



Climate
Risk Index

Climate Risk Index 2026

Who suffers most from extreme weather events?

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Authors: Lina Adil, David Eckstein, Vera Künzel, Laura Schäfer

Contributors: Linus Nolte

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List of abbreviations

AMOC	Atlantic Meridional Overturning Circulation
AR6	IPCC Sixth Assessment Report
BMZ	Federal Ministry for Economic Cooperation and Development (Germany)
COP	Conference of the Parties
CRI	Climate Risk Index
DPO UN	Department of Peace Operations
DPPA	UN Department of Political and Peacebuilding Affairs
EEA	European Environment Agency
EM-DAT	Emergency Events Database
FRLD	Fund for responding to Loss and Damage
GDP	Gross domestic product
GGA	Global Goal on Adaptation
GHG	Greenhouse gas
GST	Global Stocktake
HDI	Human Development Index
ICJ	International Court of Justice
IOM	International Organization for Migration
IMF	International Monetary Fund
IPCC	Intergovernmental Panel on Climate Change
L&D	Loss and damage
LDCs	Least Developed Countries
LLDCs	Least Developed Land-Locked Countries
MHEWS	Multi-hazard early warning system
Mol	Means of Implementation
NAP	National Adaptation Plan
NCQG	New Collective Quantified Goal
ND-GAIN	Notre Dame Global Adaptation Initiative
NDCs	Nationally Determined Contributions
ODA	Official Development Assistance
PPP	Purchasing power parity
SB	Subsidiary Body
SDGs	Sustainable Development Goals
SIDS	Small Island Developing States
UNDP	United Nations Development Programme
UNDRR	United Nations Office for Disaster Risk Reduction
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNGA	United Nations General Assembly
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
UNSG	United Nations Secretary-General
VC	Voluntary Commitment
WMO	World Meteorological Organization
WWA	World Weather Attribution

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Key Messages

- I. The Climate Risk Index (CRI) ranking indicates that, between 1995 and 2024, **Dominica, Myanmar, and Honduras** were the countries most affected by extreme weather events' impacts.
- II. **St. Vincent and the Grenadines, Grenada, and Chad** were the most affected by extreme weather events' impacts in 2024.
- III. From **1995 to 2024, more than 832,000 people died worldwide** and **direct economic losses of over USD 4.5 trillion (inflation-adjusted)** directly resulted from **more than 9,700** extreme weather events.
- IV. **Floods, storms, heat waves, and drought** were the most prominent impacts short- and long-term. From 1995 to 2024 heat waves (33%) and storms (33%) caused the most fatalities. Floods accounted for nearly half of those affected (48%). Storms caused, by far, the greatest economic losses (58% or USD 2.64 trillion inflation-adjusted).
- V. The most affected countries in the long-term index for 1995–2024 can be divided into two groups: (1) Countries most affected by highly unusual extreme events (**e.g. Dominica, Myanmar, Honduras, and Libya**) and (2) countries affected by recurring extreme events (**e.g. Haiti, the Philippines, Nicaragua, and India**). Climate science clearly shows that climate change raises the risk for both categories, strongly indicates that it contributes to transforming unusually extreme events into continued threats, creating a new normal.
- VI. **The CRI indicates that all countries are affected, but those in the Global South are particularly impacted.** In both the short- and long-term indices, extreme weather events' impacts particularly affected poorer Global South countries. Between 1995 and 2024, six of the 10 most affected were lower-middle-income, including one Small Island Developing State and three Least Developed Countries. These countries' coping capacities are substantially lower than others'. None of the 10 most affected over the previous 30 years were in the high-income group¹, and only one for 2024. In 2024, eight of the 10 most affected were in the low and lower-middle-income group².

1 For definition of income groups see World Bank 2024e.

2 Ibid.

VII. The CRI ranking is based on the best publicly available historical data set – at the time of publication – on the extreme weather events’ impacts. **These events and their impacts are often underreported, especially those in Global South countries**, because of data quality and coverage challenges, and data gaps. This can lead to the ranking less accurately capturing all experienced impacts for all countries.

VIII. Human-induced climate change affects the frequency and intensity of extreme weather events and leads to widespread adverse climate impacts.

El Niño influenced many extreme events at the beginning of 2024. However, attribution science found that climate change helped fuel these events even more than El Niño.³ Climate science also found that in 2024, human-caused climate change added 41 days of dangerous heat for billions of people worldwide, greatly impacting vulnerable populations and driving other extreme weather events, such as intensified hurricanes and wildfires. The summer of 2024 was the hottest on record, with two billion people experiencing 30+ risky heat days⁴.

IX. COP 30 should find effective ways to close the global ambition gaps, as the CRI 2026 results illustrate: Global emissions must be reduced immediately, adaptation efforts must be accelerated, effective solutions to address loss and damage must be implemented, and adequate climate finance must be provided. Courts in 2025 have confirmed this urgency. An International Court of Justice advisory opinion clarified that states have binding legal duties to prevent and address the harmful effects of climate change – including stronger mitigation, adaptation, and loss and damage actions and provision of climate finance.

3 World Weather Attribution 2024c.

4 Climate Central 2024.

1 Introduction

Relentless heat waves, catastrophic floods, raging wildfires, and destructive storms – the intensifying manifestations of the climate crisis are reshaping the world with alarming speed. What once were considered exceptional events have become the defining feature of a rapidly warming planet. The Climate Risk Index (CRI) 2026 starkly illustrates the escalating costs of inaction. Between 1995 and 2024, more than 832,000 people lost their lives and nearly USD 4.5 trillion in direct economic losses were recorded as a result of more than 9,700 extreme weather events. Such events' frequency and severity in 2024 confirmed that the new normal of the climate crisis is no longer a projection – it is already here.

The past year was marked by unprecedented extremes – 2024 was confirmed as the hottest year on record, with global average temperatures surpassing 1.5°C higher than pre-industrial levels for the first time. The date 22 July marked the hottest day ever recorded, while throughout 2024, sea surface temperatures worldwide, including in the North Atlantic and Mediterranean, reached record highs. These conditions fuelled deadly heat waves across Asia, Europe, and Latin America, with more than two billion people experiencing 30+ dangerous heat days.¹ In the Caribbean, Hurricane Beryl struck St. Vincent and the Grenadines and Grenada with extraordinary force, causing massive destruction with its wind speeds as high as 260 km/h. In Africa, severe rains and flooding in west and central regions claimed lives and uprooted communities, while countries in Asia were hit by an especially devastating typhoon season that included heavy rain, flooding, and landslides. At the same time, prolonged drought and fire conditions in the Amazon led to the largest-scale wildfires since 2005, consuming more than 20 million

hectares of forest. The CRI 2026 rankings reflect the global spread of these disasters.

St. Vincent and the Grenadines, Grenada, Chad, Papua New Guinea, and Niger were among the countries most affected in 2024, facing compounding human and economic losses. Once again, the CRI confirms that those least responsible for climate change are often the most affected, underscoring the persistent injustice at the heart of the crisis. Of the 10 most affected countries in 2024, seven are in the low-income and lower-middle-income group.

Science leaves no doubt that human-induced climate change is amplifying these events' frequency and intensity. Attribution studies show that, in 2024, climate change alone added 41 days of extreme heat for billions of people and was a stronger driver than El Niño in most of the major events observed.² The resulting human, ecological, and economic tolls clarify that climate impacts are escalating into a critical and unpredictable phase. Several Earth systems – from the weakening North Atlantic circulation to coral reefs at their thermal limits – are edging closer to tipping points, with risks of irreversible change.

The broader political context heightens the urgency. The World Economic Forum has identified extreme weather as the second most pressing short-term global risk for 2025, and likely the leading threat of the coming decade. However, global ambition remains insufficient. The United Nations Environment Programme (UNEP) Emissions Gap Report 2024 confirmed that current policies put the world on a path toward 2.6–3.1°C of warming by 2100.³ At the same time, the UNEP Adaptation Gap Report 2024 estimated that effective ad-

1 Ibid.

2 World Weather Attribution 2024c.

3 UNEP 2024a.

aptation requires USD 215–387 billion annually, while climate finance needs to address loss and damage (L&D) in developing countries are projected to reach USD 1.1–1.7 trillion annually by 2050.⁴

As COP30 draws near, the geopolitical backdrop is increasingly difficult. Escalating conflicts and security crises are diverting political attention and financial resources, while deep cuts to official development assistance (ODA) have weakened many Global South countries' abilities to respond to climate impacts. Meanwhile, in many Global North countries, climate diplomacy has been deprioritised in favour of short-term national interest strategies, such as energy security and defence spending. The climate crisis is being ignored as one of the biggest security threats of our time. The UN Secretary-General is therefore calling for a 'fundamental shift in how we understand and pursue security.'⁵ Some good news, however, is that where governments hesitate, courts are stepping in. In 2025, the International Court of Justice (ICJ) issued a landmark advisory opinion affirming that States have binding legal duties to prevent and address climate harm, including through stronger mitigation and adaptation actions, and through finance and reparations for L&D.⁶

The CRI findings are, therefore, more than a statistical account of extreme weather effects on countries – they are a call to action. The findings highlight the need to urgently reduce global emissions, accelerate adaptation efforts, implement effective solutions for addressing L&D, and redefine security in human-centred terms. Climate change is no longer a distant risk; rather, it is today's defining challenge, touching every aspect of life and threatening the foundations of human security. The window for preventing the most catastrophic consequences is rapidly narrowing. COP30 must rise to this moment by closing ambition gaps, scaling adaptation action, and delivering credible solutions for L&D.

1.1 Qualifier: How to read the CRI

The CRI analyses how climate-related extreme weather events affect countries and, thereby, measures the consequences of realised risks for countries. This retrospective index ranks countries by their economic and human effects (fatalities and affected people⁷), both in absolute and relative terms, with the most affected country ranked highest. The CRI aims to visualise how extreme weather events affected countries at a point 1 year before its publication⁸ and over the preceding 30 years. CRI 2026 analyses data from 2024.⁹ Data are limited on the economic and human effects of slow-onset events, so these events are not included in the index. The index is based on data from the EM-DAT international disaster database,¹⁰ World Bank, and International Monetary Fund (IMF). It examines absolute and relative impacts to create a country ranking based on six indicators: economic losses, fatalities, affected people – absolute and relative for each (see chapter 6 for more on the methodology).¹¹ The CRI aims to contextualise international climate policy debates and processes with a view to the climate risk countries are facing. This index simplifies the aggregation and understanding of climate-related extreme weather events' impacts across different regions and periods. The countries ranked highest should consider the CRI results as a warning sign of being at risk of frequent events or rare and extraordinary extreme events. Climate science and significantly improved attribution science clearly show that climate change is affecting the intensity, frequency, and duration of many extreme events. Such events' impacts on aspects such as economic costs and human health can also more clearly be attributed to climate change.¹²

4 UNEP 2024b.

5 United Nations 2025.

6 Klein and Schäfer 2025.

7 'Affected' refers to the total number of injured, otherwise affected, and homeless.

8 The year 2024 is the baseline for CRI 2026.

9 The previous CRI edition was based on data for the year 2022. As we now used the most recent data possible, we switched to 2024 as the basis for CRI 2026. As a reference, we have included a calculation for 2023 in the Annex.

10 The analysis is based on the EM-DAT database as of 29 September 2025.

11 The CRI underwent a 2-year revision process (CRI 2025 – 2026). This year's CRI applies a refined methodology that makes the analysis more robust (see 6.1 and 6.3).

12 Otto 2023a.

2

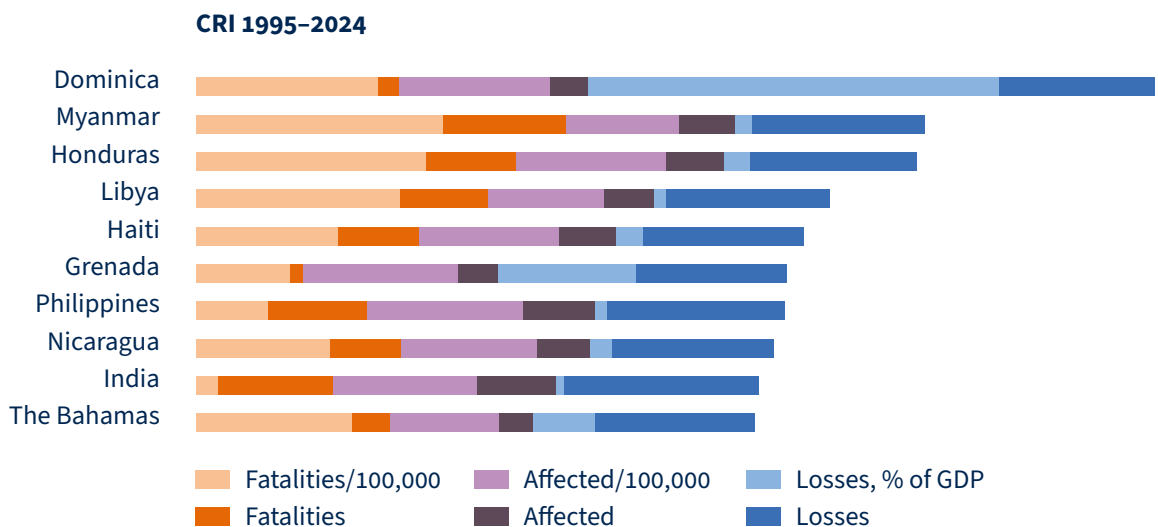
Key results of Climate Risk Index 2026

Climate change’s consequences are evident world-wide, with increased intensity and severity of extreme weather events. Between 1995 and 2024, more than 9,700 such events directly caused more than 832,000 lives lost worldwide, affected nearly 5.7 billion people, and led to direct economic losses of nearly USD 4.5 trillion (inflation-adjusted).

2.1 Countries most affected in 1995–2024

The CRI ranking indicates Dominica, Myanmar, and Honduras were the most affected countries in the long-term index, which spans 1995–2024, followed by Libya, Haiti, and Grenada. Figure 1 shows the 10 most affected countries over this term per the six CRI indicators analysed (absolute number of fatalities, fatalities per 100,000 inhabitants, absolute number of people affected, affected per 100,000 inhabitants, absolute economic losses, relative economic losses [in percentage of GDP]). The following sub-chapter is a brief description of the relevant extreme weather events leading to the high ranking, and the most significant events for the 10 countries.

Figure 1: The 10 countries most affected in 1995–2024



Dominica (1st) ranks highest because of its extraordinarily high economic losses relative to GDP. Dominica is one of the more hurricane-prone countries in the Caribbean. Notable events include Hurricane Marilyn and Luis in 1995, Hurricane Dean in 2007, Hurricane Ophelia in 2011, Tropical Storm Erika in 2015 and Hurricane Maria in 2017. Hurricane Maria was exceptionally severe, inflicting economic damage reaching USD 1.8 billion, equalling 270% of the small island's GDP. In 1995–2024, the country endured seven tropical cyclones resulting in nearly 100 deaths, more than 110,000 people affected, and total economic damage of nearly USD 3 billion (inflation-adjusted).¹³

Myanmar (2nd) had especially high absolute fatalities and economic losses, particularly due to one extraordinary weather event. Smaller contributions to its ranking come from the relative values of affected people and economic losses. Myanmar endures many natural hazards, including extreme temperatures, drought, cyclones, flooding and storm surges, and heavy rainfall events. Extensive flooding continues to overwhelm and displace populations in several regions.

Cyclone Nargis in 2008 was particularly devastating, killing nearly 140,000 people in floods after torrential rainfall. This accounts for over 95% of fatalities in the country over the previous three decades. The event caused USD 5.8 billion in economic damage. In the three decades examined, Myanmar experienced 55 extreme events, most of which were floods, causing nearly 141,000 fatalities, with more than nine million people affected and more than USD 8.6 billion of economic damage (inflation-adjusted).¹⁴

Honduras (3rd) ranks near the top because of its high number of fatalities per 100,000 people, affected people per 100,000, and absolute economic losses. Honduras is one of the poorest countries in the Western Hemisphere and is vulnerable to extreme weather

events because of its high exposure to many different climate-related hazards (hurricanes, tropical storms, floods, droughts, and landslides) that devastate crops and critical infrastructure. In 1998, Hurricane Mitch destroyed an estimated 70% of the country's crops and infrastructure, causing more than 14,000 fatalities and USD 7 billion in economic damage, which significantly set back the country's development process.¹⁵ Between 1995 and 2024, 60 extreme weather events, mostly floods and hurricanes, hit Honduras. In total they caused more than 15,000 fatalities, affected more than 12.5 million people, and led to economic damage of nearly USD 8 billion (inflation-adjusted).¹⁶

Libya (4th) had high numbers of fatalities per 100,000 people and high absolute economic losses. Tropical Cyclone Daniel in 2023 caused catastrophic floods and landslides. It was, by far, the most impactful extreme weather event in Libya. The cyclone caused almost all the fatalities, affected people, and economic damage shown in the data.¹⁷ It led to 13,200 deaths while affecting 1.6 million people and causing economic damage surpassing USD 6 billion.¹⁸ Two dams subsequently collapsed, greatly affecting the city of Derna.¹⁹ Poor maintenance due to the ongoing conflict and state fragility in Libya compounded the floods' effects. The dams, built in the 1970s, also were not designed to withstand such severe events.²⁰ According to World Weather Attribution (WWA), flooding was up to 50× more likely and 50% more intense because of climate change.²¹

Haiti (5th) had high numbers of people affected per 100,000 and high absolute economic losses. As the only Least Developed Country (LDC) in the Western Hemisphere, Haiti is highly vulnerable to the impacts of climate change because of its low economic development, limited resources, and geographic location.²² Situated on the Atlantic hurricane belt and a low-lying coastal plain, the country is particularly exposed to rising temperatures, hurricanes, and heavy rainfall.²³

13 Centre for Research on the Epidemiology of Disasters 2025.

14 Ibid.

15 World Bank 2024a.

16 Centre for Research on the Epidemiology of Disasters 2025.

17 Centre for Research on the Epidemiology of Disasters 2025.

18 Centre for Research on the Epidemiology of Disasters 2025.

19 ReliefWeb 2023.

20 World Weather Attribution 2023.

21 Ibid.

22 World Bank 2024b.

23 Ibid.

Hurricane Jeanne in 2004, which triggered severe floods and landslides, was the most fatal disaster in recent decades in the country, causing more than 2,700 deaths and USD 83 million in economic damage.²⁴ Earlier that same year, intense rainfall led to devastating floods, resulting in more than 2,600 deaths and affecting more than 30,000 people.²⁵

Hurricane Matthew in 2016 inflicted record-breaking economic losses of over USD 2.6 billion (inflation-adjusted) and affected more than two million people.²⁶ Over the last three decades, Haiti has experienced 91 extreme weather events – mainly floods and tropical storms. Together, these disasters caused nearly 8,000 fatalities, affected close to nine million people, and resulted in more than USD 4 billion in economic damage (inflation-adjusted).²⁷

Grenada (6th) had high numbers of people affected per 100,000 and high absolute economic losses as well as in relation to the country's GDP. As a small island state, it faces distinct risks related to climate variability and change. The country is especially vulnerable to hurricanes, rising sea levels that threaten coastal areas, and shifting rainfall patterns – marked by overall declining precipitation alongside more frequent heavy rainfall events.²⁸ The most devastating was Hurricane Ivan in 2004, which caused 39 deaths, affected 60,000 people, and led to nearly USD 1.5 billion in economic losses (inflation-adjusted).²⁹ In 2024, Hurricane Beryl struck the island, resulting in eight fatalities, more than 7,000 people affected, and USD 230 million in economic damage. That same year, a severe drought impacted 100,000 people, underscoring the country's exposure to hydrometeorological extremes.³⁰ Between 1995 and 2024, seven extreme weather events were recorded in Grenada per the EM-DAT database, with nearly 50 deaths, more than 225,000 affected peo-

ple, and nearly USD 1.8 billion in economic damage (inflation-adjusted).³¹

The Philippines (7th) has a high ranking mainly because of its high number of affected people per 100,000 and high absolute economic losses. Powerful typhoons regularly hit the archipelagic country because of its geographical location. These storms include Ketsana (2009), Bopha (2012), Haiyan (2013), Mangkhut (2018), and Goni (2020), with Typhoon Haiyan being the most devastating. Striking in 2013 as a Category 5 storm, it was the strongest typhoon ever recorded in the Philippines, and one of the strongest globally. Haiyan killed more than 7,000 people, devastated nine regions, damaged 1.1 million homes, and caused USD 802 million in agricultural and infrastructure losses.³² In total, Haiyan inflicted economic damage of around USD 13 billion.

