Social crisis & migrations

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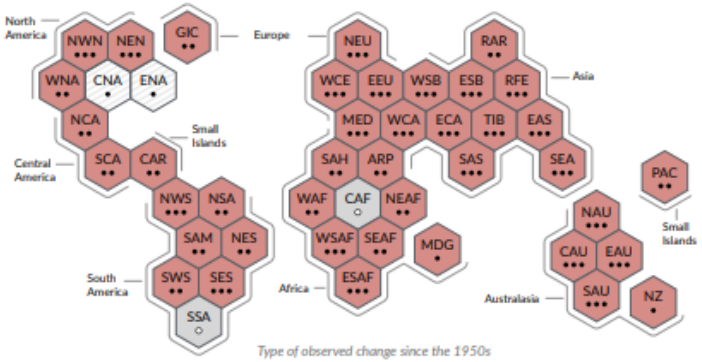
Climate change is already affecting every inhabited region across the globe with human influence contributing to many observed changes in weather and climate extremes

a) Synthesis of assessment of observed change in **hot extremes** and confidence in human contribution to the observed changes in the world's regions

Type of observed change in hot extremes
- Increase (41)
- Decrease (0)
- Low agreement in the type of change (2)
- Limited data and/or literature (2)

Confidence in human contribution to the observed change
- ●●● High
- ●● Medium
- ● Low due to limited agreement
- ○ Low due to limited evidence

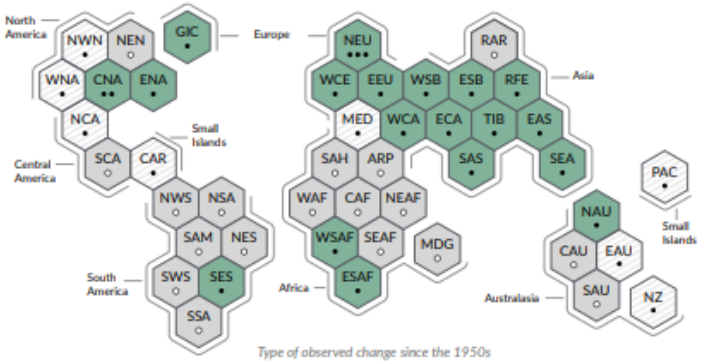


Type of observed change since the 1950s

b) Synthesis of assessment of observed change in **heavy precipitation** and confidence in human contribution to the observed changes in the world's regions

Type of observed change in heavy precipitation
- Increase (19)
- Decrease (0)
- Low agreement in the type of change (8)
- Limited data and/or literature (18)

Confidence in human contribution to the observed change
- ●●● High
- ●● Medium
- ● Low due to limited agreement
- ○ Low due to limited evidence

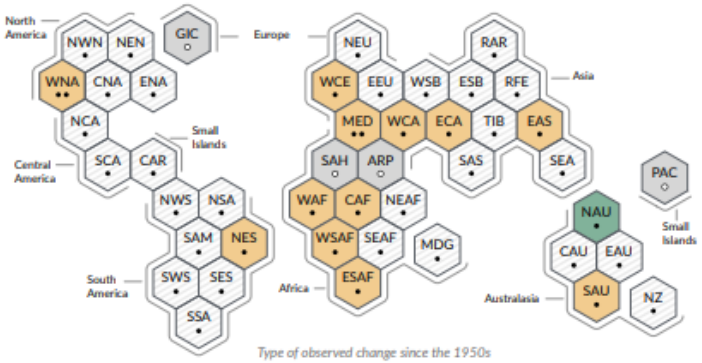


Type of observed change since the 1950s

c) Synthesis of assessment of observed change in **agricultural and ecological drought** and confidence in human contribution to the observed changes in the world's regions

Type of observed change in agricultural and ecological drought
- Increase (12)
- Decrease (1)
- Low agreement in the type of change (28)
- Limited data and/or literature (4)

Confidence in human contribution to the observed change
- ●●● High
- ●● Medium
- ● Low due to limited agreement
- ○ Low due to limited evidence



