World Health Organization

Impact of El Niño in the Western Pacific Region

Date: 20 October 2026

Public Health Situation Analysis (PHSA)

Typologies of Emergency	Main Health Threats	Countries of Very High Concern	WHO grade
Drought Epidemics Flooding	Waterborne Diseases Heat Stress Malaria and Arboviral Diseases Malnutrition Protection Risks (including gender-based violence) Trauma and Injuries Respiratory Diseases	Indonesia Philippines Papua New Guinea Solomon Islands Vanuatu Fiji	3

Context and Summary

The Western Pacific Region, one of the six regions of the World Health Organization (WHO), includes 38 countries and areas, with more than one quarter of the world's population, 1.9 billion people.[1] Every few years, Pacific island countries and areas experience the effects of El Niño - a naturally occurring climatic event that brings about extreme weather changes in the region. El Niño can potentially severely impact climate and health. The latest forecasts are predicting a potentially exceptional El Niño.

As of 8 October 2026, a broad dry signal is forecast over the western Pacific and the equatorial Atlantic Ocean, stretching across the South Pacific.[2]Conditions are forecasted to continue to intensify and exceed strong El Niño thresholds in August-October 2026 - with the expected peak towards the end of 2026.[3]

While most of the countries expected to face the highest risks of severe humanitarian impacts are in other regions, the Philippines is one of the countries most at risk in the Western Pacific Region.[4] The magnitude of the public health impact will differ from country to country, depending on local coping capacities and vulnerabilities.

Asia and the Pacific risk a strong El Niño backlash, potentially pushing an additional 8.2 million people into acute hunger. Rising temperatures and altered weather patterns are expected to drive crop failures and food shortages, higher food prices, and stress on health systems from heat-related illness and respiratory impacts from haze, particularly among the elderly and young children.[5] Countries with high agricultural dependence are considered particularly vulnerable to El Niño disruption, including Cambodia, the Lao People's Democratic Republic, Papua New Guinea, the Philippines, Solomon Islands, Tonga, and Viet Nam.[6]

The last "very strong" El Nino in 2014-16 had significant food security and public health implications, leaving millions of people in need of food assistance.[7] Moreover, the Pacific hurricane seasons saw 16 hurricanes in each of 2014 and 2015, the joint-highest number of records. One study found that El Nino was a contributing factor to the spread of the Zika virus, a risk facing the Western Pacific region, since it created conditions beneficial for mosquito-borne transmission.[8]



The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of WHO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: WHO | Map Production: WHO WPRO DSI | Map Date: 20 July 2026 | © WHO 2026, All rights reserved.

World Health Organization
Western Pacific Region

Humanitarian Profile

PEOPLE IN NEED (PiN)

While no regional figure is available, countries such as the Philippines is at high risk after recovering from cyclones that **affected over 13 million people in 2025**.[9]

HEALTH NEEDS 2026

While there is no regional figure for health needs available, **the numbers requiring health services across the region are expected to rise**.

FOOD SECURITY

Asia and the Pacific risk a strong El Niño backlash, potentially pushing an **additional 8.2 million people** into acute hunger. [10]

World Health Organization

Response to Date

The humanitarian system enters this El Niño cycle in a materially stronger position than at the equivalent point in 2023–24.[11] Combined Drought Index (CDI) anticipatory action triggering systems are also operational in Papua New Guinea, providing additional early-warning infrastructure that should be monitored and maintained ahead of the November– December 2026 peak risk window.[12]

As of October 2026, a total of 15 Pacific Island Countries including Papua New Guinea Meteorological offices have declared El Niño status with widespread El Niño conditions continuing to drive significant climate variations, severe dry spells, and heightened drought risks across monitored island nations. National authorities are actively monitoring climate indicators with majority of the countries in the early "Response Monitoring" phase, issuing public advisories and key messages, while mobilizing emergency coordination mechanisms as risk thresholds are met.[13]

As of July 2026, National Societies across the region were already monitoring and responding to developing conditions. Indonesia had declared Drought Emergency Status in several districts. Papua New Guinea, Vanuatu, the Solomon Islands, and the Marshall Islands were monitoring drought and rainfall extremes affecting water security and food production, while Japan, Republic of Korea, and China were tracking heightened risk of heatwaves, typhoons, and flooding. Mongolia was monitoring impacts on pasture conditions and livestock dependent livelihoods.[14]

Since 2025, severe humanitarian funding constraints are reducing operational capacity precisely as needs are increasing. Several high-risk contexts are already reporting pipeline breaks, reduced operational footprints and forced prioritisation measures. Funding reductions may limit early action, preparedness activities, food assistance and health operations. [15]

Western Pacific Regional Context

With a population of 2.2 billion – approximately one quarter of the world's population – it encompasses people living in diverse settings, from small islands to large cities, across varied ecological, economic and geographic landscapes, making uniform action strategies challenging.[16] Notably, the impacts of the unfolding El Niño are less likely to impact the high-income countries in the region (HICs), such as Australia, Brunei Darussalam, Japan, New Zealand, Republic of Korea, and Singapore.

The countries in the region most at risk are the middle-income countries (Cambodia, China, Lao People's Democratic Republic, Malaysia, Mongolia, Philippines, Viet Nam) and the Pacific Island Countries and Areas (Cook Islands, Fiji, Kiribati, Marshall Islands, Micronesia (Federated States of), Republic of Naoero, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu).[17]

Pacific island countries and areas are treated as a distinct group regardless of income level due to their unique and largely shared geographical and demographic characteristics. They tend to experience similar challenges due to a relatively small scale of economy and geographical remoteness, which impact how health service delivery and financing are being organized in these countries.[18]

In Papa New Guinea, some 1.2 million people are estimated to require direct food relief, with water shortages, crop losses, dwindling food reserves and higher prices already reported. Schools are being disrupted and concerns are growing over health, nutrition and bushfires. The largest impacts on agriculture and food security are expected from November.[19]

More broadly, in the WHO Western Pacific Region, the only country to have a UN led humanitarian response plan active in 2026 is Viet Nam (Multiple Typhoons 2025-2026), which identified 1.4 million people in need after multiple typhoons and floods in late 2025.[20]

Emerging Climate Risks: Countries of Concern

Historically, El Niño is typically associated with below-average rainfall, elevated temperatures, increased drought risk and heightened pressure on agriculture, water resources and energy systems across Southeast Asia and parts of the Pacific.[21]

Most countries, particularly Fiji, Solomon Islands,Vanuatu, Tonga, Niue, Samoa, Cook Islands and Palau, are experiencing below-average rainfall, increasing drought conditions, declining water availability and heightened wildfire risk.[22] Some of the most significant impacts often occur during the peak in countries including Indonesia and Papua New Guinea and during decaying phases of El Niño, extending into the following year even after the event has begun to weaken.[23]

The Philippines, where El Niño is likely to suppress the monsoon season (May–October), is at high risk as the country is still recovering from six consecutive cyclones that affected over 13 million people in 2025 and a powerful earthquake that struck Mindanao in June 2026.[24] The country is also heavily exposed to global energy and fertiliser price increases driven by the Middle East conflict.[25]

As of 8 October 2026, the dominant wet signal is above-normal rainfall across the central and eastern equatorial Pacific east of the Date Line.[26] Countries likely to be impacted include Kiribati, Naoero and parts of the Federated States of Micronesia, the Republic of the Marshall Islands, and Tuvalu.[27] These conditions bring risks of flooding, water contamination and marine ecosystem impacts, including coral bleaching associated with warmer sea temperatures.[28]

