

# Humanitarian impact of heavy rainfall and flooding

## OVERVIEW

Since 1 December 2023, heavy rain and associated floods, landslides, and storms have affected most of Peru. Between 6 January and 1 March 2024, the rain and floods affected over 100,000 people, including over 30,000 children, and damaged or destroyed around 42,000 homes, 70 schools, and 130 health centres (UNICEF 08/03/2024). On 26 and 28 February, the Government of Peru declared two 60-day states of emergency because of intense rain in districts belonging to 19 of Peru's 24 departments: Amazonas, Áncash, Apurímac, Arequipa, Ayacucho, Cajamarca, Cuzco, Huancavelica, Huánuco, Ica, Junín, La Libertad, Lima, Loreto, Madre de Dios, Moquegua, Pasco, Puno, and Ucayali (El Peruano 26/02/2024 and 28/02/2024). As at 6 March, rain and floods had killed eight people since January, all in Apurímac department (Mongabay 06/03/2024).

Recent severe incidents of heavy rain and flooding occurred in Tumbes and Piura departments in mid-February; Madre de Dios department from 21–26 February; Ucayali department from 24 February to at least 4 March; Cusco department on 29 February, with a landslide injuring 12 people and leaving two others missing; and Junín and Áncash departments from 10–12 March (ECHO 26/02/2024 and 29/02/2024; FPP 04/03/2024; Canal N 25/02/2024; Panamericana 25/02/2024; El Heraldo 21/02/2024; PAHO 13/03/2024).

The rain, floods, and landslides have significantly limited access to basic services and increased shelter, WASH, health, food security, and livelihood needs (El Comercio 26/02/2024; UNICEF 08/03/2024; ECHO 26/02/2024; Infobae 24/02/2024). Stagnant water and damage to WASH infrastructure raise the risk of dengue transmission, which is already high because of an outbreak across the country (UNICEF 08/03/2024; DGE accessed 12/03/2024). The long-term impact of heavy rainfall and floods on agriculture will aggravate food insecurity, with over half the Peruvian population experiencing food insecurity as at August 2022, making it the most food-insecure country in Latin America (FAO 25/08/2022).

Coping capacities in many affected departments, particularly in northern Peru, are already low because of heavy rainfall, floods, and landslides from September 2022 until mid-2023, which left nearly 850,000 people in need as at August 2023 (OCHA 23/08/2023; ECHO 02/05/2023). Localised coastal El

Niño, which results from warmer Pacific Ocean temperatures off the coast of Peru, and the global El Niño phenomenon aggravate these extreme weather conditions (UN 01/05/2023; IMARPE accessed 15/03/2024).

A large number of affected indigenous communities, including the Bélgica community in Iñapari (Madre de Dios), seven communities in Fitzcarrald district, Manu province (Madre de Dios), the Asháninka community (Junín), and over 43 communities in Purús (Ucayali), may experience particularly high needs because of systemic marginalisation and higher poverty rates (Actualidad Ambiental 02/03/2024; Infobae 24/02/2024; El Comercio 13/03/2024; Ucayali Regional Government 01/03/2024; Minority Rights Group accessed 12/03/2024). The nearly 1.55 million Venezuelan refugees, asylum seekers, and migrants in Peru, whose primary unmet need is health, may also be particularly vulnerable to the humanitarian needs resulting from floods and associated disease transmission (UNHCR 15/12/2023).

### About this report

**Aim:** this report seeks to alert humanitarian responders and decision makers about the current humanitarian impacts of heavy rainfall and flooding in Peru. It provides an overview of seasonal forecasts for March–May 2024, which may prolong or aggravate existing needs and affect different parts of the country.

**Scope:** the report provides a country-level perspective of rainfall and flooding in most of Peru's departments since December 2023. It highlights recent developments, in February–March 2024, in Áncash, Junín, Madre de Dios, Piura, Tumbes, and Ucayali departments.