Type of observed change since the 1950s

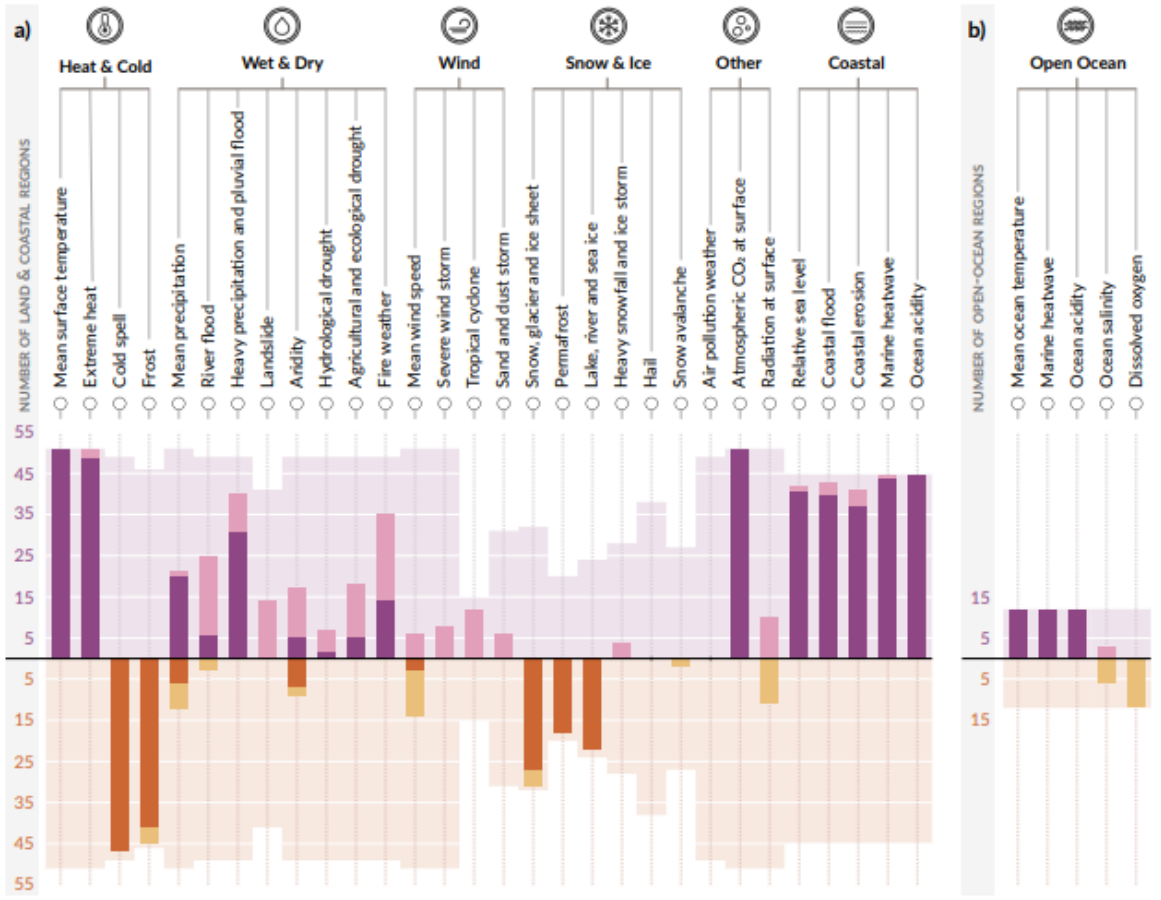
Source: IPCC (2021) Climate Change 2021 The Physical Science Basis

Multiple climatic impact-drivers are projected to change in all regions of the world

Climatic impact-drivers (CIDs) are physical climate system conditions (e.g., means, events, extremes) that affect an element of society or ecosystems. Depending on system tolerance, CIDs and their changes can be detrimental, beneficial, neutral, or a mixture of each across interacting system elements and regions. The CIDs are grouped into seven types, which are summarized under the icons in the figure. All regions are projected to experience changes in at least 5 CIDs. Almost all (96%) are projected to experience changes in at least 10 CIDs and half in at least 15 CIDs. For many CIDs there is wide geographical variation in where they change and so each region are projected to experience a specific set of CID changes. Each bar in the chart represents a specific geographical set of changes that can be explored in the WGI Interactive Atlas.

interactive-atlas.ipcc.ch

Number of land & coastal regions (a) and **open-ocean regions** (b) where each **climatic impact-driver** (CID) is projected to increase or decrease with ***high*** *confidence* (dark shade) or ***medium*** *confidence* (light shade)