Emerging Climate Risk Hotspots Across Asia And The Pacific- September–November 2026 *(UN, August 2026)*[29]		
Level of concern	**Climate condition**	**Country / territory**
Very High	**Drier**	Indonesia
		Philippines
		Papua New Guinea
		Solomon Islands
		Vanuatu
		Fiji
High	**Drier**	Palau
		Tonga
		Samoa
		Cook Islands
Elevated Concern	**Drier**	Cambodia
		Viet Nam
		Lao PDR
Elevated Concern	**Wetter than average / mixed**	Republic of the Marshall Islands
		Naoero
		Parts of Federated States of Micronesia
		Kiribati
		Tuvalu

Food Security

Food insecurity is an imporatnt pathway through which El Niño can affect health and remains an area of concern in the Western Pacific. Countries with high agricultural dependence are considered particularly vulnerable to El Niño disruption, including, Cambodia, the Lao People's Democratic Republic, Papua New Guinea, the Philippines, Solomon Islands, Tonga, and Viet Nam.[30] As of June 2026, the vegetation and crop conditions remained generally favourable across much of Asia-Pacific, with no widespread agricultural drought stress.[31]

The primary concern is the emergence of rainfall deficits during key planting and crop development periods later in 2026 and early 2027. This creates a critical window for preparedness action before conditions deteriorate.[32] Rising temperatures and altered weather patterns are expected to drive crop failures and food shortages, higher food prices, and stress on health systems from heat-related illness and respiratory impacts from haze, particularly among the elderly and young children.[33]

Climatic shocks cause damage to crops, kills livestock, and leads to shipping disruption. [34] The impact of a food shock varies considerably across different economies, however emerging markets like Indonesia are among those more severely affected.[35] Beyond the immediate impact, El Nino also has second round effects on inflation. For instance, governments may cushion the impact of higher food prices with subsidies. That might reduce the domestic hit temporarily, but by further boosting demand and raising fiscal deficits, it pushes the adjustment elsewhere and risks creating further inflation overall.[36]

At the same time, renewed pressures linked to the Middle East are adding uncertainty to fuel, fertilizer, and food markets and supply chains. The combined impact could result in an additional 8.2 million people facing acute food insecurity in Asia and the Pacific in just a few monitored countries, with the overall number likely higher.[37]

Indonesia and the Philippines face similar dynamics, with the Philippines additionally exposed through its large Gulf Cooperation Council migrant labour community, where remittance disruption would compound already-elevated food price pressure.[38] Pacific Island Countries are exposed through heavy dependence on imported food and fuel (imports average 60% of GDP), limited freshwater storage and dependence on rainwater harvesting, and tropical cyclone seasons. Even modest rainfall deficits can rapidly trigger water security crises in these settings.[39] Rising fuel and fertilizer costs and food prices may also lead to negative economic coping mechanisms, such as selling off assets.

El Niño-induced drought disrupts food production through multiple, interconnected pathways that span the human-animal-environment interface. Reduced pasture availability, water scarcity and elevated heat stress increase livestock morbidity and mortality, leading to forced destocking and loss of animal-source foods (meat, dairy, eggs, fish), which are critical sources of protein and micronutrients for rural households. In Pacific Island Countries and Areas, climate-sensitive subsistence farming systems and high dependence on locally caught fish make communities especially vulnerable to El Niño-driven declines in agricultural and fisheries productivity.

Reduced agricultural production, loss of livelihoods and rising food prices may limit access to nutritious diets, increasing the risk of malnutrition, micronutrient deficiencies and poor maternal and child health outcomes. Food insecurity can also increase susceptibility to infectious diseases, worsen chronic conditions such as diabetes and hypertension, and contribute to psychological distress, particularly among vulnerable populations.

World Health Organization

Health status and threats

Population mortality: With a population of 2.2 billion – approximately one quarter of the world's population.[40] The COVID-19 pandemic has significantly impacted health globally, reducing life expectancy across all WHO regions.[41] Life expectancy at birth reached 77.3 years in 2023 and healthy life expectancy 67.3 years. Both remained below 2019 levels, while the gap between life expectancy and healthy life expectancy widened to 10 years.[42] Populations across countries in the Western Pacific Region are rapidly ageing. The Region is home to one of the largest and fastest-growing older populations in the world. More than 265 million people aged 65 years and older live in the Region, and this number is projected to double by 2050.[43]

Health in the Western Pacific Region has evolved significantly during the past two decades. The Region continued to experience an epidemiological transition with a shift from infectious diseases and injuries to NCDs as leading causes of mortality.[44] Between 2000 and 2023, in the Western Pacific Region, the share of deaths due to noncommunicable diseases (NCDs) increased from 75.0% to 84.7%, while their share of disability-adjusted life years (DALYs) rose from 63.8% to 79.0%. Earlier mortality declines were interrupted during the COVID-19 pandemic.[45]

Vaccination coverage: While overall immunization coverage in the Western Pacific Region has stabilized following the COVID-19 pandemic, progress remains uneven.[46] Coverage with three doses of diphtheria–tetanus–pertussis-containing vaccine (DTP3) fell from 94% in 2015 to 89% in 2025, and all four vaccination indicators assessed remained below 90% regionally.[47]

Overview of Key Health Risks

The below table outlines the key public health risks facing countries in the Western Pacific facing drier than normal conditions in the coming months.

Notably, **for countries and territories facing wetter than normal conditions,** the overall health risks are largely comparable to those outlined below, but are driven primarily by flooding, landslides, and storms rather than water scarcity and heat. Specific health risks include waterborne diseases including leptospirosis, arboviral diseases, and malnutrition from disrupted crop production and food distribution, although net effects on food security will vary by location.

Key Health Risks in Coming Months: Countries With Drier Than Normal Conditions		
Public health risk	**Level of risk**	**Rationale**
Waterborne Diseases	Very high	No cholera cases were reported from the WHO Western Pacific Region in in September 2026.[48] However, cholera was reported in the region in 2025 in the Philippines.[49] Across the Pacific Island Countries and Areas, there are reported rising rates of communicable diseases (diarrheal illnesses).[50] Water scarcity drives diarrhoeal disease. Surface water and groundwater depletion; saltwater intrusion in coastal areas reduces potable water availability; reduced water quantity degrades hygiene practice, creating direct pathways to infection and facilitating the spread of water-and sanitation-related diseases, including cholera, typhoid, and soil-transmitted helminthiasis.[51]
Heat Stress	Very high	Heat stress is a leading cause of weather-related death and can exacerbate underlying illnesses including noncommunicable diseases (NCD). Vulnerable groups include older adults, infants, pregnant women, outdoor workers, remote populations, and people with comorbidities. Indoor heat stress in overcrowded, poorly