Beyond these catastrophic events, the Philippines faces numerous tropical cyclones every year. Between 1995 and 2024, it experienced 371 extreme weather events, which are a constant threat to communities and development. Collectively, these disasters caused more than 27,500 fatalities, affected more than 230 million people, and resulted in more than USD 35 billion in economic losses (inflation-adjusted).³³

Nicaragua (8th) had high fatalities per 100,000 and high economic losses. The country has faced many hazards – including floods, droughts, wildfires, and mudslides – but hurricanes and tropical storms dominate, as a persistent threat accounting for around 60% of all events.³⁴ Hurricane Mitch in 1998 was, by far, the most devastating disaster, causing more than 3,000 deaths, affecting more than 860,000 people, and inflicting nearly USD 2 billion in economic damage.³⁵ Mitch alone accounted for the majority of recorded fatalities and a large share of the country's total economic losses. Only Hurricane Iota in 2020 surpassed it for people affected, at around

24 Centre for Research on the Epidemiology of Disasters 2025.

25 Ibid.

26 According to EM-DAT, Hurricane Matthew was the event that caused the greatest economic damage in Haiti in 1995–2024.

27 Centre for Research on the Epidemiology of Disasters 2025.

28 Federal Ministry for Economic Cooperation and Development [BMZ] (n.d.).

29 Ibid.

30 Ibid.

31 Centre for Research on the Epidemiology of Disasters 2025.

32 World Bank 2024c.

33 Centre for Research on the Epidemiology of Disasters 2025.

34 Ibid.

35 Centre for Research on the Epidemiology of Disasters 2025.

900,000.³⁶ Other major storms include Hurricane Eta (2020) and Hurricane Julia (2022). Combined, Mitch, Iota, Eta, and Julia caused an estimated USD 3 billion in economic damage in Nicaragua.

Between 1995 and 2024, Nicaragua experienced nearly 50 extreme weather events, resulting in more than USD 3.2 billion in inflation-adjusted economic losses, nearly four million people affected, and 3,800+ fatalities.³⁷

India (9th) had high absolute fatalities and high economic losses, as well as many people affected, both in absolute terms and per 100,000 population. The country has faced various extreme weather events, including floods, heat waves, cyclones, and drought. Floods and landslides resulting from heavy monsoons have displaced millions and damaged agriculture, and cyclones have devastated coastal areas, underscoring India's diverse climate risks. Notable events with high fatalities and/or economic losses include the 1998 Gujarat and 1999 Odisha cyclones, Cyclones Hudhud and Amphan in 2014 and 2020, the 1993 floods in northern India, Uttarakhand floods in 2013, and severe floods in 2019. Recurring and unusually intense heat waves, all with temperatures around 50°C, claimed many lives

in 1998, 2002, 2003, and 2015. There were nearly 430 extreme weather events in the three decades examined, causing economic losses of nearly USD 170 billion (inflation-adjusted), nearly 1.3 billion affected people, and 80,000+ fatalities.³⁸

The Bahamas (10th) has a high ranking because of high fatalities per 100,000 and substantial economic losses in relative and absolute terms. The country is especially vulnerable to hurricanes, which account for nearly all recorded disasters (except for one flood in 2013 due to heavy rainfall).³⁹ Hurricane Dorian in 2019, a Category 5 storm with wind speeds reaching 298 km/h, was the most devastating event. Dorian caused more than 400 fatalities, affected tens of thousands of people, and inflicted over USD 4 billion in economic damage. That storm alone accounted for a majority of deaths, people affected, and economic losses in the country's disaster record.^{40,41}

Between 1995 and 2024, the EM-DAT database recorded 17 extreme weather events in the Bahamas. Together, these events resulted in over USD 9.1 billion in inflation-adjusted economic damage, more than 53,000 people affected, and 400+ fatalities.⁴²

36 Ibid.

37 Ibid.

38 Centre for Research on the Epidemiology of Disasters 2025.

39 Ibid.

40 Centre for Research on the Epidemiology of Disasters 2025.

41 Ibid.

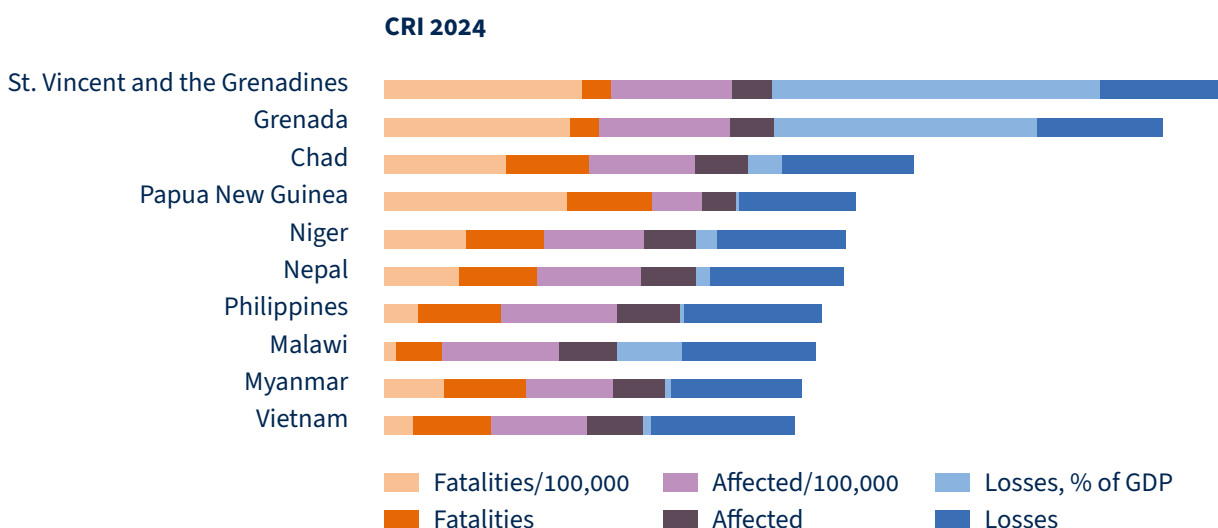
42 Ibid.

2.2 Countries most affected in 2024

The CRI ranking indicates **St. Vincent and the Grenadines, Grenada, and Chad** were the most affected countries in 2024, followed by Papua New Guinea, Niger, and Nepal. Figure 2 shows the 10 most affected countries in 2024, per the six CRI indicators analysed

(absolute number of fatalities, fatalities per 100,000 inhabitants, absolute number of people affected, affected per 100,000 inhabitants, absolute economic losses, relative economic losses [in percentage of GDP]). The following sub-chapter briefly describes the relevant extreme weather events leading to high rankings, and their most significant impacts for the 10 countries.

Figure 2: The 10 most affected countries in 2024



Saint Vincent and the Grenadines (1st) ranks highest for 2024 because of its exceptionally high economic losses per GDP, as well as fatalities per 100,000. The most significant extreme event in the country in 2024 was Hurricane Beryl, which made landfall on 1 July as a Category 4 storm (later weakening), with wind speeds reaching 260 km/h and causing widespread destruction.^{43,44} The hurricane killed eight, affected more than 40,000, and caused more than USD 230 million in economic damage – about 20% of the country’s GDP.⁴⁵

homes affected.⁴⁶ Residents of these islands were evacuated to mainland Saint Vincent.⁴⁷ Overall, the hurricane may have affected about 36% of the total population⁴⁸ and virtually every structure in the country sustained damage.⁴⁹ Mayreau was particularly hard-hit, with 98% of buildings damaged,⁵⁰ homes destroyed, and trees stripped of their leaves.⁵¹ Residents faced critical shortages of power, food, and water following the storm.⁵²

The southern Grenadine islands of Canouan, Mayreau, and Union were severely impacted, with 90–100% of

Grenada (2nd) has an especially high ranking largely because of exceptionally high economic losses relative to GDP, as well as high numbers of fatalities and

43 ACAPS 2024.
 44 Deutsche Welle 2024.
 45 Centre for Research on the Epidemiology of Disasters 2025.
 46 ACAPS 2024.
 47 UNOCHA 2024a.
 48 ACAPS 2024.
 49 UNOCHA 2024a.
 50 Ibid.
 51 ZDFheute 2024.
 52 Ibid.

affected people per 100,000. Hurricane Beryl was the main cause. Beryl made landfall on 1 July as a Category 4 storm,⁵³ with wind speeds of 265 km/h.⁵⁴ By 3 July, Beryl had destroyed Carriacou Island's only hospital⁵⁵ and its airport terminal.⁵⁶ The hurricane killed eight, affected more than 12,000 people, and caused USD 218 million in economic damage⁵⁷ – approximately 16% of the country's GDP. Around 3,000 people sought refuge in emergency shelters.⁵⁸ Housing was damaged or destroyed across all affected areas, including northern Grenada, Carriacou, and Petite Martinique,⁵⁹ and 95% of the country lost power.⁶⁰ A ClimaMeter study found that the hurricane-force winds and heavy rainfall were largely intensified by human-driven climate change, fuelled by record warmth in the Atlantic Ocean.^{61,62}

In addition to Beryl, Grenada experienced a severe drought in 2024, which affected 100,000 people.⁶³ This was the country's worst drought in 14 years⁶⁴ and accompanied a heat wave with temperatures exceeding 31.7°C for several consecutive days.⁶⁵ The government declared a water crisis on 10 May,⁶⁶ highlighting Grenada's vulnerability to both hydrometeorological extremes and compound climate risks.

Chad (3rd) has a high ranking because of its high absolute economic losses and many fatalities and affected people per 100,000. The country was severely impacted by two major floods caused by heavy rainfall,⁶⁷ with the most destructive occurring between August

and early September 2024. This event resulted in 576 deaths, affected nearly two million people, and caused USD 380 million in economic damage.⁶⁸ The floods damaged 433,000 hectares of cropland and destroyed 218,000 homes, as well as critical infrastructure including roads, bridges, and protective dikes.⁶⁹ According to the UN Office for the Coordination of Humanitarian Affairs (OCHA), all 23 provinces of Chad were affected.⁷⁰ WWA noted that the rainy season brought extremely heavy, in some cases unprecedented, rainfall across large parts of the Sahel, triggering catastrophic flooding.⁷¹ WWA studies indicate that, similar to the 2022 floods, human-caused global warming has made such extreme rainfall events far more likely and their frequency is expected to increase further with continued warming.⁷²

Papua New Guinea (4th) has a rank because of its many fatalities per 100,000 and high absolute economic loss. Two major landslides triggered by heavy rainfall are the main causes. The first landslide occurred in March in the Chimbu region, resulting in 23 deaths and affecting nearly 8,000 people.⁷³ It was accompanied by severe flooding, particularly in coastal areas,⁷⁴ and caused extensive road washouts.⁷⁵

The second, far more devastating, landslide struck the Enga region in May. Extraordinary rainfall triggered the event, which claimed 670 lives and caused USD 60 million in economic damage.⁷⁶ Approximately 1,250 peo-

53 ReliefWeb 2024a.

54 Centre for Research on the Epidemiology of Disasters 2025.

55 Straker 2024a.

56 ReliefWeb 2024b.

57 Centre for Research on the Epidemiology of Disasters 2025.

58 Straker 2024b.

59 ReliefWeb 2024c.

60 Gilbert and Wolfe 2024.

61 Faranda et al. 2024.

62 Borenstein 2024.

63 Centre for Research on the Epidemiology of Disasters 2025.

64 FAO n.d.

65 Ibid.

66 IFRC 2024a.

67 Centre for Research on the Epidemiology of Disasters 2025.

68 Ibid.

69 World Bank 2025.

70 France24 2024a.

71 World Weather Attribution 2024a.

72 Ibid.

73 Centre for Research on the Epidemiology of Disasters 2025.

74 ReliefWeb 2024d.

75 Al Jazeera 2024a.

76 Centre for Research on the Epidemiology of Disasters 2025.

ple were displaced, more than 150 houses were buried, and about 250 houses were abandoned.⁷⁷ The landslide hit six remote villages around 3 a.m., while most residents were asleep.⁷⁸ The event left a massive scar on a densely vegetated mountain⁷⁹ and contaminated creeks prompted the UN to warn of heightened disease risk.⁸⁰ International aid was mobilised but rescue operations were hampered by a collapsed bridge, fallen trees, and ongoing local conflicts.⁸¹ While landslides are relatively common in Papua New Guinea, this event ranks among the most catastrophic in recent years.⁸²

Niger (5th) has a high ranking because of a major flood that caused relatively high numbers of people affected and considerable economic losses. The flood, triggered by heavy rainfall and impacting all eight regions of the country,⁸³ resulted in 396 fatalities, affected more than 1.5 million people, and caused USD 225 million in economic damage.⁸⁴ According to the country's national meteorological agency, floods in 2024 were far more destructive than in previous years, with some regions experiencing up to double the normal rainfall.⁸⁵ Homes were destroyed and livestock losses were extensive.⁸⁶ WWA notes that, because of human-caused global warming, such extreme rainfall events in the Niger Basin are no longer rare and their frequency is expected to increase further with continued warming.⁸⁷

Nepal (6th) has its ranking because of a high number of people affected per 100,000 and high economic losses. In 2024, the country experienced a series of devastat-

ing floods and landslides.⁸⁸ The first event occurred in July, when torrential monsoon rains triggered floods and several mudslides, causing 24 fatalities and affecting more than 2,700 people.⁸⁹ In August, a glacier outburst flood accompanied by a mudslide swept through Thame village, damaging nearly half of the settlement⁹⁰ and displacing 135 people.^{91,92}

The most severe disaster struck in September. Continuous heavy rainfall caused widespread flash floods, river overflows, and landslides across 44 districts, with the worst impacts in the Kathmandu Valley, where nearly 20% of the monthly average rainfall fell within 2 days.⁹³ The event resulted in 268 fatalities, affected nearly 2.6 million, and caused economic damage exceeding USD 338 million.⁹⁴ At least 8,400 people were displaced and critical infrastructure was severely damaged.⁹⁵ Large parts of the capital, Kathmandu, were also submerged.⁹⁶ According to WWA, the rainfall during 26–28 September was about 18% more intense than usual and just over twice as likely because of human-induced climate change.⁹⁷

The Philippines (7th) has a high ranking mainly because of its high number of affected people per 100,000 and substantial economic losses. The country experienced an exceptionally destructive typhoon season in 2024, with multiple powerful storms making landfall from September to November.⁹⁸ These typhoons affected more than 16 million people, damaged or destroyed 480,000 houses, and displaced 11 million people.⁹⁹

77 The Guardian 2024a.

78 Le Monde 2024.

79 Ibid.

80 France24 2024b.

81 The Guardian 2024a.

82 Ibid.

83 Save the Children 2024a.

84 Centre for Research on the Epidemiology of Disasters 2025.

85 RFI 2024.

86 Ibid.

87 World Weather Attribution 2024a.

88 Centre for Research on the Epidemiology of Disasters 2025.

89 Ibid.

90 Ibid.

91 Centre for Research on the Epidemiology of Disasters 2025.

92 Singh Rai 2024.

93 ReliefWeb 2024e.

94 Centre for Research on the Epidemiology of Disasters 2025.

95 Ibid.

96 Al Jazeera 2024b.

97 World Weather Attribution 2024b.

98 ReliefWeb 2024f.

99 WFP 2024a.

Typhoon Gaemi (Carina) struck on 22 July, causing heavy rainfall and flash floods on the island of Luzon. Together with Typhoon Butchoy (Prapiroon), which also hit in July, these storms caused 53 fatalities, affected nearly 6.5 million people, and led to USD 211 million in economic damage.¹⁰⁰ Typhoon Yagi (Eteng) made landfall in early September, bringing heavy rains in combination with the southwest monsoon. The storm caused 33 deaths, affected three million people, and inflicted USD 33 million in economic damage.¹⁰¹ On 22 October, Tropical Cyclone Trami (Kristine) triggered massive flooding and landslides,¹⁰² causing the most severe destruction of the typhoon season. Trami killed 191, affected more than 9.6 million people, and caused USD 373 million in economic losses.¹⁰³ Several other storms followed during the peak typhoon season, including Typhoon Man-Yi (Pepito), which made landfall on 16 November, killing 15, affecting nearly four million, and leading to USD 100 million in economic damage.¹⁰⁴

In addition to typhoons, the Philippines had an extreme heat wave in April and May, with temperatures reaching 53°C.¹⁰⁵ The 2024 typhoon season was not ordinary, according to WWA, as six typhoons struck the country within just 30 days.¹⁰⁶ Anthropogenic climate change increased the average intensity of these storms by about 2 m/s (7.2 km/h)¹⁰⁷ and boosted the frequency of storms such as Gaemi (Carina) by 30%.¹⁰⁸ The same climate drivers also intensified the heat wave by about 1.2°C.¹⁰⁹

Malawi (8th) has a high rank because of its many affected people per 100,000. Between February and March 2024, heavy rains triggered flooding that killed six and affected and displaced more than 14,000 residents of Nkhotakota District.¹¹⁰ Several areas were cut off after roads and critical bridges were destroyed.¹¹¹ In November, another period of heavy rainfall led to additional flooding, killing 11 and bringing the total number of people affected in 2024 to nearly 49,000.¹¹²

In April, Malawi experienced a severe drought associated with El Niño, affecting more than six million people and causing USD 400 million in economic damage.¹¹³ Approximately 750,000 hectares of maize, 44.3% of the national crop area, were lost.¹¹⁴

In December, Tropical Cyclone Chido struck, causing 13 fatalities and affecting more than 45,000.¹¹⁵ The storm damaged or destroyed the roofs of schools, health facilities, and homes, compounding the country's vulnerability to extreme weather.¹¹⁶

Myanmar (9th) was hit by three extreme weather events in 2024, causing high economic losses and many fatalities and affected people per 100,000. Between 30 June and 2 August, heavy rains triggered widespread flooding along the Chindwin and Ayeyarwady Rivers, affecting more than 100,000 people.^{117,118} Agricultural lands were extensively damaged, as many residents were displaced. On 8 September, Typhoon Yagi struck Myanmar, causing 460 deaths, affecting more than one million people, and resulting in USD 222 million in economic damage.¹¹⁹ Heavy floods in September wors-

100 Centre for Research on the Epidemiology of Disasters 2025.

101 Ibid.

102 Ibid.

103 Ibid.

104 Ibid.

105 Ibid.

106 World Weather Attribution 2024d.

107 Ibid.

108 World Weather Attribution 2024e.

109 World Weather Attribution 2024f.

110 Centre for Research on the Epidemiology of Disasters 2025.

111 Save the Children 2024b.

112 Centre for Research on the Epidemiology of Disasters 2025.

113 Ibid.

114 PreventionWeb 2024.

115 Centre for Research on the Epidemiology of Disasters 2025.

116 Masina 2024.

117 ReliefWeb 2024h.

118 Ibid.

119 Centre for Research on the Epidemiology of Disasters 2025.

ened the situation: nearly 2.4 million people – about 4% of the population¹²⁰ – were exposed to flooding, with more than 360 reported drowned and 100+ missing.¹²¹ More than 235,000 people were forced from their homes,¹²² 24 bridges and nearly 160,000 houses were damaged, and another 150,000 homes and 260,000 hectares of crops were flooded.¹²³ From April to May, Myanmar also experienced a severe heat wave, with temperatures reaching 47°C, resulting in 50 fatalities.¹²⁴ According to WWA, such extreme temperatures are now approximately 45× more likely and about 0.85°C hotter because of human-induced climate change.¹²⁵

Vietnam (10th) had many people affected per 100,000 and high absolute economic losses. The most devastating event was Typhoon Yagi, which made landfall on 7 September, with wind speeds reaching 280 km/h, triggering widespread floods and landslides.¹²⁶ Yagi killed 345, affected more than 3.6 million, and caused USD 2 billion in economic damage.¹²⁷ In northern Vietnam, nearly 3,300 homes were damaged and more

than 120,000 hectares of crops were lost.¹²⁸ Heavy rainfall in late October also impacted the country. From 20 to 23 October, floods caused two deaths, affected 108 people, damaged 27 houses, disrupted 13 roads, and destroyed 1,272 hectares of crops.¹²⁹ From the end of March to May, Vietnam experienced a prolonged heat wave lasting 47 consecutive days.¹³⁰

2.3 Detailed look at relevant events

The CRI analyses extreme weather events’ human and economic effects on countries, including hydrological, meteorological, and climatological events. The strongest effects result from six event types: floods, storms, heat waves, drought, wildfires and others¹³¹. This section analyses which of these events are responsible for how many fatalities, their degree of effect, and economic loss for the year 2024 and the long-term period of 1995–2024.

Table 1: Overview of fatalities, affected people, and economic damage for six event types in 2024

Hazard	Fatalities ¹³²	Affected ¹³³ (million people)	Economic loss ¹³⁴ (billion USD)
Drought	0	29.48	13.33
Flood	5,931	49.14	32.77
Heat wave	4,050	33.08	0*
Storm	2,591	47.97	172.60
Wildfire	170	0.138	4.78
Other ¹³⁵	3,440	6.86	0.345

*No data available for economic losses related to heat waves.

120 World Bank 2024d.

121 UNOCHA 2024b.

122 Al Jazeera 2024c.

123 France24 2024c.

124 Centre for Research on the Epidemiology of Disasters 2025.

125 World Weather Attribution 2024f.

126 Centre for Research on the Epidemiology of Disasters 2025.

127 Ibid.

128 The Guardian 2024b.

129 ReliefWeb 2024g.

130 Tuoi Tre News 2024.

131 “Others” include cold waves, severe winter conditions, mass movement, and glacier lake outburst flood.