BAR CHART LEGEND

- Regions with ***high*** *confidence* increase
- Regions with ***medium*** *confidence* increase
- Regions with ***high*** *confidence* decrease
- Regions with ***medium*** *confidence* decrease

LIGHTER-SHADED 'ENVELOPE' LEGEND

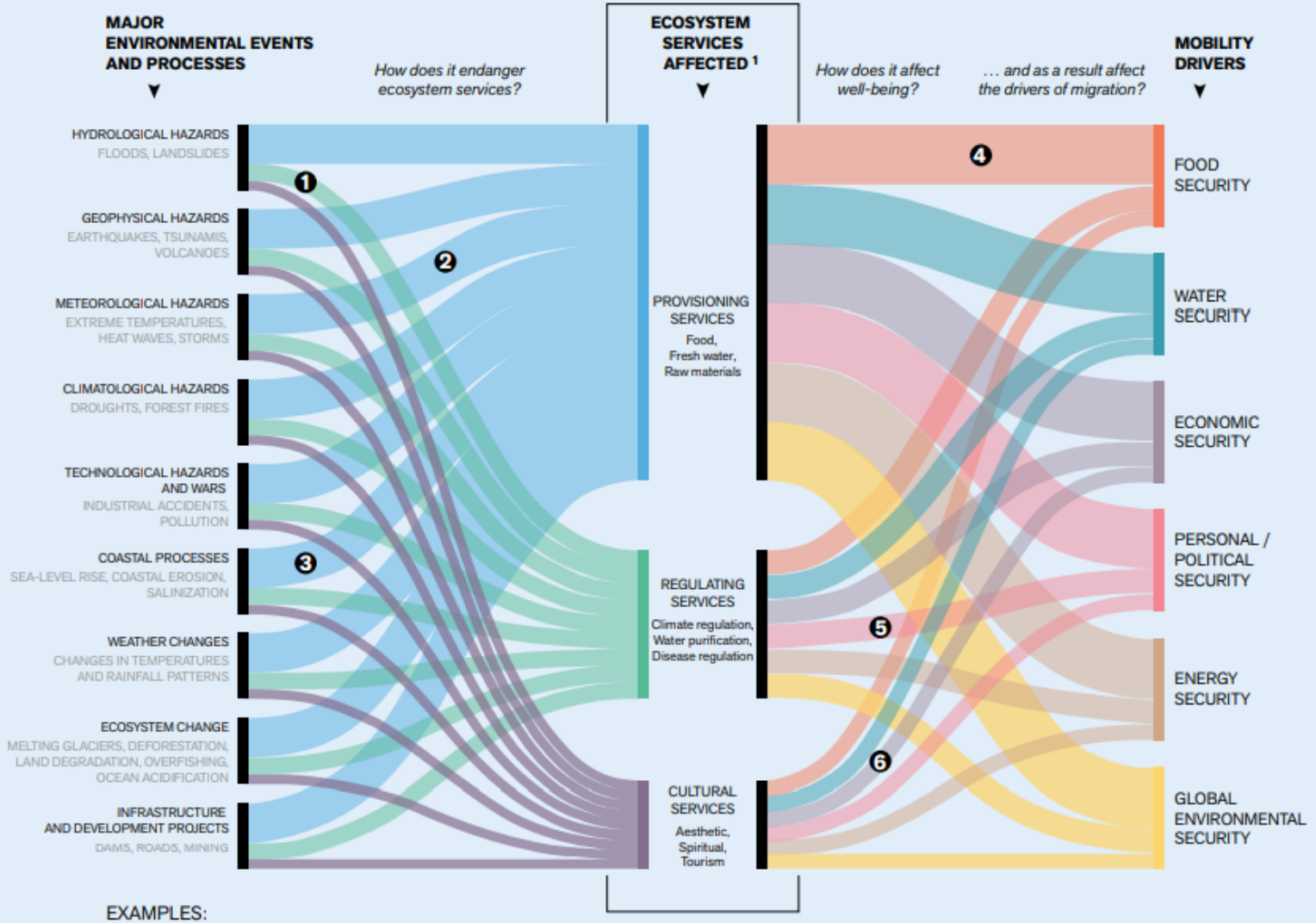
The height of the lighter shaded 'envelope' behind each bar represents the maximum number of regions for which each CID is relevant. The envelope is symmetrical about the x-axis showing the maximum possible number of relevant regions for CID increase (upper part) or decrease (lower part).

