



Timor-Leste (also known as East Timor) is a small mountainous island nation. The country is prone to natural hazards such as floods, landslides, drought, tsunamis and earthquakes. Of these hazards, the most common is flood, followed by drought and storms.¹ Situated in the Pacific Ring of Fire, the country commonly experiences earthquakes.

The climate is tropical, hot and humid, with two seasons - rainy and dry. The climate is influenced by the West Pacific and Australian Monsoons and El Niño Southern Oscillation (ENSO). The wet season is from November to May, and the dry season is from May to October.² ENSO strongly affects the country's climate. El Niño typically results in less precipitation and a shorter rainy season while La Niña typically brings above-average rainfall, an extended wet season, and more rainfall during the dry season.³



Source: The CIA World Factbook

As of September 2025, the country is on track to become the 11th member of the Association of Southeast Asian Nations (ASEAN), with a formal invitation expected at the 47th ASEAN summit in October 2025. Membership will allow for additional support from ASEAN for disaster preparedness, response and recovery.

Vulnerability Factors

Timor-Leste relies on rain-fed agriculture and a few key crops; a significant amount of food is imported.⁴ Natural hazards can disrupt agricultural production and have severe consequences for food security, nutrition, health and livelihoods. These challenges are compounded by limited infrastructure, social safety nets and resources. Timor-Leste is one of the world's poorest nations, with 41% of citizens living below the poverty line and over 70% reliant on agriculture.⁵ Almost two-thirds of the population suffer food shortages for at least two months each year.^{6, 7, 8}

Limited infrastructure and geographical challenges hinder access to communities, especially the large rural population. Around 92% of roads are assessed as being in poor or very poor condition, and heavy rainfall can worsen the conditions, cutting off access.⁹ Many rural communities live along the coastline where they rely on farming and fishing, and almost 65% of the population live in low-lying areas exposed to hazards such as flooding.¹⁰ Telecommunications coverage is also weak in some areas and has prevented the dissemination of early warnings.¹¹

FAST FACTS



Geography: Timor-Leste is in Southeast Asia, northwest of Australia and at the eastern end of Indonesia. It includes the eastern half of the island of Timor, the Oecussi enclave in the northwest and the islands of Atauro and Jaco. It shares half of the main island with Indonesia's Timor Barat province.¹⁶ The central mountains rise to 3,000 m (9,850 ft) with deep valleys, and almost half of the country has slopes greater than 40%.¹⁷ The country has 706 km (272.5 mi) of coastline.¹⁸ Total land area is 14,874 sq km (5,743 sq mi).¹⁹



Population: 1,506,909 (2024 est.)²⁰
Population of Dili (capital): 324,269²¹

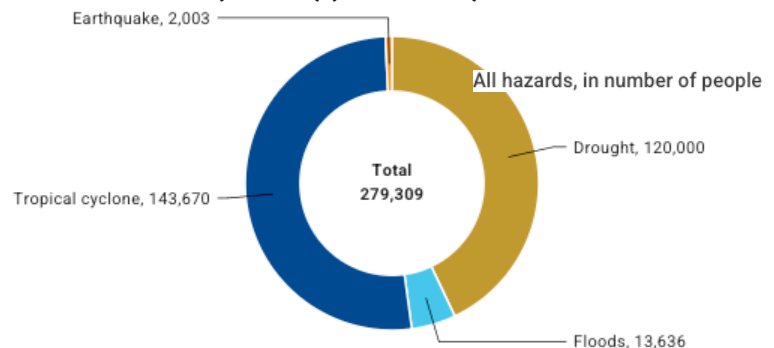


Administration: Timor-Leste is divided into 12 municipalities (districts) and one special administrative region, Oecusse-Ambeno. Municipalities include Aileu, Ainaro, Baucau, Bobonaro, Covalima, Dili, Ermera, Lautem, Liquica, Manatuto, Manufahi, and Viqueque. Municipalities are subdivided into sub-districts. The smallest administrative unit is the suco (village), comprised of aldeias (hamlets).