132 Fatalities include confirmed fatalities directly attributable to a disaster added to missing people whose whereabouts since the disaster are unknown; therefore, they are presumed dead based on official figures. Accurate quantification of fatalities is difficult for some events, especially for heat waves. Most heat-related deaths result from increased risk of less obvious conditions, such as cardiovascular disease. These seemingly indirect deaths are not noted as being ‘heat-related’ at the time and can only be estimated via retrospective statistical methods (<https://ourworldindata.org/disaster-database-limitations>).

133 Affected indicates the total of injured, otherwise affected, and homeless.

134 No data available for economic loss related to heat waves and other events.

135 Cold waves, severe winter conditions, mass movement, glacier lake outburst flood.

Table 2: Overview of fatalities, affected people, and economic damage for six event types for 1995–2024

Hazard	Fatalities	Affected ¹³⁶ (million people)	Economic loss ¹³⁷ (billion USD, inflation-adjusted)
Drought	25,283	1,825.08	286.95
Flood	205,452	2,720.01	1,314.01
Heat wave	278,395	33.93	32.86
Storm	274,753	988.26	2,637.27
Wildfire	2,791	15.26	177.57
Other ¹³⁸	45,611	112.30	64.96

Note that some of these five events are connected or interdependent. Compound events, defined as ‘a combination of multiple drivers and/or hazards that contribute to societal or environmental risk,’ account for many of extreme weather events’ most severe impacts.¹³⁹ For example, most floods can be linked to a storm,¹⁴⁰ such as in the Philippines, the fifth most affected country in 2024, where a cyclone accompanied by heavy rainfall caused extensive and destructive flooding on the island of Luzon. From the 30-year perspective, floods were responsible for nearly half of all people affected, with the floods often triggered by heavy rainfall following severe storms.

Heat waves, drought, and forest fires are also closely related. Extended periods of elevated temperatures with little precipitation can lead to drought conditions. Prolonged drought and heat waves increase wildfire risk.¹⁴¹ Climate change exacerbates the occurrence of compound drought and heat waves.¹⁴² The 2022 Eu-

ropean heat wave, for instance, caused widespread drought and wildfires across the continent.

Fatalities

Floods and heat waves were the deadliest extreme weather events in 2024. Table 1 shows floods were responsible for 37% of fatalities (5,931), followed by heat waves (25%, 4,050) and storms (16%, 2,591). Mass movements and severe winter conditions accounted for 2,243 (14%) and 1,197 (7%) casualties, respectively. Saudi Arabia, the Islamic Republic of Afghanistan, and the United States recorded the most fatalities in 2024 – all three due to extreme temperatures. In Saudi Arabia, 1,300+ people died on the Hajj pilgrimage in Mecca because of extreme heat, which exceeded 50°C.¹⁴³ Heavy snowfall, rainfall, and temperatures as low as -33°C affected most of Afghanistan at the end of February 2024, resulting in more than 1,100 casualties and widespread disruption of services, blocked roads, and significant loss of livestock.¹⁴⁴ The United States faced a severe heat wave in the southern and western regions, with more than 1,000 deaths.¹⁴⁵

136 Affected indicates the total of injured, otherwise affected, and homeless.

137 No data available for economic loss related to heat waves and other events.

138 Cold waves, severe winter conditions, mass movement, glacier lake outburst flood.

139 Zscheischler et al. 2020.

140 Yangchen 2021.

141 Hufe and Hortig 2022.

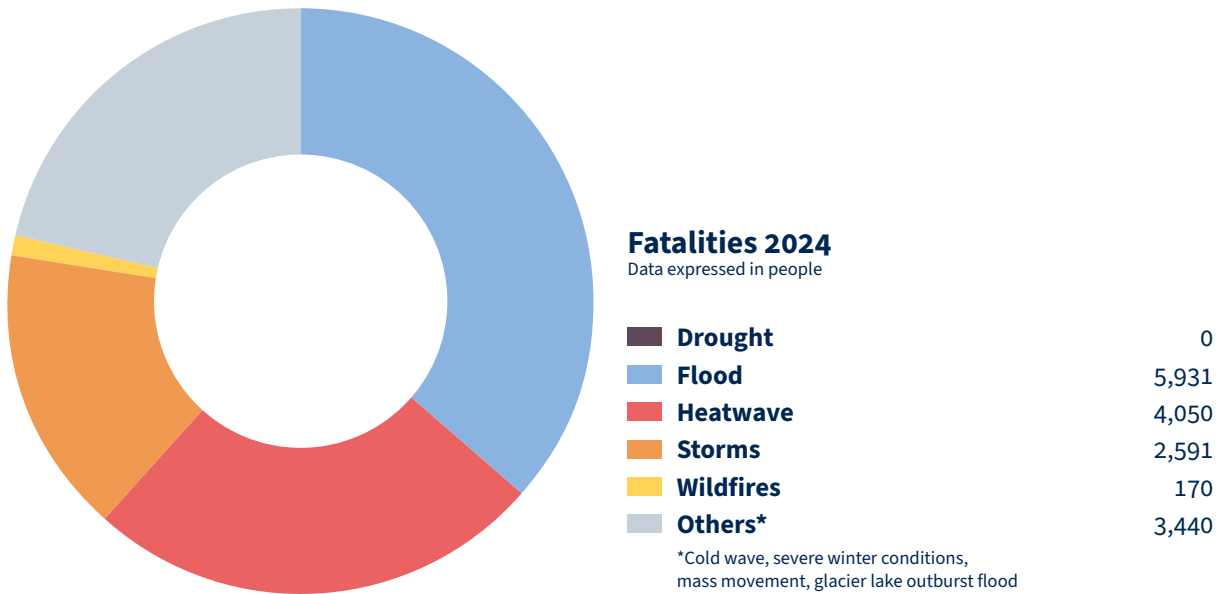
142 Wang et al. 2023.

143 Alarabiya 2024.

144 ReliefWeb 2025a.

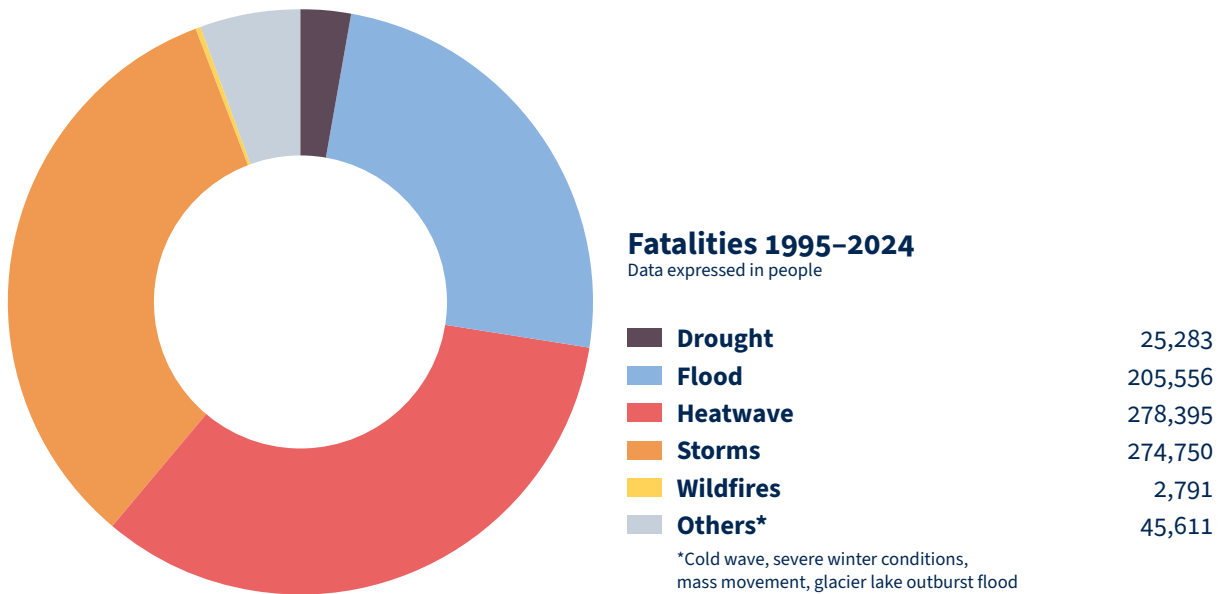
145 Associated Press 2024.

Figure 3: Fatalities, by event, in 2024



From the long-term perspective (1995–2024), heat waves (33%, 278,395) and storms (33%, 274,750) caused the most fatalities, followed by floods (25%, 205,556).

Figure 4: Fatalities, by event, in 1995–2024



Affected people

Floods (29%, 49.14 million people) and storms (29%, 47.97 million) led to the largest number of people affected in 2024, followed by heat waves (20%, 33.08 million) and droughts (18%, 29.48 million). Bangladesh, the Philippines, and India recorded the most

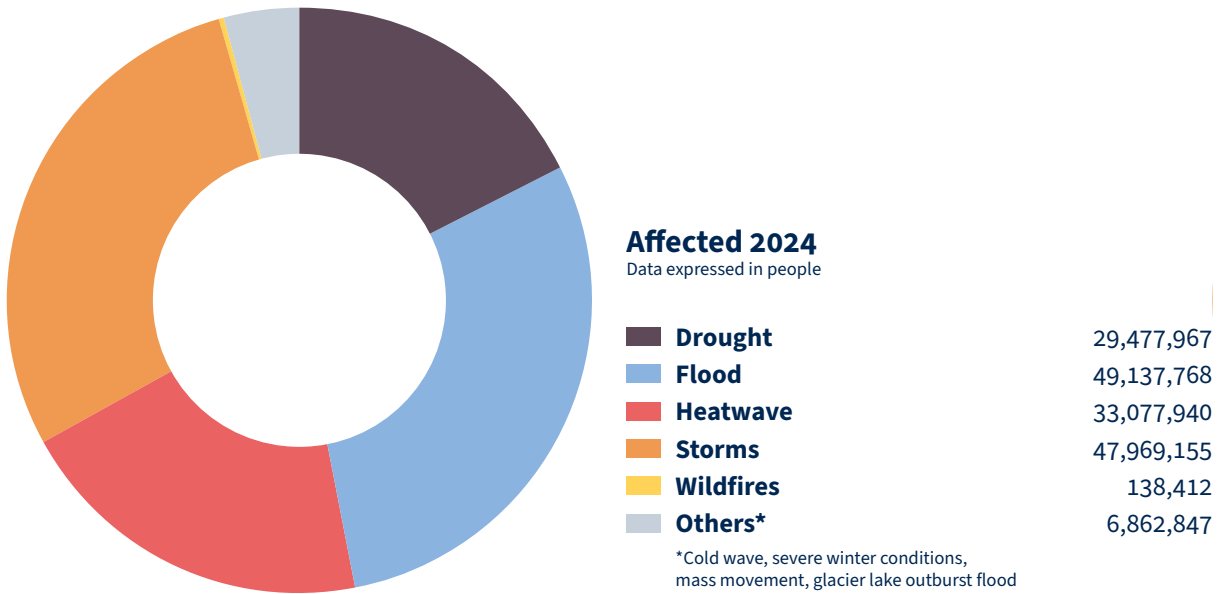
people affected by extreme weather in 2024. Bangladesh experienced a severe heat wave with temperatures that reached 43.8°C¹⁴⁶ and that affected more than 33 million people. The Philippines was struck by Typhoon Trami, which caused widespread and disastrous flooding nationwide,¹⁴⁷ affecting more than 9.6

146 ReliefWeb 2025b.
147 WFP 2024a.

million people. Heavy rainfall during the 2024 monsoon season resulted in severe flooding and landslides across several regions of India, affecting more than

eight million people, especially in Gujarat, Maharashtra, and Tripura states.¹⁴⁸

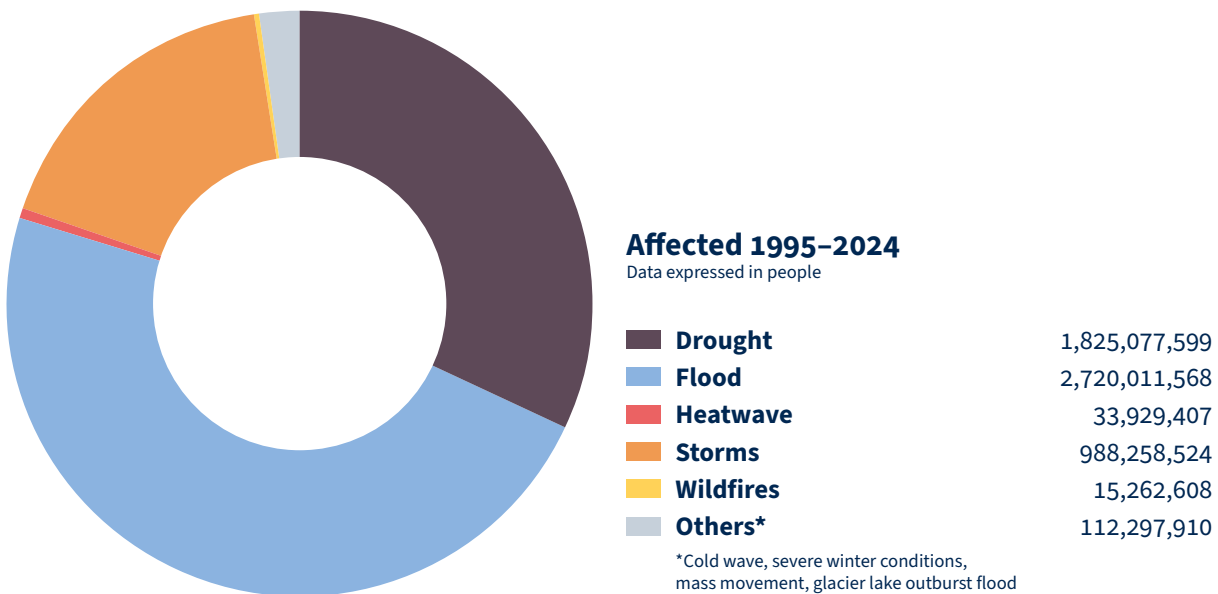
Figure 5: Number of people affected, by event, in 2024



From the 30-year perspective, floods were responsible for almost half of all people affected (48%), often due to extreme flood events triggered by heavy rainfall following severe storms, such as in Myanmar in 2008.

Drought (32%, 1.83 billion) and storms (17%, 0.988 billion) also affected many people.

Figure 6: Number of people affected, by event, in 1995–2024



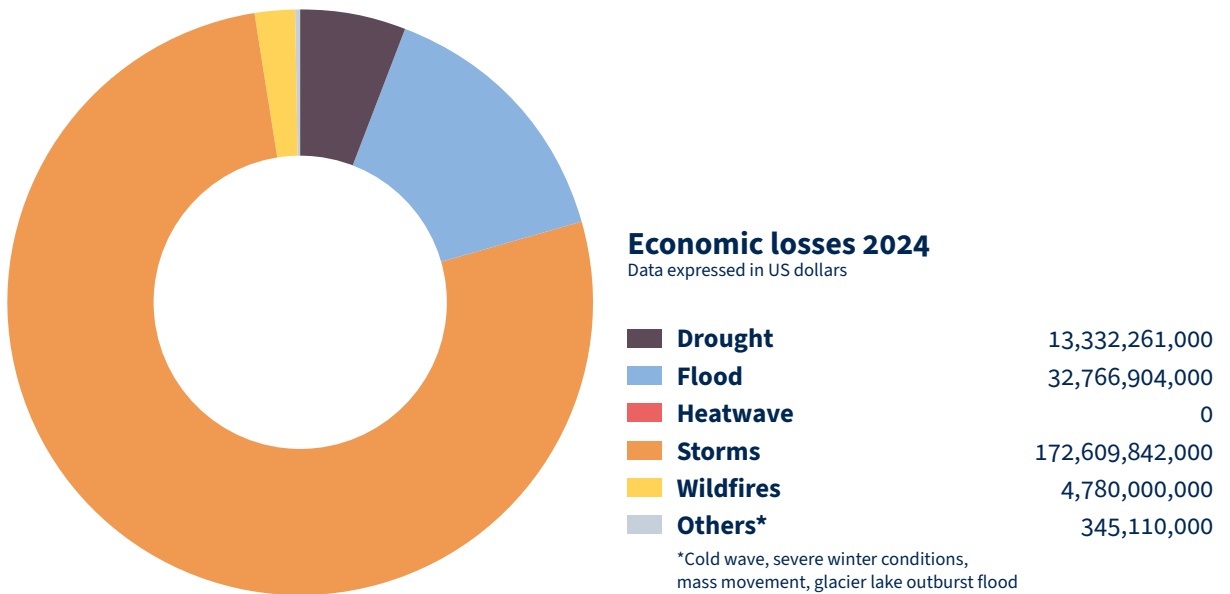
148 ABP News (2024).

Economic loss

The greatest economic loss in 2024 was, by far, that due to storms (77%; USD 172.61 billion). Floods also caused substantial economic damage (15%, USD 32.77 billion). The United States, Spain, and Brazil experienced the extreme events with the largest-scale economic losses. Hurricane Helene was the deadliest hurricane to strike the mainland United States since Hurricane Katrina in 2005, causing USD 56 billion in total economic damage.¹⁴⁹ Hurricane Milton was the second costliest extreme event in 2024.¹⁵⁰

Milton made landfall on the west coast of the state of Florida, less than 2 weeks after Hurricane Helene, resulting in more than USD 38 billion in economic damage.¹⁵¹ Spain suffered its worst natural catastrophe in recent history,¹⁵² after torrential rain brought over a year's worth of precipitation to several areas in eastern Spain,¹⁵³ causing over USD 11 billion in economic damage.¹⁵⁴ Brazil experienced severe floods caused by heavy rains and storms that hit Rio Grande do Sul state,¹⁵⁵ leading to more than USD 7 billion in total economic damage.¹⁵⁶

Figure 7: Economic loss, by event, in 2024



From the 30-year perspective, storms caused, by far, the greatest economic loss (58%; USD 2.64 trillion, inflation-adjusted), followed by floods (29%; USD 1.31 trillion, inflation-adjusted).

149 Centre for Research on the Epidemiology of Disasters 2025.

150 Ibid.

151 Ibid.

152 BBC 2024.

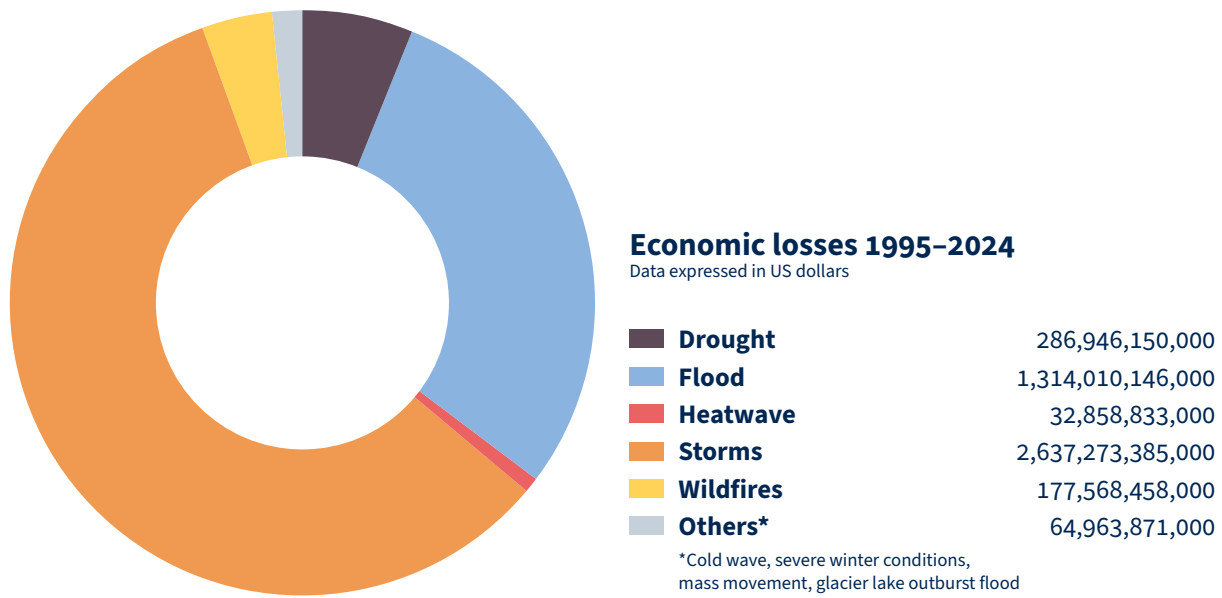
153 WMO 2024a.