		ventilated units creates acute health risk. Inadequate shelter design that traps heat is particularly dangerous for infants, elderly and people with chronic illness. [52]
Arboviral Diseases (not including malaria)	Very high	Rising temperatures and altered weather patterns are expected to increase the spread of vector-borne diseases[53] Drought can promote household water storage that creates breeding sites for Aedes mosquitos. The magnitude and direction of impact varies by country and local ecological conditions. Several countries in the WHO Western Pacific Region such as Cambodia, the Lao People's Democratic Republic, Malaysia, the Philippines, Singapore and Viet Nam have observed early increases in the number of dengue cases reported so far this year.[54]
Malnutrition	Very high	Across the Pacific Island Countries, there are reports of heightened acute malnutrition among children under 5.[55] Temperature and precipitation anomalies are likely to increase wildfire and heatwaves risks, disrupt aquaculture and fishery, and may significantly affect rice and other staple food production across Indonesia, Papua New Guinea, and the Philippines.[56] Increased food insecurity and diarrhoea are likely to negatively affect the nutritional status of vulnerable populations further (e.g. rural communities, pregnant and lactating women, children), especially those in drought-affected regions. [57]
Protection Risks (including gender-based violence)	High	Scarcity intensifies competition over access, driving inter-community tension and conflict in fragile contexts. Women and girls face elevated protection risks when collection points become distant or unsafe. [58] Non-partner sexual violence also showed substantial variation across countries in the Western Pacific Region, with Naoero having the highest point estimate globally, and Vanuatu also ranked among the 10 highest countries worldwide.[59]
Malaria	High	El Niño-associated changes in rainfall and temperature may increase malaria transmission risk, particularly in epidemic-prone areas, high-altitude/transmission-fringe settings, and humanitarian contexts. Displacement and health system disruption may further increase risk by impacting surveillance, vector control, diagnosis and treatment.
Trauma and Injuries	High	Rising temperatures and drought conditions raise the risk of forest fires and transboundary haze, which can cause trauma and injuries.[60] Higher temperatures, prolonged dry spells, low humidity and stronger winds increase fire probability in dense settlements with flammable materials. [61.]
Measles	High	The ongoing measles outbreak in many countries in the Western Pacific, highlights the potential for rapid spread where susceptible populations are brought together in crowded settings. Drought-related disruptions to health services, outbreak vaccination and cold chain may further impact access to timely immunization, especially among vulnerable populations.
Vaccine Preventable Diseases (VPD)	High	Vaccine preventable outbreaks are a risk across the region. Last year, nearly 1.7 million babies, around 1 in every 11 born across the Region, were zero-dose children, meaning they did not receive even a first routine vaccine dose.[62] The risk further increases if the weather conditions disrupt access to health services, facilities ability to operate, and/or there is displaced population staying at crowded evacuation centres/shelters due to weather conditions.

Respiratory Diseases	High	Air pollution is a major risk factor for premature death and disability due to respiratory, cardiovascular and other diseases. Exposure to air pollution occurs indoors and outdoors, which are commonly measured, respectively, as household air pollution and ambient air pollution. Joint exposure to ambient and household air pollution was associated with 6.6 million deaths in 2021.[63]
Maternal and Child Health Risks	High	Climate-driven extreme heat during pregnancy is increasingly associated with premature birth, stillbirth, low birth weight and maternal complications. These risks are not experienced equally: people working outdoors, living in inadequate housing, travelling long distances for care, or relying on health facilities without reliable water, electricity or cooling may have fewer options to protect themselves from extreme heat.[64]
Noncommunicable Diseases (NCDs)	High	The disease burden is increasingly dominated by noncommunicable diseases (NCDs). These diseases accounted for 84.7% of deaths in 2023. [65] People living with noncommunicable diseases may be disproportionately affected by El Niño-related health system disruptions. After climatic shocks, medium-term health impacts include increased morbidity and risk of complications of chronic diseases due to interruption of treatment.[66] If displacement occurs, lifestyle changes may cause or exacerbate chronic conditions.[67]
Mental Health Conditions	High	The mental health impacts of climate change are unequally distributed with certain groups disproportionately affected depending on factors such as socioeconomic status, gender and age.[68] Studies from the Philippines, Indonesia and several Pacific Island countries and areas have documented adverse mental health outcomes following climate-related disasters.[69]
Communicable Diseases (including Human immunodeficiency virus (HIV) and Tuberculosis (TB))	High	People living with HIV or TB may be disproportionately affected by El Nino-related disruptions to health services, medication supply chains and access to care, which can interrupt treatment and increase the risk of treatment failure, drug resistance and onward transmission. [70] Food insecurity and undernutrition increase susceptibility to TB disease and worsen treatment outcomes, while displacement and overcrowding in evacuation centres/shelters may facilitate TB transmission.[71] The Region includes five of the 30 high TB burden countries (China, Mongolia, Papua New Guinea, the Philippines, and Viet Nam), and HIV incidence has increased in Fiji, the Lao People's Democratic Republic, Papua New Guinea and the Philippines.
Biotoxins	Moderate	Increased sea surface temperatures resulting in algal proliferation. Some associations between biotoxins and El Niño have been observed in both marine and freshwater settings. In 2026, Vanuatu experienced a large outbreak of ciguatera fish poisoning on multiple islands. No hospitalisations or deaths were reported. Increased risk is anticipated for shellfish poisoning, particularly among coastal, fishing-dependent communities.
Red: ***Very high risk. *Could result in high levels of excess mortality/morbidity in the upcoming month. Orange: **High risk**. Could result in considerable levels of excess mortality/morbidity in the upcoming months. Yellow: **Moderate risk.** Could make a minor contribution to excess mortality/morbidity in the upcoming months. Green: **Low risk.** Will probably not result in excess mortality/morbidity in the upcoming months*		

World Health Organization

Further Information on Key Health Risks

Waterborne Diseases

No cholera cases were reported from the WHO Western Pacific Region (WPR) in August 2026, and no new publicly available cholera events were identified in the region in September 2026.[72] However, cholera was reported in the region in 2025 in the Philippines. In 2024, there were more than 2000 cholera cases and 24 deaths reported in the Philippines. Climate-related hazards, such as stronger and more frequent typhoons, flooding, and rising sea levels are disrupting water systems, leaving already vulnerable communities even more exposed to cholera.[73] Across the Pacific Island Countries, there are reported rising rates of communicable diseases (diarrheal illnesses).[74] Water scarcity also drives diarrhoeal disease. Depletion of surface water and groundwater, along with saltwater intrusion in coastal areas, reduces the availability of potable water. With less water available, households cut back on hygiene practices such as handwashing and cleaning, which opens direct pathways to infection.[75]

Heat Stress

El Niño conditions can increase global and regional temperatures. Exposure to excessive heat can cause dehydration, heat exhaustion, heatstroke, and premature mortality, and can worsen underlying conditions such as cardiovascular disease, chronic kidney disease, diabetes, respiratory disease, asthma, and mental health conditions.

Heat stress is an established public health risk in the Western Pacific Region. Evidence from countries, including Japan, China, the Republic of Korea and Australia, demonstrates that periods of extreme heat can increase mortality, hospitalizations and the exacerbation of cardiovascular, respiratory and renal diseases. In Pacific Island Countries, prolonged exposure to high temperatures combined with humidity, water scarcity and limited adaptive capacity may increase the risk of heat-related illness, particularly among older persons, infants, pregnant women and outdoor workers.
Hospital admission surges strain facilities with inadequate housing. Indoor heat stress in overcrowded, poorly ventilated units creates acute health risk. Inadequate shelter design that traps heat is particularly dangerous for infants, elderly and people with chronic illness.[76] Heatwaves cause disproportionate impact in facilities without ventilation or cooling.[77]

Arboviral Diseases (Chikungunya, Dengue, and Zika)

Chikungunya

Chikungunya poses an increasing regional threat due to the widespread distribution of Aedes aegypti and Aedes albopictus mosquitoes and growing population susceptibility in many areas. El Niño-related warming may increase vector abundance and transmission potential in suitable environments, while drought-driven water storage practices can create additional breeding habitats.

