

RECOVERING THE ANCESTRAL PRACTICE OF ANDEAN LAGOONS IN THE AYACUCHO REGION OF PERU

On the dry slopes of Tuco, in the Ayacucho Region in Peru, [the ancient practice of creating lagoons that supply water](#) and transform the entire territory into vast fields of cultivation is being rescued. These lagoons, called *Qochas* in the local language and inspired by the Andean dams of the Inca peoples, are a traditional way of storing rainwater in natural holes adapted by the community through the construction of simple dams.

This initiative is managed by three agricultural engineers, Magdalena, Marcela and Lidia Machaca, graduates of the National University of San Cristobal de Huamanga, through the [Asociación Bartolomé Aripaylla \(ABA\)](#) that they founded in 1991 involving the indigenous community of Quispillaccta, located in the Chuschi district (Cangallo Province), in the Ayacucho Region. The engineers emphasize that the scarcity of water in Peru is the product of the disappearance of the snow-capped mountains and, at the same time, of the implementation of development practices that have generated the reduction of wetlands, the low recharge of aquifers, the reduction of the flow of springs and their disappearance.

[The engineers began to implement the practice of rainwater lagoons in Tuco in 1994](#), recovering the undervalued ancestral knowledge to solve the problem of growing water scarcity that generated multiple conflicts, especially during the dry season. Merging low-cost technology with ancestral practices as a formula to achieve the development of their region, the engineers began to carry out their activities that include the establishment of temporary lagoons, the construction of new lagoons and the rehabilitation of water storage basins.

The first and fundamental step in building an Andean water reservoir consists of studying the relief of the hills in the area, so that the lagoon takes advantage of natural subsidence and can be created by simply closing the water escape points. This activity is carried out by selecting the places with the support of people from the community who have more experience with water management. Choosing natural landscapes that already have the shape of reservoirs allows reducing the number of excavations and taking advantage of the natural materials of the place to carry out the permanent embanking works, avoiding the use of cement.

Along with the lagoon, always taking into account the knowledge of the communities, the characteristics of the place and the atmospheric conditions, secondary water channels are built or rehabilitated, to supply water to the entire territory. At the same



time, the works consist of creating firm land around the lagoon with native plants from the area that help fix the ground and filter the groundwater cleanly. The result is an ecosystem that works from natural elements to give life to the fauna and flora of the place.

Beginning with the construction of 12 lagoons that supply water to the Tucu area, located in the micro-basins of the Tucupayo, Chhikllarazu, Qunchallamayo and Chullcumayo rivers, taking into account the results achieved, as of the year 2000 the Association has expanded the practice with other communities in 4 districts of the territory, which have been transformed into vast fields of cultivation.

Also thanks to the support of international organizations, in 2016 there were 101 lagoons, of which 77 located in the Pampas and Cachi basins, storing approximately 1,700,000 cubic meters of water and at the same time functioning as water regulators. According to the Water Authority of the Ayacucho Region, thanks to the work of the ABA Association, the Cuchoquesera dam, at an altitude of 3,650 meters, receives an additional 15 million cubic meters of water for agricultural and livestock uses, a third of the amount of water of the reservoir initially intended for this purpose. The evaluation of the water recharge of aquifers in the five micro-basins of the Pampas and Chikllarazu rivers, already between 1986 and 2013, indicated an increase of more than 54%, with an increase in the areas with vegetation and a decrease in bare ground cover. Considering these results of great environmental and economic impact, the practice of implementing the lagoons is now being replicated also in the neighboring Regions of Apurímac and Huancavelica.

In Quispillaccta, supplying water to the entire territory, these lagoons have made it possible to relaunch the agricultural and livestock activities of the communities and small local producers. Allowing more natural grass and cows that produce up to 8 liters of milk a day, the local communities call the area “little Switzerland”.

The ABA Association works on the recovery of traditional knowledge, on the strengthening of Andean agriculture and the cultivation of ancestral species, the diversification of seeds, the improvement of soils and grazing areas, on the increase of vegetation cover and reforestation, in the cultivation of medicinal plants, among others. Through the [Magta Chuya youth network](#), the Association involves 224 girls, boys, adolescents and young people of the indigenous community of Quispillaccta and the city of Huamanga, who actively participate in the processes of creating local water systems and activities that value the culture of the territory.

The extraordinary initiative of managed by the three engineers and their Association to revive the Andean lagoons as reservoirs of rainwater has drawn national and international attention. In addition to significantly improving the living conditions of local communities, it represents an effective solution to deal with a problem as common as water scarcity, exacerbated by climate change, through an intelligent management system based on existing natural resources and on the knowledge of the local culture.

[The Peruvian Ministry of Agriculture and Irrigation mentions the experience of the ABA Association](#) as one of the 15 that can inspire a national program for *planting and harvesting water*. ABA was also recognized in a special ceremony during the COP20 event, as the winner of the competition for good practices against climate change



in rural areas, organized by the Ministry of the Environment of Peru (MINAM).

To know more

[ABA Ayacucho website](#)

[Brochure in interclima.minam.gob.pe](#)

[Article in Terre des Hommes website](#)

[Article in cooperacionsuiiza.pe](#)

[Article in redagricola.com](#)

[Article in diariocorreo.pe](#)

[Article in rumbosdelperu.com](#)

[Article in Terre des Hommes - lagoons in Costa Rica](#)

[Article in casub.cl](#)

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[Article in actualidadambiental.pe](#)

[MINAGRI siembra-cosecha de agua.pdf \(gwp.org\)](#)

[Fondo Sierra Azul – Ministerio de Agricultura y Riego](#)

[Aba Ayacycho \(p.75\) - Género-y-CC-2016 in minam.gob.pe](#)

[El conocimiento ancestral, base de Sierra Azul in hidraulicainca.com](#)

[Crianza de agua in hidraulicainca.com](#)

