecosystem services and benefits for the participating community.



### Example 3: Water Producers Projects (Guandu and Extrema, Brazil)



In Brazil, The Nature Conservancy has helped to create a growing number of Water Producers projects, which promote forest conservation and restoration through payment for ecosystem services programs. The Natural Capital Project is supporting TNC in its efforts to evaluate the impacts of restoration of riparian areas on sediment concentrations and base flow in two of these projects. This evaluation effort will provide critical evidence of the impacts of these interventions, helping to garner support for and increases in allocation of resources towards conservation, restoration, and other types of “green infrastructure.”

### Example 4: FONAG (Quito, Ecuador)

Launched in 2000, FONAG has been used as an example to inspire Water Fund creation around Latin America and beyond. The Fund aims to maintain hydrological regulation and water quality through protection of native highland grasslands (páramos). The Natural Capital Project is supporting monitoring of aquatic and terrestrial ecosystem integrity in response to restoration and ecosystem protection.



### Example 5: Instituto de Ecología AC. (INECOL; Veracruz, Mexico)



INECOL works to improve the effectiveness of PES programs through greater understanding of the relationships between land use and ecosystem services. They are utilizing InVEST carbon, water yield, nutrient, and sediment retention models to identify priority areas for ecosystem services provision, coupled with a rigorous monitoring program that will provide empirical evidence of the impacts of land use (including shade coffee, cloud forest, agricultural crops, and pasture) on targeted ecosystem services. The monitoring data generated will provide critical information on the spatial relationships between land use and ecosystem services and serve to validate and adapt models over the long-term.

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