Impact on Communities

Around 80% of the population has already experienced a natural disaster in their lifetime.¹² Floods have resulted in the severest humanitarian impacts.¹³ Impacts include lost lives, economic losses and damage to infrastructure and agriculture. Additionally, natural disasters have displaced populations. Disasters occurring during the period 2008 - 2022 resulted in 20,600 internally displaced people.¹⁴ Affected communities are often forced to sell assets, borrow cash and food, reduce consumption or use food stores.¹⁵

Past disasters (EM-DAT) (1970 - 2021) - Number of Affected



Source: UNESCAP <https://rrp.unescap.org/country-profile/tls>



OVERVIEW OF NATURAL HAZARDS



Floods and Landslides

Timor-Leste is exposed to frequent floods and landslides during the wet season (November to April).²² Flash flooding, riverine flooding and landslides are some of the main natural hazards affecting the country. Flooding in the capital and coastal areas is a particular concern. A La Niña event typically leads to increased precipitation, flooding and landslides. During the transition from El Niño to La Niña, the country is likely to experience concurrent dry conditions and extreme rainfall events, and above-average temperatures.²³ In Dili, flooding is a recurring event, and flood risk is compounded by the development of urban land in flood prone areas.²⁴ From 2013 through 2023, floods were a major hazard affecting Timor-Leste. They left a total of 28 dead and 9 missing, and they affected 29,696 households with 6,797 houses destroyed. The six most affected municipalities were Dili, Covalima, Manatuto, Viqueque, Manufahi and Oecussi.²⁵

Historical Floods and Landslides

- 2021: TC Soreja brought the worst flash floods in the country in some 40 years.²⁶
- 2020: In March, more than 9,000 people were affected by floods and mudslides on the north coast. At least seven people were injured, and 190 houses were destroyed.²⁷ Some 9,126 people were affected.²⁸



Floods in Dili April 2021

Source: Gabinete Secretario Estado Protecao Civil. https://commons.wikimedia.org/wiki/File:2021-04-04_Inunda%C3%A7%C3%A3o_em_Dili_7.jpg



Drought

Droughts and heat have affected agriculture and livestock and, consequently, have had a significant impact on food and water security. El Niño conditions have led to prolonged drought and more frequent extreme rainfall events during the dry season, and these conditions can lead to flash floods and erosion. A combination of rapid and unplanned urbanization and conditions created by dry periods has the potential to increase the incidence of forest and urban fires.^{29,30} Several municipalities are heavily impacted by drought. Almost 100% of the population of Oecussi is exposed to drought impacts. Dili follows with 88% exposure, followed by Manatuto at 63%.³¹ In 2024, an El Niño event that began in June 2023 brought abnormally high temperatures and low rainfall. It impacted 10 municipalities and affected almost 27% of the population with food shortages.^{32,33}

Historical Droughts

- 2023: Beginning in September, an El Niño event led to drought-like conditions, delayed rainfall, and flash floods during the planting season. It affected crop production, income and food security.³⁴
- 2019: Nearly 1 million people experienced more than 30 days without rainfall, while around 500,000 experienced more than 60 days without rainfall.³⁵
- 2015-2016: An El Niño-induced drought affected 80% of the population and caused over 40% to experience severe food insecurity.³⁶ The drought led to water shortages, caused crop failure, reduced income and was linked to the deaths of 70,000 head of livestock.³⁷ Around 400,000 people were affected in Lautem, Viqueque, Baucau, Oecussi and Covalima, with 120,000 of those seriously affected.³⁸



Earthquakes

Timor-Leste is located near one of the most active tectonic plate boundaries. Historically, earthquake impacts have been relatively low, but it is highly exposed to the hazard.³⁹ A total of 2,554 earthquakes with a magnitude (M) of four or above have struck within 300 km (186 mi) of the country in the past 10 years, equating to an average of around 255 earthquakes per year.⁴⁰ Experts consider the northern and southern coasts to be at high risk for earthquakes and tsunamis.⁴¹ The most recent major quake to occur near the country was a M 7.3 quake on 29 December 2021 in the Banda Sea. It did not result in any casualties or damage in Timor-Leste.^{42,43} Other significant earthquakes in the region have affected the country in the past. On 11 November 2004, a M 7.5 quake struck Indonesia's Alor Island and was felt in Dili where people fled their homes. There were no casualties and no major damage.⁴⁴



⚠️ NATURAL HAZARDS (CONT.)