ASSESSED FUTURE CHANGES

Changes refer to a 20–30 year period centred around 2050 and/or consistent with 2°C global warming compared to a similar period within 1960-2014 or 1850-1900.

Source: IPCC (2021) Climate Change 2021 The Physical Science Basis

Links between environmental change, ecosystems and human mobility



EXAMPLES:

1. Cyclone destroying mangrove > jeopardizing protection from future hazards
2. Loss of agricultural land > crop yield decrease
3. Sea-level rise and salt-water intrusion > freshwater resources affected
4. Loss of crops > famine and malnutrition
5. Epidemics > public health risks (and potential social unrest)
6. Tourism affected > job losses

1. Ecosystem services are the direct and indirect contributions of ecosystems to human well-being. These services are grouped into four categories: Provisioning, Regulating, Cultural, and Supporting services. Supporting services, as overarching services, are not represented in this diagram.

The arrows' width does not represent an exact number (this is a conceptual diagram).

Source: Millennium Ecosystem Assessment (2005)

© IOM (Mokhnacheva, Ionesco), Gemenne, Zoï Environment Network, 2015

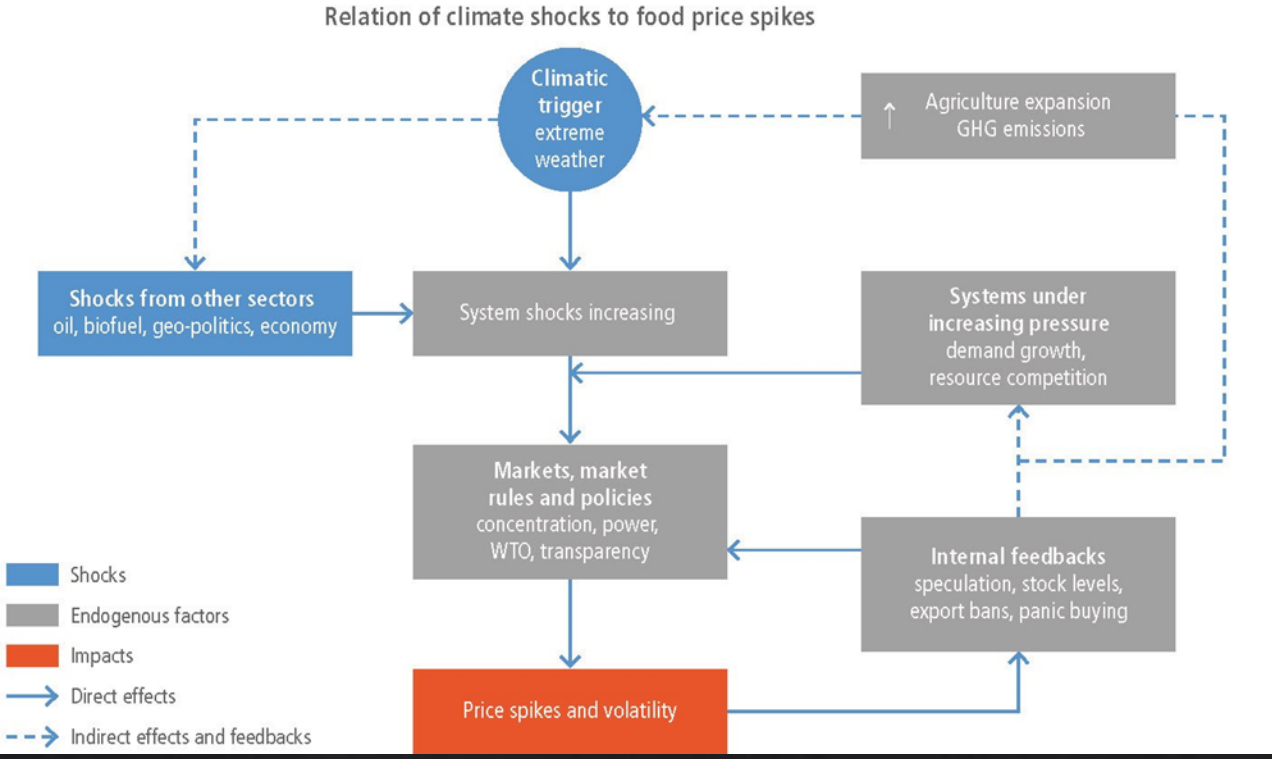
Source: IOM, WMR 2022

Social crisis

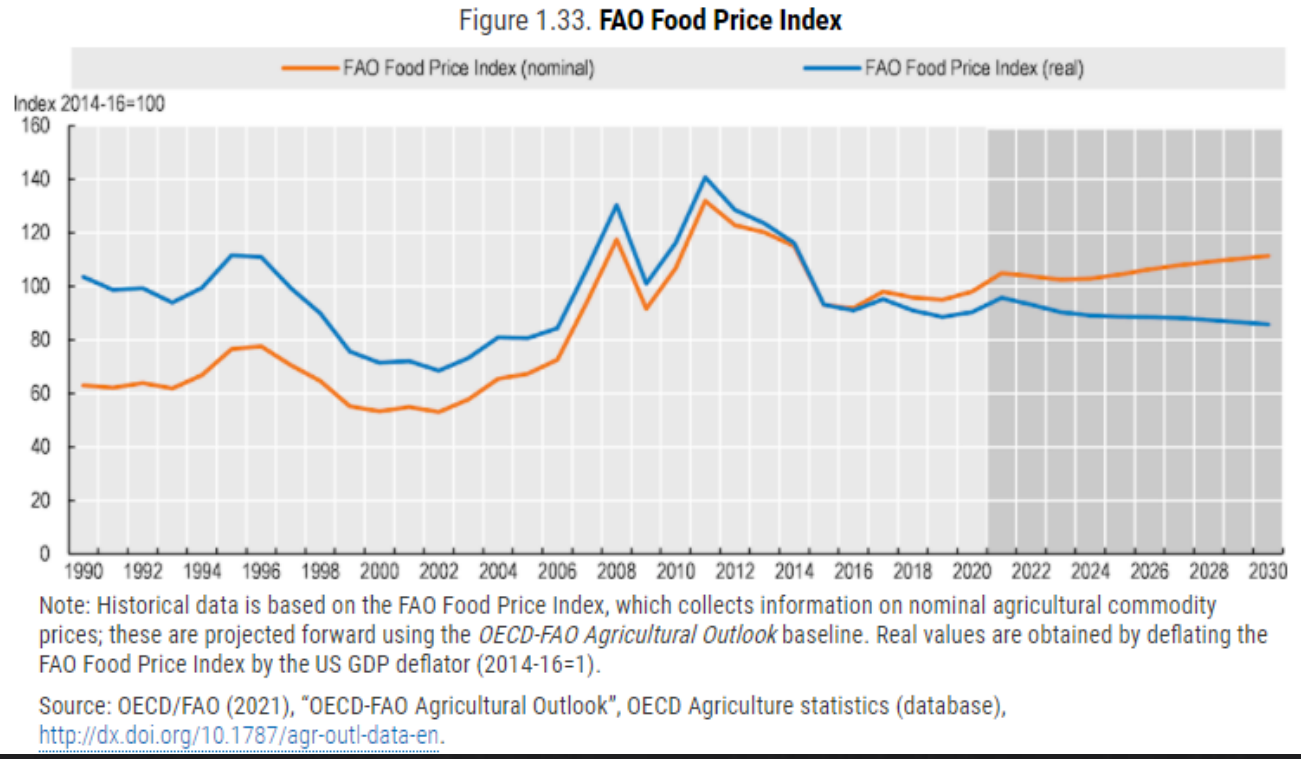
The impacts of 1.5°C of warming would disproportionately affect disadvantaged and vulnerable populations through **food insecurity, higher food prices, income losses, lost livelihood opportunities, adverse health impacts and population displacements**.

