

Prolinnova in Peru: 2018 activities

After successful work as individual organisations in Andean communities with fragile ecosystems, very cold climates, high rates of poverty and chronic child malnutrition in the Apurímac and Ayacucho Regions in Peru, several organisations of innovative farmers, NGOs, private companies,



Figure 1: Farmers constructed three RWH systems of 8000 m³ each

public institutions and academia formed the Prolinnova–Peru platform to work together on rainwater harvesting (RWH). In February 2018, the Prolinnova Oversight Group (POG) formally recognised the Prolinnova–Peru platform. The member organisations directly involved in the RWH work are: Villa Hermosa Farmers Association, Lamalama Farmers Association, Centre for Agricultural Development (CEDAP) and World Neighbors (WN). As adaptation and mitigation measures in response to climate change, these partners constructed three RWH systems in Ayacucho and Apurimac with a capacity of 8000 m³ each, benefiting eight communities and 250 families in total. Farmers provided community labour, while CEDAP and WN provided funds from their existing programmes. The local municipalities of Uripa and Cocharcas in Ayacucho and Apurimac also provided support through machines to move rocks. The Prolinnova–Peru partners met several times in the framework of this collaboration to promote RWH in the Ayacucho and Apurimac Regions.

The problem is that, because of changes in land ownership in the Andes, indigenous farmers have been obliged to move higher up in the mountains; they are no longer cultivating the most fertile land, which is in the valleys. So they have had to start all over again in constructing RWH systems. In order to secure water throughout the year, the farmers have to store high volumes of water in the wet season, and this can only be done using machinery. This allows the farmers to take collective action to benefit many in the community. Without such structures, rainwater runs off quickly during the wet season, and there is severe water scarcity during the dry season.

The farmers decided to re-introduce ancestral practices of RWH – using artisanal dams or “*quochas*” in Quechua – to reduce the social and economic impact of water scarcity. Thus, marginalised communities in the Andes are preserving and sustaining rainwater – using an ancient technique developed by the Incas in the Andes more than 10,000 years ago – and are trying to incorporate it

into public policies. The Prolinnova–Peru partners have been meeting with regional and central government authorities in order to get them more involved in RWH so that this approach is incorporated into Peruvian policies as “green infrastructure” using local materials, which is more cost effective than “grey infrastructure” using concrete and steel.

Contrary to many conventional narratives, indigenous communities do recognise and know the causes and effects of climate change in their lives – increasing temperatures, erratic rains, deforestation around basin heads, melting of glaciers and the water-related social conflicts. The innovation by these marginalised communities consists in returning to ancestral practices in the face of climate change. The communities use machinery provided by the municipalities to move the rocks and to make the RWH systems, but the principles of harvesting rainwater comes from the past.

Local farmers identified the location, a basin in the ground at the bottom of a mountain, a mountain that once might have also been a glacier that, because of the increased global warming, has melted



Figure 2: Farmers can secure food and sell the surplus when they have water availability throughout the year.

down and the water has run off, infiltrated into the ground or evaporated. Farmers also identified the natural canal for the *quocha*'s run-off and built there – using local materials such as stones and clay – a dam 3–4 metres wide, crossed by several 6-inch diameter pipes for drainage and overflow. The pipes were provided by CEDAP and WN.

In addition to conserving and collecting water, these RWH systems also contribute to

climate change mitigation: because of permanent water infiltration in the soil around the *quochas*, native plant species have thrived and taken over the mountains, covering them with perennial trees that, due to their root systems, hold water in the sloped ground. Thus, earlier ecosystems have been re-established over a period of only one or two years.

Water is one of the most important resources in the Andes for family farmers. If farmers have no water, they will produce less, which also affects their income. With the RWH systems, farmers produce food to feed their families and sell the surplus; both help them get out of poverty and guarantee continued production.

The Prolinnova CPs in the Andes (in Peru and Bolivia) have been collaborating in seeking funding to scale out technical and organisational innovations. One opportunity followed up was in response to the 2018 call of Fontagro (Regional Fund for Agricultural Technology). RWH was central to this proposal. Although it was not possible in the end to obtain funding through Fontagro, the CPs continue to look for funding opportunities for joint Prolinnova work in the Andes Region.

In 2018, the two CPs decided that the coordinator of Prolinnova–Peru would take the seat for the Andes Region in the Prolinnova Oversight Group (POG) for a term of two years.

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