**Methodology and limitations:** the report is based on a secondary data review of publicly available information. There is a lack of recent publicly available data on needs in Peru, including food security, WASH, and shelter. These information gaps partly result from recent political crises and a lack of government capacity, described in the [compounding factors](#) section below. This report provides the most recent available information on key sectors to indicate the potential scale of both pre- and post-crisis needs.



## KEY PRIORITIES

# 100,000+

PEOPLE AFFECTED  
ACROSS PERU

# 42,000

DAMAGED OR  
DESTROYED HOUSES

# High risk

OF DENGUE  
TRANSMISSION

# 4.5

INFORM CLIMATE  
CHANGE RISK SCORE

Map 1. Department reference map, Peru



Source: ACAPS using data from OCHA (15/12/2020)

## ANTICIPATED SCOPE AND SCALE

Map 2. Probability forecast for precipitation in Peru, March–May 2024



Source: SENAMHI (29/02/2024)

Peru is divided into three broad climatic regions: Costa (arid coastal plains), Sierra (the Andean Highlands), and Selva (the Amazonian rainforest) (WB accessed 13/03/2024; SENAMHI 29/02/2024).

On 29 February 2024, Peru's National Service for Meteorology and Hydrology (SENAMHI, Servicio Nacional de Meteorología e Hidrología del Perú) predicted short, intense rainfall periods in parts of all three regions in March. In the longer term, from March–May, SENAMHI predicted potential above-normal rainfall in northern Sierra region (parts of Amazonas, La Libertad, Lambayeque, Cajamarca, and San Martín departments) (SENAMHI 29/02/2024). The rainy season in this region typically lasts until the end of March, before a dry, cold season begins in May (WB accessed 13/03/2024).

For the same period, SENAMHI predicted average rainfall in central Sierra region and northern, central, and southern Costa region (Áncash, Huancavelica, part of Huánuco, Ica, part of Junín, Lima, and part of Pasco). Normal or below-normal rain is expected in southern Sierra region (Apurímac, Arequipa, Ayacucho, part of Cusco, Moquegua, part of Puno, and Tacna) and Selva region (part of Amazonas, part of Cusco, part of Huánuco, part of Junín, Madre de Dios, Loreto, part of Puno, part of San Martín, and Ucayali). That said, these regions are still vulnerable to short, intense periods of heavy rain in March (SENAMHI 29/02/2024).

Above-normal temperatures are also expected throughout the country, except along southern Costa, through May (SENAMHI 29/02/2024). Warm weather, combined with high precipitation, will likely aggravate the current dengue epidemic in Peru (UNICEF 08/03/2024).

Because of rainfall, there is a risk of landslides and other earth movements in 260 districts in the Andean region of Peru, including in Áncash, Arequipa, Apurímac, Ayacucho, Cusco, Huancavelica, La Libertad, Lima, Moquegua, and Puno departments (El Comercio 13/03/2024).

Map 3. Probability forecast for temperature in Peru, March–May 2024



Source: SENAMHI (29/02/2024)

## HUMANITARIAN CONSTRAINTS

The rainfall and flooding have damaged roads and bridges in most affected communities, including in Madre de Dios, Piura, and Tumbre departments (Infobae 26/02/2024; Rotafono 22/02/2024; El Heraldo 21/02/2024).

Affected indigenous communities in Purús province (Ucayali district) are only accessible by air because of their remote location. The flooding has blocked several river routes that normally allow access to these communities (RPP 25/02/2024; Infobae 24/02/2024).

## CRISIS IMPACTS

### WASH

Since December 2023, rain and flooding have interrupted WASH services and damaged WASH infrastructure in most affected departments, including Cusco, Madre de Dios, Piura, Tumbes, and Ucayali (PAHO 26/01/2024; ECHO 26/02/2024; Canal N 25/02/2024; El Heraldo 21/02/2024). This aggravates existing WASH needs, particularly in rural areas, which house about 18% of the country's population. As at June 2020, water services were available in only 75% of rural areas (compared with 95% of urban areas), requiring 25% of the rural population to obtain water from rivers, wells, and other unimproved sources. At the same time, only 45% of the urban population and 3% of the rural population received adequately chlorinated water, with the lowest availability in Amazonas, Cajamarca, and Pasco. Sanitation services were available to only 75% of the total population, with sewage systems available in only 19% of rural areas (UNHRC 26/07/2023).

