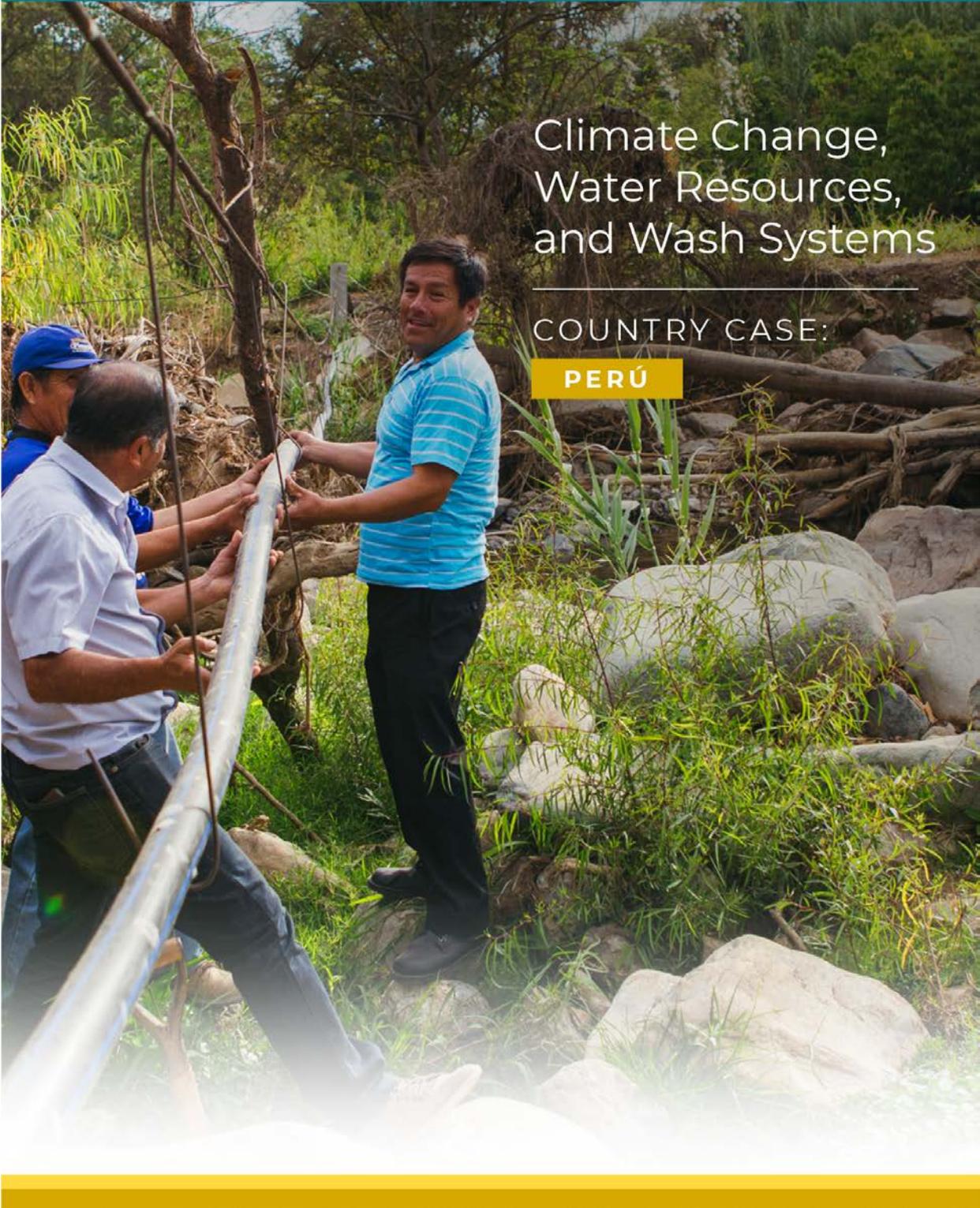


Climate Change, Water Resources, and Wash Systems

COUNTRY CASE:

PERÚ



	Risk	Programing	Policy & Planning	
Polluted water	Medium	Related	NAP	Yes
Too little water	High	Related	National climate policies & plans	Some
Too much water	High	Related	Extent WASH is included	Moderate

