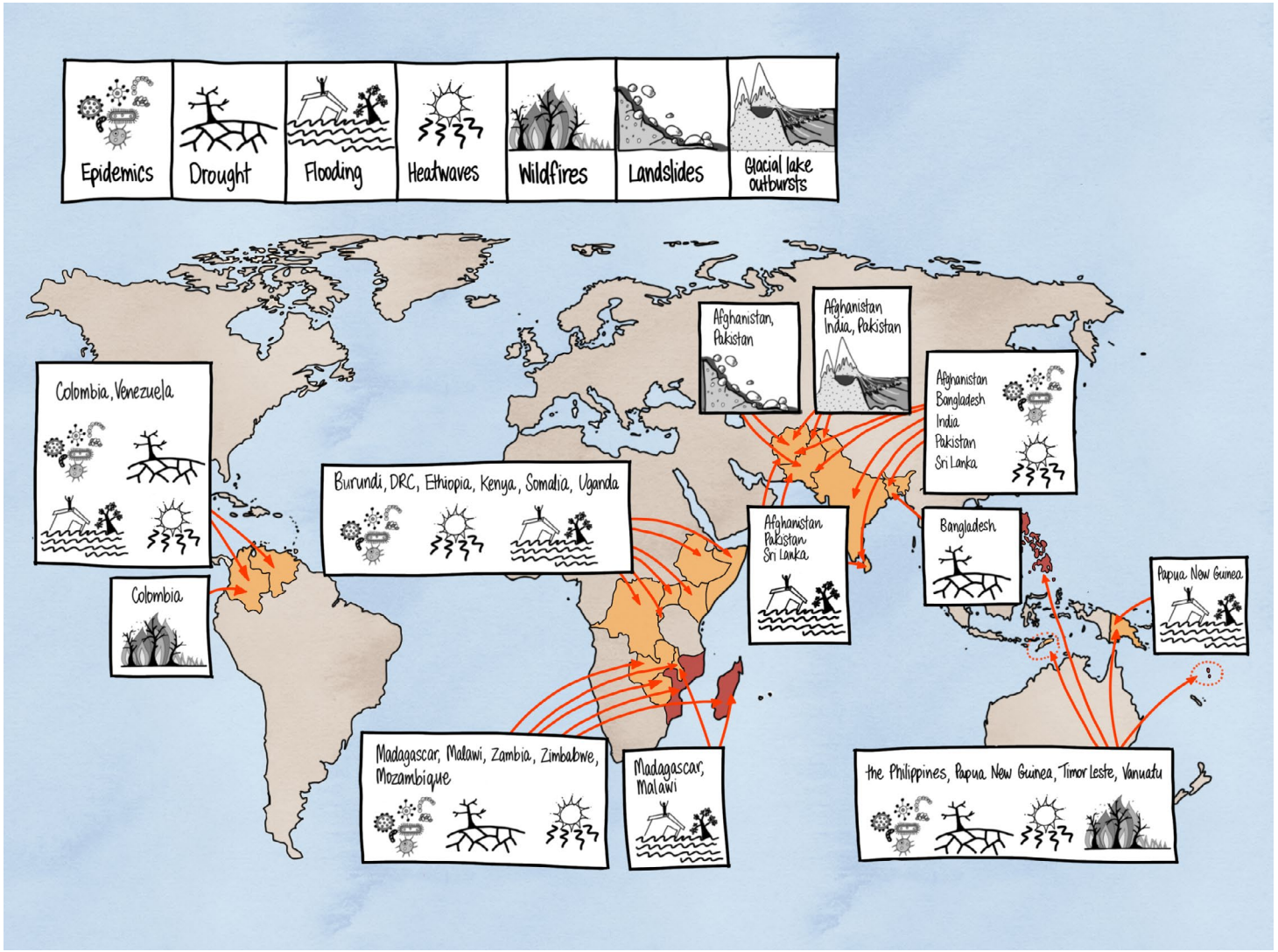
EL NIÑO OVERVIEW

Anticipated humanitarian impact in 2024

KEY MESSAGES

- The ongoing El Niño is expected to continue at least until June 2024.
- Between July–December 2023, El Niño triggered **droughts, wildfires, heatwaves, heavy rains, and floods** in many parts of the world. These include severe droughts in Central and northern South America and Southeast Asia and the Pacific, as well as flooding in East Africa.
- Between January–June 2024, several countries already facing humanitarian crises may experience heatwaves, wildfires, floods, droughts, and epidemics. These events are likely to increase the humanitarian needs of the exposed populations, with **food security and health expected to be the most affected sectors.**
- Seasonal temperature and precipitation forecasts anticipate **El Niño-induced anomalies to continue during the first semester of 2024.** These are dry/wet conditions in Central and South America, South Asia, and Southeast Asia and the Pacific; wet conditions in East Africa; and dry conditions in southern Africa.
- **2024 might surpass 2023 in warmth,** marking the first time global warming could temporarily exceed the 1.5° C threshold. During the first half of 2024, temperatures are forecast to remain above average worldwide, heightening the risk of heatwaves, droughts, and wildfires, particularly in countries going through their dry season.

Map 1. Anticipated El Niño-related hazards,January-June 2024



Source: ACAPS

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ABOUT THIS REPORT

Aim

This report provides a global overview of El Niño-related hazards anticipated between January–June 2024 and their consequent humanitarian impacts, aiming to support strategic planning and anticipatory action. The report focuses on areas where additional humanitarian needs are likely to be observed.

Scope

The geographic scope of the report is global. The report does not, however, provide exhaustive coverage of all countries exposed to or affected by El Niño. Instead, it focuses on the countries where temperature and precipitation anomalies combined with pre-existing crises and vulnerability factors are expected to trigger moderate to severe humanitarian impacts between January–June 2024.

Methodology

This report is based on historical data covering the impact of previous El Niño events, seasonal climate forecasts, and reports from humanitarian organisations, think tanks, and local and international media. The analysis also used three ACAPS datasets: the INFORM Severity Index, ACAPS' Humanitarian Access index, and ACAPS' Seasonal Calendar.

The selection of countries included in the report and the assigned risk level of El Niño's impact are based on expert judgement following an assessment per country of the indicators/factors listed below.

Forecasts and expected El Niño-related hazards

- Historical impact of previous El Niño events in the country
- Typical influence of El Niño between January–June in the country
- Seasonal precipitation and temperature forecast for the first semester of 2024

Existing vulnerabilities to El Niño impacts

- 2023 impact of El Niño in the country and materialisation of seasonal forecasts and alerts issued mid-June 2023

- Pre-existing humanitarian crises and factors contributing to exposure and vulnerabilities to El Niño-related hazards
- Agricultural seasonality

Expected impact on food security and health

- impact on agriculture, livestock, and fishery
- Potential spillover effects of El Niño on local food prices and the economy
- Potential disease outbreaks and increased health needs

Limitations

The historical impact of previous El Niño events only indicates what is likely expected. It is important to note that each El Niño-Southern Oscillation (ENSO) event is unique, and the effects observed in the past may not necessarily occur in the current El Niño. The interaction of El Niño with current record-high global warming, maritime heatwaves, and other interannual variability phenomena can also lead to unexpected outcomes. Additionally, the accuracy of climate forecasts, which provide valuable tools for anticipating El Niño effects in the coming months, typically decreases when the lead time exceeds three months.

EL NIÑO IN 2024: SITUATION OVERVIEW

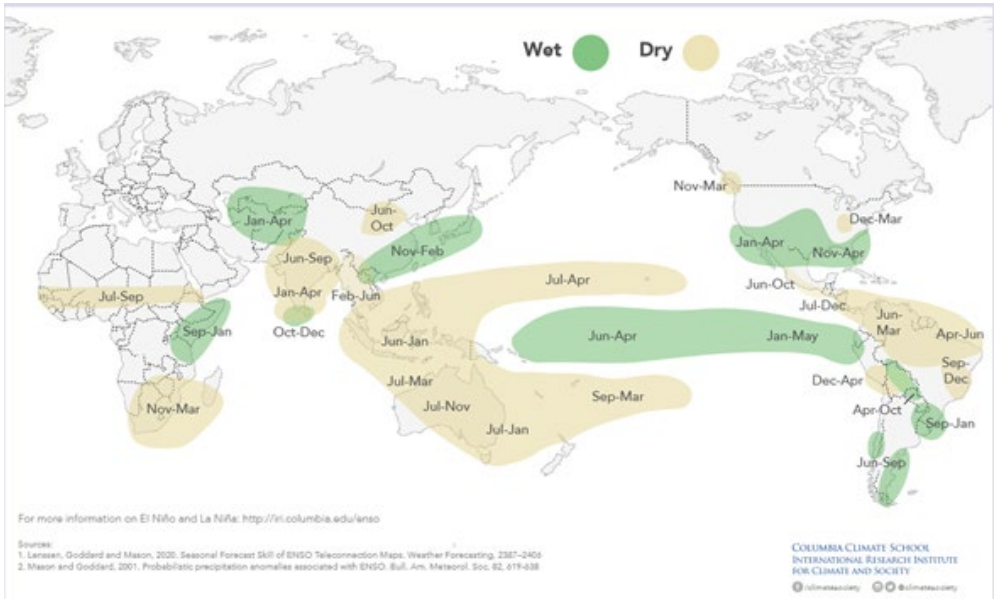
The current El Niño started in June 2023 and developed moderate to strong intensity during the second half of the year (NOAA accessed 30/01/2024). Between July–December, El Niño-induced precipitation and temperature anomalies triggered or aggravated droughts and dry spells, wildfires and heatwaves, and heavy rains and floods in many parts of the world. Severe droughts or dry spells were recorded in Central and northern South America as well as Southeast Asia and the Pacific, while flooding hit East Africa (OCHA 28/11/2023; FAO/OCHA 16/11/2023 and 03/11/2023; OCHA 14/12/2023; IDRA accessed 24/01/2024). For more information on El Niño between June–December 2023, please consult our previous report.

With El Niño expected to reach its peak around January 2024, its intensity will gradually diminish, and a shift to neutral conditions is forecast between April–July (NOAA accessed 11/01/2024). El Niño-related temperature and precipitation anomalies are expected to continue during the first and second quarters of the year, particularly in tropical and subtropical regions (Met Office 11/2023). Between January–June, El Niño-induced rainfall anomalies are typically recorded in southern Africa (dry conditions), Central Asia (wet conditions), and northern Latin America, the Pacific, and South and Southeast Asia (dry/wet conditions) (IRI accessed 11/01/2024).

The Indian Ocean Dipole (IOD) entered its positive phase in September 2023 and has been enhancing the effects of El Niño in East Africa and the Pacific. It started to weaken in December. Models predict the positive IOD to end between January–February 2024 (BOM 19/09/2023; ASMC accessed 08/01/2024; OCHA 12/09/2023).

Record-breaking temperatures from June onwards made 2023 the hottest year on record, surpassing the previous highs in 2016 by a significant margin. The average temperature in 2023 was 1.48°C warmer compared to the 1850-1900 pre-industrial level (EU 09/01/2024). These unusual air temperatures are predominantly driven by unprecedented high surface temperatures in the ocean, which were only partially induced by El Niño and largely attributed to climate change (EU 09/01/2024; NCAS 10/11/2023; NASA 14/09/2023; Ocean & Climate Platform 02/08/2023). Global temperature outlooks suggest that 2024 might surpass 2023 in warmth, marking the first time global temperatures could exceed 1.5° C (Met Office 08/12/2023). During the first half of 2024, temperatures are forecast to remain above average worldwide, heightening the risk of heatwaves, droughts, and wildfires, particularly in regions going through their warm and dry seasons, such as South and Southeast Asia and the Pacific (IRI accessed 10/01/2024; ACAPS accessed 11/01/2024).

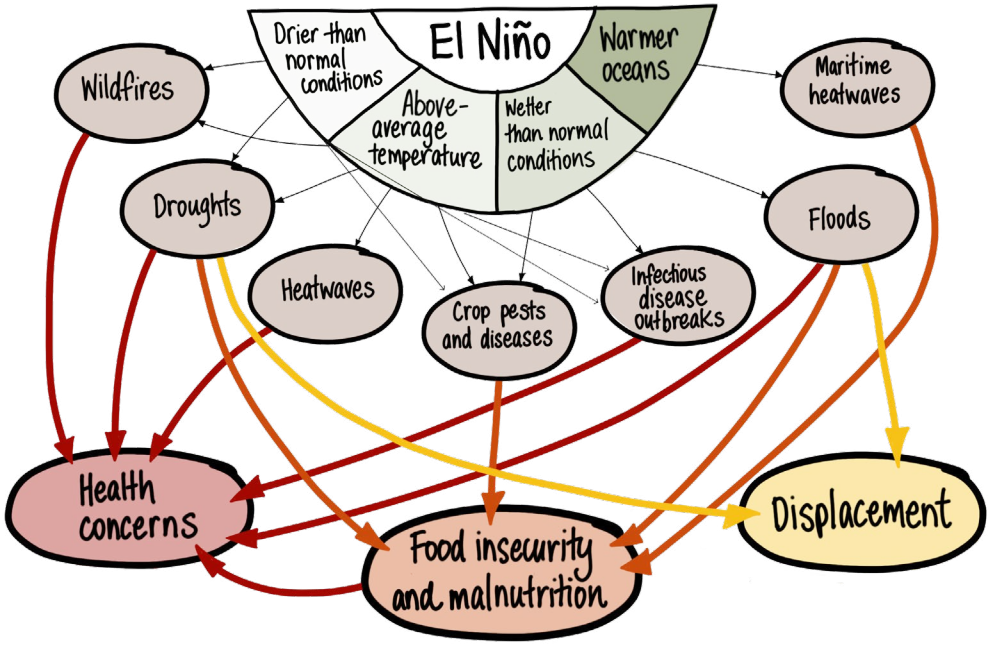
Map 2. Precipitation anomalies typically induced by El Niño and the period during which they usually manifest



Source: IRI (accessed 16/01/2024)

Many governments of El Niño-affected countries have declared a state of emergency or launched response plans in coordination with international and national humanitarian organisations. In Latin America, Bolivia, Colombia, Ecuador, Honduras, and Peru have launched such response plans. For example, the Government of Ecuador is securing USD 500 million in multilateral financing credits and loans to enhance El Niño preparedness and response efforts (OCHA 28/11/2023). In Asia, collaborative work between governments, UN agencies, the Association of Southeast Asian Nations (ASEAN), and the Asia-Pacific Technical Working Group on Anticipatory Action saw the realisation of regional response plans for El Niño impacts in December 2023 (FAO 15/12/2023). In Timor-Leste, the Government has been collaborating with UN agencies to combat the risk of food shortages as a result of El Niño's impact and dependence on rain-fed agriculture (WFP 31/10/2023). Regional response for East and southern Africa is also being coordinated between their governments and the UN (UNICEF 11/2023). A UN response plan to El Niño impacts targets more than 500,000 people in Zimbabwe until March 2024 and over one million people in Somalia until January 2024 (OCHA 20/11/2023; FAO 30/08/2023). International organisations, such as FAO, have launched a global Anticipatory Action and Response Plan targeted at assisting 4.8 million people across 34 countries in East Africa and southern Africa, Asia and the Pacific, and Latin America and the Caribbean until March 2024 to mitigate El Niño impacts (FAO 03/11/2023).