### Health

WASH infrastructure damage may force communities to drink contaminated water and adopt unsafe water storage practices, increasing the transmission of waterborne and vector-borne diseases, including dengue, acute diarrhoeal disease, acute respiratory disease, malaria, and tuberculosis (Infobae 24/02/2024; UNICEF 08/03/2024). The accumulation of stagnant water and high temperatures further increase the risk of dengue transmission (UNICEF 08/03/2024; Panamericana 25/02/2024). On 28 February, the Government of Peru declared a health emergency because of a dengue epidemic in 20 departments, including Madre de Dios and Ucayali (El Peruano 28/02/2024). As at 24 February, dengue had infected nearly 35,000 people, including over 10,000 children and adolescents, across the country. The highest cases were in La Libertad (6,148), Piura (5,275), Ica (4,645), Áncash (3,766), and Lima (2,899) (UNICEF

08/03/2024). Dengue and other waterborne and vector-borne diseases have a particularly severe impact on pregnant women. During the 2023 floods in Piura department, dengue caused or was associated with 20% of recorded maternal deaths (UNFPA 27/12/2023).

Healthcare facilities damaged by rain and floods may struggle to cope with increased disease transmission. From February–March 2024, healthcare facilities in departments including Madre de Dios, Piura, Tumbes, and Ucayali sustained significant damage and were forced to close (El Comercio 26/02/2024; Latina 26/02/2024; Infobae 26/02/2024; RPP 25/02/2024; Ucayali Regional Government 01/03/2024; El Heraldo 21/02/2024). Health infrastructure is already minimal in more remote areas of Peru, including the mountainous and jungle parts of Apurímac, Ayacucho, Cusco, Huancavelica, and Junín departments, all of which have been affected by recent rain and floods (ICRC 18/01/2024).

### Livelihoods and food insecurity

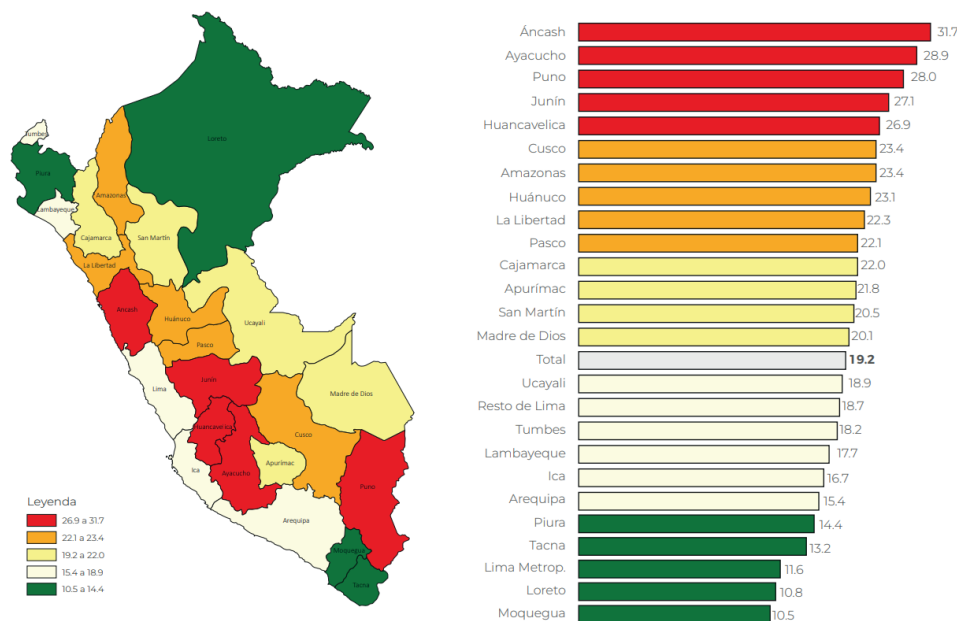
The rain and flooding have caused significant agricultural damage, which is expected to heighten livelihood and food security needs for at least several months (Infobae 26/02/2024; Actualidad Ambiental 02/03/2024). This aggravates the prior livelihood impacts of heavy rain in northern Peru from March–April 2023, which led to low rice production until the end of July (FAO 26/09/2023). The March 2024 rains may cause this pattern to reoccur. Heat in the coming months will also subject rice and yellow maize crops to thermal stress, which could affect productivity. It may also decrease starchy maize and potato crops in the central and southern Andean regions (SENAMHI 29/02/2024).

