AQUAFONDO RECOVERING ANCIENT TECHNOLOGIES SUCH AS AMUNAS, QOCHAS AND BOFEDALES TO SOW WATER IN PERÚ

April 2026

In September 2025, Aquafondo Peru was recognized by the Global Center for Adaptation as one of the Local Adaptation Champions in an award that highlights innovative, inspiring, and scalable initiatives addressing the impacts of climate change. The award recognizes Aquafondo's groundbreaking work in partnering with rural highland communities to revive ancient technologies to sow water.

The Prize underlines that “long before modern engineering, Andean civilizations developed ingenious systems to “sow water. They built *amunas*, infiltration canals that capture rainfall and guide it underground, allowing water to resurface during the dry season. They created *qochas*, highland lagoons that store water and sustain ecosystems. They also safeguarded *bofedales*, wetlands that act as natural sponges, absorbing rain and releasing water gradually. These ancestral technologies are being revived by Aquafondo, the Water Fund for Lima and Callao, to confront a looming water crisis.

Lima, home to nearly one-third of Peru’s population, sits on one of the driest coastlines in the world. The capital depends almost entirely on downstream water availability from three fragile watersheds, the Chillón, Rímac, and Lurín rivers. Climate change is now threatening these watersheds. Rainfall is increasingly unpredictable, soils dry out faster, and river flows have become erratic. This poses an existential threat to a city already facing severe water scarcity. To address this challenge, Aquafondo is partnering with rural highland communities to revive ancient technologies. The initiative is co-financed by water-using companies as part of their water sustainability commitments and international partners, while rural communities contribute labor and governance creating a shared model of responsibility and sustainability.

More than 2,000 highland residents have worked to restore 86 kilometers of *amunas*, generating more than 15 million cubic meters of water annually. By 2027, Aquafondo aims to restore additional *amunas* and *qochas* in new micro-watersheds of the Rímac River. They also plan to replicate the model across Peru and other mountain regions facing similar water challenges, supported by a global “Guardians of Water” network where communities can share knowledge and strengthen resilience together.

Aquafondo Peru is an articulation platform that mobilizes resources to conserve, protect and restore the watersheds of the Chillon, Rimac, and Lurin rivers, and thus contribute to the continuous provision of quality water for the users of the basins and mainly for the population of Lima and Callao. Its mission is to contribute to water security in Lima, through the promotion of sustainable investments in ecosystem services and public policy advocacy, in alliance with public and private actors and with the support of scientific research.

The Aquafondo website presents detailed information about their activities concerning the implementation of the amunas, qochas, and peatlands technologies.

Amunas. The amunas are an ancestral Andean technology that demonstrates that innovation also implies revaluing the past. Designed more than a thousand years ago, they regulate water in the territory: capturing it during the rainy season, storing it underground and releasing it gradually in the dry months. In a context of climate change and water stress, amunas are a natural solution for the water of the future. The results achieved by these activities are:

- + 87 km of rehabilitated amunas.
- + 14 million m³ of water infiltrated annually.
- + 6 thousand m² of conserved mountain ecosystems.
- 7 communities have reduced their climate vulnerability.

The amunas continue to function because the high Andean communities, heirs to this knowledge, assume their role as guardians of the water. Their active participation ensures that the ancestral knowledge is maintained and that the benefits reach the entire territory. The water planting practices implemented in the San Pedro de Casta Peasant Community (Huarochirí, Lima) exemplify a successful ecohydrological model and in 2023 UNESCO granted this experience official recognition as an Ecohydrology Demonstration Site. The demonstration site articulates various Nature-based solutions implemented between 2016 and 2022, which together have managed to infiltrate more than 6 million m3 of water into the aquifers that supply the domestic consumption of more than 119 thousand inhabitants of Lima. Within this practice, the amunas, with more than 27 km rehabilitated, concentrate the largest water contribution, consolidating themselves as a reference for their positive impact on water security.

Qochas. In the Lima Andes, rainfall is becoming increasingly erratic due to climate change. During the dry season, the water available in rivers and streams is drastically reduced, affecting rural communities that depend on it for their livelihoods. The qochas, ancestral rainwater reservoirs, are today recognized as Nature-Based Solutions (NBS) that make it possible to plant water and ensure its availability in critical times. The results achieved by these activities are:

- 111 thousand m³ of water stored annually.
- + 37 thousand m² of new water surfaces formed.
- 44 people trained in water planting and harvesting
- 4 qochas operational for planting and harvesting water.
- 3 farming communities have reduced their climate vulnerability.