Tropical Cyclones (TC) and Storms

Timor-Leste is moderately exposed to tropical weather systems. Although it is mostly located outside the primary cyclone zone, it is still impacted by TCs originating farther south. Timor-Leste is ranked 43rd worldwide in risk for TCs.⁴⁵ The cyclone season runs from October to May.⁴⁶ Historically, the frequency of TCs in the country's Exclusive Economic Zone is 1.46 cyclones per year. Of these, 0.57 cyclones per year make landfall. At landfall, tropical storms account for 72%, while the proportion of high-intensity cyclones is 0.6%.⁴⁷

Historical Cyclones

- 2021: TC Seroja passed between 29 March and 4 April. It brought torrential rains that caused at least 44 deaths. Heavy rains, flooding and landslides damaged critical infrastructure and impacted rural areas, livestock and agriculture. A total of 33,177 households were affected; the majority of them were in Dili. Around 28,000 houses were destroyed, and 2,363 hectares of agricultural land were damaged. Some 15,876 people were displaced. On 8 April, the government declared a state of calamity and requested international assistance.^{48,49} Total damages were estimated at US\$308 million.⁵⁰
- 2019: TC Lili brought significant rainfall (60-200 mm; 2.4-7.9 in) in May 2019, when it approached Timor-Leste. It caused wind damage and flooding in the south and east of the country.⁵¹
- 2006: Cyclone Daryl destroyed crops and over 500 houses.⁵²



U.S. Navy Seabees support the CPA and CVTL to help people affected by flooding in Dili in April 2021

Source: U.S. Embassy Dili. <https://twitter.com/USEmbassyDili/status/1378908323324456961/photo/3>



Tsunami

Although tsunamis are relatively rare, the threat is always present, linked as it is to earthquake risk. According to Think Hazard, the tsunami hazard is classified as medium, meaning there is more than a 10% chance of a potentially damaging tsunami occurring in the next 50 years.⁵³ Since 1857, three tsunami events have been recorded.⁵⁴ The deadliest tsunami occurred on 14 May 1995 when a M 6.9 earthquake in the Flores Sea triggered a 4-m (13-ft) tsunami wave, which caused damage in the Dili and Maliana. The tsunami left 11 dead and 19 injured. It destroyed several homes, damaged 40 boats and left hundreds of cattle missing.⁵⁵

Historical Tsunamis

- 2004: M 7.5 earthquake in Indonesia triggered a 2-m (6-ft) tsunami that hit Timor-Leste; however, no fatalities reported.
- 1857: On 13 May, a 3.4-m (11.2-ft) tsunami was created by a M 7.0 earthquake in the Bali Sea.⁵⁶



Extreme Weather Events

Timor-Leste is at risk of extreme weather events. The effects are exacerbated by constrained resources and limited adaptation capacity. The likelihood of extreme weather events is rising, with strong El Niño and La Niña events occurring more frequently than the pre-1960 average. It is anticipated there will be more frequent fluctuations from a strong El Niño to a strong La Niña in the future.⁵⁷ Some studies expect minimal changes in precipitation; however, the frequency of intense rainfall events is expected to increase.⁵⁸ Sea levels have risen and are expected to rise.⁵⁹ Extreme precipitation may wash away soil and pollutants and contaminate groundwater sources, while water sources in coastal areas are at risk of saltwater intrusion.⁶⁰ Rising seas combined with extreme rainfall may result in increased coastal flooding and sea surges.

DISASTER MANAGEMENT STRUCTURE

- The national disaster management office is the Civil Protection Authority (CPA), which falls under the Ministry of Interior. The CPA aims to prevent, mitigate and respond to various emergencies and disasters
- The CPA includes the CPA President, Executive Director and the National Commander for civil protection operations
- The CPA has six national directorates within its structure – the National Fire Brigade Directorate, the National Prevention and Mitigation Directorate, the National Emergency and Response Directorate, the National Recovery Directorate, the National Disaster Risk Management Directorate and the National Resource Management Directorate⁶¹
- The National Civil Protection Operation Command (NOCC) is the CPA's operations center for overseeing, coordinating or leading a response