Global effects of El Niño



Source: ACAPS 2024

Main anticipated humanitarian impacts in 2024

Food insecurity

In 2024, El Niño is expected to continue generating both adverse and favourable agricultural impacts, affecting food access and availability worldwide. Negative outcomes on food security levels are likely in southern Africa and Latin America and the Caribbean, compared to East Africa where improvements are expected (FEWS NET 03/10/2023). In 2023, 333 million people were estimated to face severe food insecurity; the numbers are likely to increase in 2024 because of newly emerged and protracted conflicts, climate change impacts, food price inflation, and the negative effects of El Niño-related hazards on agricultural production, food prices, and livelihoods (WFP accessed 23/01/2024).

El Niño impacts on food production and prices vary across regions, crops, and seasons (WB 10/2023). In the early months of 2024, dry conditions are expected in parts of South and Southeast Asia, Central and South America, and southern Africa, continuing to affect food production and livelihoods (FAO 03/11/2023).

The current El Niño has already caused drier-than-usual conditions in South and Southeast Asia, affecting agricultural output (UN 01/2024). The dry conditions, coupled with weak monsoon rains, have already decreased rice production in **Southeast Asia** for the 2023–2024 crop season, especially in India, Indonesia, and Thailand (USDA 12/12/2023). As a result, some countries such as India (the biggest exporter and second-biggest rice producer in the world) have imposed rice export bans and restrictions (VOA 30/09/2023; WB accessed 09/01/2024; USDA 12/12/2023; IFPRI 02/10/2023; Nikkei Asia 31/12/2023; Kathmandu Post 19/01/2024).

Sugar cane production in countries such as India and Thailand has also declined given El Niño-triggered conditions. Production is projected to further decline by up to 15% in 2024. Sugar cane production in Brazil is expected to increase, but the harvest will not reach the markets till midyear, until which time global sugar supplies will likely be stretched (PBS 19/11/2023).

The decline in rice and sugar production, followed by export restrictions in Southeast Asian countries, increased the global prices of these two commodities by 21% and 26.7%, respectively, between 2022–2023 (FAO 05/01/2024). Higher rice prices will heavily affect households in countries relying on rice imports, such as Côte d'Ivoire, Iran, Iraq, Nigeria, the Philippines, and Senegal (UN 01/2024; VOA 26/12/2023 and 30/09/2023; Mohidem at al. 24/05/2022; Mutthaya et al. 15/09/2014). The impact will be most felt by the poorest households, who will not be able to afford food. In 2023, 21.6 million more people faced acute food insecurity than in 2022 because of higher food prices (UN 01/2024).

In **East Africa,** despite a slight decrease in food insecurity levels, food assistance needs continue to be high, mainly resulting from the impact of El Niño and active conflicts in Ethiopia, Somalia, South Sudan, and Sudan. The floods between October–December 2023 that affected Ethiopia, Kenya, and Somalia already resulted in crop and livestock losses, displacement, and agricultural disruptions (FEWS NET 03/10/2023). El Niño-related weather shocks may contribute to Crisis (IPC Phase 3) and Emergency (IPC Phase 4) outcomes in certain areas. The risk of further flooding will likely lead to more displacement and market disruptions, limiting food access. Drowning and the spread of diseases can particularly affect livestock (FAO 31/10/2023).

Given the projected impact of El Niño over **southern Africa,** cereal and cash crop harvests are expected to be low. Maize, a staple food in the region, is sensitive to water shortages during its growing stages in February–March. With a high likelihood of dry conditions, maize harvest will likely be below average, increasing market prices (FEWS NET 03/10/2023; WFP 19/01/2024; FAO 31/10/2023).

In most countries in **Latin America,** the exceptions being Venezuela and Haiti, households depend on locally produced commodities for food consumption. El Niño impacts are expected to disrupt the production of key crops, such as beans (FEWS NET 03/10/2023; FAO 31/10/2023). El Niño also reduces forage and water availability, deteriorating livestock health and affecting crop productivity and harvests (UNDRR 15/08/2023).This is likely to have consequences on both farmers' livelihoods and availability of locally produced food. During past El Niño events, in countries in Central America, as well as in Colombia and Venezuela, the reduced food production resulted in an increase in local food prices. This made food less accessible for the population, particularly poorer households (UNDRR 15/08/2023).

Disease outbreaks and health concerns

El Niño is likely to aggravate heatwaves, increase vector-borne, rodent-borne, and waterborne diseases, cause fish and shellfish poisoning, and affect air quality in early 2024 (Rony et al. 02/01/2024; WHO 09/11/2023). The people most vulnerable to El Niño-associated health risks are those with constrained or limited access to healthcare, safe drinking water, and sanitation (WHO 09/11/2023).

The current El Niño has already posed serious health threats in 2023: the dengue outbreak in Bangladesh, heatwaves in southern Europe, increased cholera cases in southern Africa, and more widespread wildfires and air pollution stemming from haze in Indonesia (WHO 12/10/2023). In 2023, the compound effect of floods and global cholera vaccine shortages produced 667,000 cholera cases and 4,000 deaths in 30 countries, mostly in Africa (WHO 11/01/2024; The Guardian 12/01/2024). In the first half of 2024, El Niño is anticipated to contribute to the outbreak of new cholera cases and other diseases in some countries, most of which already experience high levels of humanitarian need.

With 2024 likely to be the hottest year in history, heatwaves are expected to particularly affect communities living in areas already prone to high temperatures (TWP 02/01/2024; Rony et al. 02/01/2024). Older people, pregnant women, infants, and people living with chronic conditions, as well as construction and outdoor workers and farmers, are at risk of heat-related illnesses and complications, such as those with cardiopulmonary causes, mental health issues, dermatological malignancies, allergies, renal function loss, tropical infections, heat stroke and exhaustion, and adverse pregnancy outcomes (Matsee et al. 24/05/2023).

Water scarcity and food insecurity, both stemming from the drier conditions related to El Niño events, are likely to affect countries in southern Africa and Latin America and continue to affect Southeast Asia until at least June 2024 (WHO 12/10/2023). Water scarcity and food insecurity are likely to increase the incidences of malnutrition and waterborne diseases (Rony et al. 02/01/2024; WHO 04/08/2023).

REGIONAL AND COUNTRY IMPACT

Africa

El Niño events have materialised in different ways in **East Africa** in the past. During the June–September rainfall season, El Niño events are associated with below-normal rainfall in some parts of the region, including Ethiopia, Eritrea, and Sudan. Past El Niño events have led to average to above-average rains in the region during the October–December rainfall season, especially in Somalia and Ethiopia (WFP 05/10/2023; FSNWG 11/10/2023).

Between September and mid-December 2023, El Niño-related heavy rains and flooding affected over 5.2 million people, displacing nearly two million in Burundi, Ethiopia, Kenya, Somalia, and Uganda as at 15 December 2023. The floods destroyed or damaged basic infrastructure, such as homes, hospitals, schools, and roads, heightening affected people's needs across sectors. Flooding and heavy rains destroyed or flooded hectares of cropland, significantly affecting livelihoods and raising fears of a deterioration in food security. Besides killing livestock, persistent wet conditions pose a risk of pests and disease to surviving livestock. The destruction and damage of WASH infrastructure, coupled with overcrowding in temporary displacement sites, increase the risk of diseases at a time when health services are not operational (OCHA 14/12/2023).

At least until April 2024, above-normal rainfall is expected to persist in parts of East Africa, causing further flooding (albeit of lesser intensity than recorded in October–December 2023) and infrastructure damage. The risk of waterborne disease outbreaks will likely persist because of insufficient WASH infrastructure and limited access to health services (ICPAC accessed 23/01/2024; Crop Monitor 07/12/2023; FEWS NET 30/11/2023).

DESERT LOCUSTS

Countries in East Africa, along the Red Sea and Gulf of Aden coastline, have been experiencing a desert locust outbreak since November 2023. The winter rainy season that year started earlier than usual along the coastline. With the cyclone that struck eastern Yemen in October, the rains created favourable conditions for locust breeding. The countries to be monitored include Eritrea, Somalia, Sudan, and Yemen. Although below-average rainfall is forecast along the Red Sea and Gulf of Aden in the next few months, a second generation of desert locusts is expected to develop between January–February. Some locusts are likely to migrate from Eritrea to Sudan (FAO 05/12/2023 and 05/01/2024).

Southern **West Africa** usually experiences below-normal rainfall in the July–September rainy season during El Niño conditions. Between May–October 2023, cumulative precipitation in West Africa was generally average to above average, indicating that El Niño had limited impact (C3S accessed 10/01/2024; WFP 30/11/2023). Crop conditions for the 2023 season remained generally favourable throughout the region except in conflict-affected areas, leading to minimal El Niño impacts on acute food insecurity (WFP 30/11/2023 and 09/2023; FEWS NET 03/10/2023).

In **southern Africa,** El Niño is historically associated with below-normal precipitation and high temperatures, undermining crop growth (OCHA 09/10/2023). The current El Niño event is expected to delay the onset of the main rainy season (November 2023 to April 2024), resulting in below-average rainfall in most countries. Areas likely to receive below-normal rainfall include countries with high food insecurity levels, such as Madagascar, Malawi, Mozambique, and Zimbabwe (WFP 04/12/2023; FEWS NET 08/11/2023; Crop Monitor 07/12/2023). Elsewhere, rains have started to fall and cause floods, especially in Kwazulu-Natal province of northern Zambia, where heavy rains have caused flooding conditions in January 2024 (CPC 25/01/2024). The impact of El Niño is likely to worsen humanitarian needs in southern Africa amid low labour opportunities and high food prices (FEWS NET 08/11/2023).

Burundi

El Niño impact risk: medium

INFORM Risk Index: high (5.6/10)

- **Exposure:** 4.1/10
- **Vulnerability:** 6.4/10
- **Lack of coping capacity:** 6.7/10

Projected hazards for January–June 2024 and main exposed localities

Based on seasonal forecasts, Burundi is expected to experience above-average rainfall and above-average temperatures between February–April 2024 (C3S accessed 23/01/2024; ICPAC accessed 23/01/2024). Wet and hot conditions may also persist until June 2024 (IRI accessed 23/01/2024). These conditions may trigger localised flooding and increase the risk of epidemics, especially cholera, in conjunction with the warmer-than-normal temperatures expected during the first half of the year (IRI accessed 23/01/2024; MesVaccins.net 16/01/2023).

Pre-existing humanitarian crises and vulnerabilities to El Niño

Burundi experienced violent conflicts in 1965, 1969, 1972, 1988, and 1993–2004, which killed at least 450,000 people and displaced about 1.2 million. Since achieving independence in 1962, Burundi has also experienced multiple political and security crises that have constrained socioeconomic improvements in the small Central African state (UN PBF 31/01/2023; PERI accessed 22/01/2024).

A combination of extreme weather events, epidemics of malaria, cholera, measles, and COVID-19, and socioeconomic shocks has been affecting the country in the past five years, amid structural vulnerability to shocks and the limited availability of basic services. In 2023, more than 1.5 million people were estimated to be in need of humanitarian assistance, an improved situation compared with the 1.8 million people in need in 2022 (OCHA 19/07/2023).

There are more than 73,900 internally displaced people in the count, 85,000 refugees from the Central African Republic, Democratic Republic of Congo (DRC), Mali, Rwanda, Somalia, South Africa, and Uganda, and 234,047 returnees in Burundi (IOM 06/10/2023; UNHCR 08/01/2024 a and 08/01/2024 b). Access to basic services is particularly restrained for displaced people (OCHA 19/07/2023).

Heavy rains triggered by El Niño since October 2023 have caused material damage in Bubanza, Cibitoke, Gitega, Makamba, and Rutana provinces. As at 8 January 2024, the rains had damaged more than 4,250 houses, affected 28,000 people, including 4,519 displaced (FloodList 06/11/2023; IFRC 08/01/2024).

