



*A view of the Andes Mountains from the lower basin of the Quilca-Chili watershed in southern Peru.  
Photo credit: Cristina Portocarrero/PARA-Agua*

## Helping Latin America Build Resilience in the Face of Water Scarcity

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In late 2016, much of South America's Pacific coast experienced a severe drought that destroyed crops and impacted livestock. By the end of November, Bolivia had declared a state of emergency. Wildfires raged in Peru, and parts of Colombia were suffering from a lack of food and potable water.

Relief finally came in January with the onset of the rainy season — only the rains didn't stop. By April, massive floods had caused widespread destruction throughout the region. Peru experienced its worst flooding in decades. In Colombia, mudslides killed hundreds of people and displaced thousands of others.

Such extreme weather events are likely to become more frequent across Latin America and the Caribbean (LAC), as rising temperatures alter precipitation patterns, threaten agriculture, and disturb ecosystems. South America also faces the problem of rapidly melting glaciers that sit high up in the Andes Mountains. Glacial melt threatens a vital source of fresh water for drinking, agriculture, and hydropower for millions of people living in the communities downstream.

Whether too much water, or not enough, countries across the LAC region must find ways to adapt to this new reality and change the way they think about and manage water resources.

The Partnering for Adaptation and Resilience-Agua (PARA-Agua) project is a unique USAID water initiative that has been working in Colombia and Peru to help the LAC region become more resilient in the face of these threats and challenges.

## **Adjusting to Meet the Needs of People**

PARA-Agua started in 2013 with a primary focus on studying the retreating glaciers, but quickly expanded to factor in other challenges and opportunities for water resources management across the full breadth of the watershed. The broader scope of work made the four-year, \$8 million program much more ambitious, reflecting the Agency's commitment to improving the sustainability and impact of its programs.

“USAID [adapted] the project toward what is most beneficial to the people... To make PARA-Agua about people, they needed to focus at the watershed level,” says PARA-Agua Director Sergio Claire.

This new, more holistic approach to water resources management requires cooperation and input from a broad spectrum of stakeholders, from policymakers and national-level research institutions, to regional governments, water and hydropower providers, and a wide range of water users including businesses, cities, and local communities. PARA-Agua creates linkages among the different groups, helping them to access and use scientific information to better manage water resources and make watersheds more resilient.

Five target watersheds in Colombia and Peru served as pilots for the project: Chirra-Piura (Peru); Chancay-Lambayeque (Peru); Quilca-Chili (Peru); Guatapuri (Colombia); and Chinchiná (Colombia). An additional interregional watershed in Lima (Peru) was included in 2017: Chillón-Rímac-Lurín.

## **Partnering for Better Understanding**

Managing water resources requires an understanding of the unique climate and socio-economic variables that influence each watershed. Through partnerships with organizations such as the U.S. National Center for Atmospheric Research and the national weather services in both Colombia and Peru, PARA-Agua has strengthened the technical capacity of watershed modeling groups to use the latest tools, methodologies, and data, including [modeling software](#) that helps to better understand and predict hydrological cycles for making integrated water resources management decisions.

The program has facilitated closer collaboration and data sharing among national and state-level institutions, and local watershed councils. This includes representatives from industry, public utilities, regional governments, and small rural communities, who are now better able to use scientific information to identify vulnerabilities and evaluate potential adaptation projects that best suit the needs of their respective watersheds.

“Partnering with PARA-Agua has been a great opportunity for us to work together

and learn new skills. With our improved [hydrological] models and the interagency modeling group, Piura will be able to make informed investments that reduce our vulnerability to climate change,” says Nilton Buguna Hernandez, who attended a training for the Chira-Piura Watershed Management Council in northern Peru.

These investments might include green infrastructure, hydrological monitoring systems, implementation of land use models for improved management of water resources, and the building of water reservoirs or more efficient irrigation systems. Whatever the solution, PARA-Agua activities are focused on giving voice to all the stakeholders across the watershed to improve overall watershed management.

## **Bringing More Stakeholders and Financial Resources to the Table**

PARA-Agua has supported inclusion of people in watershed councils who would not have traditionally participated, including women. For example, PARA-Agua worked with women coffee growers in Colombia to help them better understand the role of water resources management in coffee production. The project also helped create networks of female communications professionals to disseminate information about water-related issues through the media and other institutions involved in the management of water resources.

Gladys Navarro Palacios, dean at the Departmental Council of the College of Journalists in Piura, Peru, attended one of the trainings.

“Until we felt the situation of water crisis, we did not value water. Now that we have had situations of scarcity, of droughts, and now that we are ironically, with plenty of water, we are beginning to evaluate how we should act,” she says.

PARA-Agua has strengthened watershed councils by helping them better organize, gather data, and identify potential adaptation projects. However, little action can be taken or maintained without sustainable funding, which is why PARA-Agua began helping councils identify and apply for public and private finance.

In some cases the project helped design financing mechanisms such as water funds, which provide an innovative vehicle for channeling private sector investments, public taxes, or surcharges from water utilities designated for water resources management. Water funds can help protect and restore upstream watersheds and improve long-term governance of water resources by creating a vested interest among myriad stakeholders in conservation efforts.

One of PARA-Agua’s early milestones was participation in the creation of a water fund for the Chira-Piura Watershed in Peru. PARA-Agua helped the fund gain official recognition from the regional government, developed its operational strategy, and won the support of key stakeholders. The program worked to obtain more than \$300,000 in seed capital for the fund from the Swiss State Secretariat for Economic Affairs.

With the resources invested in the water fund, the watershed council intends to implement programs for the conservation and recovery of natural ecosystems that are key for the provision of water. The council also plans to implement campaigns that

promote a culture of water conservation and responsible use in the watershed.

PARA-Agua built on this success by developing a 40-hour online course to teach participants how to design, create, and properly manage a water fund. The course was so well received that it attracted collaborators, including Spanish Cooperation, the Nature Conservancy, and CapNet. The support enabled PARA-Agua to offer the training on a larger scale, training 80 individuals from 15 countries in the region.

“We are in the beginning of implementing our water fund. This course helped us develop actions to support our short-term results while maintaining our long-term objectives,” says participant, Fausto Wilfredo Asencio Diaz, an engineer with the Chira-Piura Watershed Council.

### **Reflecting on Success and Hoping for the Future**

PARA-Agua officially ends this year, leaving behind a strong foundation to build on in Peru and Colombia. Whether by improving data generation and sharing, training professional communicators, helping organize women’s groups, or facilitating the development of water funds, PARA-Agua has consistently gone the extra mile, demonstrating USAID’s deep commitment to its beneficiaries and to the sustainability of its programs.

Claire attributes PARA-Agua’s success to those in Peru and Colombia who bought into its mission, saying, “The credit goes to our partners and beneficiaries in the field, the watershed councils, the research institutions, and governments.”

According to Claire, the watershed modeling groups that the project helped to organize now train others in the use of these techniques, giving Claire good reason to be optimistic about its long-term impact. “Now, [PARA-Agua] has a life of its own.”

*By Chris Holt*



### **Additional Resources:**

- [Para-Agua.net Community of Practice](https://para-agua.net)
- [USAID Bureau for Latin America and the Caribbean](https://www.usaid.gov/latin-america-and-the-caribbean)

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