In total, El Niño-related weather events in 2023–2024, which include both dry conditions and above-normal precipitation, are predicted to affect around 1.7 million hectares of agricultural land across Peru, decreasing agricultural output by up to 16.5 million tons and causing economic losses worth up to 60% of the goods and services produced by the agricultural sector (Infobae 30/10/2023; ACAPS 07/02/2024). This will affect the livelihoods of the approximately 20% of Peruvian households for whom agriculture provided the primary source of income as at November 2021, when the most recent nationwide food security assessment was conducted (MIDIS et al. 2022; WFP 29/01/2024).

These livelihood impacts will likely aggravate food insecurity and malnutrition across Peru. The most recent national food security assessment, conducted in 2021, found that 16 million (51%) of Peruvians were food-insecure, 3.5% (560,000) of whom were severely food-insecure. 57% of the 740,000 refugees, asylum seekers, and migrants who were in Peru at the time of the assessment, equivalent to 421,800 people, were more likely to experience food insecurity. The worst affected departments were Áncash, Apurímac, Ayacucho, Cusco, and Puno, where an estimated 60–68% of the population was food-insecure (MIDIS et al. 2022; WFP 29/01/2024). All these departments have been affected by the early 2024 rainfall and flooding.

High food insecurity contributes to malnutrition among children under five in Peru, 11.5% of whom are affected by chronic malnutrition and 0.4% of whom are affected by acute malnutrition. As at December 2023, anaemia affected 42% of young children across the country (WFP 29/01/2024).

Map 4. Food insecurity index by department, August–November 2021



Sources: MIDIS et al. (2022)

## Shelter and NFIs

The rain and floods have affected homes in most affected departments, including 1,300 homes in Loreto department, damaged at the beginning of January 2024; 600 homes affected in Iñapari city, Madre de Dios department, between 21–26 February; an unspecified number of homes in Tumbes and Piura departments around 21 February; and 300 homes in the indigenous Asháninka community in Junín department at the beginning of March (ECHO 26/02/2024 and 11/01/2024; Mongabay 06/03/2024; El Heraldo 21/02/2024; Rainforest Foundation UK 05/03/2024). This will aggravate existing shelter needs in Piura and Tumbes departments. The onset of the coastal El Niño phenomenon in the first half of 2023 already damaged over 40,000 houses in these two departments, along with Lambayeque (CBi 11/07/2023).

An October–December 2023 study of departments most vulnerable to natural hazards in Peru found that most homes were not built to withstand floods and landslides. The most vulnerable departments with poor infrastructure were Amazonas, Áncash, Arequipa, Ayacucho, Cajamarca, Huancavelica, Huánuco, Ica, Junín, Lambayeque, La Libertad, Piura, San Martín, and Tumbes (Infobae 12/03/2024).

## Education

The floods and landslides have caused significant damage and disruption to schools in affected departments, including Madre de Dios, Piura, Tumbes, and Ucayali (France 24 28/02/2024; Infobae 26/02/2024). As at 11 March, 90 out of around 2,000 schools in Ucayali department had delayed the resumption of classes because of the floods (Anota 11/03/2024). This aggravates existing barriers to education in Peru, particularly among indigenous communities in rural areas and Venezuelan refugee and migrant children (Global Issues 22/09/2022).