Between October–December 2023, about 1.8 million people were expected to experience high acute food insecurity levels (i.e. IPC 3 or above) in the northern lowlands livelihood zone, central humid plateau, and eastern plains (IPC 27/11/2023).

Anticipated humanitarian impact of El Niño

Wet conditions since September 2023 have enhanced soil moisture, creating favourable conditions for above-average harvest in 2024, particularly for maize, rice, sorghum, and pasture for livestock. During the second half of 2023, restrictions on exports to Tanzania and Rwanda and other administrative measures reduced crop sales and enabled the preservation of household food stocks, mitigating the impact of a near-average harvest in June–August (FEWS NET 12/2023). Because of an above-average harvest at the end of 2023, food security projections for January–March 2024 indicate a reduction in the number of people experiencing high acute food insecurity (i.e. IPC 3 or above), estimated at 1.2 million people (IPC 27/11/2023; IPC accessed DD/MM/202Y).

Wetter-than-normal conditions will improve food security but are also likely to worsen the health situation by increasing the number of cholera cases. The country currently counts about 175 confirmed cases. Wet conditions are also expected to trigger an upsurge in malaria and diarrhoea cases, particularly among children under five (IFRC 19/11/2023).

Democratic Republic of Congo

El Niño impact risk: medium

INFORM Risk Index: very high (7.7/10)

- **Exposure:** 7.7/10
- **Vulnerability:** 7.9/10
- **Lack of coping capacity:** 8.0/10

Projected hazards for January–June 2024 and main exposed localities

According to seasonal forecasts, above-average rainfall is likely to occur between February–April 2024 in eastern DRC, while western regions are expected to experience drier-than-usual conditions. Temperatures are expected to remain above average during the entire first semester of 2024 (C3S accessed 23/01/2024; WMO accessed 23/01/2024; IRI accessed 23/01/2024).

Persisting wet conditions in eastern provinces will increase the risk of flooding, the spread of waterborne and vector-borne diseases, and displacement (IRC 13/12/2023; WHO 12/10/2023).

Pre-existing humanitarian crises and vulnerabilities to El Niño

Besides exposure to natural hazards, such as floods, droughts, and volcanic eruptions, conflict also besets several provinces of DRC (REACH 04/01/2024; OCHA 29/12/2023). In 2023, the collapse of a truce between the Government and the armed group M23 triggered intense fighting in Ituri, North Kivu and South Kivu provinces (WFP 15/12/2023).

The country hosts more than 6.95 million IDPs, the largest IDP population in Africa (IOM 26/10/2023). In 2023, more than 25.4 million people were in need of humanitarian assistance, including food, shelter, WASH, education, health, protection, and nutrition (OCHA 29/12/2023).

Between November–December 2023, severe floods affected about 229,900 people and displaced over 75,000 in the provinces of Équateur, Haut-Uele, Ituri, Mongala, Sud-Ubangi, and Tshopo (OCHA 12/12/2023; Radio Okapi 14/12/2023). As at 5 January 2024, the floods had affected about 600,000 people, killed 300, and destroyed almost 43,800 houses (ECHO 16/01/2024; Radio Okapi 07/01/2024; AA 06/01/2024). The flooding has also reduced agricultural activity, destroyed crops, and obstructed roads in some of the most affected provinces, such as Équateur, Ituri, Kongo-Central, and North Kivu (Radio Okapi 07/01/2024; AA 06/01/2024; RFI 10/01/2024).

Anticipated humanitarian impact of El Niño

In northeastern and eastern-central parts of the country, the lean season continued until mid-December 2023 as the populations' food stocks were predicted to diminish (FEWS NET 11/2023). Anticipated above-average rainfall is expected to favour crop production, livestock conditions, and labour opportunities. That said, conflict in the eastern provinces is likely to persist, hindering income-earning opportunities and agricultural production despite the favourable rainfall forecast (FEWS NET 08/11/2023). Based on the September 2023 IPC analysis, more than 23.4 million people are projected to experience acute food insecurity levels (IPC 3 or above) between January–June 2024 (IPC 29/09/2023).

Heavy rains related to El Niño conditions could worsen the humanitarian situation of IDPs and host communities in Ituri, North Kivu, and South Kivu provinces, which are already facing floods and conflict. As many people already live in flooded areas, the risks of waterborne and vector-borne diseases (cholera, malaria, dengue) increase. The country already recorded more than 41,000 suspected and confirmed cholera cases in 2023 (WHO 27/10/2023). Over 1,120,000 children under the age of five and 605,000 pregnant and lactating women are projected to suffer from severe acute malnutrition. Malnutrition can further increase vulnerability to diseases such as cholera, measles, and diarrhoea (IPC 03/01/2024). Flooding has destroyed at least 34 health facilities, making treatment more challenging. New floods could further hamper health service delivery (WHO 12/01/2024).

Ethiopia

El Niño impact risk: medium

INFORM Risk Index: very high (7.0/10)

- **Exposure:** 7.2/10
- **Vulnerability:** 7.2/10
- **Lack of coping capacity:** 7.2/10

Projected hazards for January–June 2024 and main exposed localities

Precipitation forecasts for February–April 2024 anticipate above-average rainfall in southeastern Ethiopia (ICPAC accessed 23/01/2024). Some models also indicate that wet conditions may prevail in the southwestern regions between April–June (C3S accessed 23/01/2024; WMO accessed 23/01/2024; IRI accessed 05/01/2024). In parts of Amhara and Tigray, dry conditions may continue during the first quarter of 2024, triggering a below-average rainy season (C3S accessed 13/01/2024; WMO accessed 13/01/2024; ACAPS accessed 23/01/2024).

The anticipated above-average rainfall in southern Ethiopia heightens the risk of flooding and flash floods, potentially causing severe impacts such as the events observed between October–November 2023. Above-average rainfall will also heighten the risk of cholera and malaria outbreaks. As at December, there were over 30,000 reported cholera cases throughout the country (Health Cluster 29/12/2023).

Pre-existing humanitarian crises and vulnerabilities to El Niño

Conflict in different regions of Ethiopia has aggravated the humanitarian situation and hindered sustained humanitarian access. In Amhara, tensions that started in April 2023 between the Fano militia and the Federal Government have escalated into major conflict, disrupting humanitarian access particularly in regularly affected areas (ICG 16/11/2023; Al Jazeera 29/12/2023; Logistics Cluster 03/01/2024). In Tigray, conflict, drought, and displacement continue to drive high levels of humanitarian needs (Al Jazeera 02/11/2023). The damage, destruction, and occupation of health facilities during the two-year conflict continue to severely disrupt health infrastructure (Tigray EAO 10/02/2022; WHO 04/09/2023).

Prolonged drought between 2020–2023 marked by consecutive failed rainy seasons persistently affected northern, southeastern, and southern Ethiopia (WFP 23/01/2023; OCHA 08/09/2022).OCHA 08/09/2022). In Tigray, lack of adequate rainfall has resulted in drought in Central, Eastern, North Western, South Eastern, and Southern regions (OCHA 10/01/2024). Around 1.7 million drought-affected people are reported across North Gondar, North Shewa, North Wello, Oromo Special, South Wello, and Wag Hamra zones in Amhara region (OCHA 01/12/2023 and 22/12/2023; Addis Standard 21/11/2023; EDRMC X 09/01/2024). Widespread occurrences of IPC 4 and IPC 3 food insecurity outcomes are expected to persist across northern, southern, and southeastern Ethiopia until at least mid-2024 (IPC 109/202; FEWS NET 06/01/2024). According to the Ethiopia Disaster Risk Management Commission and the Nutrition Cluster, approximately four million in drought-stricken areas, including Afar, Amhara, Oromia, South Ethiopia, South West Tigray , are in need of food assistance(OCHA 10/01/2024).

Between October–November 2023, severe flooding affected approximately 1.5 million people and displaced thousands in Somali, South Ethiopia, South West Ethiopia, and Oromia regions (OCHA 01/12/2023 and 18/12/2023). The country also saw a number of outbreaks in 2023, including malaria, cholera, and measles. As at end of December, Ethiopia was still facing a cholera outbreak, with Somali and Oromia regions reporting most cases (Health Cluster 29/12/2023; EPHI accessed 08/01/2024).

Anticipated humanitarian impact of El Niño

El Niño-induced drought in *Meher* crop-producing areas and northern pastoral areas will continue to affect food security by disrupting agricultural production (OCHA 22/12/2023; FEWS NET 01/10/2023; Crop Monitor 07/12/2023). Waterborne diseases are more likely to occur and spread when communities are forced to rely on contaminated water sources and lack access to sanitation facilities. Drought-induced food shortages can increase malnutrition cases (Health Cluster 29/12/2023; EPHI accessed 08/01/2024). Despite the resumption of food aid in the country after nearly five months of pause given alleged aid diversion, the food security situation will likely remain critical (USAID 14/11/2023; UNHCR/WFP 21/12/2023).

In conflict-affected areas, such as Amhara, humanitarian access restrictions are likely to limit the response to El Niño-induced and -aggravated needs (Logistics Cluster 03/01/2024).

In southeastern regions previously affected by a cycle of heavy rainfall and dry conditions, above-average rainfall can hamper agriculture recovery, hindering crop planting, growth, and subsequent harvest (FEWS NET 06/01/2024; Crop Monitor 07/12/2023). Nearly 21,500 livestock deaths and the destruction of 215,600 hectares of farmland have been reported to result from the October–December rains (FEWS NET 06/01/2024; OCHA 18/12/2023). Prolonged wet conditions also increase the risk of flash floods, displacement, critical infrastructure damage, and livelihood disruptions. At the same time, heavy rainfall is likely to contaminate wells and destroy latrines, increasing the risk of vector- and waterborne diseases.

Agricultural disruptions from the floods and droughts are likely to reduce food availability and increase market prices. As at November 2023, the prices of maize and sorghum were 55–80% higher compared to the previous year given lower market supply and high fuel prices (FEWS NET 06/01/2024). Droughts and floods can worsen existing severe malnutrition levels, subsequently increasing mortality and morbidity rates (Health Cluster 29/12/2023; FEWS NET 01/10/2024).

Kenya

El Niño impact risk: medium

INFORM Risk Index: high (6.6/10)

- **Exposure:** 8.3/10
- **Vulnerability:** 5.9/10
- **Lack of coping capacity:** 5.8/10

Projected hazards for January–June 2024 and main exposed localities

Seasonal forecasts anticipate above-average temperatures and above-average rainfall in most of Kenya between February–April 2024, particularly in the central and southern regions. These hot and wetter-than-normal conditions are likely to continue until May–June in large parts of the country (ICPAC accessed 23/01/2024; WMO accessed 23/01/2024; C3S accessed 13/01/2024).

Above-average rainfall may continue triggering riverine and flash flooding particularly in previously drought-affected areas, as dry soil cannot absorb all the water, increasing water runoff (OCHA 17/11/2023). Flooding will also trigger several health-related hazards, increasing the incidence of vector-borne (malaria and Rift Valley fever) and waterborne diseases (cholera) (OCHA 07/08/2023; IFRC 24/11/2023).

Pre-existing humanitarian crises and vulnerabilities to El Niño

The country is struggling to recover from five consecutive seasons of below-average rainfall, which have particularly affected communities living in arid and semi-arid lands (ASAL). As a result of the drought, 6.4 million people needed humanitarian assistance in 2023 (OCHA 07/08/2023). IPC projections estimate that over 1.5 million people experienced IPC 3 or worse food insecurity levels from October–December 2023 (IPC 01/09/2023).

In October and early November, rainfall amounts were about twice the average, leading to widespread flooding that displaced more than 130,000 people and extensively damaged livestock and infrastructure (OCHA 21/11/2023; EC accessed 18/12/2023). By the end of November, flooding had affected at least 19 of the country's 47 counties, with Garissa, Isiolo, Mandera, Marsabit, Mombasa, Tana River, Samburu, and Wajir being the most affected (FEWS NET 30/11/2023). By mid-November, flooding and soil erosion had affected around 25,000 people in Dadaab refugee camp, forcing many to relocate, and displaced more than 100 households in Kakuma camp (UN 17/11/2023).

Anticipated humanitarian impact of El Niño

El Niño-induced above-average rainfall could support recovery from current drought conditions, improving crop and livestock production. That said, heavy rains can also result in flooding and landslides, triggering further displacement and infrastructure damage. Flooding may also trigger an upsurge of plant and livestock pests and diseases and increase the risk of post-harvest losses (OCHA 17/11/2023; EC accessed 18/12/2023; FAO 03/11/2023).

At the end of November, staple food prices were atypically high, driven by high demand, high fuel and marketing costs, and the depreciation of the Kenyan shilling. With the anticipated above-average rains possibly affecting production, maize prices in Kenya are expected to decrease compared to 2022–2023 prices but remain above the five-year average. Bean prices are projected to be higher than in 2023 (FEWS NET 30/11/2023; ACAPS accessed 18/12/2023).

Food security prospects for February–May 2024 are improving, with Mandera, Marsabit, and Turkana counties expected to move from IPC 3 to Stressed (IPC Phase 2) food insecurity levels. Regardless, overall food security in the country is likely to remain stressed, and full livelihood recovery will necessitate several good rainy seasons (FEWS NET accessed 12/12/2023).

Between January–May 2024, the incidence of flood-induced waterborne and vector-borne diseases may be particularly high in previously drought-affected communities facing high food insecurity rates and malnutrition-reduced immune system functioning, increasing disease likelihood (WHO 04/08/2023). Refugees and asylum seekers living in camps across the country, including the 440,000 people living in Dadaab and Kakuma camps, are particularly at risk of the spread of waterborne and vector-borne diseases triggered by flooding (UNHCR 19/07/2023; OCHA 08/11/2023).