154 Centre for Research on the Epidemiology of Disasters 2025.

155 Al Jazeera 2024d.

156 Centre for Research on the Epidemiology of Disasters 2025.

Figure 8: Economic loss, by event, in 1995–2024



3

Interpreting the CRI results

3.1 Unusually extreme events, continuous threats, and the new normal

The CRI 2026, covering 1995–2024, is based on annual average values over a 30-year period. Countries covered in the long-term index can be divided into two groups:

1. **Most affected by unusually extreme events**
2. **Affected by recurring extreme events (continuous threats)**

Note that, in this context, CRI results reflect realised risks stemming from heightened exposure to hazards or increased vulnerability, signalling susceptibility to frequent or severe extreme weather events. **Dominica, Myanmar, Honduras, and Libya** are among the countries in the **first category (unusually extreme events)** – those that experienced exceptionally severe, infrequent, and high-impact disasters, where a single event could cause disproportionate human and economic losses. In Dominica, Hurricane Maria caused USD 1.8 billion in economic damage, equalling 270% of the small island’s GDP. In Myanmar, Cyclone Nargis in 2008 caused over 95% of the country’s fatalities over the three-decade period. For Honduras, Hurricane Mitch in 1998 caused more than 14,000 deaths and USD 7 billion in economic damage (inflation-adjusted). In Libya, Cyclone Daniel in 2023 affected 1.6

million people and caused USD 6 billion in economic damage (inflation-adjusted).

Extreme weather events also regularly affected these countries. There are clear indications that **climate change increases the risk for unusually extreme events** (see chapter 4), especially when compound or concurrent extremes interact, and increases the probability of low-likelihood, high-impact events.¹⁵⁷ There are also increasingly clear indications that we are entering a ‘critical and unpredictable phase’¹⁵⁸ of the climate crisis. It is critical because, in the recent past, historical air and sea surface temperature records and ice extent records have been broken multiple times.¹⁵⁹ For 2024, many of the extreme weather events reflected the combined influence of a strong El Niño at the beginning of the year, which shaped atmospheric patterns driving floods and droughts, and the influence of human-induced climate change, which amplified their intensity and frequency, contributing to record global temperatures and unprecedented climate-related disasters.¹⁶⁰ The year 2024 also saw records for the hottest day ever and for unprecedented global sea surface temperatures. And 2025 is already on track to be the second- or third-hottest year on record, with January marking record warmth, February and June ranking as the third-hottest, and March through May registering the second-hottest monthly temperatures ever recorded. It is unpredictable because the possible self-reinforcing feedback effects and the consequences of tipping points cannot be fully assessed scientificall-

157 IPCC 2021b.

158 Ripple et al. 2024.

159 Ibid.

160 WMO 2024b.

ly. Studies show the North Atlantic Current is already weakened from climate change and may be approaching a tipping point.¹⁶¹ New research on the Atlantic Meridional Overturning Circulation (AMOC) indicates that, while collapse before 2100 was previously considered unlikely, longer-term models running to 2300 and 2500 suggest the tipping point beyond which a shutdown is inevitable could be passed within decades.¹⁶² Scientists have long cautioned that an AMOC collapse ‘must be avoided at all costs.’¹⁶³

Haiti, the Philippines, Nicaragua, and India are among those in the **second category (continuous threats)**. This category includes countries exposed to repeated and frequent extreme weather events, wherein the losses can accumulate over time, such as through repeated economic loss. Haiti, for instance, faced 91 extreme weather events in the 30-year period, with hurricanes posing a continuous threat. The Philippines regularly experiences typhoons because of its vulnerable geographical location. Nicaragua endured nearly 50 extreme weather events over the three decades, with hurricanes and tropical storms a persistent danger. India recorded more than 400 events in the same period, with recurring floods, cyclones, droughts, and heat waves presenting continuous risks. This category has grown more relevant in the past few years, with several countries, such as the Philippines and India, continuously ranking among the most affected in the long-term 30-year index. There also are clear indications that climate change **contributes to transforming unusually extreme events into continued threats**. The Philippines endured typhoons before 2009, but from 2009, both frequency and impact have seen a sustained increase, with multiple storms striking nearly every year. This behaviour illustrates how unusually extreme events are evolving into a continuous threat. Thus, what were highly unusual threats have become the new normal, with science clearly demonstrating climate change’s significant effect on extreme weather events’ frequency, intensity, and duration (see chapter 4).

3.2 How Global South and Global North countries are affected

Extreme weather events’ impacts affect countries worldwide. Coping capacity and levels of resilience, however, vary widely among countries. The long-term, 30-year index showed an **especially strong effect on Global South countries**, as six of the **10 most affected countries in 1995–2024** were from the lower-middle-income group¹⁶⁴ (Myanmar, Honduras, Haiti, Philippines, Nicaragua, India; four being a Small Island Developing State [SIDS] and two being Least Developed Countries [LDCs]), and three (Dominica, Grenada, and Libya) from the upper-middle-income group. Only one country in the 10 most affected countries, the Bahamas, was from the high-income group. This finding is in line with the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report (AR6) high-confidence statement that, ‘Vulnerable communities who have historically contributed the least to current climate change are disproportionately affected.’¹⁶⁵

The 2024 ranking also shows the Global South is disproportionately affected. Three of the 10 most affected countries were from the low-income group (Chad, Malawi, and Niger – all LDCs), five from the lower-middle-income group (Papua New Guinea, Nepal, Philippines, Myanmar, and Vietnam – one SIDS and two LDCs) and two from the upper-middle-income group (St. Vincent and the Grenadines and Grenada – two SIDS). No high-income country was among the 10 most affected.

The pattern continues among the 20 most affected countries. For the long-term, 30-year index, one country (Afghanistan – LDC) was from the low-income group, 10 (Myanmar, Honduras, Haiti, Philippines, Nicaragua, India, Bangladesh, Vietnam, Pakistan, and Vanuatu – three LDCs and two SIDS) lower-middle-income, five (Dominica, Libya, Grenada, China, and Guatemala – two SIDS) upper-middle-income, and only four (Bahamas, France, Italy, and the United States – one SIDS) were high-income countries.

In 2024, five (Chad, Niger, Malawi, Afghanistan, and Mali – all LDCs) of the 20 most affected countries were

161 Biló et al. 2024.

162 Sybren Drijfhout et al. 2025.

163 The Guardian 2025a.

164 World Bank 2024e.

165 IPCC 2023.

from the low-income group, eight (Papua New Guinea, Nepal, Philippines, Myanmar, Vietnam, Bangladesh, India, and Nigeria – three LDCs and one SIDS) lower-middle-income, five (St. Vincent and the Gren-

adines, Grenada, Jamaica, Brazil, and Thailand – three SIDS) upper-middle-income, and just two (Chile and Spain) were high-income countries.

Figure 9: The 20 countries most affected in 1995–2024

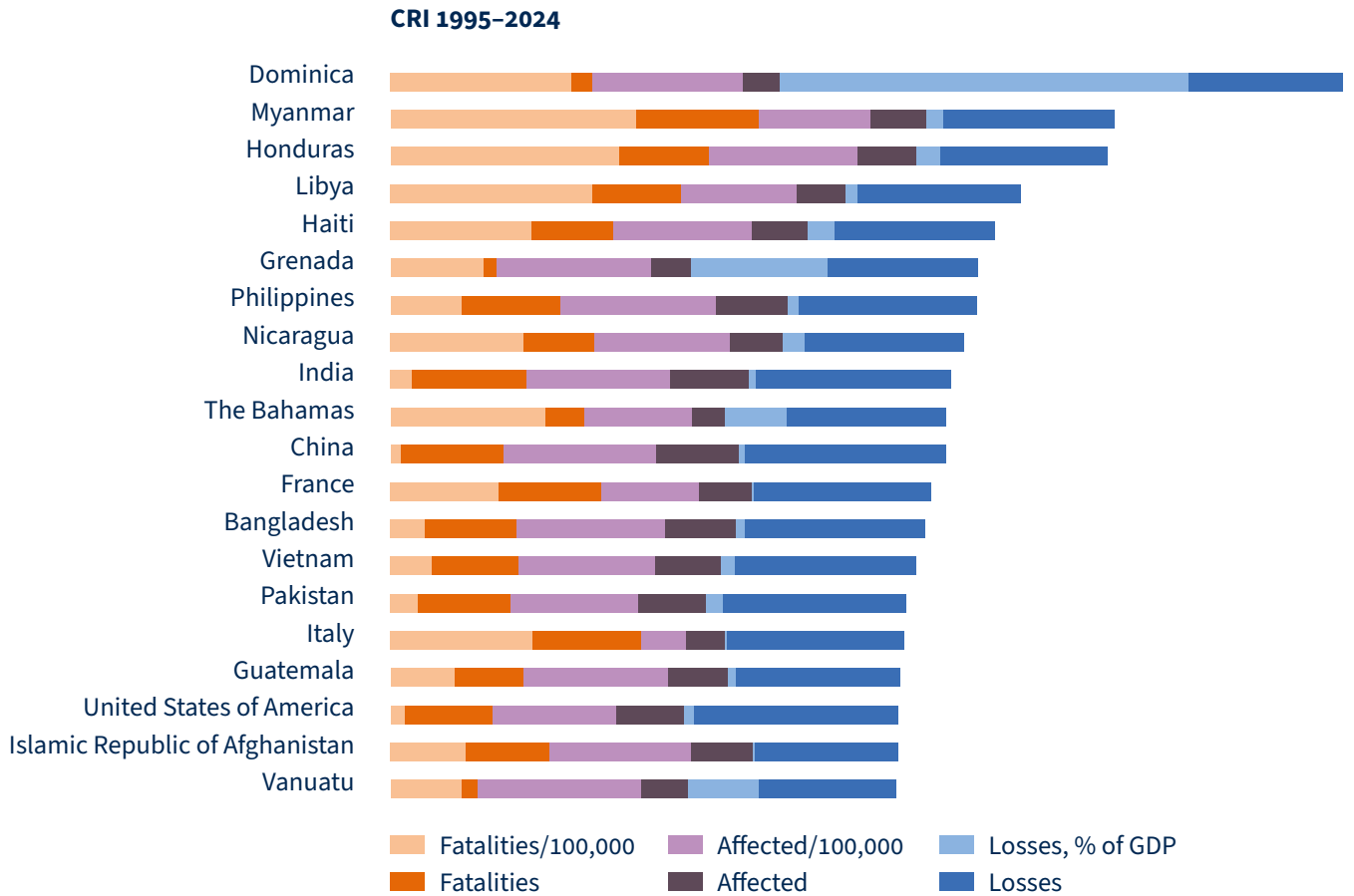
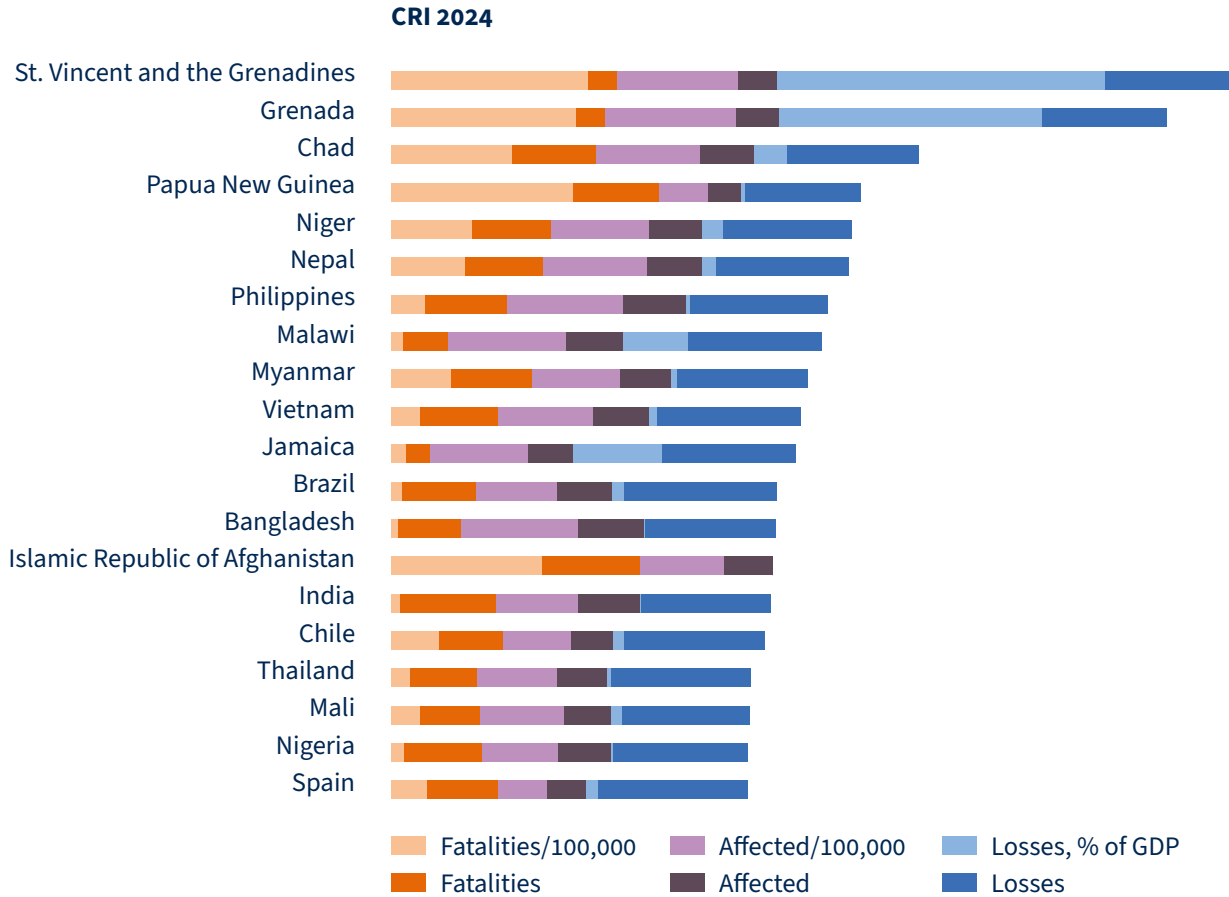


Figure 10: The 20 most affected countries in 2024



The reasons for the **more disproportionate effects on the Global South countries**, apart from the very occurrence of extreme weather events, is well-analysed by the Notre Dame Global Adaptation Initiative (ND-GAIN) index. The ND-GAIN ranking combines information on countries’ vulnerability¹⁶⁶ and readiness.¹⁶⁷ It shows the potential degree of effect and of coping capacities. Its findings echo the CRI results, highlighting the particular vulnerability of the Global South – especially poorer countries, which occupy the lowest 43 ranks (indicating the most vulnerable and least prepared to address risks and impacts) and are primarily drawn from low-income

or lower-middle-income groups across Africa, Latin America, and the Asia-Pacific.¹⁶⁸ While the **ND-GAIN ranking underscores Global South countries’ high vulnerability and lack of coping capacity, these circumstances are also seen** in the degree of effect in the CRI ranking. These countries generally have lower coping capacities as, among other factors (financial), means are scarcer. For example, fatalities from extreme weather events have generally been found substantially higher in vulnerable countries (in 2010–2022, 15× higher than low-vulnerability regions).¹⁶⁹

166 Including exposure, sensitivity, and ability to adapt to the adverse impacts of climate change.

167 A country’s ability to leverage investments and convert them to adaptation actions, considering three components – economic readiness, governance readiness, and social readiness.

168 Notre Dame Global Adaptation Initiative 2024.

169 IPCC 2022.

The Human Development Index (HDI) further reinforces this analysis. The HDI looks into the three key dimensions of human development – long and healthy life (via a life expectancy index), being knowledgeable (education index), and decent standard of living (gross national income index) – and ranks countries

on these factors.¹⁷⁰ The ranking aligns with the ND-GAIN findings and CRI results, showing countries with ‘low human development’ mainly are from the Global South, especially some African countries and Asia-Pacific countries, which are among those most affected by extreme weather events.

Chad in the Spotlight: Climate and Humanitarian Risks

Chad, ranked 3rd in the CRI for 2024, is one example of a heavily exposed country with low coping capacities. The country was hit by two flood events in 2024, which were caused by heavy rain. In August and September, 576 people died and nearly two million people were affected. The flooding caused a total economic loss of USD 380 million. It damaged 433,000 hectares of cropland and destroyed 218,000 homes, as well as roads, bridges, and protective dikes.¹⁷¹ At the same time, Chad already faced a complex humanitarian crisis driven by regional conflict and economic instability, as well as the climate shocks.¹⁷² The ongoing conflict in Sudan, with 722,000 new refugees arriving in Chad since April 2023, exacerbated this crisis, as most arrivals migrated to an area already struggling with food insecurity.¹⁷³ Chad also faced increasing numbers of internally displaced persons (IDPs); the vast majority because of conflict.¹⁷⁴ According to the International Organization for Migration, ‘food security, climate change, and migration are linked in complex and multifaceted ways’ as migration can also be an adaptation strategy toward climate change.¹⁷⁵ Social inequalities also further exacerbate climate vulnerability, potentially leading to gender-based violence during and after disasters, while climate change, conflict, and food insecurity can intensify these inequalities themselves.¹⁷⁶ Chad had very limited coping capacities to handle those parallel challenges. The ND-GAIN vulnerability index reinforces the CRI findings, highlighting Chad as the most vulnerable country and the second-least-ready country in terms of adaptive capacity.¹⁷⁷

Extreme weather impacts heavily affect Global North countries as well. Europe is the fastest-warming continent, warming at twice the global average since the 1980s.¹⁷⁸ Regular weather patterns are changing in Europe. Heat waves and droughts are increasing, rainfall is declining, and more severe precipitation extremes are occurring, leading to highly uncommon flooding.¹⁷⁹ Examples of unusual, unprecedented events show that many European countries are **not yet prepared for these events in terms of comprehensive risk management**. There is little focus on prevention and preparedness, and this shortcoming intensifies impacts. Even with overall progress, pre-

paredness is low and policy implementation is ‘lagging substantially behind quickly-increasing risk levels.’¹⁸⁰ The lag is seen in examples such as flood events in the German Ahr Valley in July 2021 (134 fatalities) and Spain’s Valencia region in October 2024 (~232 fatalities). In both cases, the national weather agencies issued severe warnings well in advance, but communication and timely action was delayed at the local level. Populations also lacked knowledge on relevant issues, such as evacuation routes. In Spain, over half the victims were >70 years old, underscoring that the most vulnerable groups (in this case, older people) are the most affected among all countries (see below).

170 UNDP 2024.

171 World Bank 2025.

172 WFP 2024b.

173 Ibid.

174 Red Cross Red Crescent Climate Centre 2024.

175 IOM 2021.

176 Ibid.

177 University of Notre Dame 2023.

178 EEA 2024b.

179 Ibid.

180 Ibid.

Additionally, risk perception in Spain at the national level was comparably low and the risk management approach failed to focus on prevention and preparedness.¹⁸¹ In Germany, experts assessed the risk management in the Ahr River region as a systemic failure. Either the warnings were not issued correctly or people did not know how to react properly. At the same time, coping capacities were much better in the aftermath of events such as the Ahr Valley floods. The German government had set up a support fund of around EUR 30 billion just 1 month after the flood.¹⁸²

Among all countries, in both the Global North and Global South, **extreme weather events' impacts most affect the most vulnerable parts of the population**, such as in the areas of food security and health.¹⁸³ AR6 is clear about this: '...across sectors and regions the most vulnerable people and systems¹⁸⁴ are observed to be disproportionately affected. The rise in weather and climate extremes has led to some irreversible impacts as natural and human systems are pushed beyond their ability to adapt.'¹⁸⁵

At the micro-/household level, poorer households are more vulnerable, more exposed, and need more time to recover, especially in the Global South,¹⁸⁶ where state capacity to support affected people is limited. Inequality, poverty, and marginalisation because of gender, ethnicity, and low income can further exacerbate vulnerability and, thus, the degree of effect. This is especially true for Indigenous Peoples and local communities and it hinders adaptation, leading to soft limits and resulting in disproportionate exposure and impacts for the most vulnerable groups.¹⁸⁷

Apart from extreme events' direct effects on households, there can also be lagged effects, when recovery is incomplete, especially for poorer households. Households in the Philippines were shown to need

years to recover after, for example, a typhoon event, and 90% of their total economic losses occurred only in the recovery phase.¹⁸⁸ There is a disproportionate effect because income losses cannot be offset.¹⁸⁹ These effects are compounded under continuous threats, where communities have not fully recovered before the next event hits.¹⁹⁰ As the climate crisis advances, impacts that become L&D will increase and be strongly concentrated among the poorest vulnerable populations.¹⁹¹

Looking ahead, the IPCC (2022) indicated (with high confidence) that future human vulnerability will continue to concentrate where capacities of local, municipal, and national governments, communities, and the private sector are least able to provide infrastructure and basic services.

3.3 Data gaps as a challenge to determining climate risks and impacts: A solution approach

A vast amount of data must be analysed in preparing an index; therefore, data availability and quality are central in the index's quality. The data analysed for the CRI rely on scientific best practices and methodologies that are constantly evolving, with a view to ensuring the highest accuracy, completeness, and granularity. Nonetheless, several challenges persist regarding data availability. Data challenges for the CRI are as follows.