PLANS

The National Civil Protection Emergency Plan (2021) is a three-level plan that aligns with the ASEAN Joint Disaster Response Plan. An Alert Level I (Alert Situation) is within the response capacity of local authorities. An Alert Level II (Contingency Situation) is a large-scale disaster that requires coordination for national-level authorities to support the local response. An Alert Level III (Calamity Situation) requires an all-of-society approach and coordinated response.⁶²

MAJOR ACTORS IN A DISASTER RESPONSE

National:

- CPA; NOCC
- Timor-Leste Red Cross, or Cruz Vermelha de Timor-Leste (CVTL)
- Timor-Leste Defence Force (F-FDTL)
- National Police of Timor-Leste (PNTL)
- Municipal and ‘suco’ (village) disaster management structures
- National Logistics Center (NLC)
- National Cluster System

International:

- United Nations Country Team/Agencies: UN Office for the Coordination of Humanitarian Affairs (OCHA), World Food Program (WFP), UN Children’s Fund (UNICEF), World Health Organization (WHO), and the International Organization for Migration (IOM)
- International Non-Governmental Organizations: Mercy Corps, Catholic Relief Services, Oxfam, World Vision
- International Federation of Red Cross and Red Crescent Societies (IFRC)
- Australian Red Cross (RC), New Zealand RC, Indonesia RC, American RC, Korean RC
- Donor countries: Australia, U.S., Japan, New Zealand, South Korea

USINDOPACOM DISASTER RESPONSE



After Timor-Leste requested international assistance for heavy rains and flash floods in early April 2021, USAID and USINDOPACOM provided immediate response support. A U.S. Navy Naval Mobile Construction Battalion (“Seabees”) was already in the country to work on a project, and Seabees immediately provided support to the CPA and the CVTL. U.S. Navy Seabees have deployed to the country since 2009. They have completed over 100 construction projects, including health clinics, schoolhouses and other critical infrastructure.⁶³

