THE ANCESTRAL WARU WARU SYSTEM IS BEING REVIVED IN PERU TO TACKLE CLIMATE CHANGE

November 2026



In the Acora District of Peru's Puno Department, five Waru Waru sites, ancestral agricultural systems based on raised platforms and water channels, were restored by the World Monuments Fund WMF in partnership with the Aymara Suma Yapu Association and four Aymara communities, with the aim of strengthening food production, preserving traditional knowledge, and improving adaptation to climate change.

As described on the IICA Institute website "Waru Waru is an ancient practice of the ancestors of the Tiahuanaco culture, which was located in the highlands between Bolivia and Peru, above 4000 m above sea level. It consists of an agricultural infrastructure that modifies the relief of the terrain by building raised embankments on the original surface, inserting channels to form the embankments, thereby achieving the interaction of the elements soil - water - climate - plant - man. It is especially used in areas with restrictions for agriculture, due to poor drainage, temporary flooding problems, frequent frosts and low potential for agricultural activity. The embankments are generally 4 to 10 m wide by 10 to 100 m long, and 0.5 to 1 m high. They are built with the earth excavated from the channels and have a similar size and depth, to form a platform or "bed" surrounded by water where planting is done. This water around the waru waru creates a microclimate that mitigates the effect of frost, making it possible for crops to develop. The water in the canals, which absorbs the sun's heat during the day and radiates at night, helps protect crops from frost. The more fields are cultivated in this way, the greater the effect on the environment. The sediments in the canals contain nitrogen-rich algae and plant and animal remains, which are then used as a source of nutrients for crops, improving agricultural yield in the highland area."







The project enabled the restoration of five Waru Waru sites, where communities once again planted native potatoes. Local farmers in the Acora area dug canals, raised the soil beds, and planted native potato varieties on the floodplains surrounding Lake Titicaca. At an altitude of over 3,800 meters, this ancient hydraulic system protected the crops from the extreme frosts of the high plateau, and during the 2025–2026 season, the communities successfully harvested four tons of native potatoes. More than 50 potato varieties, both sweet and bitter, were recovered during the season. Over 12 hectares were restored across the four participating communities, with the involvement of local families and farmers.

The effectiveness of the Waru Waru system lies in its passive thermoregulatory design. During the day, water accumulating in the side trenches absorbs intense solar radiation; as night falls and temperatures plummet below freezing, the water releases that heat,

warming the air immediately surrounding the plants' leaves. This invisible thermal barrier prevents frost from damaging the potato crops—a vital benefit at high Andean altitudes, where extreme daily temperature fluctuations destroy conventional plantings. The system also naturally addresses soil fertilization. Over the months, sediments, algae, and organic matter settle at the bottom of the channels; farmers then remove this nutrient-rich sludge to coat the planting mounds, completing a virtuous, self-sustaining production cycle that eliminates the need for industrial agrochemicals.



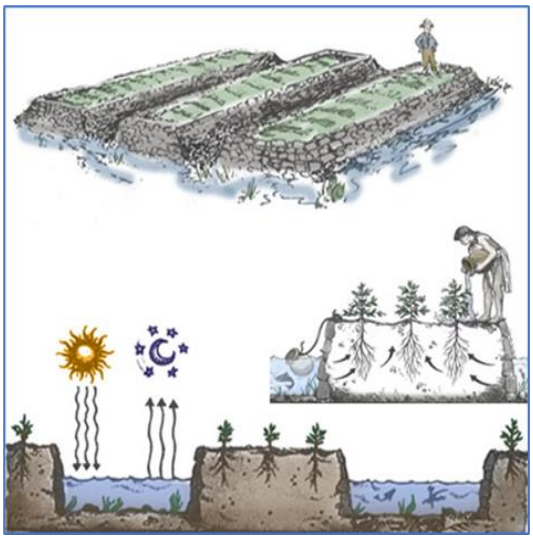
The final harvest of the first growing season yielded approximately four tons of native potatoes, and representatives from the four local communities traveled to Lima to market their produce and showcase its quality. In addition to immediate consumption, families set aside a portion of the harvest to *produce chuño* and *tunta*, traditional Andean dehydrated foods that utilize extreme cold for long-term preservation, thereby ensuring food reserves for months of scarcity. The International Potato Center and the Mater initiative have participated in the genetic monitoring of the crops to help preserve the immense biodiversity of the Andes in the face of the environmental crisis.