1. Variation in data quality across and within countries. This situation may incur geographical bias in EM-DAT due to unequal reporting quality and coverage across space.¹⁹² There are particular data gaps for Global South countries, which might lead to these countries being misrepresented in the CRI.¹⁹³ The issue is particularly pronounced for heat waves, also with a view to EM-DAT. Heat waves are not well-recorded for

181 Chavda 2024.

182 Bundesfinanzministerium 2021.

183 EEA 2024a.

184 For example water and food security, ecosystems.

185 IPCC 2022.

186 Sauer et al. 2023.

187 IPCC 2022.

188 Sauer et al. 2023.

189 Ibid.

190 National Academies of Sciences, Engineering, and Medicine 2022.

191 IPCC 2022.

192 EM-DAT Project 2022.

193 Dinku 2019.

Sub-Saharan Africa.¹⁹⁴ Extreme weather damage databases, such as EM-DAT, report no significant heat wave impacts in Sub-Saharan Africa since 1900, though the region has, in fact, experienced several heat waves.¹⁹⁵ EM-DAT lists only two heat waves in the region since 1900, which have led to 71 recorded premature deaths. By contrast, 83 heat waves were recorded in Europe since the beginning of the 20th century.¹⁹⁶ About 52% of heat wave events in EM-DAT occurred in nine countries: Japan, India, Pakistan, and the United States, followed by western European countries – France, Belgium, the United Kingdom, Spain, and Germany.

The existence of data gaps is well known and acknowledged. The Sendai Framework, for example, aims to ‘promote the collection, analysis, management and use of relevant data’ and notably, includes mortality data improvement as a high priority.¹⁹⁷ There are numerous reasons for data gaps, including the following.

a. Distribution of meteorological stations: Meteorological stations, which are essential for recording extreme weather events, are very unevenly distributed worldwide. This condition leads to substantial data gaps for developing countries in particular (see, for example, UNDRR 2023b).¹⁹⁸ Meteorological stations provide a wealth of high-quality data for observing global meteorological changes and are needed for registering extreme weather events. Zhan et al. (2023)¹⁹⁹ showed that GDP and government spending were the main factors influencing the number of active stations in each country. They also summarised that most stations are in developed countries. The World Meteorological Organization (2024) similarly highlighted that, despite progress, significant gaps persist in the coverage of observing networks, most notably in LDCs and SIDS, which are only collecting and internationally exchanging 9% of mandated Global Basic Observing Network data.²⁰⁰ The number of weather stations in the United States, European Union, and Africa clarifies the great

difference between Global South and Global North. While the United States and European Union (population: 1.1 billion) have 636 weather radar stations, the entire African continent (population: 1.2 billion) has 37.²⁰¹ Otto (2023) also concluded that, ‘Floods are one of the deadliest natural disasters worldwide, but deaths linked with flooding aren’t distributed evenly. They most often occur in places that lack weather data and warning systems – and most of those places are in the Global South.’ As Otto (2023)²⁰² also noted, weather observations alone will not save lives, but without them we can neither understand the past nor plan for the future. Evidently, without reliable data, researchers cannot understand how weather is changing, and without knowing what ‘normal’ weather looks like, it becomes more difficult to determine what is ‘extreme.’

b. Insufficient systematic data collection and cataloguing: Data quantity and quality and the coverage of disaster events are insufficient in some areas.²⁰³ For Global North countries, national governments provide numbers on fatalities, affected people, and economic losses. For Global South countries, however, this is often done by different non-governmental organisations that lack sufficient connection with meteorological services.²⁰⁴ This shortcoming results in a severe lack of collated data that could accurately show economic losses. Systematic collection and cataloguing are needed for making information robust enough for planning and policymaking, especially for low-income, highly vulnerable countries and regions.²⁰⁵

c. Database collection techniques: Disaster loss databases (including EM-DAT, which is used for the CRI) are continuously updated as new information becomes available. These updates includes corrections, filling of data gaps, and sometimes revisions to events that occurred many years ago. All analyses of extreme weather events’ impacts, therefore, represent a snapshot based on the database as it stood at the time of download.

194 Otto and Harrington 2020b.

195 Otto and Harrington 2020a.

196 Ibid.

197 United Nations Office for Disaster Risk Reduction 2015.

198 United Nations Office for Disaster Risk Reduction 2023b.

199 Zhan et al. 2023.

200 WMO 2024b.

201 Otto 2023b.

202 Ibid.

203 Osuteye et al. 2017.

204 Otto and Harrington 2020b.

205 Ibid.

Future updates may slightly alter historical values, but such revisions do not affect the overall validity of the long-term trends and findings presented here.

d. Use of different data collection techniques: Countries use different techniques to collect data on extreme weather events, and this practice might distort index results. For instance, some countries use ‘excess mortality rate’ to determine heat wave-related fatalities (rather than an [officially] recorded number of such deaths). This rate is expressed as a percentage of additional deaths in a month compared with a baseline period. The higher the value, the more additional deaths versus the baseline.²⁰⁶ Moreover, indirect and long-term consequences, such as disease outbreaks or excess mortality linked to post-disaster sanitary conditions, are generally often underestimated or overlooked. Similarly, insured damage is more accurately covered than non-insured or indirect economic losses.²⁰⁷

e. Under-representation of regions in research: Science clearly shows that research on climate change impacts is not evenly distributed worldwide. Campbell et al. (2018), focussing on heat wave and health impact research, found that ‘regions most at risk from heat waves and health impact are under-represented in the research. The CRI-employed database EM-DAT itself notes that for heat waves, ‘the actual human impact is likely underreported and not fully reflected in EM-DAT.’²⁰⁸ One reason for this outcome is that climate research is largely carried out by research institutes in Global North countries, resulting in a bias toward events in these countries.²⁰⁹ Virgüez et al. (2024)²¹⁰ found that 75% of the most highly cited climate science papers’ authors are based in North America and Europe, and that most climate models have been developed in the Global North. Such asymmetries are perpetuated by systemic barriers, such as the disparities in funding opportunities, bias in peer

review systems, and dominance of English-language publishing. Huge geographical differences also exist in attribution science (see chapter 4).²¹¹ Large attribution knowledge gaps are especially notable in Global South countries because of a lack of good-quality weather data and well-evaluated climate models.²¹² Therefore, current attribution studies ‘provide very little information about those events and regions where the largest economic damages and socio-economic losses are incurred.’²¹³ Attribution studies, thus far, have focused on Europe (22%), eastern and southeast Asia (22%), and Northern America (19%), with only 1% covering northern Africa and western Asia.²¹⁴ Besides research, countries that benefit from substantial media coverage are also more likely to be better represented in disaster loss databases.²¹⁵

2. Methodological boundaries of data collection: Accurately attributing human loss to a particular extreme event faces certain methodological boundaries for data collectors (e.g. in determining whether an older person died during a heat wave because of the extreme temperature or their advanced age).

3.4 Sensitivity analysis: Including HDI data as a proxy for data gaps

CRI sensitivity analysis including HDI as a correcting factor is used for missing data to balance out the potential misrepresentation of Global South countries due to data gaps. The HDI is used as a proxy for data availability because studies concluded that data gaps correlate with GDP and government spending.²¹⁶ However, this correlation has yet to be fully consistent across all assessed countries. There are instances, for example, of SIDS with high HDI rankings but that still exhibit substantial data gaps. The HDI is a summary measure of average achievement in key human development dimensions: a long and healthy life, being knowl-

206 Eurostat 2020.

207 Alderman et al. 2012.

208 EM-DAT 2024.

209 Otto and Harrington 2020c.

210 Virgüez et al. 2024.

211 Clarke et al. 2022.

212 Otto et al. 2020.

213 Ibid.

214 McSweeney and Tandon 2024.

215 Delforge et al. 2025.

216 Zhan 2023.

edgeable, and having a decent standard of living. It is the geometric mean of normalised indices for each of the three dimensions and represented by a value of 0–1. Countries are ranked in four groups: low (<0.55), medium (0.55–0.699), high (0.7–0.799), and very high (≥0.8). For the CRI, the HDI is incorporated as a proxy for data availability. First, the ‘HDI gap’ is determined for each country, illustrating the gap between a country’s HDI score and the ‘perfect’ HDI score of 1. The result is weighted and added to a country’s CRI score as

an ‘HDI correction.’ A conservative weighting of 10% is used for the correction so as not to overcorrect the factual data calculations in the CRI. Countries with a very high HDI score (≥0.8) also are excluded under the assumption that data gaps are less likely within them.

Accordingly, the HDI-corrected CRI score can be written as:

$$\text{CRI score}_{\text{HDI-corrected}} = \text{CRI score} \times 0.9 + \text{‘HDI gap’} \times 0.1$$

Figure 11 shows the HDI-corrected CRI ranking for 1995–2024. Several developing countries – such as Pakistan, Bangladesh, Afghanistan, Mozambique, and Malawi – rise in the ranking or enter the top 20, while developed countries – such as France, Italy, and the

United States – fall in the ranking. The HDI correction’s significance is also clearly visible when considering the 20 most affected countries, as developing countries now account for 18 of the 20 (vs 16 of 20 in the original ranking).

Figure 11: 20 countries most affected in 1995–2024 (HDI-corrected)

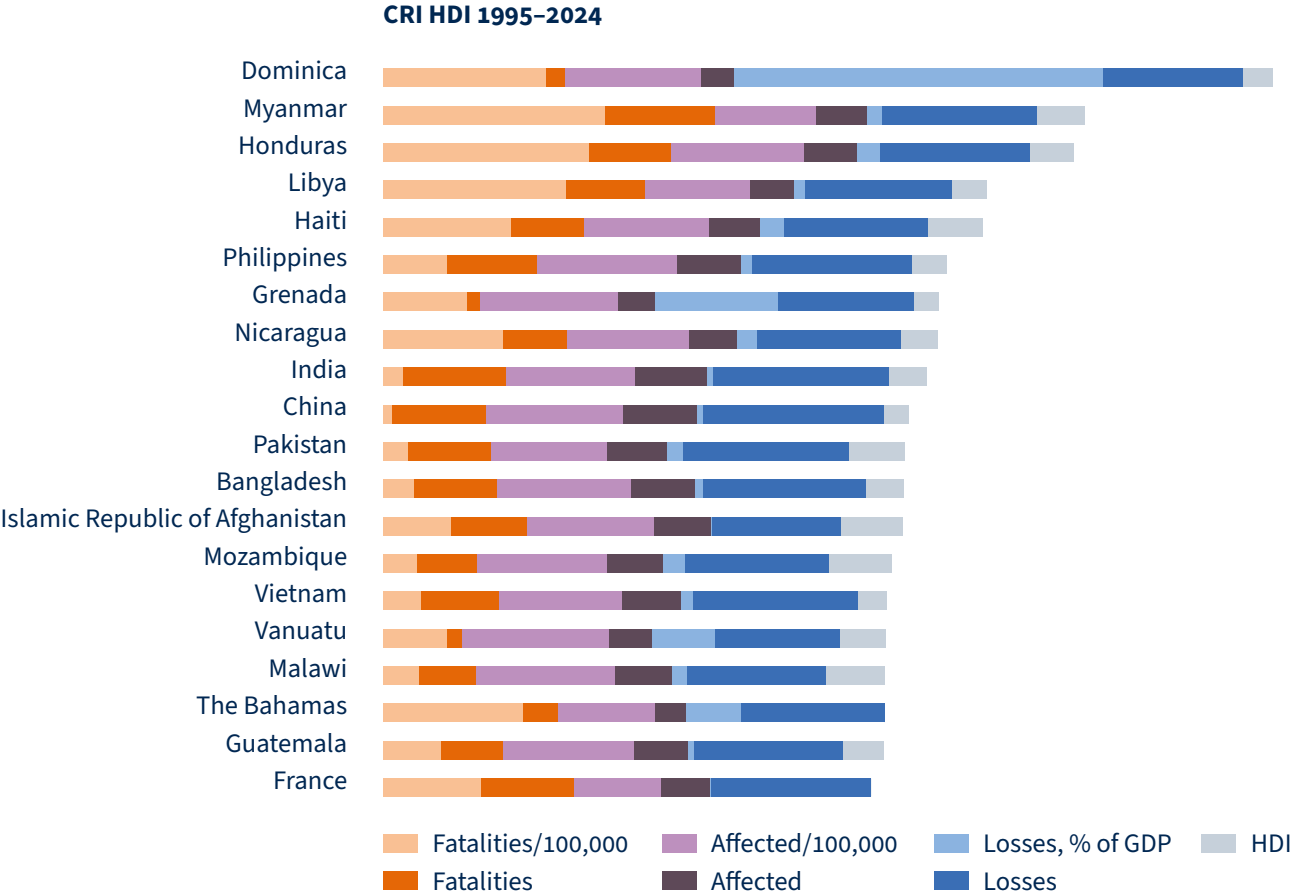
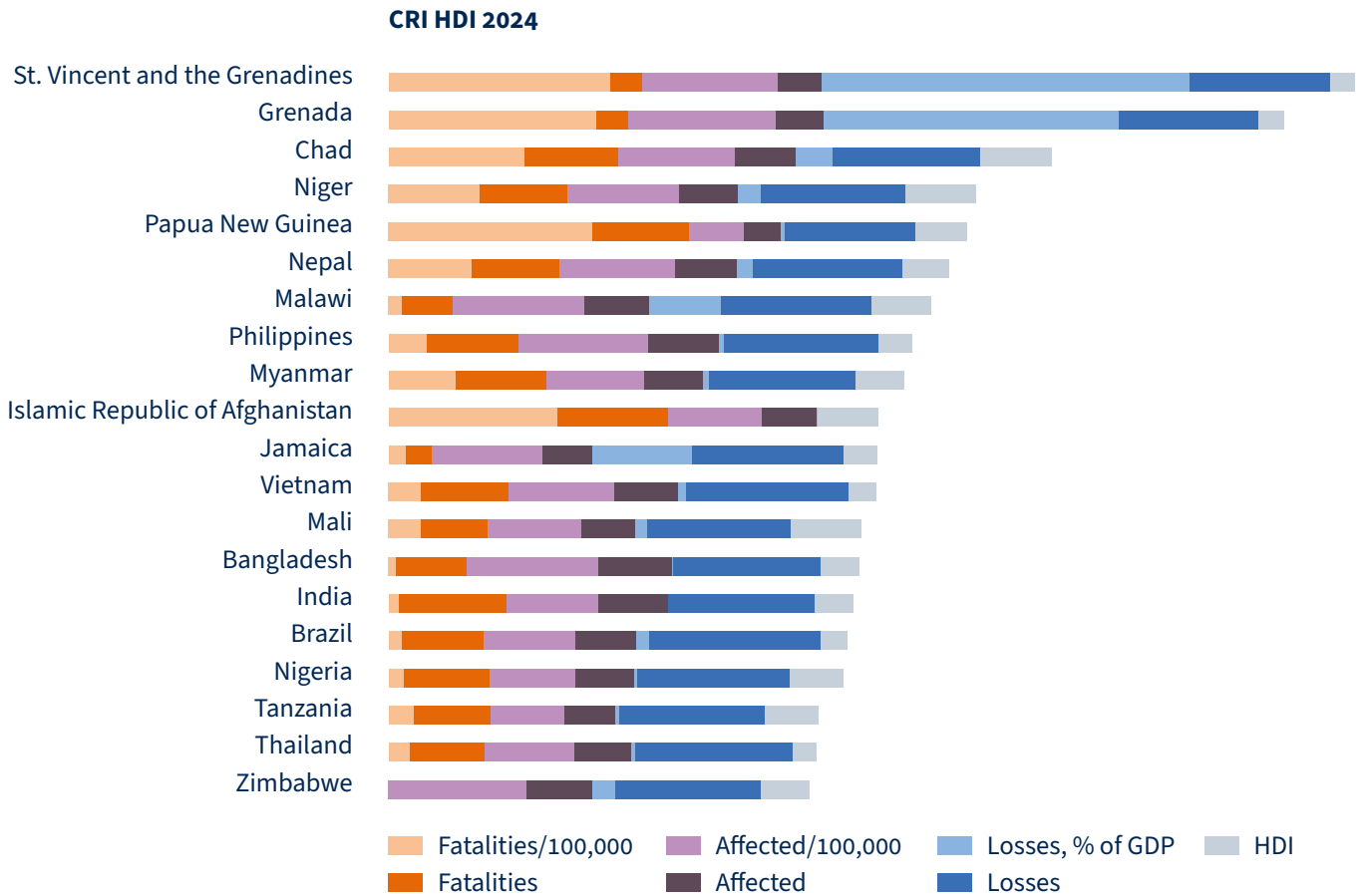


Figure 12 shows the HDI-corrected CRI ranking for 2024. Several developing countries – such as Afghanistan, Mali, Tanzania, and Zimbabwe – rise in the ranking or enter the top 20, while Spain, the only developed country in the original list, drops out. The HDI

correction’s significance is also clearly visible when considering the 20 most affected countries, as developing countries now account for all 20 (vs 19 of 20 in the original ranking).

Figure 12: 20 countries most affected in 2024 (HDI-corrected)



4

Linking extreme weather events and climate change

Extreme weather events' emergence and formation are complex, and many interrelated factors must be considered in explaining the specific causes. However, science clearly demonstrates climate change's substantive effect on certain types of events' frequency, intensity, and duration. Understanding this relationship is essential for mitigating risks and preparing to deal with the impacts. This chapter presents the current scientific status of attribution of extreme weather events to climate change and details climate change's effects on the key hazard types for the CRI.

4.1 Current scientific status of attribution science

Science has thoroughly researched the connection between extreme weather events and climate change. AR6 states with high confidence that, 'Human-caused climate change is already affecting many weather and climate extremes in every region across the globe. This has led to widespread adverse impacts and related losses and damages to nature and people.'²¹⁷ Subsequent rapid- and peer-reviewed attribution has added dozens of new cases involving heat, drought, extreme rain/flooding, storms, and wildfire. The field now covers **600+ attribution studies** on nearly 750 extreme

weather events. A meta-review of these studies concludes that **climate change increased the likelihood and/or intensity of 74% of assessed events**.²¹⁸

Most importantly, attribution science has built a solid evidence base on human-induced climate change's contribution to individual extreme weather events. Attribution science estimates climate change's influence on extreme weather events by comparing real-world data with a simulated climate that excludes certain factors, such as greenhouse gas (GHG) emissions (e.g. simulating a world without climate change).²¹⁹ Attribution science emerged in the 1990s and has evolved from a new, seldom-applied method struggling to pinpoint causes of individual events to a multimethod approach with more than 600 studies on nearly 750 events to date.²²⁰ Studies can now answer whether and to what extent human-induced climate change affected extreme weather events' likelihood, intensity, or impact.²²¹ AR6, therefore, notes that, 'Evidence of observed changes in extremes such as heatwaves, heavy precipitation, droughts, and tropical cyclones, and, in particular, their attribution to human influence, has strengthened since AR5.'²²² Even rapid attribution following single events is now possible.²²³

217 IPCC 2023.

218 McSweeney and Tandon 2024.

219 Otto 2017.

220 McSweeney and Tandon 2024.

221 Otto 2023a.

222 IPCC 2022.

223 Taminga et al. 2025.

However, huge geographical differences exist among attribution studies, similar to what occurs with general climate change data (see chapter 3.3).²²⁴ Large attribution knowledge gaps are especially present for Global South countries due to the lack of adequate weather data and well-evaluated climate models.²²⁵ Therefore, current attribution studies ‘provide very little information about those events and regions where the largest economic damages and socio-economic losses are incurred.’²²⁶ Such studies, thus far, have focused on Europe (22%), eastern and southeast Asia (22%), and Northern America (19%), with only 1% covering northern Africa and western Asia.²²⁷

El Niño influenced many extreme events that occurred during the beginning of the CRI year 2024. However, attribution science found that climate change played a bigger role than El Niño in fuelling these events.²²⁸ Climate science also found that, in 2024, human-caused climate change added 41 days of dangerous heat for billions of people worldwide, substantially impacting vulnerable populations and driving other extreme weather events, such as intensified hurricanes and wildfires. The summer of 2024 also was the hottest on record, with two billion people experiencing 30+ risky heat days.²²⁹

4.2 Attribution of CRI event types to climate change

Heat waves

Heat wave refers to a period of abnormally hot and/or unusually humid weather, lasting from 2 days to numerous weeks.²³⁰ Countries and regions apply different thresholds for temperature and duration in defining an event as a heat wave.²³¹ As heat waves are primarily influenced by thermodynamic factors, it is

easier for attribution scientists to establish a causal link to climate change compared with other extreme weather events.²³² This fact has led to heat waves being studied more extensively than other extreme weather events. Extreme heat events evidently are growing more frequent because of climate change, and heat levels once considered very rare are now merely seen as unusual.²³³ According to AR6, heat waves that had a 10% chance of occurring annually in the pre-industrial climate are now 2.8× more frequent and 1.2°C hotter.²³⁴ The frequency will rise to 5.6× if 2°C of global warming is surpassed.²³⁵

Heat waves negatively impact human health, as heat-related illnesses follow their increased frequency and intensity. Heat-related mortality also has increased, with one study attributing 37% of heat-related deaths globally to climate change.²³⁶ Rising temperatures disproportionately affect the most vulnerable groups in society – older people, children, and those with pre-existing medical conditions.²³⁷ Additionally, a large part of the global population resides in hotter regions, where heat waves’ impacts are felt most acutely.