Insecurity has continued hindering humanitarian access in some areas of the country, with a spike of non-state armed group attacks reported in August 2023 in Garissa, Lamu, and Mandera counties (OCHA 07/08/2023).

Madagascar

El Niño impact risk: high

INFORM Risk Index: high (5.5/10)

- **Exposure:** 4.0/10
- **Vulnerability:** 5.7/10
- **Lack of coping capacity:** 7.1/10

Projected hazards for January–June 2024 and main exposed localities

Seasonal forecasts anticipate above-average temperatures in the entire country until June 2024. Between February–April, below-average precipitation is expected in the southern and southwestern regions, while the northern regions may experience wet conditions during the same period (WMO accessed 09/01/2024; 3CS accessed 09/01/2024; IRI accessed 09/01/2024). Below-average rainfall is expected to affect the rainy season that runs between November–April in the central and southern regions, aggravating the current drought (WFP 04/12/2023). The start of the rainy season in November–December 2023 was delayed in Grand Sud. At the end of December, cumulative precipitation was below average in southern, southeastern, and western Madagascar (FEWS NET 05/01/2024).

The cyclone season started in December. Given the influence of the positive IOD, the season may be below average, with southern Madagascar expected to experience a below-average number of cyclones. Despite the diminished probability of a cyclone impact, the potential for catastrophic damage persists should an intense cyclone occur (FEWS NET 11/2023). On 1 January 2024, Tropical Cyclone Alvaro made landfall over the southwestern-central coast of Madagascar, damaging infrastructure and affecting almost 26,000 people, displacing more than 9,500, and killing ten as at 5 January (ECHO 05/01/2024 and 03/01/2024).

Pre-existing humanitarian crises and vulnerabilities to El Niño

Madagascar has been facing a severe food security crisis driven by drought, recurrent cyclones, and high food prices, occurring in a context of structural and socioeconomic vulnerability to climate shocks because of poverty, limited access to basic services, poor infrastructure, and weak national adaptation and disaster risk management capacities (WFP accessed 09/01/2024; UNUEHS accessed 09/01/2024; IMF 05/06/2023). Since 2021, the southern region of Madagascar (Grand Sud and Grand Sud-Est) has been experiencing a severe drought, significantly affecting crop development and livestock (TWP 01/07/2021; FEWS NET 05/01/2024; WB 03/03/2023). In February 2023, Cyclone Freddy made landfall in the country, causing widespread damage to infrastructure and homes and affecting over 290,000 people (OCHA 14/03/2023; IFRC 13/03/2023).

Between July–September 2023, over one million people (16% of the analysed population) were projected to face severe acute food insecurity (IPC 3 or worse). Post-cyclone recovery in Grand Sud-Est has been slow because of high food prices and structural challenges, infrastructure weakness, and epidemics of waterborne diseases (IPC 22/08/2023).

Anticipated humanitarian impact of El Niño

Madagascar heavily relies on rice as a main food crop. In 2024, below-average rainfall induced by El Niño can affect rice, maize, and sorghum production in the southern and western regions, further deteriorating food insecurity (ACAPS accessed 09/01/2024; Global Yield Gap Atlas accessed 09/01/2024). Besides reduced yields, export restrictions on non-basmati white rice implemented by India since July 2023 may diminish the supply and contribute to higher rice prices in 2024, with Madagascar being the largest rice importer in 2022 (IFPRI 02/10/2023).

In Grand Sud and Grand Sud-Est, over 1.7 million people are projected to face food insecurity between January–April 2024 (IPC 22/08/2023). High food insecurity rates may also increase malnutrition among children, weakening their immunity against endemic diseases such as malaria and cholera, as well as communicable diseases such as HIV/AIDS and tuberculosis (WHO 08/2023; IPC 22/08/2023).

Areas experiencing prolonged dry conditions can witness an increased incidence of waterborne diseases between January–June, including cholera and acute diarrhoeal diseases (ACAPS accessed 09/01/2024; FEWS NET 05/01/2024). In the north, wet conditions may lead to an increase in rodent breeding, which may trigger a higher incidence of plague cases (WHO 12/10/2023). In 2023, an estimated 1.9 million people faced challenges in accessing safe water and sanitation. Poor WASH services, further disrupted by droughts and cyclones, may heighten the risk of waterborne diseases (UNICEF 05/12/2022).

Malawi

El Niño impact risk: medium

INFORM Risk Index: medium (4.4/10)

- **Exposure:** 2.2/10
- **Vulnerability:** 6.2/10
- **Lack of coping capacity:** 6.3/10

Projected hazards for January–June 2024 and main exposed localities

El Niño has delayed the rainy season in Malawi, which typically runs from mid-October–April (DCCMS accessed 08/01/2024; FEWS 05/01/2024). Seasonal forecasts for February–April anticipate normal to above-average rainfall in the north and below-average rainfall in central and southern regions (WMO accessed 23/01/2024; C3S accessed 23/01/2024). Above-normal temperatures are projected from January–June (WMO accessed 08/01/2024; IRI accessed 08/01/2024).

Pre-existing humanitarian crises and vulnerabilities to El Niño

In 2024, approximately 9.4 million people, including 4.8 million children, are estimated to require humanitarian assistance in Malawi (UNICEF 28/12/2023). Climatic shocks, such as dry spells, cyclones, and floods, are some of the primary drivers of the food insecurity situation in the country, as they lead to below-average crop production and affect livelihoods (IPC 18/08/2023; WFP accessed 09/01/2024). Most families in Malawi work in farming, making them highly susceptible to climatic stresses and shocks (IFRC 28/11/2023). From October 2023 to March 2024, around 4.4 million people (22% of the population) are anticipated to face IPC 3 or worse food insecurity levels. Around 35% of all under-five children in Malawi exhibit signs of chronic malnutrition (IPC 18/08/2023).

The country is still reeling from the impact of Tropical Cyclone Freddy, which struck in March 2023. The tropical cyclone adversely affected southern Malawi, displacing more than 659,000 people and flooding over 204,800 hectares of crops (OCHA 13/05/2023). The cyclone compounded the challenges stemming from below-average harvests in 2023 and the unfavourable macroeconomic conditions in the country (FEWS 08/11/2023). The increase in food and fuel prices is also limiting people's purchasing power (UNICEF 15/08/2023; WFP accessed 09/01/2024).

At the same time, Malawi is dealing with a cholera outbreak that started in early 2022. As at October 2023, there were over 59,000 cases recorded, including more than 1,700 deaths (WHO 03/10/2023).

Anticipated humanitarian impact of El Niño

Land preparation and planting for 2023–2024 cereal crops started in November 2023 (EC accessed DD/MM/202Y). In northern Malawi, the forecast for average to above-average rainfall conditions is expected to support normal crop and livestock production (FEWS 08/11/2023). That said, dry conditions in central and southern regions are expected to affect agricultural production, aggravating food insecurity (UNICEF 28/12/2023; WFP 09/2023). Besides reduced crop yields, the adverse impacts of El Niño will also trigger low labour opportunities and high food prices (Malawi24 07/08/2023; FEWS NET 12/2023).

The compounded effects of El Niño and persistently high poverty rates in areas affected by Tropical Cyclone Freddy, coupled with the current economic downturn, might increase food insecurity levels beyond March 2024 (UNICEF 28/12/2023; UNICEF accessed 09/01/2024).

The cholera outbreak has been under control in most of the country's districts, but cases continue to be reported. There are also concerns that the outbreak could worsen with the rainy season, especially with the challenges the country is facing in the WASH and health sectors (UNICEF 28/12/2023 and 15/08/2023; OCHA 30/11/2023).

Mozambique

El Niño impact risk: high

INFORM Risk Index: high (6.7/10)

- **Exposure:** 6.1/10
- **Vulnerability:** 7.9/10
- **Lack of coping capacity:** 6.2/10

Projected hazards for January–June 2024 and main exposed localities

Seasonal forecasts for February–April anticipate prevailing dry conditions in most parts of the country, except for Cabo Delgado province (northern Mozambique), where rainfall may be above average. Temperatures are expected to remain above average until June at least (WMO accessed 22/01/2024; C3S accessed 22/01/2024; IRI accessed 23/01/2024).

The anticipated dry conditions can lead to prolonged drought, while above-average precipitation in the north may trigger localised flooding (FEWS NET 20/01/2023). Both dry and wet conditions may aggravate the current cholera crisis (OCHA 16/01/2024). Prevailing above-average temperatures may trigger a higher incidence of malaria cases (UNDRR 17/01/2024).

Pre-existing humanitarian crises and vulnerabilities to El Niño

Natural hazards, such as droughts, floods, and cyclones, and the armed insurgency in Cabo Delgado province are driving humanitarian needs in Mozambique. More than 2.3 million people need humanitarian assistance, and nearly 600,000 people are internally displaced. The most reported needs are WASH, protection, and shelter (OCHA 28/12/2023).

Nearly 60% of the country's population lives in the coastal provinces most prone to floods, cyclones, and waterborne diseases. By the end of March 2023, Cyclone Freddy and subsequent floods had affected more than 1.2 million people and displaced 184,000. The cyclone also damaged agricultural land and led to crop losses (IFRC 27/11/2023).

The Cabo Delgado conflict that started in 2017 has spilled to neighbouring provinces, such as Niassa and Nampula in 2022. It continues to drive insecurity, displacement, and food insecurity for affected people (IOM accessed 24/01/2'024; Intelligence Briefs 21/06/2022). As at August 2023, the conflict had produced more than 570,000 returnees and 670,000 IDPs. Their highest needs are WASH, protection, and shelter assistance (OCHA 28/12/2023).

Anticipated humanitarian impact of El Niño

Coastal provinces, such as Nampula, Sofala, and Zambezia, will likely be the most vulnerable to heavy rains, floods, and cyclones, driving displacement and basic infrastructure damage. The conflict and subsequent displacement are already affecting northern Mozambique, creating an increased impact risk for El Niño conditions. Floods and cyclones are estimated to affect up to 774,000 people during the 2023–2024 rainy season. Displaced people will likely need humanitarian assistance, especially shelter, WASH, and food. Road damage may restrict humanitarian access, affecting the response from the Government and humanitarian organisations. Healthcare response to the cholera outbreak that started in September 2022 may be further restricted as floods cut off more roads and damage water and health infrastructure (OCHA 28/12/2023; UNICEF 28/12/2023).

Dry conditions will likely affect southern and central provinces, such as Gaza, Inhambane, Manica, Sofala, and Zambezia, leading to the wilting of main crops such as maize. This, combined with conflict, insecurity, and already high food prices, will likely further reduce people's purchasing power and drive more needs for humanitarian assistance, especially food (FEWS NET 20/01/2023; WB 01/12/2023). Women and girls will likely be more exposed to gender-based violence and sexual harassment and abuse as the dry conditions result in water shortages and force women, who usually fetch water in rural areas, to walk longer distances to reach water sources. This increases the need for protection assistance for women and girls (WB 01/12/2023).

Somalia

El Niño impact risk: medium

INFORM Risk Index: very high (8.5/10)

- **Exposure:** 8.9/10
- **Vulnerability:** 8.2/10
- **Lack of coping capacity:** 8.5/10

Projected hazards for January–June 2024 and main exposed localities

A high likelihood of above-average precipitation is projected for the February–April period in southern Somalia. Above-average temperatures are anticipated to continue during the first semester of 2024 (ICPAC accessed 21/01/2024; WMO accessed 04/01/2024; C3S accessed 23/01/2024). Rainfall may intensify during the Gu rainy season between late March–June (ACAPS accessed 04/01/2024).

Above-average rainfall may trigger floods and lead to displacement. Water stagnation resulting from floods increases the risk of diseases, such as acute watery diarrhoea (AWD) and cholera (OCHA 08/06/2023 and 26/12/2023).

Pre-existing humanitarian crises and vulnerabilities to El Niño

Armed group violence and conflict and the impact of consecutive weather extremes of droughts and floods drive the complex crisis in Somalia. This crisis has resulted in humanitarian needs for more than 6.9 million people, mostly in Banadir and Baydhaba. The most urgent needs reported are WASH, health, and nutrition. While needs are high in 2024, overall need levels are 17% lower than in 2023 (OCHA 27/12/2023).

Political instability, ethnic tensions, and economic deterioration aggravate the conflict related to Al-Shabaab. The armed group's attacks usually lead to fatalities, displacement, and insecurity (ACLED 17/11/2023).

The drought that affected Somalia in 2023 has pushed the population to near-famine food insecurity levels. The drought preceded extreme floods and heavy rains, especially in the *Deyr* season that started in October 2023 (OCHA 27/12/2023). The total number of flood-affected people in 2023 reached 2.48 million, including 1.2 million displaced. The most affected areas were Banadir, Galmudug, Hirshabelle, Jubaland, Puntland, and Southwest (Govt. Somalia et al. 30/11/2023; OCHA 26/12/2023).

Anticipated humanitarian impact of El Niño

Above-average rainfall can be beneficial for agriculture and livestock and mitigate the impact of the previous drought in areas that do not experience heavy flooding (FEWS NET/FSNAU 17/11/2023; Crop Monitor 07/12/2023). Heavy rainfall and flooding will also likely limit Al-Shabaab activity as a result of poor road conditions, which may induce a temporary reduction in violence, injuries, and fatalities (Grey Dynamics 27/11/2023).