Dengue

Worldwide, the incidence of dengue has increased 30-fold over the past 50 years. Dengue is a major public health concern as it can develop into a potentially fatal form called “severe dengue”. Of an estimated 2.5 billion people at risk for dengue globally, about 70% live in Asia Pacific countries. Climate conditions, unclean environments, unplanned urban settlements and rapid urbanization can lead to increased mosquito breeding, especially in urban and semi-urban areas.[78] Several countries in the WHO Western Pacific Region such as Cambodia, the Lao People’s Democratic Republic, Malaysia, the Philippines, Singapore and Viet Nam have observed early increases in the number of dengue cases reported so far this year.[79] Increased temperatures associated with El Niño can accelerate Aedes mosquito development, biting rates and dengue virus replication, while drought conditions may lead to increased household water storage that creates additional breeding sites.

Zika

Although no major Zika outbreaks are currently reported in the Western Pacific Region, sporadic travel-related Zika cases continue to be detected in several countries and areas in the region, highlighting the ongoing risk of virus importation and re-establishment of local transmission where competent Aedes vectors are present.

Malaria

Malaria incidence remained much lower in the Western Pacific Region than globally in 2024, but the decline observed between 2016 and 2021 has since reversed, with incidence rising to 2.33 cases per 1000 population at risk, slightly above the 2015 level of 2.28. This is driven mainly by increases in Papua New Guinea and Solomon Islands.[80]

Malaria impacts associated with El Niño will vary according to local climate conditions, local health vulnerability and health system capacities, population immunity and the effectiveness of malaria control programmes. Impacts of El Niño on temperature and rainfall patterns influence the breeding and survival of both Anopheles mosquitoes and Plasmodium parasites.

The effects of El Niño on malaria are particularly pronounced in epidemic-prone areas where climate conditions are generally not suitable for year-round vector reproduction. Small changes in climate conditions in these areas have the potential to change normally unsuitable habitats into viable habitats for mosquitoes that transmit malaria, or to temporarily extend the period of malaria susceptibility. Such areas often include regions in higher altitude, desert fringes and areas of unstable malaria transmission and are therefore more susceptible to outbreaks when transmission conditions become favorable. Decreased immunity acquired over time by inhabitants of these new malaria-prone areas can further increase the risk of outbreaks.

Protection Risks (including gender-based violence)

Protection risks are detailed in the *Determinants of Health* section of the report.

Malnutrition

Temperature and precipitation anomalies are likely to increase wildfire and heatwaves risks, disrupt aquaculture and fishery, and may significantly affect rice and other staple food production across Indonesia, Papua New Guinea, and the Philippines.[81] More broadly, with uncertainty regarding global fuel, fertilizer, and food markets and supply chains, an additional 8.2 million people could face acute food insecurity in Asia and the Pacific- with the overall number likely higher.[82]

Livestock mortality and reduced animal productivity during drought further threaten household food security and income, particularly for pastoralist and subsistence farming communities.[83] Stress-induced livestock movement and congregation at remaining water sources may also increase the risk of zoonotic disease transmission and animal-to-animal spread of transboundary animal diseases, with downstream implications for food supply chains.[84]

In the Western Pacific Region, substantial progress has been made in reducing undernutrition over the past quarter century. The prevalence of stunting declined from 24.7% in 2000 to 15.7% in 2012 and 12.8% in 2024, with the lowest rates in Tonga and highest in Papa New Guinea.[85] Wasting also declined, from 4.2% in 2000 to 3.2% in 2012 and 2.4% in 2024, corresponding to a reduction in the number of affected children from 6.1 million in 2000 to 4.8 million in 2012 and 2.5 million in 2024. These levels are below the 2024 global estimates for stunting and wasting, which stood at 23.2% and 6.6%, respectively.[86]

However, after two decades of sustained improvement, progress in reducing stunting appears to have stalled in the Region, a pattern also seen globally. The regional prevalence reached its lowest estimated level in 2020–2021, at 12.1%, but has since increased gradually, rising to 12.3% in 2022, 12.6% in 2023 and 12.8% in 2024.[87] Although this increase is modest and should be interpreted in light of the uncertainty around the estimates, the recent upward trend is notable after a long period of decline. This points to the need for continued attention to child nutrition in the Region, particularly to ensure that earlier gains in reducing chronic undernutrition are maintained.[88]

At the same time, overweight among children under 5 has become an increasingly important concern. The prevalence of overweight increased from 5.1% in 2000 to 6.5% in 2012 and 8.2% in 2024, exceeding the 2024 global estimate of 5.5%.[89] In absolute terms, the estimated number of children under 5 affected by overweight in the Region increased from 7.4 million in 2000 to 9.7 million in 2012, peaking at 11 million in 2017 and 2018, before declining to 8.6 million in 2024.[90]

Trauma and Injuries

Climate events such as droughts can cause direct injuries attributable to fires, injuries associated with displacement, and occupational injuries experienced by outdoor workers.[91]

Road traffic injuries are preventable and remain a major public health and development problem. They are the leading cause of death globally among people aged 5–29 years, and males are more likely than females to die in road crashes. Rates declined among both sexes, but the burden remained substantially higher among males.[92]

Measles

Measles cases increased from a period low of 1458 cases in 2021 to 78 782 in 2025, returning close to the levels recorded in 2015. Indonesia, Mongolia and Viet Nam together accounted for 79% of the 2025 total.[93] Reported cases of vaccine-preventable diseases rely heavily on country surveillance capacities and hence are likely to be under-reported.[94]

Vaccine Preventable Diseases (VPD)

El Niño-related drought, flooding and displacement may increase the risk of vaccine-preventable disease outbreaks by disrupting routine and catch-up immunization, vaccine supply and cold-chain systems, disease surveillance and access to health services. Existing immunity gaps and ongoing poliovirus events in parts of the Western Pacific Region including Papua New Guinea and Lao People's Democratic Republic highlight the importance of maintaining essential immunization services. Remote communities, displaced populations and zero-dose and under-immunized children may be particularly vulnerable, while overcrowding in temporary shelters may facilitate transmission of respiratory and close-contact infections, including diphtheria, pertussis and rubella.

Respiratory Diseases

Respiratory disease activity is already elevated in several countries of the Region. As of September 2026, early increases in seasonal respiratory virus activity have been reported in countries including Japan, the Republic of Korea, Cambodia, and China. New Zealand, Australia and Fiji have also experienced sharp increases in activity in recent weeks. Concurrent increases in SARS-CoV-2 activity have also been observed in some countries, although generally at lower levels than influenza. El Niño-related disruptions to health services and increased population vulnerability may further amplify the health impacts of respiratory disease outbreaks.[95]

Air pollution is a major risk factor for premature death and disability due to respiratory, cardiovascular and other diseases. Exposure to air pollution occurs indoors and outdoors, which are commonly measured, respectively, as household air pollution and ambient air pollution. Joint exposure to ambient and household air pollution was associated with 6.6 million deaths in 2021.[96]

Wildfire smoke is a significant respiratory hazard during prolonged dry periods. Smoke can travel long distances and increase exposure to fine particulate matter, contributing to respiratory and cardiovascular morbidity, even in areas far from active fires. This is particularly relevant for the Western Pacific Region, where smoke from recent wildfires in Indonesia has affected air quality in neighbouring countries, including Malaysia, Singapore and the Philippines.