At the same time, the Waru Waru agricultural fields were included in the 2025 World Monuments Watch due to their immense heritage value and pivotal role in regional food security. The Acora project was selected from among five global initiatives; this selection recognized the value of restoring cultural landscapes through conservation, research, and direct collaboration with the communities that keep this traditional knowledge alive. The restoration of the Waru Waru agricultural fields in Acora is part of the World Monuments Fund's Cultivating Resilience program, which aims to strengthen the adaptive capacity of historic gardens and cultural landscapes in the face of climate change. In submitting the nomination, Peru's Ministry of Culture identified the Waru Waru system as a resource capable of contributing to resilience and food security amidst the climate crisis.



Following this recognition, and in collaboration with the Suma Yapu Aymara Association and the Puno Regional Directorate of Culture, the World Monuments Fund has launched a new project to support the preservation and expansion of Waru Waru practices through training and local participation in these traditional agricultural methods.



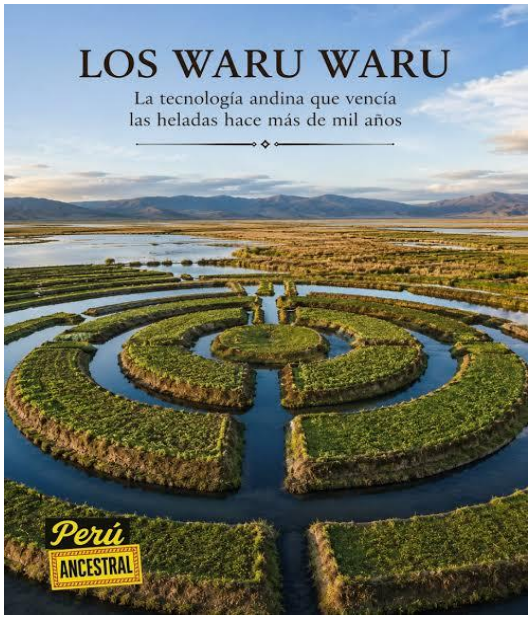
The World Monuments Fund website states that "Today, several challenges threaten the survival of this agricultural system. First and foremost, climate change has made agricultural income increasingly uncertain, forcing many families to migrate to cities looking for better opportunities and leaving behind their Waru Waru fields and the traditions associated with them. The introduction of modern machinery and intensive livestock farming poses further challenges, compromising the region's crop biodiversity while lessening overall yield. These changes threaten to disconnect local youth from their ancestral environment and practices. As Indigenous insights into climate resilience gain increasing recognition worldwide, Waru Warus exemplify how practices that have endured millennia of change can help communities face an uncertain future."



The new project's goal of highlighting the diversity of the native Andean crops grown led to a partnership with Mater, the International Potato Center and Asociación Aymara Suma Yapu. Mater, an interdisciplinary research center that connects science and the humanities, has worked with WMF to coordinate cultural

internships and seed-sharing initiatives that bring together Aymara communities from the district of Acora and the communities of Mullak'as-Misminay and K'acllaraccay, surrounding the MIL Center. The program allows participants to exchange agricultural practices and cultural traditions. In addition, the International Potato Center, a leading institution in research on potato diversity and Andean agrobiodiversity, is supporting the documentation of native potato varieties and the study of their relevance. The partners are also developing a catalogue of more than 85 potato varieties cultivated at the Waru Waru sites that the team has restored. The publication will help preserve and transmit knowledge about these crops and their role within resilient local food systems.









To know more

Waru Waru in World Monuments Fund WMFwebsite

2025 World Monuments Watch

Article in gob.pe

Waru Waru in iica.int

Article in caretas.pe

Article in Peru21.pe

Article in heraldodemexico.com.mx

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