That said, above-average rainfall can lead to the overflowing of rivers, such as the Shabelle and Juba Rivers, damaging nearby agricultural land and crops. Heavy rains during the rainy season were estimated to have flooded 1.5 million hectares of cropland by the end of 2023 (Govt. Somalia et al. 30/11/2023; Grey Dynamics 27/11/2023; Crop Monitor 07/12/2023). Consecutive weather extremes of droughts and floods are already driving food insecurity across Somalia. At the end of 2023, 4.3 million people were estimated to be facing IPC 3 food insecurity levels or worse (FEWS NET/FSNAU 17/11/2023; IPC 18/09/2023). The impact of expected floods will likely restrict humanitarian and government response to people's needs; damage to roads and bridges can limit the ability to reach remote areas (Grey Dynamics 27/11/2023; OCHA 08/06/2023).

The northeast and northwest of the country, which are facing dry conditions or where there is little rain anticipated, can experience a return movement of IDPs. In this case, shelter needs can increase for the returnees who have lost their homes in the period of displacement. They will also likely need assistance to repair their lands and restore their livelihoods. There is an increased risk of disease outbreaks, such as malaria and dengue fever, among the returnees because of stagnant floodwaters (OCHA 26/11/2023; FEWS NET 14/12/2023).

Uganda

El Niño impact risk: medium

INFORM Risk Index: very high (7.0/10)

Exposure: 7.2/10

Vulnerability: 6.9/10

Lack of coping capacity: 6.9/10

Projected hazards for January–June 2024 and main exposed localities

A high likelihood of above-average precipitation and above-average temperatures is projected for the first six months of 2024 in the whole country (ICPAC accessed 21/01/2024; C3S accessed 08/01/2024; IRI accessed 08/01/2024). Above-average rainfall may trigger flash and riverine flooding and increase the incidence of cholera, measles, malaria, dengue, and diarrhoea cases, especially in overcrowded refugee settlements (OCHA 14/12/2023).

Pre-existing humanitarian crises and vulnerabilities to El Niño

Insecurity and conflict in neighbouring countries, such as South Sudan and the DRC, drive refugees and asylum seekers into Uganda. The current influx of refugees into the country continues to put a strain on resources such as food, shelter, and healthcare. The refugees also face high food insecurity levels and a lack of job opportunities. The increasing numbers of refugees and limited shelters have also led to overcrowding in the settlements (UNHCR 12/01/2023; UNHCR accessed 01/08/2024).

Natural hazards, such as the floods and droughts that periodically affect the country, and disease outbreaks of Ebola, measles, and cholera have been driving humanitarian needs for the host and refugee populations. In 2024, more than 2.4 million people, including 1.6 million children, are projected to need humanitarian assistance (UNICEF 12/12/2023). Malnutrition is also driving more humanitarian needs among refugees and host communities. By March 2024, more than 114,200 under-five children and 13,200 pregnant or lactating women are projected to face acute malnutrition, with over 21,000 under-five children experiencing severe acute malnutrition (SAM) (IPC 27/11/2023).

Anticipated humanitarian impact of El Niño

Rainfall can improve agricultural productivity. That said, in areas where rain is likely to lead to floods, such as Amuru, Butaleja, Kakumiro, Kyankwanzi, Mubende, Nakaseke, Nakasongola, Ntoroko, Packwach, and West Nile districts, waterlogging will likely result in crop damage. This will aggravate food insecurity levels in areas hosting refugees. Between February–June 2024, 23% of the analysed population (963,000 people) are expected to face IPC 3 food insecurity levels or worse, up from 20% between August 2023and January 2024 (FEWS NET 11/2023; IPC 27/11/2023).

Floods can also lead to landslides in mountainous areas, such as Elgon and Rwenzori, restricting the movement of people and humanitarian staff. Infrastructure damage and displacement are also expected to result from the impact of floods (FEWS NET 11/2023). People will likely need health, water supply, and sanitation services, especially in areas affected by a cholera outbreak (IOM 06/09/2023).

The refugee population will likely be the most affected. Uganda was hosting more than 1.6 million refugees and asylum seekers as at November 2023, with the majority being from the DRC and South Sudan. They stay in refugee settlements exposed to the risk of floods in the northern and western regions (UNHCR accessed 01/08/2024). In 2023, out of the 1.6 million refugees, about 4,000 were affected by the floods (FEWS NET 11/2023).

Zambia

El Niño impact risk: medium

INFORM Risk Index: medium (3.9/10)

Exposure: 1.8/10

Vulnerability: 5.9/10

Lack of coping capacity: 5.7/10

Projected hazards for January–June 2024 and main exposed localities

Seasonal forecasts for the February–April 2024 period anticipate below-average rainfall and above-average temperatures in most of the country (WMO accessed 23/01/2024; C3S accessed 23/01/2024; IRI accessed 23/01/2024). Dry conditions are expected to affect the rainy season that typically runs from November–March (ACAPS accessed 09/01/2024). Above-average temperatures and below-average rainfall may trigger water scarcity and heighten the risk of heatwaves, as well as vector- and waterborne diseases, during the first six months of 2024 (WHO 12/10/2023).

Pre-existing humanitarian crises and vulnerabilities to El Niño

The country faces high food insecurity rates driven by a combination of climate hazards, such as flooding, prolonged dry spells, extremely high temperatures, and pest outbreaks, together with macroeconomic shocks affecting prices (IPC 13/11/2023; WFP 11/2023). Despite a surplus in maize production in 2023, maize grain and input (fertiliser) prices have remained high.

Between August–September 2023, an estimated 1.59 million people (17% of the total population) were classified to be facing Crisis (IPC Phase 3) or above food insecurity levels (IPC 13/11/2023). Since January 2023, a cholera outbreak has been affecting nine out of ten provinces. As at 18 January 2024, the country had recorded 10,887 cases and 432 deaths from the disease, resulting in a 4% case fatality rate. More than 30% of the cases were among children under five years old (WHO 20/01/2024; ECHO 04/01/2024; IFRC 10/01/2024).

Anticipated humanitarian impact of El Niño

In 2024, El Niño-induced below-average rainfall may affect food crop yields, particularly maize and soya bean (ACAPS accessed 09/01/2024). This may have a negative impact on labour opportunities and further increase food prices, limiting food access for low-income households (IPC 13/11/2023).

For the October 2023 to March 2024 period, the number of people projected to be highly food-insecure is expected to increase to 2.04 million (23% of the total population). Part of Eastern, Southern, and Western provinces, which are already facing severe food, water, and pasture shortages, will be the worst affected (IPC 13/11/2023).

Limited water availability will deteriorate WASH access, heightening the risk of waterborne diseases, such as cholera (UNICEF accessed 09/01/2024).

Zimbabwe

El Niño impact risk: medium

INFORM Risk Index: medium (4.1/10)

- **Exposure:** 2.3/10
- **Vulnerability:** 5.3/10
- **Lack of coping capacity:** 5.8/10

Projected hazards for January–June 2024 and main exposed localities

Seasonal forecasts indicate a high likelihood of below-average rainfall and above-average temperatures in the entire country between February–April 2024. Dry conditions may persist until June (WMO accessed 09/01/2024; C3S accessed 09/01/2024; IRI accessed 09/01/2024). These rainfall and temperature anomalies are expected to affect the rainy season that typically runs from November–February, triggering droughts and an increased incidence of pests and waterborne and vector-borne diseases (ACAPS accessed 09/01/2024; OCHA 20/11/2023).

Pre-existing humanitarian crises and vulnerabilities to El Niño

High inflation, the devaluation of the Zimbabwean dollar against the US dollar, high dependence on low-productivity agriculture, and climate shocks, including recurrent droughts and floods, contribute to persisting poverty and food insecurity in Zimbabwe (WB accessed 09/01/2024; OCHA 20/11/2023). At the end of December 2023, the formal exchange rate was around ZWL 6,000 per USD 1, against the parallel market rate of around ZWL 10,000 per USD 1 (FEWS NET 12/2023). In December 2023, the month-on-month food inflation rate rose to 8.6%, a 3.7% increase from 4.9% in November, hindering access to basic commodities for poor households (ZimStat 28/12/2023). Record-dry conditions and high temperatures in November and early December delayed planting for the season and led to below-normal planted areas across most of the country. Besides this, between October and early December, over 7,000 cattle died across Zimbabwe because of the dry conditions, affecting pastoralists' livelihoods (FEWS NET 12/2023).

Since February 2023, the country has been grappling with a severe cholera outbreak. At the beginning of November, suspected and confirmed cases had been documented in all ten provinces and 41 out of 62 districts, with particularly concerning surges reported in the southeastern provinces of Masvingo and Manicaland (IFRC 16/11/2023). As at 3 December, 10,263 suspected cholera cases had been reported, including 1,409 confirmed cases and 230 deaths (CFR 2.2%) (WHO 03/12/2023).

Anticipated humanitarian impact of El Niño

Until April 2024, below-average rainfall is likely to affect crop growing. As a result, below-average food and cash crop harvests are already anticipated between March–June. This will affect staple food availability and prices, including maize, deteriorate livelihoods, and reduce labour opportunities in the agricultural sector (FEWS NET 12/2023). Government projections anticipate that Zimbabwe's maize harvest will halve to 1.1 million tons in 2024, triggering a major grain deficit that threatens the food security of poor households (Reuters 13/12/2023).

Below-average 2024 food stocks are also expected to be exhausted earlier than usual, leading to an urgent need for food assistance at the start of the next lean season in late 2024 (FEWS NET 08/11/2023; ACAPS accessed 09/01/2024). Prolonged dry spells will also result in poor livestock body conditions. Poor households, especially in the southern and western regions, are likely to increase their reliance on remittances, petty trade, and informal mining to be able to afford basic goods and meet their needs (FEWS NET 12/2023).

Anticipated water availability constraints because of the forecasted dry conditions are likely to aggravate challenges in accessing WASH facilities, increasing the risk of additional cholera and typhoid fever outbreaks (UNICEF 12/12/2023; WHO 27/12/2023).

Protection concerns for women and girls will increase in 2024. The decrease in water availability could compel them to undertake extended journeys to fetch water, consequently heightening their vulnerability to gender-based violence (UNICEF 12/12/2023).

Asia and The Pacific

El Niño typically triggers below-average rainfall and weaker monsoons in South and Southeast Asia. The eastern-central Pacific islands and areas across the Hindu Kush Mountain Range in central Asia typically experience wetter conditions during El Niño (WHO 09/11/2023; ASMC accessed DD/01/2024; NG accessed 23/01/2024).

During the first semester of 2024, El Niño will continue triggering temperature anomalies in the entire region, with abnormally high temperatures forecast across Asia and the Pacific. Precipitation forecasts for the February–April period anticipate below-normal rainfall in parts of Bangladesh, Myanmar, the Philippines, Timor-Leste, and Vanuatu. In the Philippines, dry conditions may continue until June at least and will be particularly severe.

For the same period, above-average rainfall is forecast in Indonesia and parts of Papua New Guinea, which experienced dry conditions in most of the country in the previous season (FAO/OCHA 06/12/2023; IRI accessed 124/01/2023; C3S accessed 24/01/2024; WMO accessed 24/01/2024). Above-average rainfall and snowfall are forecast in Pakistan and Afghanistan (OCHA 06/12/2023; IRI accessed 13/01/2023; Euronews 06/01/2024).

In 2024, the main impacts of El Niño will be on health, with a potential spike of waterborne, vector-borne, and heat-related diseases and the health impacts of wildfires. Temperature and precipitation anomalies are expected to increase the transmission of dengue, chikungunya, and Zika, with moderate to very high risks of dengue and Zika projected in Indonesia, Myanmar, Papua New Guinea, the Philippines, Timor-Leste, and Viet Nam (WHO 12/10/2023). Several countries in Southeast Asia, including Bangladesh, India, Sri Lanka, and Thailand, already recorded high dengue incidences in 2023 mainly driven by El Niño conditions, with Bangladesh experiencing a severe outbreak (ACAPS 26/09/2023).

Heat and water stress, forest fires, and increased risks of pests and diseases may also continue affecting crop production, livestock, and aquaculture in the region, affecting staple food availability and prices (FAO 03/11/2023). In Bangladesh, Myanmar, the Philippines, and Timor-Leste, El Niño-induced dry conditions are expected to persist in the coming months, affecting agricultural production and livelihoods, particularly for smallholder farmers who do not have access to irrigation systems. While above-average rainfall in Afghanistan may support winter crops, it also poses the risk of floods and landslides. Northern Pakistan faces potential floods, jeopardising livestock and wheat crop, a primary staple (FAO/WFP 31/10/2023).

Afghanistan

El Niño impact risk: medium

INFORM Risk Index: very high (8.1/10)

- **Exposure:** 8.7/10
- **Vulnerability:** 8.5/10
- **Lack of coping capacity:** 7.1/10

Projected hazards for January–June 2024 and main exposed localities

Seasonal forecasts for the February–April period anticipate near-normal rainfall in most of the country, except for the northern provinces, where precipitation may be above normal. Above-average temperatures are expected to continue at least until June in the entire country (WMO accessed 03/01/2024; IRI accessed 03/01/2024; C3S accessed 03/01/2024; ACAPS accessed 08/01/2024).

Afghanistan has been experiencing drought for the last three consecutive years. The probability of near-normal and above-average rainfall in some areas of the country presents a positive outlook for mitigating prolonged drought effects and replenishing depleted water supplies. This particularly applies to Badghis, Baghlan, Kunar, Parwan, and Samangan provinces, which have been the most affected by the drought (OCHA 23/12/2023 and 11/12/2023; FEWS NET 03/10/2023). That said, above-average rainfall combined with high temperatures poses an increased risk of flooding resulting from early snowmelt, particularly in the flood-prone provinces in northern, southern, and eastern Afghanistan. These regions include Helmand, Jowzjan, Kunduz, and Nimroz (FEWS NET 26/10/2023). Hardened soil from the prolonged drought may also face challenges in absorbing sudden heavy rainfall, increasing the likelihood of flash floods, soil erosion, and potential infrastructure damage (ACAPS 25/07/2023; FEWS NET 03/10/2023).

