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Restored Ecosystems Bring Water to Millions of People

Water is no longer as plentiful or as predictable for South Americans now that their glaciers are retreating at the fastest rate on Earth. Yet, there is a way to help communities become stronger and more prepared to face this challenge.

Essential Facts about Water in the Andes

The Andes: Critical water regulators

The Andes play an essential role in the water security of the continent, providing water to ~90 million people, including major urban centers such as Lima, Bogotá, Quito, Santiago, and La Paz, as well as for vital industries such as agriculture, hydropower, and mining.

Water security crisis

Tropical glaciers are melting faster than anywhere else outside of the Arctic Circle, with Andean glaciers thinning by nearly three feet a year since 2000. As ice disappears, downstream rivers become more irregular, leading to longer and more intense droughts. Scientists estimate that the ice loss in the Andes could reduce the water flow to the Amazon River tributaries by up to 20%.

Forests: A natural solution

High Andean Polylepis forests are natural water regulators. They capture and store water in large quantities, steadily releasing it throughout the dryer season and recharging wetlands. With only 500,000 hectares remaining, protecting and regenerating these native ecosystems is critical to strengthening the cultural identity of rural communities and ensuring people, economies, nature, and wildlife have access to clean, abundant water in the decades to come.

An emerging water crisis in South America

High-Andean ecosystems are key to regulating the water cycle, sustaining life, and powering South America's major economic sectors. Mountain waters form the headwaters of the Amazon River, nourishing agricultural lands that grow coffee, avocados, and staple crops. This same water sustains livestock, hydropower, and millions of people downstream, including major city centers. However, climate change is rapidly destabilizing this balance. Without these forests, regional water security and local economies are at risk.

Abra Malaga in southern Peru is an example of a high-Andean ecosystem with still-intact native forests.

Rising temperatures and shifting precipitation patterns are accelerating glacial retreat in the Andes. These glaciers are now smaller than they have been in at least 11,700 years. By 2050, the central range in the Andes might lose between 84 to 98 percent of its glaciers, one study projects. Melting glaciers can trigger catastrophic floods and landslides, overwhelming lakes and rivers with torrents of water, mud, and debris.

Scientists estimate that 95% of Andean catchments will reach peak water before 2030 — the tipping point when meltwater supply declines permanently, increasing the risk of prolonged droughts.

No population — rural or urban — is spared from the consequences. Severe drought in Ecuador led to nationwide power outages and water rationing, loss of staple crops and livestock in Bolivia, and water rationing in Colombia. Intensifying cycles of drought and flood, worsened by land degradation, are forcing many to migrate, contributing to further environmental damage and human-wildlife conflicts.

Polylepis forests: Nature's answer to melting glaciers and water scarcity

Forests play a crucial role in regulating the water cycle, influencing precipitation, evaporation, and water flow. Polylepis forests in particular are a vital nature-based solution to melting glaciers. Thriving at altitudes up to 16,000 feet, these resilient trees

capture water from precipitation, regulate river flows, slow runoff, and recharge groundwater supplies. Their deep roots enhance soil permeability and reduce the risk of landslides. Additionally, the surrounding soil acts as a natural filter, purifying water before it returns to rivers and aquifers.

Restoring Polylepis forests and other native trees is a practical, direct, and scalable form of ecosystem restoration for both rural and urban communities in the Andean region, offering a natural buffer against water scarcity and providing long-term climate resilience.

Acción Andina is a continental-scale initiative involving 16 partner organizations in six Andean countries in South America, with plans to expand to Venezuela.

About Acción Andina

Acción Andina, co-founded and co-led by Global Forest Generation and ECOAN, is a bold initiative to restore and protect one million hectares of fragile Polylepis forests over the next two decades and lay the foundation for a 100-year vision to fully restore the Andes. It is the most ambitious restoration initiative in the region, aiming to increase climate change resilience, while sustaining water, biodiversity, and livelihoods.

Since its launch in 2018, Acción Andina has planted 12 million of these extraordinary native trees and engaged over 40,000 community members across six Andean countries, restoring degraded ecosystems with an impressive 80% tree survival rate a year after planting.

Contact us to discuss how you would like to partner to protect the last remaining hectares of Polylepis forests, secure water sources for millions of people, and regenerate the Earth's most biodiverse regions.