Maternal and Child Health Risks

Rising temperatures are creating growing risks for maternal, foetal and newborn health. Climate-driven extreme heat during pregnancy is increasingly associated with premature birth, stillbirth, low birth weight and maternal complications. These risks are not experienced equally: people working outdoors, living in inadequate housing, travelling long distances for care, or relying on health facilities without reliable water, electricity or cooling may have fewer options to protect themselves from extreme heat.[97]

Between 2015 and 2023, maternal mortality fell by 12%, while neonatal and under-5 mortality each fell by 17%; regional estimates were below the Sustainable Development Goal (SDG) thresholds, although several countries remained above the relevant targets.[98] Between 2015 and 2023, the under-5 mortality rate in the Western Pacific Region fell by 17%, from 13.6 to 11.2 deaths per 1000 live births. The regional neonatal mortality rate also declined by 17%, from 6.7 to 5.6. In 2023, both regional estimates were below their respective SDG 3.2 targets of 25 and 12 or fewer deaths.[99] The latest coverage of at least four antenatal care visits was 49.0% in Papua New Guinea, 50.7% in Naoero, 67.8% in the Marshall Islands and 68.1% in Indonesia, while skilled birth attendance was 56.4% in Papua New Guinea.[100]

Noncommunicable Diseases (NCD)

People living with noncommunicable diseases may be disproportionately affected by El Niño-related health system disruptions. After climatic shocks, medium-term health impacts include increased morbidity and risk of complications of chronic diseases due to interruption of treatment.[101] If displacement occurs, lifestyle changes may cause or exacerbate chronic conditions.[102] Changes in exercise routines, sleep patterns, diet, smoking and alcohol consumption can all increase the risk of cardiovascular disease, obesity, hypertension, and diabetes.[103]

The disease burden is increasingly dominated by noncommunicable diseases (NCDs). These diseases accounted for 84.7% of deaths in 2023.[104] The Western Pacific Region is further advanced in this epidemiological transition than the world as a whole. Between 2000 and 2023, the share of deaths due to NCDs increased from 75.0% to 84.7% and from 63.8% to 79.0% of DALYs. Over the same period, the share due to communicable, maternal, perinatal and nutritional (CMPN) conditions declined from 14.6% to 9.4% of deaths and from 20.8% to 10.0% of DALYs. The share due to injuries fell from 10.4% to 5.9% of deaths and from 15.4% to 11.0% of DALYs.[105]

Mental Health Conditions

The mental health impacts of climate change are unequally distributed with certain groups disproportionately affected depending on factors such as socioeconomic status, gender and age.[106] Evidence from the Western Pacific Region indicates that climate-related hazards, including cyclones, flooding, droughts, sea-level rise and other extreme weather events, can contribute to psychological distress, anxiety, depression and post-traumatic stress symptoms.[107]

These impacts are often associated with displacement, resource insecurity, loss of livelihoods, water insecurity, and disruption of social networks, with vulnerable populations potentially experiencing disproportionate effects. Studies from the Philippines, Indonesia and several Pacific Island countries have documented adverse mental health outcomes following climate-related disasters.[108]

Suicide is a major public health concern with far-reaching effects on individuals, families and communities in the Western Pacific Region. More than 720 000 people die by suicide each year globally, with approximately one in four of these deaths occurring in the Western Pacific Region. Suicide is the third-leading cause of death among people aged 15–29 years.[109]

Communicable Diseases (including Human immunodeficiency virus (HIV) and Tuberculosis (TB))

The estimated HIV incidence in the Western Pacific Region remained below 0.1 new infections per 1000 uninfected population in both 2015 and 2024, while the estimated number of new HIV infections declined from 170 000 in 2015 to 160 000 in 2025.[110] However, this low regional estimate masks important country-

level increases, including epidemics in a few countries: among 15 countries with data, incidence increased in four, including an ongoing epidemic in Fiji and the Philippines, and a further increase from already high incidence in Papua New Guinea.[111] Tuberculosis incidence declined globally from 150 to 131 per 100 000 population between 2015 and 2024 but increased slightly in the Western Pacific Region from 129 to 131. Across the 28 countries of the Region, 16 countries improved and 12 worsened.[112]

Biotoxins

Marine and freshwater biotoxins may increase during El Niño as higher temperatures, altered rainfall patterns, drought and changes in water quality create conditions favorable for harmful algal and cyanobacterial blooms. Some algae produce toxins that can accumulate fish and shellfish, causing illnesses such as ciguatera fish poisoning and shellfish poisoning. Ciguatera is one of the most common seafood-borne illnesses in tropical Pacific Island Countries and remains an important public health concern in coastal and fishing-dependent communities. Environmental conditions associated with El Niño, including warmer sea surface temperatures, may increase the risk of harmful algal blooms and ciguatera in some Pacific island settings. Recent outbreaks of ciguatera fish poisoning have been reported in countries such as Vanuatu, highlighting the ongoing vulnerability of communities that rely on reef fish as an important food source.

Determinants of health

Water, Sanitation and Hygiene (WASH)

Unsafe water, sanitation and hygiene (WASH) was associated with 1.4 million deaths in 2019. In the Western Pacific Region, the mortality rate due to unsafe WASH was 5.7 per 100 000 population, with country estimates ranging from 1.7 in Brunei Darussalam to 37.4 in Kiribati.[113]

In health-care facilities, water shortages may disrupt infection prevention and control measures, environmental cleaning and routine service delivery. Pacific island countries, including Kiribati, the Marshall Islands, FSM, Tuvalu and Naoero, are particularly vulnerable because of their dependence on rainfall and limited freshwater resources. Outer islands throughout the Pacific rely on generators to power desalination equipment. Equipment is vulnerable to fuel shortages, lack of spare parts and usage outpacing maintenance. Equipment breakdown can lead to a loss of water supply to hard-to-reach areas.

Displacement

Climate change, migration, displacement and health are interconnected issues. The Western Pacific Region is home to a large and growing migrant population. Migration and displacement influence the social determinants of health, access to health services and overall well-being, challenged exacerbated by climate change.[114] Displacement can increase vulnerability to a range of adverse health outcomes by disrupting access to safe water, sanitation, food, shelter, health services and social support networks.

Protection Risks

In 2023, the estimated prevalence of physical and/or sexual intimate partner violence among ever-partnered women and girls aged 15–49 years was lower in the Western Pacific Region than globally, both for lifetime experience (18.4% compared with 25.8%) and for the past 12 months (9.0% compared with 13.7%).[115]

Country-level estimates indicate wide variation across the Region and show that several Pacific island countries are among the countries with the highest estimated prevalence of physical and/ or sexual intimate partner violence globally. In 2023, lifetime prevalence among ever-partnered women and girls aged 15–49 years ranged from 7.1% in Singapore to 60.7% in Fiji.[116] Non-partner sexual violence also showed substantial variation across countries in the Western Pacific Region. Lifetime prevalence ranged from 0.7% in Cambodia to 42.0% in Naoero, the widest country range among WHO regions. Naoero had the highest point estimate globally, and Vanuatu also ranked among the 10 highest countries worldwide.[117]

With climate change events, gender-based violence, child protection risks and exploitation tend to increase in crisis and displacement settings, particularly where overcrowding, insecurity and disruptions to essential services coincide.