For the CRI year 2024, attribution science found the following.²³⁸

- In **February 2024**, the southern coastal zone of West Africa experienced abnormally early-season humid heat. Conditions were dangerously hot and analyses show that climate change made this event about **4°C hotter** than it would have been without human influence.
- At the end of **March and beginning of April 2024**, extreme heat hit the Sahel and wider West Africa, with temperatures exceeding 45°C across the region. In Mali, the city of Kayes recorded 48.5°C on

224 Clarke et al. 2022.

225 Otto 2023a.

226 Ibid.

227 McSweeney and Tandon 2024.

228 World Weather Attribution 2024c.

229 Climate Central 2024.

230 Centre for Research on the Epidemiology of Disasters 2024.

231 Copernicus 2024a.

232 Tandon 2024.

233 Clarke et al. 2022.

234 IPCC 2022b.

235 Clarke et al. 2022.

236 Vicedo-Cabrera 2021.

237 Clarke et al. 2022.

238 All information on these events from World Weather Attribution 2025a.

3 April. The extreme heat wave coincided with the end of Ramadan, exposing highly vulnerable populations to severe risks. Studies concluded that such a heat wave **would not have occurred without climate change**.

- From **April into May 2024**, record-breaking heat affected large parts of Asia, from West Asia to South-east Asia. Temperatures above 40°C persisted for many days, with particularly harsh effects on people in refugee camps, informal housing, and outdoor workers. Climate change made these heat waves **more frequent and more intense**. In West Asia, the events were about **1.7°C hotter** than in a world without climate change, while in the Philippines, the increase was about **1.2°C**.
- By **late May and early June 2024**, Mexico and surrounding regions faced a devastating heat wave that caused 125+ confirmed deaths. Attribution analyses show that human-induced warming made the 5-day maximum-temperature event about **1.4°C hotter and 35× more likely**. For nighttime temperatures, the effect was even stronger: **1.6°C hotter and 200× more likely**. In West Asia, climate change increased the probability of the event by about 5×.
- In **July 2024**, Southern Europe and North Africa also experienced deadly heat waves. Countries such as Greece, Italy, Spain, Portugal, France, and Morocco recorded extreme temperatures that caused 23+ fatalities, widespread wildfires, and major disruptions to public life. Researchers concluded that this Mediterranean heat wave **would not have occurred without climate change**. Events of this type, once virtually impossible, are now not rare, and are typically **1.7–3.5°C hotter** than in pre-industrial times.

The data gaps in climate and attribution science for Global South countries (see chapter 3.3) are particularly pronounced regarding heat waves, including in EM-DAT, which the CRI uses. Moreover, and notably, attributing economic losses to heat waves is difficult because damage often arises indirectly – through re-

duced labour productivity, health costs, crop failures, and energy disruptions – rather than from immediate physical damage. Moreover, these impacts are entangled with socioeconomic factors, such as urban planning, healthcare systems, and market dynamics, making it challenging to isolate how much was directly caused by heat extremes.

Floods

Flood is a general term for water overflow from a stream channel onto normally dry land in the floodplain (riverine flooding), higher than normal levels along the coast and in lakes or reservoirs (coastal flooding), and ponding of water at or near where the rain fell (flash flood).²³⁹ A flash flood is heavy or excessive rainfall in a short period of time and that produces immediate runoff, creating flood conditions within minutes or a few hours during or after the rainfall.²⁴⁰

Attribution science faces multiple challenges in analysing flood events. Scussolini et al. (2023) indicated a non-linear relationship between rainfall and flood occurrence or severity, as this relationship depends on various factors, such as hydrological processes, river and coastal management, and pre-existing conditions before rainfall. Human interventions, such as dam construction and land-use changes (e.g. agricultural development), also can influence flood dynamics by amplifying, mitigating, or outweighing climate change's effects.²⁴¹ Despite these complexities, the principal findings show climate change has made heavy rainfall more frequent and intense in many parts of the world.²⁴² The aggregated findings in the latest IPCC report indicate that, at a global scale, a rainfall event that would be expected once in 10 years now has a 1.3× chance of occurring every 10 years and will bring greater precipitation.²⁴³ The frequency is expected to increase as global warming continues.²⁴⁴

Global temperature increase leads to rising global sea levels, which increase coastal flooding.²⁴⁵ Meanwhile, the higher GHG emissions level leads to more tropi-

239 Centre for Research on the Epidemiology of Disasters 2024.

240 Ibid.

241 Scussolini et al. 2024.

242 Fischer 2021.

243 IPCC 2022.

244 Clarke et al. 2022.

245 IPCC 2022.

cal cyclones, which often cause floods.²⁴⁶ Scientists also have found, with a high level of confidence, that increased precipitation extremes and inland flooding can be attributed to global surface air temperature warming.²⁴⁷

They have observed that climate change is changing annual monsoons in parts of Asia and Africa. Shorter, but more intense, rains are adversely impacting many low- and middle-income countries where large populations depend on monsoons for agriculture.²⁴⁸ Hurricane Katrina was one event for which attribution scientists established a clear link between a flood event and climate change. Katrina struck the US southeastern coast in 2005, killing 1,800 and causing widespread destruction. Simulating sea level and climate conditions from 1900, Irish et al. (2013) unpacked climate change's influence on the event. Their findings suggested that 'flood elevations during Hurricane Katrina [...] were estimated to be 15 to 60% higher in coastal areas' because of sea level rise. Thus, while attribution science should account for different factors when examining floods, the general trend is that increased rainfall and sea level rise are already leading to more severe flooding in different parts of the world.

For the CRI year 2024, attribution science found the following:²⁴⁹

- **March 2024 – Kenya, Tanzania, and Burundi:** During the long rains, **extreme rainfall and river flooding** in Kenya, Tanzania, and neighbouring countries were found to be **'heavily influenced by climate change,'** consistent with theory that a warmer atmosphere intensifies short-duration downpours that trigger deadly floods and landslides.
- **April 2024 – UAE and Oman:** Exceptionally heavy rainfall caused massive disruption and 24+ fatalities (20 in Oman, four in the UAE). Attribution analyses show that, with 1.2°C of global warming to date, heavy rainfall events such as this are now more likely. The observed event was 10–40% more intense

than it would have been in an El Niño year under a 1.2°C-cooler climate, underscoring the amplifying effect of human-induced warming.

- **April–May 2024 – Southern Brazil (Rio Grande do Sul):** Over 420 mm of rain caused flooding across >90% of the state, leaving 169+ people dead, 44 missing, and displacing 80,000. Services collapsed, with millions lacking electricity, water, and telecommunications. Attribution studies found El Niño increased the likelihood by 2–5× and intensity by up to 10%. Human-induced climate change further increased the likelihood by more than 2× and intensity by 6–9%.
- **Mid-September 2024 – Central Europe (Poland, Czechia, Austria, Romania, Hungary, Germany, and Slovakia):** Record-breaking 4-day rainfall led to widespread flooding across Central Europe. Analysis shows that, compared with pre-industrial times, heavy 4-day rainfall events in the region are now about twice as likely and 10% more intense because of human-caused climate change.
- **September 2024 – Nepal:** Extreme rainfall triggered flash floods, landslides, and riverine flooding in Kathmandu and surrounding regions, killing 244+ people. High-resolution climate model analyses indicate that human-induced warming made the rainfall about 70% more likely and 10% more intense compared with a 1.3°C-cooler climate. Future warming of 2°C could increase intensity by a further 3%.
- **July–September 2024 – Sahel Region (Sudan, Nigeria, Niger, Chad, and Cameroon):** Prolonged heavy rains caused catastrophic flooding, killing more than 2,000 people and displacing millions. Attribution analyses suggest that human-induced climate change roughly doubled the likelihood of such an event and increased intensity by about 10%, compounding existing vulnerabilities linked to conflict, poverty, and poor water management.
- **October 29–30, 2024 – Southeastern Spain:** Extreme rainfall caused devastating floods, killing more than 200 people, displacing more than 400, and leaving hundreds of thousands without water and electricity. Attribution studies showed that, in today's climate (1.3°C warmer than pre-industri-

246 Irish et al. 2014.

247 Tebaldi et al. 2023.

248 Katzenberger et al. 2021.

249 All information on these events from World Weather Attribution 2025b.

al), heavy 1-day rainfall events of this intensity are about 12% stronger and twice as likely compared with a world without human-caused warming.

Drought

A drought is an extended period of unusually low precipitation, which leads to water shortages for people, animals, and plants.²⁵⁰ Drought differs from most other hazards in that it develops slowly, sometimes over years, and its onset is generally difficult to detect. The IPCC's latest report outlines various types of drought, including meteorological (precipitation deficits), agricultural (soil moisture deficits), ecological (plant water stress), and hydrological (shortages in reservoirs, lakes, and groundwater). All drought types are interconnected, essentially describing a moisture shortage in different parts of the hydrological system.²⁵¹ Higher temperatures and precipitation deficits, either individually or together, are key drivers of drought. Attribution scientists face challenges in GHG emissions' indirect influence on precipitation and, in turn, on drought.²⁵²

AR6 stated with moderate confidence that, 'human-induced climate change has contributed to increases in agricultural and ecological droughts in some regions.'²⁵³ The report warned, with high confidence, that agricultural and ecological drought will continue to increase. Drought severely impacts people and ecosystems, leading to lower water quality, harm to aquatic ecosystems, crop failure, livestock losses, and reduced water availability. These conditions are particularly detrimental to the agricultural sector, contributing to food insecurity, which can drive human conflicts and displacement.²⁵⁴ For instance, in the Horn of Africa, a severe drought since October 2020 has led to acute food insecurity for millions of people. Attribution scientists have shown that the conditions would not have led to such a drought in a 1.2°C-cooler world.²⁵⁵

For the CRI year 2024, attribution science found the following:²⁵⁶

- January 2024 – South America (Amazon River Basin): Extraordinary drought driven by low rainfall and persistent heat. Human-induced climate change increased the likelihood of meteorological drought by 10× and agricultural drought by about 30×.
- May 2024 – Central America (Panama Canal): One of the driest years on record, with below-average rainfall in the Panama Canal Watershed. Under today's 1.2°C warming, such an El Niño-related drought occurs once every ~40 years, with ~8% less precipitation compared with neutral El Niño–Southern Oscillation years.
- September 2024 – Italy (Sicily and Sardinia): Severe drought after 12 months of low rainfall and extreme heat, with impacts on agriculture and tourism. Human-induced climate change increased the likelihood of this drought (SPEI12, August 2023 to July 2024) by about 50%.

Storms and tropical cyclones

The CRI includes several types of storms – tropical cyclones are the most destructive. A tropical cyclone originates over tropical or subtropical waters.²⁵⁷ It is characterised by a warm-core, non-frontal synoptic-scale cyclone with a low pressure centre, spiral rain bands, and strong winds. Depending on their location, tropical cyclones are also referred to as hurricanes (Atlantic, Northeast Pacific), typhoons (Northwest Pacific), and cyclones (South Pacific and Indian Ocean). While these storms' wind speed thresholds vary by region, the Saffir-Simpson Hurricane Wind Scale is a commonly used classification system. This scale categorises hurricanes into five levels based on their sustained wind speeds, from 1 (minimal damage) to 5 (catastrophic damage), and helps estimate storms' potential destruction and impact.

250 Centre for Research on the Epidemiology of Disasters 2024.

251 McSweeney 2021.

252 Olsen et al. 2023.

253 IPCC 2023.

254 World Weather Attribution 2023.

255 Ibid.

256 All information on these events from World Weather Attribution 2025c.

257 Centre for Research on the Epidemiology of Disasters 2024.

Climate change's influence on tropical cyclones is more complex than for other types of extreme weather events, as heavy rainfall and extreme winds propel the impacts.²⁵⁸ Moreover, the surrounding conditions, such as sea surface temperatures, are vital for storm formation. Warmer ocean temperatures, driven by climate change, act as fuel for tropical cyclones, intensifying the strength of these storms and, thus, potentially making them more destructive.²⁵⁹ As warmer air holds more moisture, these storms also are likely to lead to heavier rainfall in affected regions.²⁶⁰ AR6 found, 'it is likely that the global proportion of category 3–5 tropical cyclone instances and the frequency of rapid intensification events have both increased globally over the past 40 years.'²⁶¹

Attribution science findings show that climate change is strengthening conditions conducive to the most powerful hurricanes, with more intense rainfall totals and higher wind speeds.²⁶² Studies have repeatedly shown that recent extreme flood events can be attributed to climate change. The causes of these events include Superstorm Sandy²⁶³ (2012 in the Caribbean and the eastern United States) and Hurricane Katrina (2005 in the US state of Louisiana).²⁶⁴

For the CRI year 2024, attribution science found the following:²⁶⁵

- **January 2024 – Europe (Black Sea region):** Storm Bettina caused heavy rainfall, snowfall, and hurricane-force winds. Climate change doubled the likelihood of such precipitation and increased intensity by ~5%.
- **May 2024 – Europe (United Kingdom and Ireland):** A series of damaging winter storms brought flooding risks. Human-caused climate change made rainfall during these storms about 20% heavier.
- **August 2024 – Asia (Western Pacific):** Typhoon Gaemi (Super Typhoon Carina) intensified with stronger winds and heavier rainfall. Climate change significantly increased wind speed and rainfall amounts.
- **October 2024 – North America (Florida, United States):** Hurricane Helene made landfall as a Category 4 storm, with destructive winds, rainfall, and storm surges. Climate change was a key driver of its catastrophic impacts.
- **October 2024 – North America:** Hurricane Milton produced extreme 1-day rainfall. In today's 1.3°C warmer climate, such rainfall is 20–30% more intense and about twice as likely, with one dataset showing even larger changes.
- **November 2024 – Asia (Philippines):** Six typhoons struck within 30 days, affecting more than 13 million people. Climate change made the odds of at least three major typhoons making landfall in 1 year ~25% higher, with such events now expected every 15 years.

Wildfires

Wildfires are uncontrolled and unpredictable combustion or burning of plants in a natural setting – such as forest, grassland, brush land, and tundra – and that consume the natural fuels and spread depending on environmental conditions (e.g. wind, topography).²⁶⁶ Factors such as high temperature, low humidity, lack

258 World Weather Attribution 2024a.

259 IPCC 2019.

260 Ibid.

261 IPCC 2022.

262 World Weather Attribution 2024a.

263 Sweet et al. 2013.

264 Irish et al. 2014.

265 All information on these events from World Weather Attribution 2025d.

266 Centre for Research on the Epidemiology of Disasters 2024.

of rain, fuel availability, and high wind speed propel wildfires.²⁶⁷ While these fires can cause direct loss of human lives, their death toll tends to be lower than for other weather extremes.²⁶⁸ However, inhaling wildfire smoke can lead to long-term respiratory health issues. Wildfires are also associated with large losses of wildlife and other parts of the ecosystem. Wildfires are complex to study, as their occurrence depends on pre-existing weather conditions (such as drought) and whether vegetation was subjected to low humidity and rainfall.²⁶⁹ As such, they are closely linked to other extreme weather events, such as drought and heat waves. Carbon Brief indicates wildfires are one of least-studied weather extremes in the context of attribution science.²⁷⁰

The devastating bushfires in Australia in 2019–2020, which burned up to 19 million hectares, are a prime example of the extent of wildfires.²⁷¹ These fires were fuelled, in part, by the prolonged drought that preceded them. Van Oldenborgh et al. (2020) found that cli-

mate change made the event 30% more likely²⁷² and concluded that increasing temperatures bring a higher risk of such extreme fire seasons.²⁷³ Similarly, Du et al. (2021) found that human-induced climate change was a driving force of the spring 2019 wildfires in southwest China.²⁷⁴ Researchers also identified a ‘significant anthropogenic contribution to the risk of extreme fire weather’ in Canada’s unusually intense wildfire season of 2017.²⁷⁵ Overall, wildfires’ intensity and occurrence can be clearly linked to climate change, though further studies are needed.

For the CRI year 2024, attribution science found the following:²⁷⁶

- **August 2024 – South America (Pantanal, Brazil):** Wildfires burned more than 1.3 million hectares in the world’s largest tropical wetland. Human-driven warming made the fire weather index (DSR, June 2024) about 40% more intense and 4–5× more likely.

267 Dowdy et al. 2009.

268 Clarke et al. 2022.

269 Van Oldenborgh et al. 2021.

270 McSweeney and Tandon 2024.

271 WWF 2018.

272 Van Oldenborgh et al. 2021.

273 Ibid.

274 Wang et al. 2019.

275 Kirchmeier-Young et al. 2019.

276 All information on these events from World Weather Attribution 2025e.

5

CRI context: Status quo of international climate and resilience policy

CRI 2026 sends a clear and urgent message: global emissions must be reduced immediately, adaptation efforts must be accelerated, and effective solutions to address L&D must be implemented, including the necessary financial support. The findings also reinforce a fundamental injustice: those who are least responsible for the climate crisis are often the most affected, yet they still lack sufficient support from those with greater historical responsibility for the climate crisis and greater financial capacity.

This chapter provides context for interpreting the CRI results. It outlines the broader context needed to understand the CRI results, including the current emissions gap and recent climate trends. It then explores the current geopolitical landscape and assesses the state of resilience policies in 2025. Finally, it looks ahead to COP30, highlighting why this conference must become a turning point for scaling up emissions reductions, strengthening resilience, and securing meaningful support for those most at risk.

5.1 The large emissions gap

GHG emissions, primarily from burning fossil fuels, continue to drive global warming and intensify climate impacts such as sea-level rise, heat waves, floods, and biodiversity loss, with the most vulnerable communities hit hardest. In 2024, global temperatures reached record highs, as this was the first calendar year to surpass 1.5°C above pre-industrial levels.²⁷⁷ All 10 of the hottest years were in the past decade, demonstrating the rapid warming. Record-breaking GHG levels and air and sea surface temperatures contributed to extreme weather events worldwide. While 1 year above 1.5 °C does not violate the Paris Agreement (which measures long-term averages), current trends suggest we could surpass this threshold permanently by the 2030s. As of mid-2025, the global emissions gap remains wide. The UNEP Emissions Gap Report 2024 projected that current climate pledges will lead to 2.6–3.1°C of warming by 2100— well above the 1.5°C limit.²⁷⁸ Staying below 1.5°C requires emissions to fall 43% from 2019 levels by 2030.²⁷⁹ However, emissions rose 1.2% in 2022 and an estimated 1.3% in 2023, driven by fossil fuel dependence, industrial recovery, and growing energy demand. Without stronger 2025 NDCs, the world remains on a

277 Copernicus 2024b.

278 UNEP 2024a.

279 IPCC 2023.

dangerous warming path. Urgent and ambitious climate action is imperative.

The 1.5°C limit is not just a scientific benchmark – it is a vital social, political, and economic safeguard. Global emissions are also deeply unequal: in 2022, the top-10% income group produced 48% of emissions (two-thirds in developed countries), while the bottom 50% produced just 12%.²⁸⁰ The richest 1% alone generated 16% of global CO₂ in 2019 – more than twice the emissions of the poorest half.²⁸¹ Some billionaires, through luxury consumption and private aviation, have greater annual emissions than entire countries.²⁸² A recent study warned that the remaining carbon budget for 1.5°C could be used up within 3 years. The target can still be met, but only with immediate and deep emission cuts, especially in high-emitting nations.²⁸³ Delaying action until 2030 would double the annual reduction rate needed, from 7.5% to 15%.²⁸⁴

5.2 Latest developments in international climate and resilience policy

5.2.1 Geopolitical context

Fragmentation and a pronounced shift toward national security agendas shape the geopolitical landscape for climate risk management in 2025. Escalating conflicts and crises have moved international attention away from climate diplomacy and toward hard security concerns, such as military-, cyber- and energy security. In many industrialised countries, climate action has been politically downgraded, with energy security, defence spending, and border control prioritised over global climate commitments.

This retreat from multilateralism is accompanied by sharp cuts in ODA, which undermine institutional capacity in the Global South. The OECD projected a

9–17% ODA drop in 2025, which is a USD 31.1 billion decline from 2023.²⁸⁵ The closure of USAID in early 2025 alone created a USD 56 billion global funding gap.²⁸⁶ Since public climate finance, especially grants, has traditionally been channelled through ODA, these cuts have disrupted bilateral projects as well as multilateral mechanisms such as the Green Climate Fund and the Adaptation Fund. The effects are already tangible: early-warning systems, adaptive infrastructure, and regional resilience initiatives in low-income regions such as Southeast Asia and Central America face critical financing gaps.²⁸⁷ Moreover, because of the closure of USAID and other US-based institutions and initiatives, climate data and satellite-based climate risk monitoring and forecasting for countries across Africa, South Asia, and Latin America are absent.²⁸⁸ These systems have enabled timely warnings for droughts, floods, and cyclones, and been crucial in reducing disaster impacts.