Climate trends and impacts on water resources

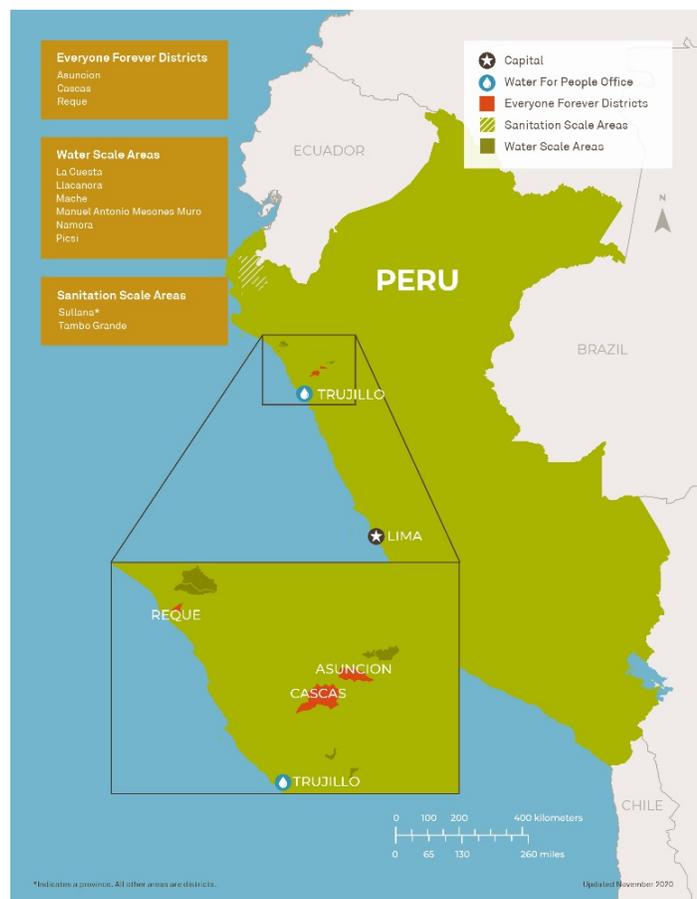
In Perú Water For People works in three municipalities. On the coast, we work in Reque de Lambayeque, and in the mountains (La Sierra) we work in Asunción de Cajamarca and Cascas de La Libertad.

Trends on the coast:

- El Niño-Southern Oscillation (ENSO) with intense rainfall every three to five years is a climatological phenomenon considered as a threat. According to the National Meteorology and Hydrology Service, ENSO will increase in its intensity and its frequency due to climate change. This phenomenon has two well-defined phases: a warm one (El Niño) and a cold one (La Niña). Likewise, the transition from El Niño to La Niña is mainly rapid, whereas the transition from La Niña to El Niño is more gradual.
- The rivers along the coast of the Pacific slope generally carry large flows during the rainy season (December-April) and are reduced to the base flow in the dry season (May-November), as a result of the infiltration in the highlands. However, in recent years, the change in rainfall in the highlands has caused droughts in the lowlands with impacts on the water supply.
- It is estimated that by 2030 the temperature will have increased between 0.4 and 1.2°C, with increased rainfall on the north coast during ENSO.

Trends in the mountains:

- Changes in rainfall patterns produce water shortages and increasingly longer periods of drought.
- It is estimated that by 2030 the temperature will have increased between 0 to 1.6°C.



Impacts on WASH infrastructure and services

In intervention areas, piped water systems can be gravity-fed (with or without treatment) or pumped (with or without treatment). Service is provided via home connection with low coverage of micrometering. Sanitation service is provided through dry toilets (ventilated dry pit latrines) and hydraulic drainage (mostly septic tanks and a low percentage of sewage). The infrastructure will be affected differently according to the context of the intervention areas.

In Asunción, we have altitudes ranging from 1,600 m. to 4,150 m. (5250-13,615 ft.) with average rainfall ranging from 600 mm (23.6") in the lowlands to 1,400 mm (55") per year in the highlands. In Cascas, we have altitudes ranging from 600 m. to 4,000 m. (1968-13,123 ft.) with average rainfall ranging from 150 mm (5.9") in the lowlands to 300 mm (11.8") per year in the highlands. Finally, Reque is at an average of 25 meters (82 ft.) above sea level with desert characteristics on the coast and little precipitation; that changes when the El Niño Phenomenon occurs, causing torrential rains.