Pre-existing humanitarian crises and vulnerabilities to El Niño

Afghanistan is currently mired in a complex humanitarian crisis, with 23.7 million people in need of humanitarian assistance December 202 as at 3(OCHA 23/12/2023). Long-term conflicts, natural hazards, protracted drought since 2020, economic instability, and a funding shortfall following the shift in governance in August 2021 drive this crisis. These drivers have left the population with high needs and limited access to essential services (OCHA 23/12/2023; UNDP 18/04/2023). There are approximately 6.3 million IDPs within the country (OCHA 23/12/2023).

In 2023, drought was reported to affect 25 out of 34 provinces, affecting more than 50% of the country's population (OCHA 01/08/2023). Approximately 80% of the population relies on agriculture as their main livelihood source, with the sector contributing over 30% to the country's GDP (Context 27/11/2023). Recurrent droughts are making it hard for communities to continue their traditional farming practices and maintain self-sufficiency (OCHA 01/08/2023; Reuters 15/08/2023).

Flash floods in July 2023 affected over 125,000 people in the northern, eastern, and southern provinces, damaging residential houses, washing away over 13,000 hectares of agricultural land, and causing over 1,000 livestock deaths (IFRC 07/08/2023). The October 2023 earthquakes in Herat province affected approximately 275,000 people, resulted in numerous casualties, and extensively destroyed homes, leaving families displaced and in dire need of assistance (Shelter Cluster 21/12/2023). The recent return of over 475,000 Afghans from Pakistan has further strained the country's resources (UNHCR 17/11/2023).

High humanitarian constraints persist in Afghanistan, hindering assistance delivery through issues such as underfunding, banking system constraints, bureaucratic hurdles, and insecurities (OCHA 23/12/2023; OCHA 14/12/2023). These challenges collectively deepen the country's humanitarian crisis by impeding aid provision to the affected population.

Pre-existing humanitarian crises and vulnerabilities to El Niño

In Afghanistan, the prospect of above-average rainfall brings both hope and challenges. Precipitation deficits and high temperatures recorded in the north from October–December caused concern for crop yields and agricultural productivity, with delayed planting and poor soil conditions posing challenges to successful winter wheat cultivation. Northern and western regions are projected to be facing (IPC 3) food insecurity levels due to prolonged drought, though southern and eastern parts are projected at Stressed (IPC 2) levels (FEWS NET 13/01/2024). An estimated 15.8 million people in the country are anticipated to face severe acute food insecurity (IPC 3 or above) until March (IPC 14/12/2023).

Drought, overgrazing, limited locust control, and the forecasted above-average temperatures and rainfall provide suitable conditions for a locust outbreak. Such an outbreak would destroy a significant portion of the annual wheat production, posing an additional threat to food security in the country (Eco-Business 04/01/2024). Northern and northeastern Afghanistan are specifically susceptible to Moroccan locust outbreaks (FAO 10/05/2023).

From December 2023 to April 2024, above-average rains are expected to allow for snow water storage. The increased snow water storage potential can be a crucial source of crop irrigation, supporting pasture recovery during the spring and summer of 2024. On the other hand, above-average rainfall during the wet winter season may trigger floods and landslides. Potential crop destruction, heightened livestock mortality, and waterborne disease outbreaks would affect people's health, livelihoods, food security, and nutrition levels.

Acute respiratory infection cases also tend to rise with the onset of winter. Since January 2023, around 1.5 million cases have been reported, with over 2,500 deaths. Over 37,700 cases were already recorded in just the first week of January 2024 (WHO 10/01/2024).

Bangladesh

El Niño impact risk: medium

INFORM Risk Index: high (5.7/10)

- **Exposure:** 6.9/10
- **Vulnerability:** 5.5/10
- **Lack of coping capacity:** 4.8/10

Projected hazards for January–June 2024 and main exposed localities

Seasonal forecasts anticipate below-average rainfall in the southeastern regions between February–April 2024. Above-average temperatures are also expected to continue at least until June (WMO accessed 04/01/2024; IRI accessed 04/01/2024; C3S accessed 04/01/2024). Heatwaves have become more prevalent in Bangladesh during the past decade; these are more likely to occur between May–June (IFRC 29/08/2023; TBS 29/09/2023; WMO accessed 04/01/2024).

Pre-existing humanitarian crises and vulnerabilities to El Niño

Bangladesh hosts more than 970,000 Rohingya refugees dependent on humanitarian assistance (UNHCR 11/01/2024; ISCG et al. 07/03/2023). They have been denied formal legal status, are not permitted to legally work, and are confined to camps (ISCG et al. 07/03/2023). Rohingya living in camps experience extreme movement restrictions, overcrowding and a lack of privacy, inadequate WASH facilities, and insecurity and violence (ISCG et al. 07/03/2023; ACAPS 12/05/2023). The refugees also face high food insecurity and malnutrition levels (ISCG et al. 07/03/2023; UNHCR et al. 04/01/2024).

Based on a 2022 assessment, nearly 35 million people in Bangladesh faced moderate to severe chronic food insecurity (CFI) – i.e. Moderate (IPC CFI Level 3) or Severe (IPC CFI Level 4) levels — with nearly 11.7 million experiencing IPC CFI Level 4 (IPC 15/06/2022). Besides chronic food insecurity, some districts also experience acute food insecurity. Nearly 12 million people were projected Crisis (IPC 3) or worse levels of food insecurity May-September 2023, with 2.2 million facing Emergency (IPC 4 levels (IPC 01/06/2023). Numerous factors drive food insecurity in the country. These include poor food access and utilisation, frequent natural hazards affecting food production and livelihoods, a lack of sustainable livelihood sources, low physical, financial, and human capital levels, and the high prices of essential goods, especially fuel and food (IPC 15/06/2022; IPC 01/06/2023).

Anticipated humanitarian impact of El Niño

Rice is the main staple food in the country and the primary income source for nearly half the total rural population (BRKB accessed 08/01/2024. The growing season of *Boro* rice (February–April) contributes around 55% of the total annual rice production, while the growing season of *Aus* rice (March–June) contributes around 10% (FAO 10/11/2023; ACAPS accessed 14/01/2024). Generally, food production in the country is considered adequate, and food availability is not a significant food insecurity driver (IPC 15/06/2022 and 01/06/2023). That said, high temperatures could dry up water sources for irrigation, affecting the yields of main crops such as rice, wheat, and maize (Zinat et al. 11/06/2020; Khandoker et al. 08/07/2018). This would likely affect farmers' livelihoods and lead to food shortages, aggravating food insecurity in the country, especially for low-income households.

Heatwaves are likely to significantly affect areas without planned urbanisation, especially those with low green coverage and inadequate ventilation, such as Dhaka city (IFRC 29/08/2023). These can affect livelihoods and aggravate health concerns, such as dehydration, heat exhaustion, heatstroke, and cardiovascular issues, especially for older people, pregnant and lactating women, children, people with disabilities, people living in poorly ventilated houses, and people who work outdoors (TBS 05/06/2023; CDC accessed 08/01/2024; IFRC 29/08/2023). Increased mortality rates have been recorded during heatwaves in the country (Nissan et al. 01/10/2017).

In 2023, Bangladesh experienced the deadliest dengue fever outbreak since it first recorded the epidemic in 2000 (Reuters 02/10/2023). From 1–21 January 2024, around 850 dengue cases were reported, compared to around 570 in the whole of January 2023 (DGHS 21/01/2024 and 31/12/2023). The persistent population of Aedes mosquitoes could lead to an upsurge in dengue cases when rainfall resumes towards the very end of the January–June 2024 period (Bdnews24.com 13/01/2024; The Daily Star 24/12/2023).

The Rohingya refugees in Cox's Bazar live in shelters mostly made of tarpaulin sheets and bamboo without sufficient provisions for ventilation (ISCG et al. 07/03/2023; AA 06/06/2023). Heatwaves could worsen the health conditions of the over 900,000 Rohingya in the city who already need health assistance (ISCG et al. 07/03/2023).

India

El Niño impact risk: medium

INFORM Risk Index: high (5.3/10)

- **Exposure:** 7.4/10
- **Vulnerability:** 4.7/10
- **Lack of coping capacity:** 4.2/10

Projected hazards for January–June 2024 and main exposed localities

Seasonal forecasts anticipate a high probability of above-average temperatures in the upcoming months, particularly in the southernmost region. Rainfall is expected to be near normal in most of the countries during the February–April period, except for localised below-average rainfall in the central and northern regions (IMD 01/01/2024; WMO accessed 03/01/2024; IRI accessed 03/01/2024; C3S accessed 03/01/2024; ACAPS accessed 08/01/2024).

Pre-existing humanitarian crises and vulnerabilities to El Niño

India has been grappling with malnutrition over the past few years. Approximately 234 million (16.6% of the population) are undernourished, and India ranked 111th out of 125 countries in the 2023 Global Hunger Index (GHI accessed 08/01/2023; FAO et al. 2023). Between 2019–2021, 224.4 million people were reported to be undernourished. Nearly 36 million children faced chronic malnutrition, while around 22 million faced acute malnutrition (FAO et al. 2023; ClearIAS 10/12/2023; The Indian Express 07/07/2022). With the increasing population, the country is struggling to maintain food sufficiency (ClearIAS 10/12/2023).

India hosts over 200,000 refugees and asylum seekers mostly from Afghanistan, Myanmar, Sri Lanka, and Tibet (UNHCR 31/01/2023). Some of them live in camp areas, while others live in urban settings with host communities. The refugees face challenges in accessing basic services, such as healthcare and education, and are more vulnerable to poverty (Al Jazeera 05/01/2024; RI 18/05/2023; MPI 10/09/2020).

India, with its distinctive geoclimatic conditions, faces high susceptibility to natural hazards, such as earthquakes, floods, cyclones, and droughts (UNDP 21/01/2012). The recent monsoon season and cyclone events since June 2023 have led to hundreds of fatalities, evacuations, and extensive property destruction across various states, particularly Andhra Pradesh, Assam, Chhattisgarh, Himachal Pradesh, Odisha, Sikkim, Tamil Nadu, and West Bengal (ECHO 29/09/2023, 18/10/2023, and 08/12/2023). The response capacity to disasters is improving at the national level, but their impact remains significant (TOI 01/07/2023; ACAPS 12/10/2023).

Anticipated humanitarian impact of El Niño

Above-average temperatures may trigger heatwaves between March–June, as well as glacial lake outbursts that can result in severe flooding in the northern states, likely damaging housing and critical infrastructure.

Above-average temperatures can also trigger crop and livestock losses. The potential impact on wheat, which is sensitive to heat stress particularly in March, raises concerns about a possible decrease in production (The Indian Express 22/01/2024; GI 28/11/2023). The country has curbed exports of rice, wheat, and sugar to ease food inflation, which has been on a rising trend regardless (TE accessed 22/01/2024). Any further decrease in wheat production could result in sustained high domestic prices (Reuters 09/01/2024).

India is also struggling with a water crisis because of groundwater exploitation, water resource mismanagement, and a lack of rainwater harvesting (WB 14/02/2023). In some areas, farmers are already not getting enough irrigation water (UN 25/10/2023). Unusual rainfall with above-average temperatures may aggravate the situation by compromising agricultural yield. Water scarcity in the drier season (December–February) can also expose women and girls to protection risks as they travel longer distances to collect water (The Water Project accessed 08/01/2023). Lack of safe water access can lead to waterborne disease outbreaks, such as cholera, which is endemic in the country.

Pakistan

El Niño impact risk: medium

INFORM Risk Index: high (6.1/10)

- **Exposure:** 7.2/10
- **Vulnerability:** 5.9/10
- **Lack of coping capacity:** 5.3/10

Projected hazards for January–June 2024 and main exposed localities

Seasonal forecasts for the February–April period anticipate above-normal precipitation in the northeastern regions. The country is also expected to continue experiencing above-average temperatures during the first semester of 2024 (PMD 28/12/2023; WMO accessed 23/01/2024; IRI accessed 23/01/2024; C3S accessed 23/01/2024).

Pakistan is already facing an elevated risk of extreme weather events attributable to climate change, including the high risk of floods because of glacial lake outbursts, particularly in the northern regions (ESCAP 23/10/2023; WHH 26/10/2023; WB 19/12/2023). The seasonal forecast of above-average rainfall and temperatures from January–March further compounds this risk, potentially aggravating the possibility of heavy flooding, particularly in northern Pakistan (WHO 12/10/2023). Despite the forecasted above-average temperatures for 2024, some areas of the country normally experience cold waves during the first quarter of the year, particularly Balochistan, Gilgit-Baltistan, Khyber Pakhtunkhwa, northern Punjab, and Sindh provinces. Cold waves can affect agricultural yields besides representing a threat to people's health, livelihoods, and access to services (TBP 09/01/2024; PO 14/01/2024; Pakistan Today 12/02/2023).