This state of affairs comes on top of an already inadequate climate finance system. The USD 100 billion annual target for developing countries was only met in 2022, with USD 115.9 billion mobilised.²⁸⁹ Yet, only 32% supported adaptation, compared with an estimated need of USD 215–387 billion annually.²⁹⁰ Most finance is provided as loans, not grants, with some even extended at market rates. This stipulation further strains the fiscal position of already indebted countries, exacerbating their vulnerability. Meanwhile, humanitarian needs are surging. UNOCHA projected that 305 million people will require urgent assistance in 2025, but in 2024, only 30% of the USD 56.7 billion requested was funded.²⁹¹ Conflict and climate emergencies are the key drivers of this rising demand.

Climate-related disasters are compounding instability. About 3.3–3.6 billion people already live in vulnerable conditions, with adaptation limits increasingly exceed-

280 UNEP 2024a.

281 Oxfam 2023.

282 Oxfam 2024.

283 Forster et al. 2025.

284 UNEP 2024a.

285 OECD 2025.

286 Financial Times 2025.

287 European Parliament 2025.

288 Chase-Lubitz 2025.

289 OECD 2024.

290 Ibid.

291 UNOCHA 2024c.

ed.²⁹² In 2024 alone, natural disasters triggered 45.8 million internal displacements – the highest number since records began in 2008. Between 2015 and 2024, disasters forced 264.8 million movements across 210 countries, with storms and floods responsible for nearly 90% of the movements.²⁹³ SIDS are overwhelmingly affected. Finally, debt crises critically undermine adaptation and L&D responses. Global public debt reached USD 102 trillion in 2024, with developing countries accounting for USD 31 trillion and record interest payments of USD 921 billion.²⁹⁴ Over half of these countries spend more than 10% of revenues on debt servicing, leaving little fiscal space for climate investments.²⁹⁵ In 2022, a study found that 58 developing countries spent twice the amount on debt repayments compared to climate finance they received – trapping them in cycles of disaster, borrowing, and repayment.²⁹⁶

5.2.2 Where do relevant policies stand in 2025?

Strengthening overall resilience – Sustainable Development Goals (SDGs): The 2025 SDG report highlights that today’s structural crises are increasingly interconnected, which undermines progress toward the 2030 Agenda and hinders implementation of the goals.²⁹⁷ Despite some gains, change is too slow.

Hunger affects one in 12 people, and billions of people still lack access to safe water, sanitation, and hygiene. Inequalities remain stark, as women spend 2.5× more time on unpaid care work than men, and persons with disabilities remain underserved. In 2023, GHG emissions reached a record 57.1 GtCO₂e, and fossil fuel subsidies remained high, at USD 1.1 trillion. Ocean warming and acidification continue, with a global coral bleaching event threatening 44% of coral species. Economic instability and rising debt burdens progress. Low- and middle-income countries paid USD 1.4 trillion in debt servicing in 2023, and a USD 4 trillion annual financing gap persists. Per capita GDP growth

was projected to slow to just 1.5% in 2025. Peace and justice have deteriorated, as more than 120 million people are displaced, conflict deaths rose 40% in 2024, and one-third of prisoners lack formal sentencing. Violence against human rights defenders and journalists remains high. And development financing is weakening, with ODA falling 7.1% in 2024 after 5 years of growth, with further reductions expected.

The Sendai Framework provides a global roadmap for disaster risk reduction (DRR), emphasizing state leadership and shared responsibility. By October 2024, 131 countries had adopted national DRR strategies (up from 57 in 2015), and 110 reported aligned local strategies, with 73% of municipalities implementing them.²⁹⁸ Early warning systems have also considerably improved, with 113 countries now operating multi-hazard early warning systems (MHEWS). This progress helps reduce disaster-related deaths and impacts. The UN’s Early Warnings for All initiative, launched in 2022, aims to ensure global coverage by 2027. Nearly one-third of Voluntary Commitments (VCs) support this goal. The Sendai Framework VC platform, launched in 2018, had recorded 161 commitments from 729 organizations by April 2025²⁹⁹ – up sharply from 100 in 2022. NGOs lead, with 39% of commitments, though contributions from governments, academia, and the private sector are growing. These commitments address all four Sendai Priorities and seven Targets, with strong links to SDGs 11 (sustainable cities and communities), 13 (climate action), and 17 (partnerships for the goals). However, important issues – such as sea level rise, recovery, shelter, and livelihoods – remain underrepresented. Inclusion also lags, as only one VC explicitly focuses on this theme, despite the launch of the Sendai Gender Action Plan in 2024.³⁰⁰ Monitoring and accountability remain challenges, with 37% of VCs overdue on progress reporting. DRR financing continues to rely heavily on external, often constrained, funding.

292 IPCC 2022.

293 IDMC 2025.

294 UNCTAD 2025.

295 World Bank 2024f.

296 Zami 2024.

297 UNSTATS 2025.

298 UNDRR 2025.

299 Ibid.

300 Ibid.

Status of National Adaptation Plans (NAPs): As of 4 July 2025, 64 countries had submitted NAPs,³⁰¹ which was up from 51 at the time of the first Global Stocktake (GST) in 2023. Over 100 developing countries are currently engaged in NAP processes. However, the LDC group voiced strong concern at Subsidiary Body (SB) 62 over persistent barriers to financing NAP formulation and implementation, calling the lack of support ‘not just frustrating but demoralizing.’³⁰² Despite growing engagement, the GST found most adaptation efforts remain fragmented, incremental, and unevenly distributed.³⁰³ It warned that the world is not on track to meet long-term adaptation and temperature goals, and the window for action is rapidly closing. In response, Paragraph 59 of Decision 1/CMA.5 urges all countries to establish NAPs and processes by 2025³⁰⁴, with clear progress in implementation by 2030. For developing countries, NAPs remain the main instrument for integrating adaptation into national planning, strengthening resilience, and reducing vulnerability to climate change.

5.2.3 Other relevant developments in 2025: Litigation, climate, and security

Climate litigation expands: Increasingly, courts are stepping in where climate diplomacy stalls. Across the world, affected communities, civil society actors, and progressive legal practitioners are turning to the judiciary to demand accountability and climate justice. Climate litigation is no longer peripheral, it is becoming a central force shaping international climate policy.³⁰⁵ The year 2025 marks a turning point, with landmark legal developments. These cases are beginning to clarify legal responsibilities for climate harm, including financial obligations related to L&D. In 2025, the ICJ advisory opinion³⁰⁶ marked a historic moment by affirming that states have binding international legal obligations to prevent and address climate change’s harmful effects, including through stronger mitigation and adaptation actions. It emphasised that insufficient climate action can amount to a violation of human rights and inter-

national environmental law, which significantly raises the stakes for national policies and international cooperation. The advisory opinion also made clear that developed States have a legally binding duty to provide financial resources to developing States, for both mitigation and adaptation and addressing L&D. In parallel, the court’s decision in *Saúl Luciano Lliuya v. RWE*³⁰⁷ made clear that carbon majors such as RWE can, in principle, be held legally liable under German civil law for climate change impacts. It provides the critical legal groundwork for future climate litigation. Finally, based on the Inter-American Court of Human Rights Advisory Opinion,³⁰⁸ States must also implement targeted programs and allocate resources to highly exposed populations, including Indigenous peoples, coastal communities, and informal urban settlements. Together, these landmark decisions expand the legal accountability framework for States and corporations, increasing pressure to align climate policies with scientific evidence and justice principles.³⁰⁹

Climate–security nexus: Climate change is increasingly seen as a serious threat to human security, acting as a threat multiplier that exacerbates poverty, political instability, food and water insecurity, and displacement. Climate-related disasters disrupt livelihoods and undermine safety, dignity, and peace, making human security – a focus on individual rights and well-being – a central theme in climate discussions.³¹⁰ Institutional recognition has grown steadily. Since the UN Security Council’s first debate on the issue in 2007, key developments include the 2018 launch of the Group of Friends on Climate and Security, establishment of the UN Climate Security Mechanism in 2020 (comprising the UNDP, UNEP, DPPA, and DPO), and appointment of the first UN Special Rapporteur on human rights and climate change in 2022. At COP29, new partnerships were announced, including over USD 36 million from the UN Peacebuilding Fund for climate-related conflict prevention in 13 countries. **The COP28 Dec-**

301 NAP Central 2025.

302 IISD 2025.

303 UNFCCC 2024a.

304 Ibid.

305 As of mid-2025, 3,099 climate-related legal cases had been filed globally across nearly 60 jurisdictions, as reported in a comprehensive update by Norton Rose Fulbright in July 2025. de Wit and Stebbing 2025.

306 ICJ 2025.

307 Hamm Higher Regional Court 2025.

308 Inter-American Court of Human Rights 2025.

309 Klein and Schäfer 2025.

310 Schultheiß et al. 2025.

laration on Peace and Security and Climate³¹¹ links climate action with peacebuilding and humanitarian response, highlighting that fragile and conflict-affected countries, despite being the most vulnerable, receive the least climate finance. **The 2024 Baku Call on Climate Action for Peace, Relief and Recovery**, launched at COP29, reinforces these efforts, with a new coordination platform, the Baku Climate and Peace Action Hub.³¹² Climate change is now part of national and global security strategies. Countries including Germany, Brazil, and EU members, along with NATO, officially recognise climate risks as security threats.³¹³ In 2025, COP Executive Director Ana Toni and UNFCCC Executive Secretary Simon Stiell warned that failing to align climate and security policy could deepen inequality, displacement, and conflict. As Toni put it, ‘More rearmament without climate action risks more wars in the future.’³¹⁴

5.3 What COP30 needs to deliver to respond to CRI results

Based on the CRI results, COP needs to deliver the following key points:

1. Clear strategy for addressing and closing the ambition gap

The new round of national climate plans (in NDCs), which were due in September 2025, once again risks lacking ambition on mitigation and adaptation, despite their importance for limiting warming to 1.5°C and reducing impacts.³¹⁵ The CRI results show that vulnerable countries, with negligible historical emissions, continue to face the gravest consequences of insufficient action. COP30 must therefore deliver a political roadmap to close the ambition gap across all pillars of the Paris Agreement. Brazil, as the COP30 host, will

be pivotal, alongside key players such as the European Union and China. Possible approaches include:

- A high-level declaration reaffirming the Dubai Consensus (transition from fossil fuels, tripling renewables, doubling efficiency by 2030).
- A COP30 cover decision mandating ambitious NDC reviews, annual reporting, and follow-up until COP35.
- A ‘coalition of the willing’ drafting a roadmap for fossil fuel phaseout for adoption at COP31.

2. Closing the finance gap

Climate finance remains the cornerstone for Global South countries to address risks. COP29 set a New Collective Quantified Goal (NCQG) of USD 300 billion annually post-2025, with developed countries to lead. The sum does not include financing for measures for addressing L&D. The related COP decision³¹⁶ simultaneously recognised the need for at least USD 1.3 trillion per year and the Baku-to-Belém Roadmap was launched to mobilise this additional public and private finance, but the process remains vague and politically weak. At COP30, Parties must establish a transparent framework for developed countries’ individual finance commitments, including a new specific target for adaptation finance and time-bound pledges. A credible strategy to move toward the USD 1.3 trillion benchmark is essential, while recognising limits of private finance and the lack of innovative instruments for adaptation and L&D. Finally, COP30 must tackle structural inequities in the international financial architecture that prevent adequate flows to vulnerable countries.

3. The Global Goal on Adaptation: From Targets to Operationalisation

The Global Goal on Adaptation (GGA), with the UAE Framework for Global Climate Resilience as its political foundation, provides seven thematic including on water, food and agriculture, health, ecosystems and biodiversity, poverty and livelihoods, infrastructure and human settlements, and cultural heritage, and

311 UNFCCC 2023.

312 UNFCCC 2024b, UNFCCC 2024c.

313 See, for example, Germany’s national security strategy, Federal Foreign Office 2023.

314 The Guardian 2025a.

315 As of 29 September, only 51 (of 197) countries, accounting for 26% of global emissions, had published new NDCs (see <https://www.climatewatchdata.org/ndc-tracker>).

316 UNFCCC 2024a.

four iterative adaptation cycle targets, focusing on impact, vulnerability and risk assessments, planning, implementation, and monitoring and evaluation. COP30 must move beyond targets toward operationalisation. At SB62 in Bonn, Parties discussed a first set of measurable indicators, including for Means of Implementation (MoI) – finance, capacity building, and technology. A working list of 113 indicators now exists, but key issues remain unresolved, including how to track adaptation finance and private sector roles. Beyond indicators, the Baku Adaptation Roadmap and the concept of transformative adaptation (linking resilience with equity and development) need far greater attention. COP30 success will require:

- Adopting a robust and equitable indicators package – including MoI indicators on finance, capacity, and technology – consistent with the Paris Agreement.
- Establishing a politically backed Baku Adaptation Roadmap with concrete steps and milestones for scaling adaptation.
- Creating a space to integrate transformative adaptation and social equity into GGA operationalisation.
- Linking the GGA to a new global adaptation finance target to close the MoI gap.

4. Adequate support to address loss and damage (L&D)

Momentum for L&D has faded since the historic creation of the FrLD at COP27. COP29 failed to integrate L&D into the NCQG, leaving vulnerable countries exposed to escalating costs – estimated at USD 290–580 billion annually by 2030.³¹⁷ Current pledges to the FrLD remain symbolic (about USD 800 million by COP29) compared with actual needs. A decisive push is required at COP30. Parties need to:

- Finalise the third review of the Warsaw International Mechanism.
- Decide upon an L&D Gap Report (analogous to UNEP’s mitigation/adaptation gap reports) to build political momentum.
- Integrate L&D into the Baku-to-Belém Roadmap.
- Ensure that the FrLD develops a reliable replenishment cycle as well as operationalise direct access modalities to channel funds swiftly to affected communities.

317 Markandya et al. 2018.

6

Method³¹⁸

6.1 Objectives and scope

The CRI analyses climate-related extreme weather events' economic and human effects on countries and, thereby, measures the consequences of realised risks for countries. The index ranks countries based on their economic and human effect, with the most affected country ranked first. Climate science and significantly improved attribution science clearly show that climate change is affecting many extreme weather events' intensity, frequency, and duration. These events' impacts on, for example, economic costs and human health also are more clearly attributable to climate change.³¹⁹

The results and a high CRI rank should be taken as a warning signal for the respective countries. The strong connection between the increasing climate crisis and extreme weather events indicates hazards' potential to continue occurring and intensifying. Some changes are happening faster than scientists previously assessed, and every fraction of a degree of warming will intensify these impacts.

The CRI underwent a 2-year revision process (CRI 2025–2026). The current CRI applies a refined methodology for a more robust analysis (see 6.3). While this refinement of the normalisation method results in some differences with previous editions in the understanding of global distribution of countries' affectedness, the

overall findings and their interpretation as a warning signal remain consistent.

Aim of the CRI

The CRI aims to visualise how extreme weather events affected countries 1 year before publication and over the preceding 30 years. It simplifies the aggregation and understanding of climate impacts³²⁰ across different regions and time periods, bringing attention to nations that extreme weather events most severely affect. This index aims to contextualise climate policy debates and related policy processes with a view to the climate risks and impacts countries are facing. Apart from the ranking, the index brings forward concrete policy demands and formulates options for taking action, with a particular focus on the UN climate negotiations, debates, and processes on the climate–security nexus at different policy levels, and multilateral fora, such as G7 and G20.

Scope of the CRI

The CRI is a retrospective index based on past data and indicating 174 countries' realised risks. It is not intended for use as linear projection of future climate impacts or as a standalone source of information for planning risk management and adaptation measures. The index covers the degree of effect from extreme weather events – including hydrological, meteorological, and

318 A detailed description of the CRI methodology is available in Adil et al. 2025: Methodology of the Climate Risk Index. Germanwatch.

319 Otto 2023a.

320 The authors acknowledge that risks and impacts are subject to value judgements and based on cultural and social conceptualisation (see, for example, Farbotko and Campbell 2022).

climatological events – included in EM-DAT. In these categories,³²¹ the CRI includes seven hazard types.³²²

1. Hydrological

- Flood (including general, flash flood, riverine flood)
- Mass movement wet (including avalanches wet, landslides wet, mudslides wet, rockslides wet)

2. Meteorological

- Storm (including extra-tropical storm, tropical cyclone,³²³ severe weather, tornado, blizzard/winter storm, hail, derecho, lightning/thunderstorm, sand/dust storm, storm surge, wind action, connective)
- Extreme temperature (including severe winter conditions, heat wave, cold wave)

3. Climatological

- Wildfire (including wildfire general, forest fire)
- Drought
- Glacial lake outburst

6.2 Components and indicators

The CRI investigates hazards and their related impacts³²⁴ and, thus, countries' realised risks driven by extreme weather events. The index includes three hazard categories and seven hazards. Each hazard's impact factor is measured with three indicators, with each measured in absolute and relative terms.

Table 3: CRI indicator overview

CRI Indicators Overview		
1	Economic losses due to hazard	Absolute economic losses (in purchasing power parity)
		Relative economic losses due to hazard (per unit gross domestic product)
2	Fatalities ³²⁵ due to hazard	Absolute fatalities (absolute number)
		Relative fatalities (per 100,000 inhabitants)
3	Degree affected ³²⁶ due to hazard	Absolute affected (absolute number)
		Relative affected (per 100,000 inhabitants)

321 Following EM-DAT categorisation and definitions.

322 For definitions for all hazards included in the CRI, see: Adil et al. 2025: Methodology of the Climate Risk Index. Germanwatch.

323 Depending on its location and strength, a tropical cyclone can be called a hurricane, typhoon, tropical storm, cyclonic storm, tropical depression, or simply, a cyclone. Hurricanes are strong tropical cyclones that occur in the Atlantic Ocean or northeastern Pacific Ocean, and typhoons occur in the northwestern Pacific Ocean. When occurring in the Indian Ocean and South Pacific, comparable storms are referred to as tropical cyclones.

324 IPCC definition of impact: The consequences of realised risks on natural and human systems, where risks result from the interactions of climate-related hazards (including extreme weather and climate events), exposure, and vulnerability.

325 Fatalities include confirmed fatalities directly attributed to a disaster added to missing people whose whereabouts since the disaster are unknown and, therefore, they are presumed dead based on official figures.

326 Affected is the total number of injured, otherwise affected, and homeless people.

Relative and absolute indicators: While absolute numbers tend to more prominently represent populous or economically capable countries, relative values capture the proportional impacts on smaller and poorer countries. The CRI analysis is based on absolute and relative indicators in order to consider both effects. With double-weighting in the average ranking of all indicators generating the CRI score, more emphasis and, therefore, greater importance is placed on the relative indicators. Identifying relative values in the index represents an important complement to the otherwise often-dominating absolute values, as it enables analysis of country-specific data on economic damage in relation to real conditions and capacities in the countries. Clearly, for example, economic damage of USD 1 billion causes much less severe relative economic consequences for richer countries, such as the United States and Japan, than for poorer countries, where economic damage often is a substantial share of the annual GDP.

Use of purchasing power parity values for a more comprehensive estimation of how different societies are affected: Absolute economic losses are counted in purchasing power parity (PPP) values. These values enable a more appropriate expression of how a loss of USD 1 actually affects people compared with using nominal exchange rates. PPP measures the price of specific goods in different countries and is used to compare the absolute purchasing power of the countries' currencies. For example, this means a farmer in India can buy a greater amount of crops with USD 1 than a farmer in the United States. Thus, the same nominal damage's relative economic impact is much higher in India.

Influence of economic and population growth on results: Note that values and, thus, country rankings in the CRI regarding the respective indicators may not only change because of extreme weather events' absolute impacts, but also because of economic and population growth or decline. If, for example, population increases (as in most countries), the same absolute number of deaths leads to a relatively lower CRI relative fatalities rank in the following year. The same relation applies for economic growth. However, this effect does not diminish this approach's significance. Society's ability to cope with damage through disaster risk management generally grows as economic strength

increases, because greater resources often allow for better preparedness and response measures. Nevertheless, improved ability does not necessarily imply stronger implementation of effective preparation and response measures, or that such measures are applied equitably across different regions or communities in a country.

6.3 Calculating the CRI score

The CRI combines several indicators that measure disaster impacts in markedly different ways: absolute fatalities, number of people affected, and absolute economic losses, as well as relative values (in relation to population size and GDP). These indicators cannot simply be added together in their raw form because they are expressed in different units and on very different scales. To enable comparability, each indicator is first rescaled to a common 0–1 range.

In the last edition of the CRI, this rescaling was applied directly to the original values. While this approach ensured comparability, it also meant that extremely large values in a single year or for one indicator could dominate the results. For example, the exceptionally high heat-related fatalities recorded in Italy, Spain, and Greece in 2022 pushed these countries into the top 10 of the 30-year ranking, despite much lower impacts in most other years.

We refined the method, applying a logarithmic transformation before rescaling. This refinement reduces extreme values' weights while keeping their signal visible. As a result, one exceptional year (e.g. the 2022 heat wave) no longer overshadows three decades of data, and a single indicator (e.g. fatalities or losses) cannot disproportionately outweigh the others. This adjustment ensures that the index reflects long-term patterns and preserves the balance intended in the weighting scheme (e.g. between fatalities and affectedness, or between absolute and relative values). The methodological refinement produces a ranking less sensitive to outliers and more representative of sustained climate impacts across countries.