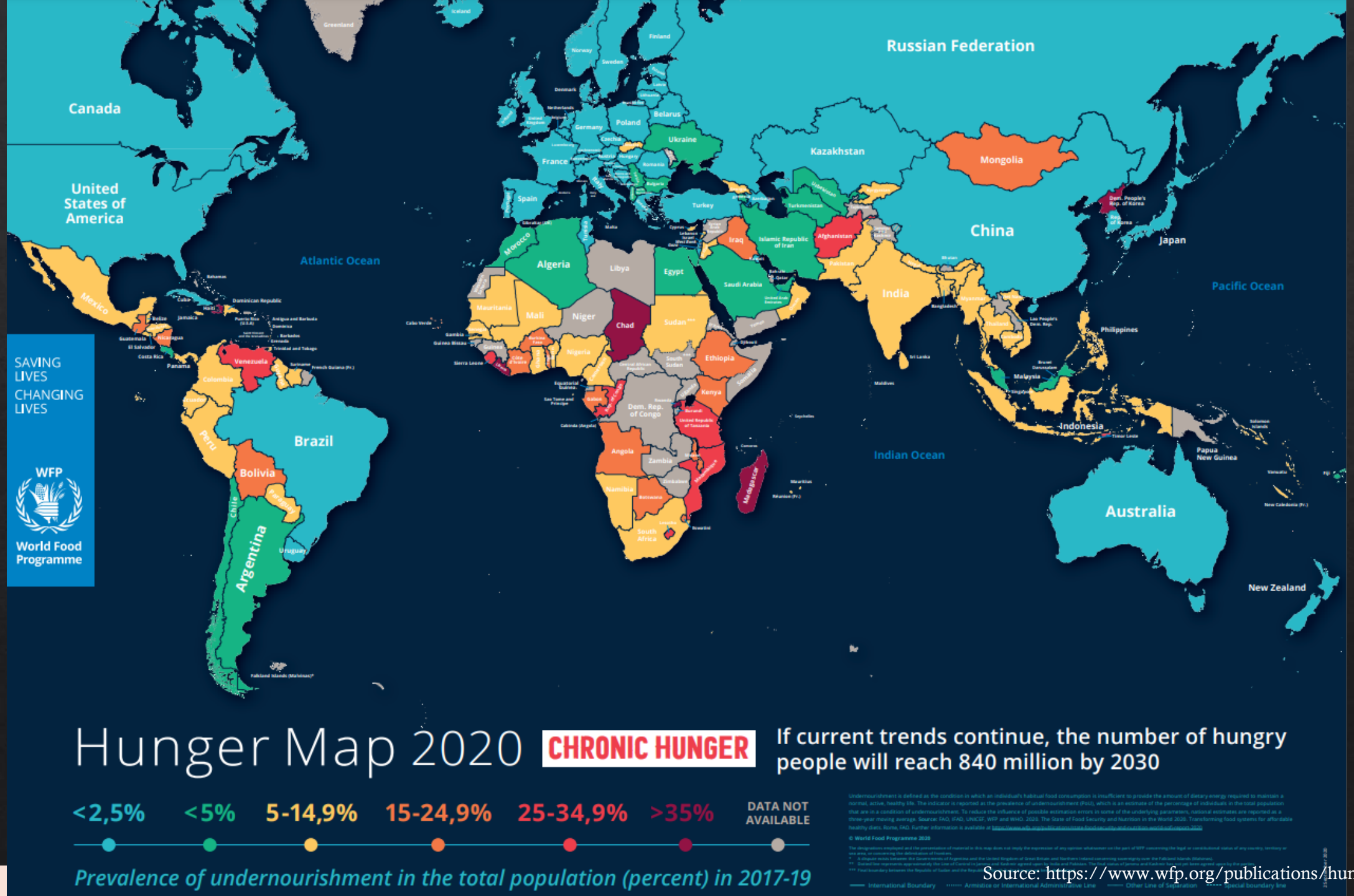
Source: IPCC (2019) Global warming of 1.5°C

Higher food prices



Source: IPCC (2020) Climate Change and Land





Hunger Map 2020

CHRONIC HUNGER

If current trends continue, the number of hungry people will reach 840 million by 2030

<2,5% | <5% | 5-14,9% | 15-24,9% | 25-34,9% | >35% | DATA NOT AVAILABLE

Prevalence of undernourishment in the total population (percent) in 2017-19

Source: https://www.wfp.org/publications/hunger-map-2020

Figure 2: Global water stress hotspots. Hotspot areas are those classified by FAO[24] as water scarce and by WRI[25] as areas with high or extremely high-water stress.