As households experience income losses and reduced resilience, negative coping mechanisms—including child labour, early and forced marriage, asset depletion and survival sex—may become more prevalent. Seasonal weather patterns can further interact with economic pressures, influencing the timing and modalities of migration along established routes.[118] Across the Pacific Island Countries, there is an increased burden on women and girls to travel longer, unsafe distances to fetch water; heightened intra-household stress over resource scarcity.[119]

Health Systems Status and Disruptions

The Western Pacific Region is defined by its extreme contrasts. The Region is home to an estimated 1.92 billion people spread across 38 countries and areas.[120] Among the 27 countries in the Region with available health expenditure data for analysis, nine are high-income countries (HICs), as classified by the World Bank, with the rest in the middle-income category, split between seven upper-middle-income countries and 11 lower-middle-income countries.[121]

The regional Universal Health Service Coverage Index increased from 76 in 2015 to 81 in 2023, but progress slowed and country values ranged from 32 to 89. Infectious-disease services strengthened most, while the noncommunicable diseases (NCD) subindex remained the weakest area.[122]

In 2025, the Region's self-reported International Health Regulations core capacities exceeded global averages in 10 of 15 areas, with strengths in surveillance, emergency management, health service provision, and risk communication and community engagement.[123] However, country average scores ranged from 38 to 100, and six countries scored below 50. Persistent gaps in zoonotic-disease capacity, chemical events and radiation emergencies point to the need for targeted investment, particularly in countries with more limited preparedness capacities.[124]

Alongside the income diversity of the Region, there is considerable heterogeneity in sociopolitical systems, with varying implications for economic structure, government revenue-raising capacity, health expenditure patterns and the government's role in health financing. With such a rich and diverse set of countries, it is impossible to represent the Western Pacific Region's health financing arrangements in a single metric.[125]

Despite recent reforms in health financing, public health spending in the Western Pacific Region remains inadequate to meet growing needs. In many countries, current policies have not yet achieved the goals of equitable service access and financial protection.[126]

Families are being pushed into poverty from the financial burden of paying for health services.[127] Financial hardship due to out-of-pocket health spending (OOPS) declined to 27% in 2022 but still affected 596 million people and was concentrated among poorer, rural, older and multigenerational households. Large differences in health spending, workforce density and hospital-bed capacity continue to shape the ability of countries to deliver services.[128]

Health systems in the Region are expected to face increased intensity of existing hazards in their overall risk profiles---including drought, flood and extreme heat—that can damage health infrastructure and disrupt facilities' ability to operate, reducing access to care in the most-affected communities. These hazards, influenced by El Nino, can have cross-cutting impacts, including on: (1) the health workforce to reach health facilities; and (2) critical enabling infrastructure, including electrical supply and cold chain, communications, and supply chains, which affect the ability to deliver care. Medicines and outpatient care are the primary drivers of out-of-pocket spending, exposing critical coverage gaps in primary health care (PHC) systems.[129]

Furthermore, the acute vulnerability of the countries in the Region to the effects of climate change also poses significant challenges for health systems. Six of the world's top 10 countries most at risk for disasters due to natural hazards are in the Western Pacific Region, with risks only likely to amplify over time.[130]

World Health Organization

Health Response and Anticipatory Actions

The forecasting of the El Niño effects and risks provides an opportunity to act to protect communities' health as well as the health workforce to reduce health impacts. By acting early, anticipatory actions can reduce costs, build resilience, and save lives.

Country level actions should be informed by country-level analysis, capacity to respond and anticipated impacts, including drought, wildfires, disruption to essential health services, and protection of vulnerable populations and communities.

More about WHOs work in the region is available here, along with information about emergency preparedness.

Anticipatory actions to protect health and continuity of essential health services	
Multisectoral coordination and planning	• Reinforce participation of the health sector in El Niño or disaster preparedness multisectoral coordination mechanisms and planning processes related to El Nino • Engage One Health coordination mechanisms, including Quadripartite (WHO, FAO, WOAH, UNEP) partners and national intersectoral platforms, to monitor and jointly respond to El Niño-related impacts on food systems, livestock health, zoonotic disease risk, water and sanitation systems and other environmental determinants of health • Scale-up vector control campaigns and interventions using seasonal climate forecasting and align vector-control activities across sectors
Surveillance and early warnings	• Reinforce multi-source surveillance, including Epidemic Intelligence from Open Source (EIOS), climate monitoring and social listening, for early detection of climate related disease risks • Integrate available veterinary, animal health and environment data into public health early warning systems and risk assessments • Track and apply evidence from the national weather services and national disaster authorities to health readiness and resilience programming • Establish baseline indicators to indicate early signs of health systems stress and alert thresholds to trigger risk assessment and response actions • Based on the existing system, establish a contingency plan for surveillance continuity for potential disruption (i.e., alternative reporting channels (phone, SMS, or paper forms) in case there's damage to infrastructure, and a surveillance plan over displaced populations or evacuation centers, etc.)
Health facility and supply readiness	• Review health facility readiness to respond and continue safely operating based on the major risks, identifying those facilities that are most vulnerable to El-Nino related impacts, including potential water scarcity • Assess health facility water and sanitation systems, and; ensure adequate WASH and IPC supplies; monitor water quality; ensure service continuity by identifying alternative water supply and/or maintaining adequate water storage, and promote safe water, sanitation and hygiene practices • Review supply chain and pre-position emergency supplies (Interagency Emergency Health Kits (IEHKs), non-communicable disease (NCDs) kits in emergencies, WASH) with special focus on safe storage • Prepare for elevated clinical management needs including reviewing clinical management guidelines for major risks (water-borne, food-borne, respiratory/vector-borne threats)

	• Review health facility referral pathways in case of facility closure, and inform affected communities
Health workforce readiness	• Verify readiness of health workers for priority risk impacts • Conduct refresher trainings for managing anticipated health consequences, including RRTs, EMTs, and community health workers *(e.g. early detection, referral and response for multiple risks including malnutrition, waterborne disease, vector borne diseases)* • Review staffing plans and health facility contingency plans/SOPs to ensure essential health continuity, applying latest risk assessment and early warnings
Community engagement and risk communication	• Strengthen social listening and understanding of community awareness of El Niño-related health risks including air pollution to inform risk communication and overall programming • Verify readiness of community- and national health workforce to collect, interpret and use rapid socio-behavioral evidence using social listening and community evidence generation approaches • Prepare multisectoral hazard-specific RCCE strategies and materials (key messages, graphic design) with special focus on recognizing early signs of dehydration and handwashing

Mitigate and respond to health impacts (immediate consequences)	
Multisectoral coordination and planning	• Activate coordination mechanisms and partner engagement • Continue to update risk assessments with special focus on addressing vulnerable population's health needs and the country's ability to surge to respond across sectors • Promote the sharing of country knowledge, best practices and lessons for mitigation and resilience-building for El Niño through communities of practices in the Asia Pacific Region
Surveillance and early warning	• Scale up nutrition screening and community-based management of malnutrition (outpatient and inpatient) in coordination with partners, with regular monitoring and dissemination of trends • Reinforce capacity for outbreak investigation and rapid response capacity for climate-sensitive diseases • Monitor and respond to health system early signs of stress based on established baseline data
Health facility and supply readiness	• Address health facility readiness and gaps to ensure safe and continuous operations (essential supplies, water access and continuity, referral pathways, infrastructure, workforce) in high-risk areas • Verify supply chain continuity for essential supplies, accounting for anticipated disruptions and last-mile delivery capacity to hard-to-reach areas • Ensure continuity of essential health services (maternal, newborn and child health, immunization, nutrition, NCD care, mental health and psychosocial support, and referral pathways), particularly for high-risk and hard-to-reach populations
Health workforce readiness	• Scale-up health workforce capacity (at all levels) through surge planning and just-in-time refresher training based on priority risks and latest forecasting to reinforce ability to surge