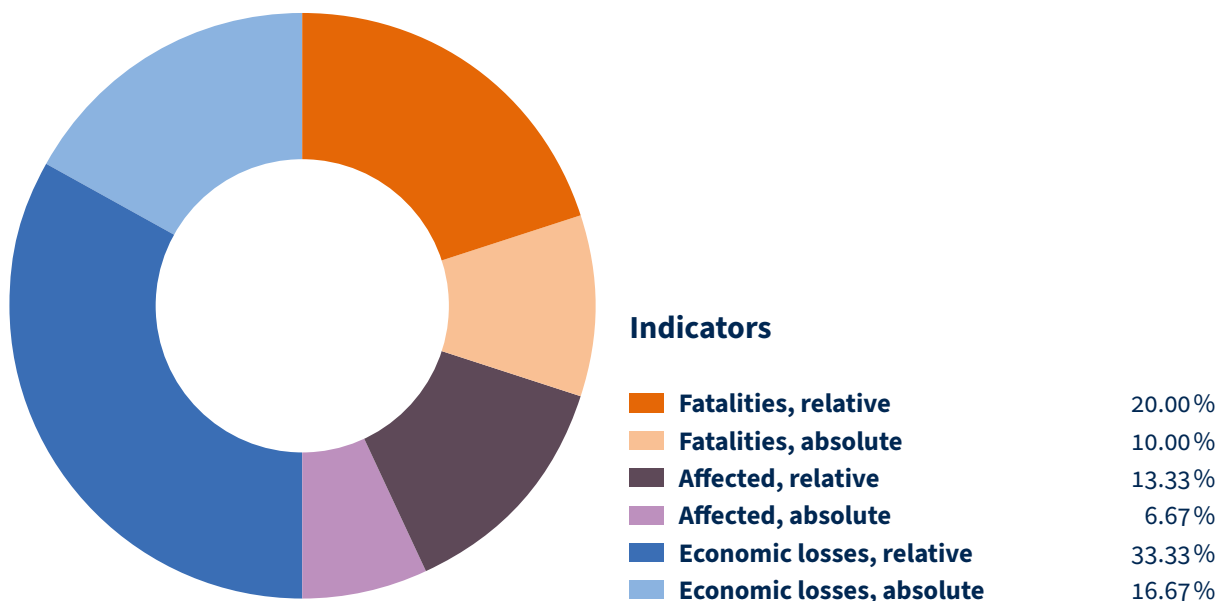
The CRI uses the following procedure for converting raw data into an index and calculating the CRI score, based on the process developed by the EU Competence Centre on Composite Indicators and Scoreboards.³²⁷

327 European Commission 2024.

Figure 13: Calculating the CRI score

- 1** Raw data from sources is selected (for sources see References and Annex). Data errors (i.e. tabulation errors coming from the source) are identified and corrected at this stage.
- 2** An indicator is labelled as 'missing' for a country if data is missing for one or more years. This particular indicator will not be considered in the averaging process. The raw data was selected to cover a high number of UN countries.
- 3** The original values in CRI indicators undergo a logarithmic transformation and are then normalised by determining the distance from the group leader. In this process, 100 is assigned to the leading country, while other countries are ranked as percentage points behind the leader.
- 4** The absolute economic and human loss indicators are weighted 1/6 (16.67%). The relative economic and human loss indicators are weighted 2/6 (33.33%). The human loss indicator consists of fatalities (weighted with 3/5 (60%)) and people affected (weighted with 2/5 (40%)).
- 5** The CRI score is calculated as follows: **CRI score** = $[3/5 \times (\text{Absolute number of fatalities}) + 2/5 \times (\text{Absolute number of people affected})] \times 1/6 + [3/5 \times (\text{Relative number of fatalities}) + 2/5 \times (\text{Relative number of people affected})] \times 2/6 + (\text{Absolute economic losses}) \times 1/6 + (\text{Relative economic losses}) \times 2/6$

Figure 14: CRI indicators and weighting



6.4 Time frames

The CRI ranking addresses two time frames.

The **short-term ranking** considers impacts of extreme weather events that occurred one year before publication.

The **long-term ranking** is based on average values over a 30-year period, which was chosen to cover a climate-relevant timeframe. This ranking makes it possible to see extreme-weather events' long-term degree of effect on countries. It shows this degree of effect from unusually extreme events and recurring extreme weather events.

Table 4: Climate Risk Index time frames

Short-term CRI	Most impacted countries in last year (2024 for CRI 2026)
Long-term CRI	Most impacted countries over the preceding 30 years (1995–2024 for CRI 2026)

6.5 Limitations of the index

The CRI should be seen as an analysis that helps explain the degree to which countries are affected by climate-related impacts and risks, based on the best publicly available historical dataset on extreme weather events' impacts and on other analysis.³²⁸ The CRI does not provide an all-encompassing analysis of countries' realised or future risks of anthropogenic climate change. This index uses data that represent current and past natural climate variability and climate change to the extent that it has already left a footprint on climate variability over the preceding 30 years.

Hazards and impacts:³²⁹ For collecting data, EM-DAT uses a threshold for defining which events to include in the database. One of the following criteria must be satisfied for inclusion:

- 10+ reported deaths
- 100+ people reported affected
- State of emergency declared
- Call for international assistance

An international appeal for assistance, however, takes first precedence for entry, even if the first two criteria are not fulfilled.³³⁰ Events that do not satisfy the out-

lined criteria are not included in the database and, therefore, also not in the CRI.

Phenomena included in the CRI

Climate change's effects can be divided into slow-onset processes and rapid-onset events in accordance with the temporal scale over which they occur and the differing speed of their impacts' manifestation.

The CRI analysis only incorporates extreme weather (rapid-onset) events, including hydrological events, such as floods and mass movements, meteorological events, such as storms and temperature extremes, and climatological events, such as wildfires, glacial lake outburst floods, and drought. The CRI does not include slow-onset processes, which are taken as 'phenomena caused or intensified by anthropogenic climate change that take place over prolonged periods of time – typically years, decades, or even centuries – without a clear start or end point.'³³¹ Slow-onset processes include increasing mean temperatures, sea level rise, ocean acidification, glacial retreat, permafrost degradation, salinisation, land and forest degradation, desertification, decreasing precipitation, and loss of biodiversity (see IPCC 2022, UNFCCC 2012, UNU 2017). Such processes cannot be included because of limited data available on their economic and human effects.

328 Notre Dame Global Adaptation Initiative 2024.

329 EM-DAT Project 2022.

330 Sapir and Misson 1992.

331 Schäfer 2023.

Geological events, including earthquakes, volcanic eruptions, and tsunamis, which are weather-independent, are also excluded and, thus, not attributable to climate change.

Level

The CRI compares how countries are affected at the national level. It does not allow for conclusions about damage distribution below that level.

Climate change parameters

The CRI's event-related examination does not allow for assessment of continuous changes of important climate parameters. For example, the CRI cannot show a long-term decline in precipitation that was shown in some African countries and resulting from climate change. Nevertheless, such parameters often greatly influence significant development factors, such as agricultural output and drinking water availability.

Impacts covered

Lagged impacts that manifest substantially later than when an event occurred (e.g. a person's death due to injuries resulting from an event's impacts, or downstream economic damage due to the loss of economic buffers or loss of income in the recovery phase of affected people³³²) may not be included in the CRI calculations. Climate change-related extreme weather events can cause both economic (including [a] physical assets and [b] income) and non-economic L&D (including [a] material and [b] non-material forms).³³³ The index covers a broad range of economic and non-economic L&D. Measuring non-economic L&D is particu-

larly challenging; therefore, the index does not cover some forms of this L&D (e.g. loss of heritage, identity, or culture).

Data updates and time lag

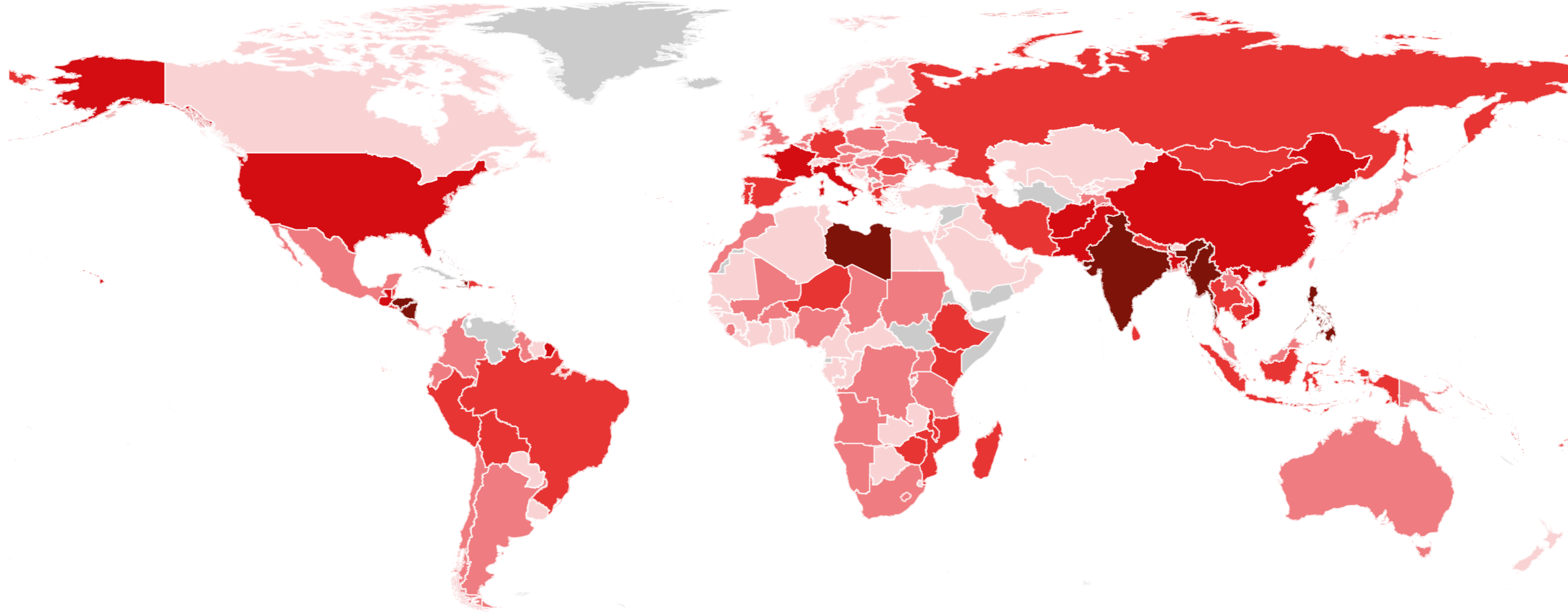
EM-DAT is continuously updated as new information becomes available. These updates include corrections and filling of data gaps, and sometimes include revisions to events that occurred many years ago. The current analysis, therefore, represents a snapshot of extreme weather events' economic and human effects based on the database at the time of this publication. Future updates may slightly alter historical values, but such revisions do not affect the overall validity of the long-term trends and findings presented here.

332 See, for example, Sauer et al. 2023.

333 Serdeczny 2018.

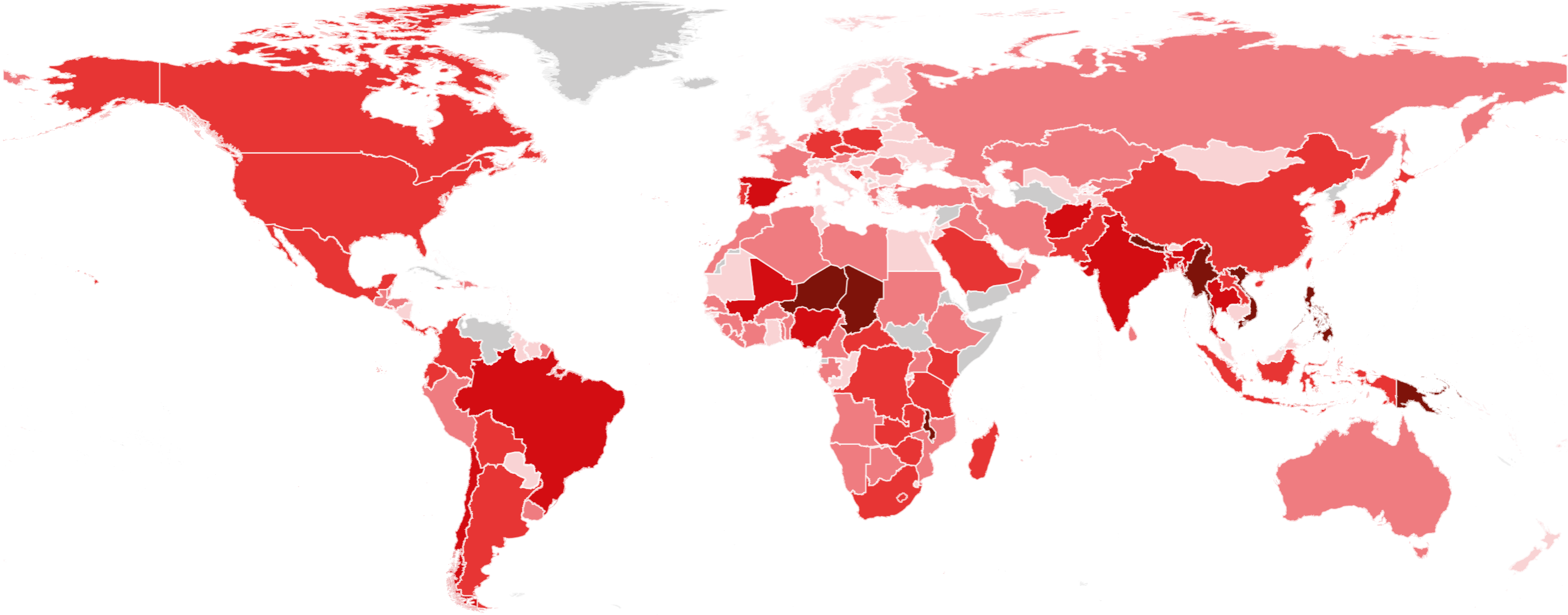


**Climate Risk Index:
Most Affected Countries 1995–2024**



- >100
- 51–100
- 21–50
- 11–20
- 1–10
- No Data

**Climate Risk Index:
Most Affected Countries 2024**



- >100
- 51-100
- 21-50
- 11-20
- 1-10
- No Data

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Annex

Country	Rank 2024	Rank 1995–2024	Rank 2023	Rank 1994–2023
Albania	141	68	54	64
Algeria	92	110	73	107
Angola	71	90	52	94
Antigua and Barbuda	138	72	174	70
Argentina	40	99	27	99
Armenia	57	128	90	126
Australia	55	69	99	65
Austria	93	100	68	96
Azerbaijan	129	119	174	117
Bangladesh	13	13	21	13
Barbados	86	157	110	156
Belarus	159	141	116	138
Belgium	142	55	49	52
Belize	95	38	174	36
Benin	90	124	174	120
Bhutan	110	137	174	132
Bolivia	41	44	34	40
Bosnia and Herzegovina	32	101	91	101
Botswana	77	130	81	128
Brazil	12	40	15	44
Bulgaria	170	56	24	54
Burkina Faso	99	98	174	91
Burundi	63	103	82	100
Cambodia	167	43	102	37
Cameroon	61	121	63	123
Canada	49	106	29	104
Cape Verde	166	139	174	135

Country	Rank 2024	Rank 1995–2024	Rank 2023	Rank 1994–2023
Central African Republic	35	115	101	158
Chad	3	62	174	98
Chile	16	87	18	93
China	30	11	14	10
Chinese Taipei	48	70	58	67
Colombia	26	54	74	53
Comoros	76	132	174	129
Costa Rica	31	78	174	81
Côte d'Ivoire	98	169	174	168
Croatia	123	67	26	61
Cyprus	101	143	62	143
Czech Republic	22	57	85	58
Democratic Republic of Congo	43	75	17	75
Democratic Republic of Timor-Leste	171	127	174	125
Denmark	135	150	89	148
Djibouti	133	148	174	147
Dominica	152	1	174	1
Dominican Republic	83	37	20	34
Ecuador	33	92	19	92
Egypt	132	154	174	152
El Salvador	72	36	111	35
Estonia	122	131	72	127
Eswatini	140	134	174	130
Ethiopia	62	47	43	46
Fiji	163	30	57	29
Finland	125	172	95	172
France	97	12	8	11
Gabon	85	167	103	167
Georgia	124	109	41	106
Germany	50	29	50	30

Country	Rank 2024	Rank 1995–2024	Rank 2023	Rank 1994–2023
Ghana	113	113	83	111
Greece	65	28	4	27
Grenada	2	6	174	12
Guatemala	60	17	28	17
Guinea	73	164	79	165
Guinea-Bissau	160	165	174	164
Guyana	157	73	174	69
Haiti	58	5	9	5
Honduras	75	3	71	3
Hungary	134	77	88	74
India	15	9	10	8
Indonesia	27	48	38	47
Iraq	91	118	120	116
Ireland	148	152	108	150
Islamic Republic of Afghanistan	14	19	47	22
Islamic Republic of Iran	69	46	109	45
Israel	128	114	174	112
Italy	104	16	3	16
Jamaica	11	84	174	95
Japan	34	71	100	68
Jordan	165	147	113	145
Kazakhstan	80	122	112	121
Kenya	45	39	40	42
Kiribati	136	161	174	161
Korea, Republic of	46	91	84	85
Kuwait	158	174	174	173
Kyrgyz Republic	70	117	174	115
Lao People's Democratic Republic	24	66	25	66
Latvia	161	151	65	149
Lebanon	64	159	56	159

Country	Rank 2024	Rank 1995–2024	Rank 2023	Rank 1994–2023
Lesotho	149	156	48	155
Liberia	78	168	174	169
Libya	88	4	1	4
Lithuania	172	146	66	144
Luxembourg	150	126	92	124
Madagascar	29	42	23	39
Malawi	8	25	2	26
Malaysia	112	86	77	83
Maldives	144	171	174	171
Mali	18	89	174	154
Malta	146	170	64	170
Marshall Islands	68	135	174	134
Mauritania	114	112	97	109
Mauritius	67	129	96	137
Mexico	28	51	12	50
Micronesia	151	58	51	55
Moldova	156	88	118	84
Mongolia	130	33	39	31
Montenegro	120	163	86	163
Morocco	96	83	174	80
Mozambique	53	23	31	23
Myanmar	9	2	6	2
Namibia	66	64	105	63
Nepal	6	26	98	28
Netherlands	81	74	94	71
New Zealand	102	142	16	139
Nicaragua	109	8	174	7
Niger	5	50	55	57
Nigeria	19	61	70	62
North Macedonia	154	97	174	90

Country	Rank 2024	Rank 1995–2024	Rank 2023	Rank 1994–2023
Norway	145	155	114	153
Oman	74	125	174	122
Pakistan	47	15	59	15
Panama	44	120	174	118
Papua New Guinea	4	63	174	77
Paraguay	169	102	67	97
Peru	54	31	13	32
Philippines	7	7	11	6
Poland	42	81	93	78
Portugal	39	27	33	25
Puerto Rico	127	32	174	33
Qatar	117	166	174	166
Republic of Congo	131	136	35	131
Romania	84	49	45	48
Russia	51	21	32	19
Rwanda	105	95	46	89
Samoa	137	123	174	119
Saudi Arabia	36	133	174	142
Senegal	87	108	174	105
Serbia	173	80	30	76
Seychelles	115	138	174	133
Sierra Leone	89	93	115	87
Slovak Republic	82	111	78	108
Slovenia	162	45	5	43
Solomon Islands	111	96	76	88
South Africa	37	53	87	51
Spain	20	24	7	24
Sri Lanka	52	41	60	41
St. Kitts and Nevis	121	60	174	59
St. Lucia	119	94	174	86

Country	Rank 2024	Rank 1995–2024	Rank 2023	Rank 1994–2023
St. Vincent and the Grenadines	1	35	107	73
Sudan	59	59	174	56
Suriname	126	145	174	141
Sweden	168	153	119	151
Switzerland	108	105	36	102
Tajikistan	107	52	117	49
Tanzania	23	82	37	113
Thailand	17	22	69	21
The Bahamas	118	10	174	9
The Gambia	174	158	174	157
Togo	94	162	174	162
Tonga	164	76	174	72
Trinidad and Tobago	116	144	174	140
Tunisia	155	149	174	146
Turkey	100	107	42	103
Tuvalu	139	160	174	160
Uganda	56	79	106	79
Ukraine	143	85	104	82
United Arab Emirates	103	173	174	174
United Kingdom	106	65	75	60
United States of America	21	18	22	20
Uruguay	79	116	53	114
Uzbekistan	147	140	174	136
Vanuatu	153	20	44	18
Vietnam	10	14	61	14
Zambia	38	104	80	110
Zimbabwe	25	34	121	38