Cascas and Asunción are located in the Sierra region, where springs are the main source of water for drinking water supply systems, and they are mainly recharged from rainfall. This system has undergone drastic changes in recent years, producing increasingly longer periods of droughts and a reduction in the flow of springs, which is aggravated by highly eroded recharge zones. This problem leads to interruptions and rationing of the water service, making evident the population's vulnerability of returning to bad practices such as consuming contaminated water from streams, wells, and ditches.

In Reque, located in the coastal region, the main source of water for drinking water supply systems is groundwater either from the water table (shallow) or from confined aquifers (deep). Shallow open pit groundwater sources suffer the greatest consequences during ENSO. The intense rains flood these water sources with mud which prevents the water suction pumps from working and causes service shortages for the population. Likewise, these sources are prone to contamination through the use of agrochemicals in agricultural activity.

Climate and WASH Policy and Initiatives

Some years ago, Perú began the process of formulating Regional Climate Change Strategies ([Cajamarca Regional Climate Change Strategy](#), [Lambayeque Regional Climate Change Strategy](#), [La Libertad Regional Climate Change Strategy](#)), as well as the one for the country ([Perú National Climate Change Strategy](#)). While the contents are varied, there are themes in the strategies, such as watershed management, research on the behavior of ENSO, and training the population for resilience to climate change.

There is a [National Plan for Adaptation to Climate Change](#) (June 2021) with a horizon to the year 2050 and which will serve as an input to update the national strategy. The plan seeks to: 1) increase the adaptive capacity of vulnerable groups to the dangers associated with climate change, 2) reduce the vulnerability of ecosystems, hydrographic basins, and rural and urban territories to the dangers associated with climate change, and 3) reduce exposure and vulnerability to the dangers associated with climate change of the infrastructure that provides goods and services to the population.

Additionally, the [Sierra Azul](#) program aims to increase water security for agricultural purposes. However, it's possible the interventions may also have benefits for drinking water uses. Another important process is the implementation of the [Integrated Water Resources Management in Ten Basins Project](#). One of them is the Chancay-Lambayeque basin, where the Reque district is located, and is focused on water security, understood as the reliable availability of an acceptable quantity and quality of water for health, livelihoods, and production of goods and services, coupled with an acceptable level of water-related risks. For this, the International Bank for Reconstruction and Development has committed to a loan of US\$40 million to contribute to the implementation of national plans and policies and the Paris Agreement of the United Nations Framework Convention on Climate Change.

Country program activities: mitigation and adaptation

Activities are within the country program's integrated water resources management (IWRM) framework that includes four components: 1) conservation of sources, 2) equitable distribution, 3) efficient use, and 4) guarantee the quality of the water.

In the case of the Asuncion and Cascas districts, found in the Sierra region, emphasis is on promoting the replication of [Water Sowing and Harvesting](#) (*Siembra y Cosecha de Agua*) projects to ensure water supply in the medium and long term. Likewise, the Sanitation Services Administration Boards (JASS, for the Spanish acronym) will be trained to reduce water waste and pay for the service according to consumption.

The JASS and the Municipal Technical Department (ATM, for the Spanish acronym) will also be trained on the implementation of the [Water Quality Route](#), with the aim of guaranteeing the consumption of chlorinated water. Topics include source water quality, spring monitoring, chlorination, registration and reporting by the service provider, and supervision of the operator and monitoring of water quality indicators by the ATM.

In the district of Reque, we are developing a proposal aimed at solving the problems of water resources availability and climate change adaptation in the context of an ENSO event. Additionally, as in the other districts, the JASS and ATM will be training on the implementation of the Water Quality Route.

These IWRM activities are examples of climate change adaptation, and all have the goal of increasing the resilience of communities. With the Water Sowing and Harvesting Program, reforestation projects also contribute to climate change mitigation.

Key challenges

Guaranteeing water security for water and sanitation services and strengthening resilience to the effects of climate change, specifically:

1. Consolidating the implementation of the Remuneration Mechanisms for Water Ecosystem Services for the general population. This process seeks to conserve water-producing areas for the water supply of urban populations managed by companies that provide sanitation services. To this end, the urban population (payer) finances conservation actions in water recharge areas owned by rural communities (contributor).
2. Obtaining municipal financing for the development of a rural municipal Water Sowing and Harvesting program for the general population.

3. Establishing institutional arrangements between the National Water Authority and the municipalities, for granting water use rights to JASS and conserving water recharge areas of the sources of rural drinking water systems.