	• Review or test SOPs/plans to deploy surge support to provide care in case of damaged or inaccessible health facilities • Reinforce health worker occupational safety in high-risk conditions (including outdoor workers)
Community engagement and risk communication	• Activate and/or tailor existing RCCE plans or develop simplified versions based on templates • Collect rapid socio-behavioral evidence on key points (knowledge, attitudes, protective and preventive behaviors) • Disseminate prevention and protection messaging to vulnerable communities via online and offline (community) channels

World Health Organization (WHO) contacts

- **WHO HQ:** Sinead McGrath (mcgraths@who.int) (author) and Nabil Tabbal (tabbaln@who.int)
- **WHO Regional Office (WPRO):** Sarika Patel, Jiyoung Lee, Taylor Warren, Chandra Gilmore, Enkhtsetseg Shinee, and Sally Edwards
- **WHO sub-regional and country offices:** Chen Zhongdan, Sara Demas, Sam Fullman, Tamara Curtin Niemi, Anup Gurung, Satoko Otsu, Amy Parry, Narinderjeet Dadar Singh, Yui Sekitani, Ankur Rakesh, Georgios Theocharopoulos, Sangjun Moon, Jeffrey Dotingco, Lepaitai Hansell

Endnotes

[1] WHO (2026), About WHO in the Western Pacific
[2] WMO (2026), Sea-surface temperatures reflect strengthening El Niño
[3] Strong El Niño expected to intensify
[4] ACAPS (2026), GLOBAL EL NIÑO OVERVIEW Countries to watch
[5] IFRC (2026), El Niño Outlook for Asia Pacific 2026–2027: Hazards, Vulnerability, and RCRC Response
[6] IFRC (2026), El Niño Outlook for Asia Pacific 2026–2027: Hazards, Vulnerability, and RCRC Response
[7] Deutsche Bank (2026), El Nino: The next supply shock?
[8] Deutsche Bank (2026), El Nino: The next supply shock?
[9] ACAPS (2026), GLOBAL EL NIÑO OVERVIEW Countries to watch
[10] WFP (2026), What is El Niño, how does it affect hunger and how does WFP respond?
[11] OCHA (2026), An Inter-Agency Report of the Global ENSO Analysis Cell: El Niño Status and Humanitarian Outlook (updated 22 June 2026)
[12] UN (2026) Asia and the Pacific: Snapshot of El Niño, Indian Ocean Dipole & Middle East Crisis: As of 28 August 2026. 28 August. Available at: https://srilanka.un.org/en/321909-asia-and-pacific-snapshot-el-ni%C3%B1o-middle-east-crisis-28-august-2026?utm_source=chatgpt.com
[13] OCHA (2026), Pacific Region Update 1: El Niño Monitoring - Regional Summary (As of 22 September 2026)
[14] IFRC (2026), El Niño Outlook for Asia Pacific 2026–2027: Hazards, Vulnerability, and RCRC Response
[15] OCHA (2026), An Inter-Agency Report of the Global ENSO Analysis Cell: El Niño Status and Humanitarian Outlook (updated 22 June 2026)
[16] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[17] WHO (2026), Regional Action Framework for Health Financing to Achieve Universal Health Coverage and Sustainable Development in the Western Pacific
[18] WHO (2026), Regional Action Framework for Health Financing to Achieve Universal Health Coverage and Sustainable Development in the Western Pacific
[19] UN News (2026), From drought to deluge: 'Super' El Niño's expanding reach
[20] OCHA (2026), https://humanitarianaction.info/plan/1522
[21] https://www.unocha.org/publications/report/indonesia/asia-and-pacific-snapshot-el-nino-middle-east-crisis-12-june-2026
[22] OCHA (2026), Pacific Region Update 2: El Niño Monitoring - Regional Summary (As of 09 October 2026)
[23] https://www.unocha.org/publications/report/indonesia/asia-and-pacific-snapshot-el-nino-middle-east-crisis-12-june-2026
[24] ACAPS (2026), GLOBAL EL NIÑO OVERVIEW Countries to watch
[25] ACAPS (2026), GLOBAL EL NIÑO OVERVIEW Countries to watch
[26] WMO (2026), Sea-surface temperatures reflect strengthening El Niño
[27] OCHA (2026), Pacific Region Update 2: El Niño Monitoring - Regional Summary (As of 09 October 2026)
[28] OCHA (2026), Pacific Region Update 2: El Niño Monitoring - Regional Summary (As of 09 October 2026)
[29] UN (2026) Asia and the Pacific: Snapshot of El Niño, Indian Ocean Dipole & Middle East Crisis: As of 28 August 2026. 28 August. Available at: https://srilanka.un.org/en/321909-asia-and-pacific-snapshot-el-ni%C3%B1o-middle-east-crisis-28-august-2026?utm_