Sources

- 1 IFRC. Timor-Leste | Flood - Simplified Early Action Protocol (sEAP No: sEAP2024TL01 | Operation No: MDRTL001). 24 Feb. 2025. <https://reliefweb.int/report/timor-les-te/flood-simplified-early-action-protocol-seap-no-seap2024tl01-operation-no-mdrtl001>
- 2 World Bank. Climate Risk Country Profile: Timor-Leste. 2025. <https://www.preventionweb.net/publication/climate-risk-country-profile-timor-les-te-2025>
- 3 ACAPS. ACAPS Briefing note - Timor-Leste: Humanitarian impacts of El Niño-related drought and heat (13 May 2024). 16 May 2024. <https://reliefweb.int/report/timor-les-te/acaps-briefing-note-timor-les-te-humanitarian-impacts-el-nino-related-drought-and-heat-13-may-2024>
- 4 WFP. Timor-Leste and WFP Provide Critical Food Assistance to 18,000 El Niño-Affected People. 1 July 2024. <https://reliefweb.int/report/timor-les-te-and-wfp-provide-critical-food-assistance-18000-el-nino-affected-people>
- 5 SPC. ANNEX 1 – BSRP II Timor-Leste Country Implementation Plan. <https://www.spc.int/sites/default/files/tenderfiles/2024-07/BSRP%20II%20Timor-Leste%20Country%20Implementation%20Plan.pdf>
- 6 OCHA. Timor-Leste: Country Profile (2017). 8 March 2017. <https://reliefweb.int/report/timor-les-te/country-profile>
- 7 ACAPS. ACAPS Briefing note - Timor-Leste: Humanitarian impacts of El Niño-related drought and heat (13 May 2024).
- 8 Levy, Wendy. In Timor-Leste, “hunger season” will be worse after El Niño. The New Humanitarian. 12 Oct 2016. <https://www.thenewhumanitarian.org/news/2016/10/12/timor-les-te-hunger-season-will-be-worse-after-el-nino>
- 9 ACAPS. ACAPS Briefing note - Timor-Leste: Humanitarian impacts of El Niño-related drought and heat (13 May 2024).
- 10 IFRC. Timor-Leste | Flood - Simplified Early Action Protocol (sEAP No: sEAP2024TL01 | Operation No: MDRTL001). 24 Feb. 2025.
- 11 ACAPS. ACAPS Briefing note - Timor-Leste: Humanitarian impacts of El Niño-related drought and heat (13 May 2024).
- 12 UNDP. Timor Leste: Strengthening Disaster Risk Management Program. <https://www.undp.org/timor-les-te/projects/strengthening-disaster-risk-management-programme>
- 13 ACAPS. ACAPS Briefing note - Timor-Leste: Humanitarian impacts of El Niño-related drought and heat (13 May 2024).
- 14 UC Berkley. Timor-Leste. https://belonging.berkeley.edu/climatedisplacement/case-studies/timor-les-te#footnoteref3_haneq3r
- 15 Timor Leste: Drought - Revised Plan of Action (RPOA) DREF Operation no. MDRTPO04. <https://reliefweb.int/report/timor-les-te/timor-les-te-drought-revised-plan-action-rpoa-dref-operation-no-mdrtpo04-0>
- 16 World Factbook. Timor-Leste. <https://www.cia.gov/the-world-factbook/countries/timor-les-te/#geography>
- 17 World Bank. Climate Risk Country Profile: Timor-Leste. 2025.
- 18 CFE-DM. Timor-Leste Disaster Management Reference Handbook. March 2022. <https://www.cfe-dmha.org/LinkClick.aspx?fileticket=ze3tgWkESqs%3d&portalid=0>
- 19 World Factbook. Timor-Leste. <https://www.cia.gov/the-world-factbook/countries/timor-les-te/#geography>
- 20 Ibid.
- 21 GoTL. Timor-Leste Population and Housing Census 2022 Preliminary Results. https://timor-les-te.unfpa.org/sites/default/files/pub-pdf/censuspreliminaryresults2022_4.pdf
- 22 OCHA. Timor-Leste: Country Profile (2017). 8 March 2017. <https://reliefweb.int/report/timor-les-te/country-profile>
- 23 ACAPS. ACAPS Briefing note - Timor-Leste: Humanitarian impacts of El Niño-related drought and heat (13 May 2024).
- 24 SPC. ANNEX 1 – BSRP II Timor-Leste Country Implementation Plan.
- 25 IFRC. Timor-Leste | Flood - Simplified Early Action Protocol (sEAP No: sEAP2024TL01 | Operation No: MDRTL001). 24 Feb. 2025.
- 26 WFP. Aerial Assessments help Timor-Leste recover following the worst floods in 40 years. 23 April 2021. <https://reliefweb.int/report/timor-les-te/aerial-assessments-help-timor-les-te-recover-following-worst-floods-40-years>
- 27 ECHO. East Timor - Floods (IFRC, NOAA-CPC) (ECHO Daily Flash of 18 March 2020). 19 March 2020. <https://reliefweb.int/report/timor-les-te/east-timor-floods-ifrc-noaa-cpc-echo-daily-flash-18-march-2020>
- 28 IFRC. Timor Leste: Floods Information bulletin. 18 March 2020. <https://reliefweb.int/report/timor-les-te/timor-les-te-floods-information-bulletin>
- 29 CPA. National report on the midterm review of the Sendai framework for disaster risk reduction 2015 – 2020: Timor-Leste. November 2023. <https://sendaiframework-mtr.undrr.org/media/96402/download?startDownload=20250822>