Migration

Climate warming has unequal impacts on different people and places as a result of differences in regional climate changes, vulnerabilities and impacts, and these differences then result in unequal impacts on sustainable development and poverty

Source: IPCC (2019) Global warming of 1.5°C

5 key drivers of migration

- Economic
- Social
- Political
- Demographic
- Environmental

Environmental	The environment affects well-being through the availability and stability of, and access to, ecosystem services, and through the occurrence of hazardous events. The availability of provisioning ecosystem services is particularly acute for economies dependent on agriculture, fisheries and forestry, which are predominant in rural parts of the developing world. Here a change in ecosystem services directly affects well-being and the demand for migration[78]. In addition, rapid-onset extreme environmental events, such as floods, landslides and wildfires, as well as volcanic eruptions, earthquakes and tsunamis, trigger displacement: significant numbers of people are displaced in the short and long term every year[79]. Migration is but one of several possible responses to extreme events, and displacement is usually the option of last resort[80]. Who leaves, who returns, and when they return depends on the underlying social, economic and political circumstances. Hence, environment affects migration in combination with the other four drivers.

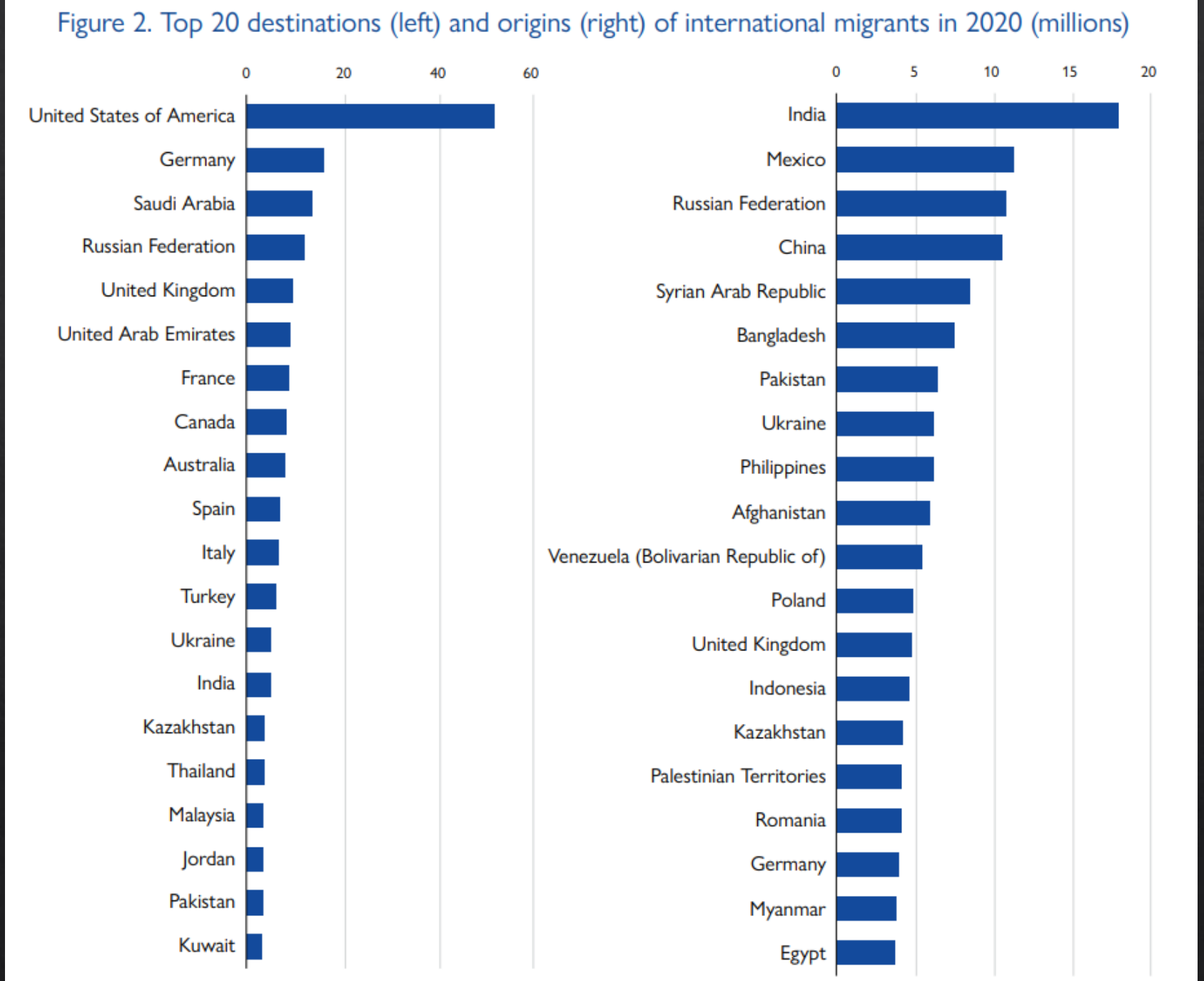
Source: The UK Government Office for Science in London (2011) Migration and Global Environmental Change. Final Project Report