[30] IFRC (2026), El Niño Outlook for Asia Pacific 2026–2027: Hazards, Vulnerability, and RCRC Response
[31] OCHA (2026), An Inter-Agency Report of the Global ENSO Analysis Cell: El Niño Status and Humanitarian Outlook (updated 22 June 2026)
[32] OCHA (2026), An Inter-Agency Report of the Global ENSO Analysis Cell: El Niño Status and Humanitarian Outlook (updated 22 June 2026)
[33] IFRC (2026), El Niño Outlook for Asia Pacific 2026–2027: Hazards, Vulnerability, and RCRC Response
[34] Deutsche Bank (2026), El Nino: The next supply shock?
[35] Deutsche Bank (2026), El Nino: The next supply shock?
[36] Deutsche Bank (2026), El Nino: The next supply shock?
[37] UN (2026) Asia and the Pacific: Snapshot of El Niño, Indian Ocean Dipole & Middle East Crisis: As of 28 August 2026. 28 August. Available at: https://srilanka.un.org/en/321909-asia-and-pacific-snapshot-el-ni%C3%B1o-middle-east-crisis-28-august-2026?
[38] OCHA (2026), An Inter-Agency Report of the Global ENSO Analysis Cell: El Niño Status and Humanitarian Outlook (updated 22 June 2026)
[39] OCHA (2026), An Inter-Agency Report of the Global ENSO Analysis Cell: El Niño Status and Humanitarian Outlook (updated 22 June 2026)
[40] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[41] WHO (2026), Health statistics in the Western Pacific Region 2023: Monitoring health for the SDGs
[42] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[43] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[44] WHO (2026), Regional health leaders agree to improve financing to achieve universal health coverage, prioritize digital health
[45] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[46] WHO (2026), Uneven progress, significant gaps: New immunization estimates must accelerate urgent action in the Western Pacific
[47] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[48] WHO (2026), Turning local lessons into national action for cholera control
[49] WHO (2026), Turning local lessons into national action for cholera control
[50] OCHA (2026), Pacific Region Update 1: El Niño Monitoring - Regional Summary (As of 22 September 2026)
[51] OCHA (2026), An Inter-Agency Report of the Global ENSO Analysis Cell: El Niño Status and Humanitarian Outlook (updated 22 June 2026)
[52] OCHA (2026), An Inter-Agency Report of the Global ENSO Analysis Cell: El Niño Status and Humanitarian Outlook (updated 22 June 2026)
[53] IFRC (2026), El Niño Outlook for Asia Pacific 2026–2027: Hazards, Vulnerability, and RCRC Response
[54] WHO (2026), Dengue increase likely during rainy season: WHO warns
[55] OCHA (2026), Pacific Region Update 1: El Niño Monitoring - Regional Summary (As of 22 September 2026)
[56] https://www.unocha.org/publications/report/indonesia/asia-and-pacific-snapshot-el-nino-middle-east-crisis-12-june-2026
[57] Anttila-Hughes JK, Jina AS, McCord GC. ENSO impacts child undernutrition in the global tropics. Nat Commun. 2021;12:5785. https://www.nature.com/articles/s41467-021-26048-7
[58] OCHA (2026), An Inter-Agency Report of the Global ENSO Analysis Cell: El Niño Status and Humanitarian Outlook (updated 22 June 2026)
[59] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[60] IFRC (2026), El Niño Outlook for Asia Pacific 2026–2027: Hazards, Vulnerability, and RCRC Response
[61] OCHA (2026), An Inter-Agency Report of the Global ENSO Analysis Cell: El Niño Status and Humanitarian Outlook (updated 22 June 2026)
[62] WHO (2026), Uneven progress, significant gaps: New immunization estimates must accelerate urgent action in the Western Pacific
[63] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[64] United Nations Climate Change (2026), UN Climate Chief on new data: "As extreme heat worsens, pregnancy and birth are a new faultline in the global climate crisis"
[65] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[66] WHO (2025), Home/Health topics/Earthquakes
[67] National Institute of Environmental Health Sciences (2023), The Health Effects of Earthquakes
[68] WHO (2022), Why mental health is a priority for action on climate change
[69] Sajjad Kabir, Elizabeth A. Newnham, Ashraf Dewan, Keegan Qi Xian
Kok & Takeshi Hamamura (2025) Climate hazards and psychological health among coastal communities in the Asia-Pacific region: a systematic review of quantitative and qualitative evidence, Health Psychology Review, 19:3, 494-512, DOI: 10.1080/17437199.2024.238322
[70] WHO (2025), Tuberculosis and climate change: analytical framework and knowledge gaps
[71] WHO (2025), Tuberculosis and climate change: analytical framework and knowledge gaps
[72] WHO (2026), Turning local lessons into national action for cholera control
[73] WHO (2026), Turning local lessons into national action for cholera control
[74] OCHA (2026), Pacific Region Update 1: El Niño Monitoring - Regional Summary (As of 22 September 2026)
[75] OCHA (2026), An Inter-Agency Report of the Global ENSO Analysis Cell: El Niño Status and Humanitarian Outlook (updated 22 June 2026)
[76] OCHA (2026), An Inter-Agency Report of the Global ENSO Analysis Cell: El Niño Status and Humanitarian Outlook (updated 22 June 2026)
[77] OCHA (2026), An Inter-Agency Report of the Global ENSO Analysis Cell: El Niño Status and Humanitarian Outlook (updated 22 June 2026)
[78] WHO (2026), Dengue increase likely during rainy season: WHO warns
[79] WHO (2026), Dengue increase likely during rainy season: WHO warns
[80] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[81] https://www.unocha.org/publications/report/indonesia/asia-and-pacific-snapshot-el-nino-middle-east-crisis-12-june-2026
[82] UN (2026) Asia and the Pacific: Snapshot of El Niño, Indian Ocean Dipole & Middle East Crisis: As of 28 August 2026. 28 August. Available at: https://srilanka.un.org/en/321909-asia-and-pacific-snapshot-el-ni%C3%B1o-middle-east-crisis-28-august-2026?
[83] FAO. Ethiopia El Niño Response Plan 2016. Rome: FAO; 2016. https://www.tralac.org/images/docs/9207/fao-ethiopia-el-nino-response-plan-2016.pdf

[84] World Organisation for Animal Health (WOAH). Safeguarding livestock during seasonal movements. https://www.woah.org/en/article/safeguarding-livestock-during-seasonal-movements/
[85] WHO (2024), WPRO Nutrition Dashboard, available at: https://data.wpro.who.int/apps/nutrition-dashboard/?embed [accessed 20/10/26]
[86] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[87] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[88] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[89] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[90] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[91] WHO (2026), Global HW Public Health Situation Analysis El Niño 2026 Implications for Public Health and Early Action
[92] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[93] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[94] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[95] WHO (2026), WPRO Respiratory Viruses Surveillance Bulletin Epidemiological Week 35 (Up to 30 August 2026)
[96] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[97] United Nations Climate Change (2026), UN Climate Chief on new data: "As extreme heat worsens, pregnancy and birth are a new faultline in the global climate crisis"
[98] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[99] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[100] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[101] WHO (2025), Home/Health topics/Earthquakes
[102] National Institute of Environmental Health Sciences (2023), The Health Effects of Earthquakes
[103] National Institute of Environmental Health Sciences (2023), The Health Effects of Earthquakes
[104] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[105] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[106] WHO (2022), Why mental health is a priority for action on climate change
[107] Sajjad Kabir, Elizabeth A. Newnham, Ashraf Dewan, Keegan Qi Xian Kok & Takeshi Hamamura (2025) Climate hazards and psychological health among coastal communities in the Asia-Pacific region: a systematic review of quantitative and qualitative evidence, Health Psychology Review, 19:3, 494-512, DOI: 10.1080/17437199.2024.238322
[108] Sajjad Kabir, Elizabeth A. Newnham, Ashraf Dewan, Keegan Qi Xian Kok & Takeshi Hamamura (2025) Climate hazards and psychological health among coastal communities in the Asia-Pacific region: a systematic review of quantitative and qualitative evidence, Health Psychology Review, 19:3, 494-512, DOI: 10.1080/17437199.2024.238322
[109] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[110] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[111] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[112] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[113] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[114] WHO (2026), WHO launches climate, health and migration research roadmap for the Western Pacific Region
[115] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[116] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[117] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[118] OCHA (2026), An Inter-Agency Report of the Global ENSO Analysis Cell: El Niño Status and Humanitarian Outlook (updated 22 June 2026)
[119] OCHA (2026), Pacific Region Update 1: El Niño Monitoring - Regional Summary (As of 22 September 2026)
[120] WHO (2026), Regional Action Framework for Health Financing to Achieve Universal Health Coverage and Sustainable Development in the Western Pacific
[121] WHO (2026), Regional Action Framework for Health Financing to Achieve Universal Health Coverage and Sustainable Development in the Western Pacific
[122] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[123] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[124] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[125] WHO (2023), Regional framework for reaching the unreached in the Western Pacific (2022-2030)
[126] WHO (2026), Regional health leaders agree to improve financing to achieve universal health coverage, prioritize digital health
[127] WHO (2026), Regional health leaders agree to improve financing to achieve universal health coverage, prioritize digital health
[128] WHO (2026), Health statistics in the Western Pacific Region 2026: monitoring health for the SDGs
[129] WHO (2026), Regional health leaders agree to improve financing to achieve universal health coverage, prioritize digital health
[130] WHO (2023), Regional framework for reaching the unreached in the Western Pacific (2022-2030)