- 30 ACAPS. ACAPS Briefing note - Timor-Leste: Humanitarian impacts of El Niño-related drought and heat (13 May 2024).
- 31 World Bank. Climate Risk Country Profile: Timor-Leste. 2025.
- 32 ACAPS. ACAPS Briefing note - Timor-Leste: Humanitarian impacts of El Niño-related drought and heat (13 May 2024).
- 33 UNRC Timor-Leste. United Nations Timor-Leste Annual Report 2024. <https://reliefweb.int/report/timor-les-te/united-nations-timor-les-te-annual-report-2024>
- 34 FAO, UNRC, UNICEF. UN Allocates US\$2 Million to Respond to El Niño Impacts in Timor-Leste. 2 Feb 2024. <https://reliefweb.int/report/timor-les-te/un-allocates-us2-million-respond-el-nino-impacts-timor-les-te-entnum>
- 35 Timor-Leste Dry Season 2019. <https://reliefweb.int/map/timor-les-te/timor-les-te-dry-season-2019>
- 36 ACAPS. ACAPS Briefing note - Timor-Leste: Humanitarian impacts of El Niño-related drought and heat (13 May 2024).
- 37 CARE, et al. ‘The Unreported Drought – El Niño’s Impact in Timor-Leste’. 17 June 2016. <https://reliefweb.int/report/timor-les-te/unreported-drought-el-nino-s-impact-timor-les-te>
- 38 SPC. ANNEX 1 – BSRP II Timor-Leste Country Implementation Plan
- 39 SPC. ANNEX 1 – BSRP II Timor-Leste Country Implementation Plan
- 40 EarthquakeList.org. Timor-Leste Earthquake Report. <https://earthquakeList.org/about/>
- 41 UNDRR. Risk reduction critical to Timor-Leste development plans. 22 November 2011. <https://reliefweb.int/report/timor-les-te/risk-reduction-critical-timor-les-te-development-plans>
- 42 Global Seismic Risk Profiles: Timor-Leste. 2023. https://downloads.openquake.org/countryprofiles/v2023.0.0/Southeast_Asia/timor_les-te.pdf
- 43 USGS. M 7.3 - 125 km NNE of Lospalos, Timor Leste. <https://earthquake.usgs.gov/earthquakes/eventpage/us7000g7lx/executive>
- 44 NOAA. Tsunami of 11 November 2004. <https://www.tsunami.gov/previous.events/?p=11-11-04>
- 45 UC Berkley. Timor-Leste.
- 46 SPC. ANNEX 1 – BSRP II Timor-Leste Country Implementation Plan.
- 47 World Bank. Climate Risk Country Profile: Timor-Leste. 2025.
- 48 DEMAC. Diaspora organizations and their humanitarian response in Timor-Leste. 3 September 2021. <https://reliefweb.int/report/timor-les-te/diaspora-organizations-and-their-humanitarian-response-timor-les-te>
- 49 World Bank & GFDRR. Learning from tropical cyclone Seroja: Building disaster and climate resilience in Timor-Leste. 2021. <https://www.preventionweb.net/publication/learning-tropical-cyclone-seroja-building-disaster-and-climate-resilience-timor-les-te>
- 50 IFRC. Timor-Leste | Flood - Simplified Early Action Protocol (sEAP No: sEAP2024TL01 | Operation No: MDRTL001). 24 Feb. 2025.
- 51 WFP. Timor-Leste Dry Season 2019. 24 Nov 2019. <https://reliefweb.int/map/timor-les-te/timor-les-te-dry-season-2019>
- 52 SPC. ANNEX 1 – BSRP II Timor-Leste Country Implementation Plan.
- 53 Think Hazard. Timor-Leste: Tsunami. <https://thinkhazard.org/en/report/242-timor-les-te/TS>
- 54 SPC. ANNEX 1 – BSRP II Timor-Leste Country Implementation Plan
- 55 UNESCO. Preserving the Story of the 1995 Tsunami in Dili, Timor-Leste. 27 May 2024. <https://www.unesco.org/en/articles/preserving-story-1995-tsunami-dili-timor-les-te-0#:~:text=On%20May%2014%2C%201995%2C%20a,missing%20and%2019%20were%20injured>
- 56 WorldData.info. Tsunamis on East Timor’s coasts. <https://www.worlddata.info/asia/east-timor/tsunamis.php>
- 57 ACAPS. ACAPS Briefing note - Timor-Leste: Humanitarian impacts of El Niño-related drought and heat (13 May 2024).
- 58 World Bank. Climate Risk Country Profile: Timor-Leste. 2025.
- 59 SPC. ANNEX 1 – BSRP II Timor-Leste Country Implementation Plan.
- 60 SPREP. Enhancing climate resilience and water security for communities in Timor Leste. 4 March 2024. <https://reliefweb.int/report/timor-les-te/enhancing-climate-resilience-and-water-security-communities-timor-les-te>
- 61 CPA. National report on the midterm review of the Sendai framework for disaster risk reduction 2015 – 2020: Timor-Leste. November 2023. <https://sendaiframework-mtr.undrr.org/media/96402/download?startDownload=20250822>
- 62 Ibid.
- 63 CFE-DM. USINDOPACOM Foreign Disaster Response in the Indo-Pacific April 1990 – January 2024. <https://www.cfe-dmha.org/LinkClick.aspx?fileticket=MNZLDbxZaic%3d&portalid=0>