## DRIVERS

### El Niño and climate

Some of the recent rain and flooding, particularly in Tumbes and Piura departments, are attributed to the warmer sea-level temperatures resulting from El Niño (Mongabay 06/03/2024). As at 2 March, SENAMHI expected coastal El Niño, the warmer Pacific Ocean temperatures off the coast of Peru and Ecuador, to continue for the rest of the month before transitioning to neutral conditions by April (SENAMHI accessed 18/03/2024; Infobae 27/10/2023; IMARPE accessed 15/03/2024). The September 2023 to March 2024 rainy season in Sierra may have contributed to rainfall in this region (WB accessed 13/03/2024).

## COMPOUNDING FACTORS

### Sociopolitical instability and weak institutions

Peru has experienced relative political stability since mass protests calling for elections at the end of 2022 and in early 2023. The protests followed former President Pedro Castillo's attempt to dissolve congress and establish an 'emergency government', prompting his removal and the swearing-in of current President Dina Boluarte. Despite a return to stability under Boluarte, there remains low public trust in government and state institutions, particularly among indigenous communities in southern Peru. This is partially rooted in widespread, longstanding corruption, both in national and local institutions. The State's inability to cope with the COVID-19 pandemic, which left Peru among the countries with the highest global rate of per capita deaths, also fuelled public discontent and demonstrated a lack of state capacity in response to disasters (ICG 08/02/2024; HRW accessed 12/03/2024). This institutional weakness and public mistrust may hamper the government response to flooding, especially in indigenous communities.

Organised crime is widespread, particularly in the Amazon Rainforest, where criminal groups undertake illegal mining, logging, land seizures, and drug trafficking. These groups frequently attack environmental and human rights defenders, often from indigenous communities in this region (HRW accessed 12/03/2024).

### Migration

After Colombia, Peru is the second most common destination country for Venezuelan refugees and migrants. As at October 2023, there were an estimated 1.5 million Venezuelans in Peru, 1.15 million (75%) of whom lived in Lima and around 533,000 (one-third) of whom were asylum seekers, comprising almost all asylum seekers in the country (UNHCR 15/12/2023).

### Economic situation

The impact of protests on business operations and the impact of El Niño on agriculture and fisheries contributed to slow economic growth in Peru in 2023. In December, inflation reached a 26-year high, largely because of increased oil, cereal, and pulse prices and the long-term impact of the COVID-19 pandemic (WFP 29/01/2024; ICG 08/02/2024). This aggravated poverty in Peru, which affected 27% of the population as at the end of 2022, and was particularly severe in rural areas, especially the Andean departments such as Ayacucho, Cajamarca, Huánaco, Pasco, and Puno, and among indigenous and black communities (HRW accessed

12/03/2024). 70% of the population is also employed in the informal labour market and lacks social protection (ICG 08/02/2024). This reduces their coping capacity in the face of livelihood shocks, including the current floods.

### Climate and natural hazards

Peru's INFORM Climate Change Risk Score is 4.5/10 ('medium') and 6.3 for exposure to droughts. It has a 4.3/10 score for lack of coping capacity, indicating barriers to responding effectively to hazards and disasters (EC accessed 12/03/2024). Aside from floods, earthquakes, landslides, and volcanic activity also affect the country (WB accessed 12/03/2024).

### Infrastructure and mining

The construction of many houses in high-risk areas in Peru adds a level of vulnerability to the severe impacts of landslides and flooding (Mongabay 06/03/2024). Large-scale mining projects have also destroyed aquifers, wetlands, and rainforests, increasing the vulnerability of communities along the Pacific Coast to both floods and drought (UNHRC 26/07/2023).

### Humanitarian response

The National Institute of Civil Defense is coordinating the national response to rainfall and flooding. As at 28 February, the institute and the Peruvian Armed Forces had delivered around 37,400 tons of aid to regional governments under the State of Emergency framework (UNICEF 08/03/2024).

By the same date, the national health department and 20 affected regional health departments were implementing an action plan in response to the national dengue emergency (El Peruano 28/02/2024).

On 1 March, UNICEF reported that an estimated 70% of humanitarian needs resulting from the floods had not been met. As at 8 March, UNICEF was collaborating with local authorities to conduct monitoring and assessments in Huancavelica, Lambayeque and Piura departments (UNICEF 08/03/2024).