Pre-existing humanitarian crises and vulnerabilities to El Niño

Various factors drive Pakistan's vulnerability to climate change and extreme weather events. These factors include geographical location, high poverty rates, social vulnerability, and exposure to multiple weather hazards. As per the Global Climate Risk Index, Pakistan ranks fifth among the world's most climate-vulnerable nations (UN-Habitat 04/06/2023). Political instability, conflict, and high inflation hinder the development of community resilience and increase affected people's needs (IPC 09/10/2023; WHO accessed 22/01/2024). In Pakistan, 11.8 million people are projected to face Crisis (IPC 3) and Emergency (IPC 4 food insecurity levels between November 2023 and January 2024 (IPC 05/06/2023). 2.14 million children are acutely malnourished and in need of urgent treatment (IPC 09/10/2023; WHO accessed 22/01/2024).

The 2022 monsoon season, characterised by substantial rainfall, severe flooding, and landslides, affected 33 million people, leaving 20.6 million in need of life-saving humanitarian assistance. The monsoon season also caused substantial crop yield and livestock losses (OCHA 18/12/2023; UN-Habitat 04/06/2023). Over 1.5 million people are still displaced, while some are living close to stagnant water (IOM 16/11/2023; IFRC 23/10/2023). The 2022 floods damaged or destroyed 13% of Pakistan's health facilities (around 2,000 clinics), while diseases such as acute watery diarrhoea (AWD), cholera, malaria, dengue, measles, COVID-19, and diphtheria continue to be reported, further straining available resources (OCHA 14/07/2023; WHO accessed 22/01/2024). The 2023 monsoon season hampered recovery from the 2022 floods, with heavy rains and floods significantly damaging crops and displacing nearly 400,000 people (ECHO 04/09/2023).

In 2023, while some areas of Pakistan faced floods resulting from the heavy monsoon rains, others experienced drought-like conditions. Between August–December, Pakistan experienced an overall rainfall deficit of −36.79%, with Sindh and Balochistan being the most affected (Govt. Pakistan 09/01/2024).

Pakistan is also home to 3.2 million Afghan refugees (UNHCR accessed 21/01/2024). They face a number of protection concerns, including deportation, limited economic opportunities, and barriers to accessing services, such as healthcare and education (NRC 14/12/2023; RI 06/07/2023).

Anticipated humanitarian impact of El Niño

January–March aligns with the *Rabi* season, which typically involves the cultivation of wheat, barley, and other winter crops (AgrInfoBank 27/03/2023; ACAPS accessed 08/01/2024). Above-average rainfall in the northeastern regions could positively influence Rabi crop yields, but above-average temperatures could trigger pest infestations, leading to localised crop damage (FAO 03/11/2023).

The Pakistani rice market is anticipated to be fruitful in 2024 following a surge in exports in the second half of 2023 (S&P Global 03/01/2024). That said, heat stress from above-average temperatures may affect winter crops, such as wheat and barley, which thrive in cooler temperatures (Becker et al. 01/05/2023).

The risk of heavy flooding from above-average rainfall and snow may also reduce crop yields and, at the same time, cause widespread infrastructure damage, affecting livelihoods and safe water access and resulting in disease outbreaks and the loss of lives (WFP 21/12/2023; IFRC 23/10/2023). Crop failure from either the floods or high temperatures will likely heighten food inflation, particularly of staples such as wheat (WHO 12/10/2023). In 2023, many farmers already grappled with financial difficulties and limited access to vital inputs, hindering

successful crop cultivation (DAWN 13/08/2023). Any reduction in agricultural production is likely to affect farmers' livelihoods and, overall, aggravate the food security situation in the country (WHO 12/10/2023).

In the regions forecast to experience above-average rainfall, glacier outbursts may cause localised flooding and landslides in mountain villages, especially in conjunction with reports of melting glaciers (RFE/RL 23/11/2023; WHO 12/10/2023). There is also a high risk of malaria transmission with heavy rainfall in conjunction with above-average temperatures (WHO 12/10/2023).

Papua New Guinea

El Niño impact risk: medium

INFORM Risk Index: high (6.7/10)

- **Exposure:** 6.6/10
- **Vulnerability:** 6.0/10
- **Lack of coping capacity:** 7.6/10

Projected hazards for January–June 2024 and main exposed localities

Seasonal forecasts indicate a high probability of above-average temperatures in the entire country between January–June 2024. Rainfall is expected to be above normal in large parts of the country. The exception is the northern regions, which may continue experiencing dry conditions, particularly from March–May (WMO accessed 23/01/2024; IRI accessed 23/01/2024; C3S accessed 04/01/2024; WFP 03/01/2024).

Pre-existing humanitarian crises and vulnerabilities to El Niño

Political and economic instability, intercommunal violence, and high vulnerability to natural hazards beset Papua New Guinea. The violence related to the 2022 general elections, along with some intercommunal violence, affected an estimated 265,000 people and displaced an estimated 87,000 people in the election year (UNCT PNG 09/08/2022; The Guardian 28/09/2022). There was also an upsurge in intercommunal violence in 2023 (The Guardian 29/08/2023; ACLED 12/01/2024).

About 80% of the country's population is dependent on rain-fed subsistence farming, and more than three-quarters of the food consumed in the country is locally grown. The agriculture sector contributes nearly a quarter of the country's GDP and provides livelihoods for 85% of the rural population. As a result, any disruption to household food production will have an immediate, severe, and long-lasting impact on food security (PwC accessed 08/01/2024). The majority of households in mountainous areas are subsistence farmers of sweet potato, the country's staple food (Diversicare 2012; Bourke et al. 08/2009; FAO 2023). In April 2023, a severe drought was already reported in several provinces (PNG DMT accessed 15/07/2023).

Anticipated humanitarian impact of El Niño

Dry conditions in the northern regions may affect crop production and livestock, leading to crop failures, especially for sweet potatoes and taro. This would deteriorate the food security of subsistence farmers. Drought might also result in water scarcity, reducing the availability of drinking water sources (FAO 2023). Although above-average rainfall expected in some parts of the country may alleviate the impact of the 2023 drought, the combination of precipitation and temperature anomalies may trigger an increased incidence of vector-borne diseases, such as dengue and Zika, while above-average temperatures may trigger wildfires (WHO 12/10/2023).

Sri Lanka

El Niño impact risk: medium

Inform risk index: low (3.1/10)

- **Exposure:** 2.7/10
- **Vulnerability:** 2.7/10
- **Lack of coping capacity:** 3.9/10

Projected hazards for January–June 2024 and main exposed localities

Seasonal forecasts anticipate near-average precipitation during the first trimester of 2024 and above-average precipitation from April (C3S accessed 23/01/2024; WMO accessed 23/01/2024). Above-normal temperatures are expected to be recorded across the country between January–June (IRI accessed 09/01/2024).

Pre-existing humanitarian crises and vulnerabilities to El Niño

In 2022, a national debt crisis triggered high inflation rates, plunging the country into an economic and food security crisis. As food inflation rates reached 95%, emergency operations provided assistance to the 6.2 million people (28% of the population) who had become food-insecure. While the scale of the food security crisis has since decreased, 24% of the total population remains food-insecure (WFP 29/12/2023; WFP/FAO 25/05/2023; WFP 30/09/2023). Shortages in fuel and agricultural inputs, such as fertilisers, weedicides, and pesticides, have contributed to the decline in agricultural output for multiple harvest seasons (WFP 14/06/2023; OCHA 17/01/2023).

Sri Lanka is one of the ten countries most affected by extreme weather events, with natural hazards such as floods, cyclones, landslides, droughts, and coastal erosion posing significant challenges to farmers. Recurrent droughts and sudden rains in the dry zones increase smallholder farmers' risk of food insecurity and increase vulnerability to acute malnutrition (WFP 14/06/2023). The southwest monsoon crucial for rice production during the *Yala* harvest (May–August) was insufficient in 2023 because of El Niño weather patterns (Al Jazeera 31/08/2023). Subsequent heavy rainfall in December, influenced by a strong El Niño effect, and floods in the northern provinces affected the agriculture sector (IFRC 30/12/2023; Sri Lanka Department of Meteorology 02/01/2024).

Anticipated humanitarian impact of El Niño

In 2024, forecasted above-normal temperatures may reduce water availability and quality in the dry zones of the country (UN 04/10/2023). El Niño-induced high temperatures may also reduce soil moisture and affect crop yields, posing challenges to the agriculture sector and farmers' livelihoods (The Island 13/01/2024; The Morning 23/12/2023).

Abnormally high temperatures may also trigger more frequent and severe heatwaves, particularly during the hot and dry period between March–April. This poses risks particularly for outdoor labourers in urban areas, farmers, older people, pregnant women, infants, and people with chronic health conditions (WB/ADB 18/11/2020; WFP 30/09/2023). Temperature anomalies, associated with above-average precipitation during the second quarter of 2024, may increase the spread of vector-borne diseases, such as dengue and malaria, affecting public health (WHO 12/10/2023).

The Philippines

El Niño impact risk: high

INFORM Risk Index: high (5.3/10)

Exposure: 7.7/10

Vulnerability: 4.5/10

Lack of coping capacity: 4.2/10

Projected hazards for January–June 2024 and main exposed localities

Seasonal forecasts indicate a very high probability for above-average temperatures during the first half of 2024, which could lead to frequent and severe heatwaves and wildfires. Seasonal forecasts also anticipate lower-than-average rainfall throughout the country, particularly in the central regions (WMO accessed 23/01/2024; IRI accessed 23/01/2024; C3S accessed 23/01/2024). High temperatures and low rainfall would likely result in dry spells and drought-like conditions throughout most of the country. Historically, the most significant reduction in rainfall during past El Niño events has been observed in the Mindanao Islands (WB 02/04/2019).

Pre-existing humanitarian crises and vulnerabilities to El Niño

Natural hazards and conflict affected more than 13.7 million people in the Philippines in 2023 (OCHA 16/01/2024). The country is one of the most natural hazard-prone countries in the world, facing typhoons, heavy rainfalls, floods, earthquakes, and volcanic eruptions. Each year, natural hazards displace millions of people in the country, most of them temporarily (UNFPA 01/2019; WB 07/03/2023; IDMC 02/2015; OCHA 31/10/2022). In Mindanao, armed conflict, violence, clan feuds, and crime also drive humanitarian needs. As at 14 December 2023, around 162,000 IDPs were residing in the Mindanao Islands (OCHA 14/12/2023). Around 80,000 of them had been displaced since May 2017 because of the Marawi conflict from May–October 2017, between the Armed Forces of the Philippines and the Maute group (OCHA 14/12/2023; ACAPS 01/06/2017; AI 17/11/2017). The rest were displaced by natural hazards, other armed conflicts, and clan feuds. Around 30% of the Marawi IDPs resided in transitory sites, while the rest were in home-based settings (OCHA 14/12/2023).

In January 2023, WFP estimated that around 10% of the Philippine population was moderately or severely food-insecure, with farmers and people working in informal sectors being the most vulnerable (WFP 19/06/2023). El Niño could deteriorate the food insecurity situation in the country, especially in regions of Mindanao, such as Davao, where food insecurity rates are high.

Anticipated humanitarian impact of El Niño

El Niño-induced temperature and rainfall anomalies between January–June 2024 are likely to affect agriculture and fisheries, aggravating the food security situation, particularly among IDPs and communities that have not yet recovered from recent disasters and conflict. Rice and corn are the main staple foods in the country, with 2.4 million and 1.16 million farmers, respectively, engaged in their production (BAFS 10/11/2022; PhilRice accessed 14/01/2024). Dry conditions may affect the main season's maize and rice yields, reducing their availability and increasing market prices, which were already high at the end of 2023 (FAO 20/12/2023; ACAPS accessed 14/01/2024). Dry conditions could also lead to mice outbreaks, leading to further damage to maize crops (FAO 03/11/2023). The Philippines is a major producer of bananas, pineapples, and coconuts worldwide, providing employment to millions of Filipino farmers (PCAARRD accessed 14/01/2024). The dry conditions might reduce the production of these fruits, affecting farmers' livelihoods (Mundus Agri 08/11/2023; S&P Global 20/08/2020). Between 60–80% of the total annual banana, pineapple, and coconut production in the Philippines occurs in the Mindanao Islands (PSA 08/2023).

Heatwaves, wildfires, and the increased incidence of vector- and waterborne diseases, particularly dengue and Zika, can also cause severe health impacts in urban areas and in rural areas with limited access to health services (WHO 12/10/2023).

Timor-Leste

El Niño impact risk: medium

INFORM Risk Index: medium (3.6/10)

- **Exposure:** 1.8/10
- **Vulnerability:** 4.6/10
- **Lack of coping capacity:** 5.7/10

Projected hazards for January–June 2024 and main exposed localities

Seasonal forecasts anticipate below-average precipitation from January–May and above-normal temperatures from January–June (C3S accessed 24/01/2024; IRI accessed 24/01/2024). These anomalies are expected to affect the rainy season, which typically runs from December–June (ACAPS accessed 08/01/2024).

Pre-existing humanitarian crises and vulnerabilities to El Niño

Timor-Leste is susceptible to multiple natural hazards, such as droughts and floods, with their impact aggravated by the country's limited and inadequate infrastructure and social welfare. The country's economy, which is highly dependent on the agriculture sector, is already grappling with insufficient food production because of poor soil quality, low-yielding crop varieties, variable rainfall, and steep slopes (WB/ADB 18/11/2021).

Almost half of the children in the country face chronic malnutrition. This rate is among the highest in Southeast Asia (WFP 15/12/2023). In early 2023, around 300,000 people (22% of the population) were projected to face high acute food insecurity levels (IPC 3 or above) (IPC 14/02/2023). Food insecurity drivers in the country include elevated food prices, the persistent impacts of the COVID-19 pandemic, and climate-related hazards (IPC 14/02/2023; WFP 15/12/2023).

Anticipated humanitarian impact of El Niño

In 2024, dry conditions, expected to peak around February–March, may pose a threat to food security and health.