Opportunity for the private sector: investing in qochas means returning water to the ecosystem, strengthening sustainability commitments under the *Water Stewardship* approach. A concrete action that contributes to the 2030 Agenda and strengthens the relationship with local communities. Aquafondo invites to join in improving qochas and building sustainable and resilient communities in the face of climate change.

Bofedales. High in the Andes, at more than 3,800 meters, are the bofedales, unique mountain ecosystems that function as natural freshwater reserves. Thanks to their native vegetation, they capture and store water from rainfall, snowmelt, and springs, gradually releasing it into rivers and aquifers. They are fundamental for the water security of Lima and Callao, as they regulate the volume of water coming from the mountains to the city. Opportunity for the private sector: The bofedales represent a natural water *replenishment* mechanism. Companies can join in their conservation returning the water consumed by their operations to the ecosystem and generating positive impacts for more than 11 million inhabitants of Lima and Callao. Being an ally in the conservation of these wetlands,

companies can ensure water quality and quantity for people, communities and biodiversity in the Andes. The results achieved by these activities are:

- + 6 thousand m³ of water stored annually.
- + 38 thousand m² of conserved mountain ecosystems.
- 46 community leaders aware of wetlands management.
- 1 management committee made up of the direct beneficiaries.

Another impactful initiative taken by Aquafondo is technified irrigation for more production with less water. In the upper Rimac river basin, thousands of farming families depend on family agriculture, which is highly vulnerable to water deficit and climate change. To meet this challenge, Aquafondo promotes the efficient use of water in agriculture through technified irrigation systems that save water, improve productivity and strengthen the resilience of rural communities. In Lima, only 6% of the agricultural plots apply technified irrigation, which reveals a gap of 94%. Scaling up this technology is key to ensuring food security and the sustainability of family farming. The results achieved by these activities are:

- 65 farmers trained in efficient water use.
- 82% water efficiency (compared to 30% for traditional irrigation).
- 33 community leaders recognized for their participatory role.
- 700 families with better livelihoods through more resilient agriculture.

Aquafondo invites companies to be allies of their technified irrigation initiatives and contribute to a more sustainable and resilient agriculture in the face of climate change. An opportunity for the future to partner on these initiatives and contribute to a more sustainable and resilient agriculture in the face of climate change. 30 thousand m² of improved community land.

Aquafondo is part of the Latin American Water Funds Partnership. In this framework the Latin American Water Funds are building a roadmap for more water, as highlighted in the recent meeting with the ongoing experiences in Argentina, Uruguay, Chile, Colombia, Peru, Ecuador, Mexico, Dominican Republic, Brazil, Guatemala and Costa Rica.

The global impact results achieved by Aquafondo during 15 years are the following:

- + 296 thousand beneficiaries 61 projects executed.
- . + 6 thousand hectares of mountain ecosystems benefited with increased humidity.
- 15 million cubic meters of water potentially infiltrated per year.
- + 87 km of amunas rehabilitated to infiltrate millions of m3 of water per year.
- + 320 thousand people from the peasant communities and citizens of Lima benefited
- More than 300,000 residents of Lima benefit from improved water availability.
- 3,900 hectares of degraded soil have been stabilized.
- 605,000 tons of carbon dioxide have been absorbed through wetland restoration.
- Over 1,000 rural ecosystem restoration and maintenance jobs have been created.
- Populations of native fauna, like Andean deer, foxes, and puna teal, have increased.

In 2022, Aquafondo was also recognized as one of the winners in the water category of the Latin America Green Awards.

To know more

Aquafondo website

Aquafondo Video

Aquafondo impact results

Aquafondo in Facebook.com

Lima Water Fund in nature.org

Aquafondo in IDEASS article 2022

Aquafondo winner of the Local Adaptation Award 2025

Aquafondo Articles

Fondos de Agua in tncmx.org

Amunas en www.gob.pe

AquaFondo – Premio Latinoamerica Verde 2022

Impacto de las Amunas en la seguridad hídrica de Lima en gwp.org

The Nature Conservancy in Peru

Amunas en Biodiversidad en América Latina - biodiversidadla.org

Amunas en SWI swissinfo.ch

Sistema hidráulico Amunas | Hidráulica Inca (hidraulicainca.com)

Amunas-gsaac.pdf en wordpress.com