Below-average rainfall and above-normal temperatures are expected to reduce rice, maize, peanut, and coffee yields. This may affect livelihoods and food security, as 80% of the population relies on this sector for livelihoods (ACAPS accessed 08/01/2024; WB accessed 08/01/2024; WB 18/11/2021; FAO 03/11/2023).

The ripple effects of El Niño on global food prices and trade may also deteriorate the food security of small-income households. The country heavily depends on imports of Indian rice, which, since July 2023, has been subject to export restrictions. This, in combination with limited rice stocks, may drive a further increase in rice prices (WFP 26/10/2023). Forecasted below-average rainfall could also increase labour burden and violence against the women responsible for collecting water, a task that requires travelling long distances usually at night (CARE 15/05/2018).

Vanuatu

El Niño impact risk: medium

INFORM Risk Index: medium (4.2/10)

- **Exposure:** 2.9/10
- **Vulnerability:** 4.5/10
- **Lack of coping capacity:** 5.5/10

Projected hazards for January–June 2024 and main exposed localities

Seasonal forecasts anticipate below-average precipitation and above-average temperatures throughout the country (IRI accessed 23/01/2024; WMO accessed 23/01/2024; C3S accessed 23/01/2024). The cyclone season, which runs from January–April, increases the risk of exposure to cyclonic activity (ACAPS accessed 24/01/2024).

Pre-existing humanitarian crises and vulnerabilities to El Niño

In early 2023, two Category 4 cyclones, Judy and Kevin, and a magnitude 6.5 earthquake hit the country, affecting up to 250,000 people (OCHA 09/03/2023; OCHA/UN RC Fiji 09/03/2023). The cyclones and earthquake displaced thousands of people and destroyed critical infrastructure, hospitals, homes, and shelters. As a result, 80% of the population required humanitarian assistance, particularly shelter, food, and WASH services (ADRA 07/03/2023). Another tropical cyclone, Lola, hit the country in October 2023, affecting 91,000 residents (IFRC 05/01/2024;)

In 2023, food access was the main challenge for the 250,000 disaster-affected inhabitants. The cyclones destroyed much of the country's agricultural system and caused it to decline by the last quarter of 2023, worsening the sector's capacity to provide enough food for the population (Govt. Vanuatu 30/06/2023).

Anticipated humanitarian impact of El Niño

In 2024, El Niño-induced dry conditions are anticipated to lead to water shortages and crop damage. These would diminish the capacity of the agricultural sector, including self-sustainable farming families, to generate sufficient food for the nation's population (WB/ADB 19/11/2021). Dry conditions can also make it more difficult for communities to restore the areas for crop plantation destroyed by the 2023 tropical cyclones (Govt. Vanuatu 30/06/2023; ERCC 02/11/2023). The combination of low rainfall and high temperatures increases the risk of wildfires, which can further affect agriculture and health.

Above-average ocean temperatures may increase fish mortality rates and reduce availability, affecting subsistence fishers the most (Climate Central accessed 11/01/2023; Govt. Vanuatu 12/2020). The fishery sector, which represents a vital source of revenue for the island's economic growth, is already struggling from the impact of the 2023 cyclones (Govt. Vanuatu 30/06/2023; ERCC accessed 31/01/2024).

Heatwaves may also increase heat-related health conditions (such as heatstroke and seizures) and mosquito-borne diseases (such as dengue, Zika, and chikungunya) (WMP accessed 09/01/2024; Govt. Vanuatu 10/08/2021; Reuters 18/07/2023; WB/ADB 19/11/2021). The 2023 cyclones damaged one-third of the health facilities in Vanuatu (Govt. Vanuatu 30/06/2023). An increase in the number of people seeking health assistance would put additional pressure on the healthcare system.

Latin America and The Caribbean

El Niño typically brings above-average temperatures, below-normal precipitation, and increased rainfall variability in the region, including extreme rainfall events. Dry conditions are observed in Central America from July–December and in northern South America from June–March. On the other hand, coastal areas of South America, including Ecuador and Peru, typically receive above-average precipitation. Some areas, including parts of the Caribbean, Colombia, Peru, and Venezuela, experience both dry conditions and increased rainfall and flooding during El Niño (IRI accessed 16/01/2023; OCHA 28/11/2023).

In 2023, Central America experienced both dry conditions and extreme rainfall events. Between April–August 2023, El Salvador, Guatemala, and Nicaragua received record-low rainfall, severely affecting maize and other staple food production. In El Salvador, drought affected almost 50% of Primera season maize crops. Besides drought, heavy rainfall during the rainy season affected more than 4.4 million people in Guatemala (El Economista 03/01/2024; OCHA 28/11/2023). In Honduras, extreme rainfall events and flooding severely damaged crops, affecting food security. Between February–May 2024, the country is projected to face Crisis (IPC 3) food insecurity levels.

Although El Niño will have less impact on precipitation and temperature in Central America during the first half of 2024 compared to 2023, the situation requires close monitoring, as the food security of subsistence farmers remains at risk given the overall reduction in yields observed in 2023. These farmers may deplete their staple food reserves before the end of the lean season, which could extend until July–August (FEWS NET 11/2023, ACAPS accessed 16/01/2024). The reduction in agricultural yields is anticipated to increase malnutrition, while water scarcity and damage to water and sanitation facilities because of flooding may trigger waterborne diseases.

Seasonal forecast for the February–April 2024 period is mixed. Some models anticipate dry conditions to persist in Nicaragua, putting additional pressure on subsistence farmers. Dry conditions are also anticipated in Brazil, Colombia, Guyana, Suriname, and parts of Venezuela (WMO accessed 23/01/2024; IRI accessed 23/01/2024). On the other hand, above-average rainfall is anticipated in coastal areas of Ecuador and parts of Colombia during the first quarter of 2024 (WMO accessed 16/01/2024; IRI accessed 16/01/2024; C3S accessed 16/01/2024; IDEAM 19/01/2024).

Both Central and South America are likely to continue facing severe health impacts because of El Niño in 2024, including a higher incidence of vector-borne diseases such as dengue, chikungunya, and Zika (Ortiz-Prado et al. 21/09/2023). In 2023, the region witnessed record-high dengue incidence, surpassing 3.5 million cases. Above-average temperatures will increase the likelihood of heatwaves, posing a particular threat to older people, children, and individuals with chronic diseases (OCHA 28/11/2023).

Colombia

El Niño impact risk: medium

INFORM Risk Index: high (5.3/10)

Exposure: 6.7/10

Vulnerability: 6.2/10

Lack of coping capacity: 3.5/10

Projected hazards for January–June 2024 and main exposed localities

The seasonal precipitation forecast is mixed. Some models anticipate above-average rainfall for the February–April period in parts of central, northern, and eastern Colombia (WMO accessed 23/01/2024; C3S accessed 23/01/2024; IRI accessed 12/01/2024). The Colombian Institute of Hydrology, Meteorology and Environmental Studies forecast 10–60% precipitation deficits for all the regions in February. The institute also forecast 10–30% precipitation deficits in the Caribbean region and some areas of Amazonia and 10–30% above-average rains in the rest of the region in March. In April, most regions are expected to experience above-average rainfall, except for Pacific region and some areas of Amazonia (IDEAM 19/01/2024).

Seasonal forecasts anticipate above-average temperatures to continue at least throughout the first quarter of 2024 (WMO accessed 12/01/2024; IRI accessed 12/01/2024).

Between October 2023 and March 2024, about 2.9 million people are estimated to be in departments at high risk of El Niño impacts. These include Antioquia, Bolívar, Cesar, Córdoba, Cundinamarca, La Guajira, Magdalena, Norte de Santander, Providencia, San Andrés, Santander, Sucre, Tolima, and Valle del Cauca. In these departments, El Niño may trigger forest fires, dry conditions, water scarcity, and an increased incidence of infectious diseases (OCHA 24/10/2023).

Pre-existing humanitarian crises and vulnerabilities to El Niño

Colombia faces several crises that amplify vulnerability to El Niño-induced temperature and rainfall anomalies. Armed conflict and internal displacement, coupled with food insecurity, create a precarious backdrop. The signing of the 2016 Peace Agreement saw over one million new displacements, while the activity of armed groups, leveraging the demobilisation of the Revolutionary Armed Forces of Colombia and the COVID-19 pandemic, intensified forced displacement, community confinements, extortion, forced recruitment, and targeted violence. These particularly affect food security and livelihoods, as well as education and WASH access (OCHA 24/11/2023). The presence of refugees and migrants increases the number of people vulnerable to El Niño-related hazards, such as heatwaves, wildfires, and water scarcity (UNCHR accessed 28/12/2023).

Since January 2023, a surge in violence and insecurity has affected a significant number of people in Colombia, resulting in the displacement of approximately 56,400 individuals and the confinement of 64,100. Indigenous and Afro-Colombian populations respectively make up 44% and 34% of the affected individuals (OCHA 24/11/2023).

In 2023, 30% of the Colombian population (15.5 million people) faced food insecurity, including 2.1 million who experienced severe food security (WFP 11/07/2023).

Anticipated humanitarian impact of El Niño in 2024

In 2023 and early 2024, below-average precipitation in localised areas, high temperatures, and maritime heatwaves are anticipated to cause crop failures and reduced fishing yields (Colombian Ministry of Agriculture 13/09/2023). These may affect livelihoods and increase food prices, including for staple food items, affecting the food security of low-income households in both rural and urban areas (OCHA 24/10/2023; Infobae 12/12/2023).

Forest fires are also expected to affect agriculture and rural livelihoods. Antioquia, Boyacá, Casanare, Córdoba, Cundinamarca, Huila, Magdalena, Meta, Santander, and Tolima departments continue to face heightened risks for this hazard, with crops such as fique, yuca, palm oil, and barley potentially facing significant losses (Pares 13/10/2023). Reduced water availability may also continue affecting livestock farming, hydroelectricity, and mining activities (iMMAP 25/08/2023).

Approximately 5.1 million people face heightened vulnerability to vector-borne diseases, such as dengue, malaria, Chagas disease, and zoonoses (OCHA 24/10/2023). There's also an increased risk of waterborne diseases, malnutrition, a rise in respiratory infections given elevated particulate matter or potential forest fires, heat-related illnesses, and an increase in mental health conditions. Health concerns are particularly relevant for older people, individuals with chronic conditions, and children (OCHA 24/11/2023; Colombian MinSalud 23/10/2023). People already facing barriers in accessing water and sanitation services, including rural and urban low-income households, indigenous communities, and refugees and migrants, will be at particular risk of waterborne diseases (OCHA 24/11/2023).

Venezuela

El Niño impact risk: medium

INFORM Risk Index: medium (4.7/10)

- **Exposure:** 5.3/10
- **Vulnerability:** 3.8/10
- **Lack of coping capacity:** 5.0/10

Projected hazards for January–June and main exposed localities

Seasonal forecasts anticipate below-normal rainfall in northeastern Venezuela between February–April, while southwestern regions are expected to experience wetter-than-usual conditions. During the March–May period, above-average rainfall is expected to prevail in large parts of the country (IRI accessed 23/01/20234; WMO accessed 23/01/2024; C3S accessed 23/02/2024). Above-normal temperatures will continue for the entire first semester of 2024 (IRI accessed 27/12/2023; WMO accessed 27/12/2023).

Belo-normal rainfall and above-normal temperatures induced by El Niño may worsen the dry season in early 2024, particularly in the eastern states of Delta Amacuro, Monagas, and Sucre (OCHA 28/11/2023). Wet conditions from March, combined with above-average temperatures, may increase the incidence of vector-borne diseases (WHO accessed 23/01/2023).

Pre-existing humanitarian crises and vulnerabilities to El Niño

Venezuela has been struggling with an economic, social, and political crisis for the past decade, particularly affecting the population's ability to access food (BBC 04/01/2023; FEWS NET accessed 03/01/2023; FEWS Net 09/2023). At the end of 2023, about 7.7 million people needed humanitarian assistance, 2.5 million of whom were expected to continue facing food insecurity (USAID 28/12/2023).

In 2023, people who did not have access to dollars or state aid packages suffered from IPC 2 food insecurity, especially in the north, the eastern rural areas, and the western and eastern borders (FEWS NET 09/2023).

Given the crisis, more than seven million people have left the country since 2015, with Brazil, Colombia, and Peru receiving the highest numbers of displaced Venezuelans (R4V 30/11/2023).

Anticipated humanitarian impact of El Niño

The drought conditions resulting from the dry season (mid-November to mid-March), combined with the effects of El Niño over the January–March period, may affect food production, particularly the rice yields typically harvested between April–July (USDA accessed 27/12/2023; ACAPS accessed 04/01/2023USDA accessed 27/12/2023; ACAPS accessed 23/01/2024). This could further reduce the local availability and prices of staple foods (USDA 23/09/2022).

Above-average temperatures could lead to a decline in soil moisture, affecting the crop yields of smallholder farmers who lack access to irrigation systems during the initial phase of the second corn planting season, usually harvested between March–May (FEWS NET accessed 23/01/2024). El Niño-induced water scarcity could also affect energy production by lowering the water level in the Simón Bolívar hydroelectric power plant in Bolívar state. Twice in the last decade, low rainfall has lowered water levels in the power plant, causing power cuts and forcing power rationing across Venezuela (Meteored 15/10/2023; Mongabay 07/08/2023).

Prevailing wet conditions during the second trimester of 2024 may have a positive impact on food production but also increase mosquito breeding, driving a higher incidence of vector-borne diseases, such as dengue, chikungunya, and Zika (OCHA 28/11/2023).