Climate migration refers to "the movement of a person or groups of persons who, predominantly for reasons of sudden or progressive change in the environment due to climate change, are obliged to leave their habitual place of residence, or choose to do so, either temporarily or permanently, within a State or across an international border"

Climate migration is thus a subcategory of environmental migration; it defines a singular type of environmental migration, where the change in the environment is due to climate change.

Source: https://environmentalmigration.iom.int/environmental-migration

Directions



Source: IOM (2021) *WORLD MIGRATION REPORT 2022*

In this visualization, the **migration corridors** are represented as lines sized according to the number of **immigrants from a country (on the left)** who were **residing in another country (on the right)** in 2020.

The largest corridors tend to be from developing countries to larger economies such as those of the United States, France, the Russian Federation, the United Arab Emirates and Saudi Arabia. Here are the **top twenty corridors**.

Source: https://worldmigrationreport.iom.int/wmr-2020-interactive/

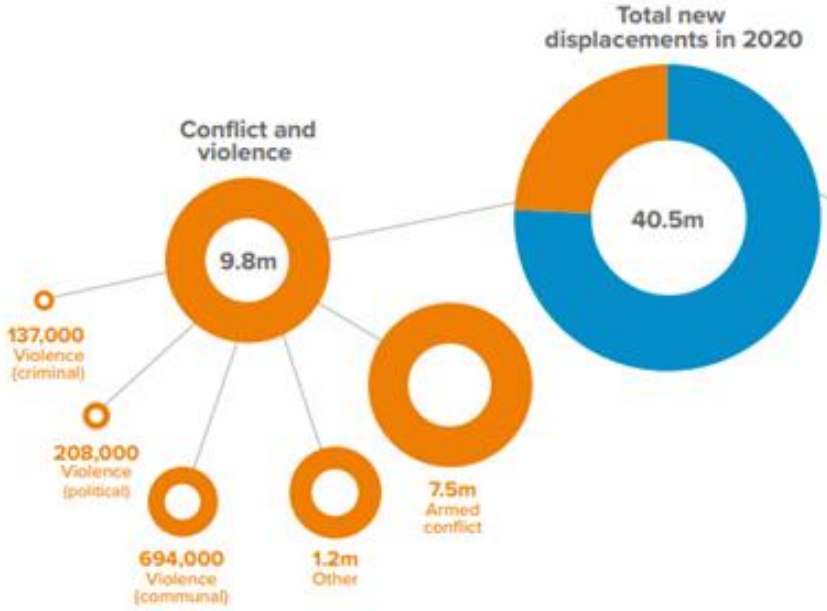


Figure 7: New displacements in 2020: breakdown for conflict and disasters

Disasters triggered more than three-quarters of the new displacements recorded worldwide in 2020, accounting for 30.7 million. More than 98 per cent were the result of weather-related hazards such as storms and floods. The majority of conflict displacements were triggered by armed conflict, but communal violence accounted for a significant proportion of the global total of 9.8 million.

Geolocated data shows that although internal displacement is a global challenge, it tends to be concentrated not only in some regions or countries but in certain areas within them. For conflict, these included Syria's northern governorate of Idlib, border areas between Burkina Faso, Mali and Niger, and eastern provinces of DRC. Disaster displacement was highly concentrated in the Bay of Bengal and the Caribbean basin, where tropical cyclones forced millions to flee.

Figure 8: Conflict displacements in 2020 by location

The boundaries, names and the designations used on these maps do not imply official endorsement or acceptance by IDMC.

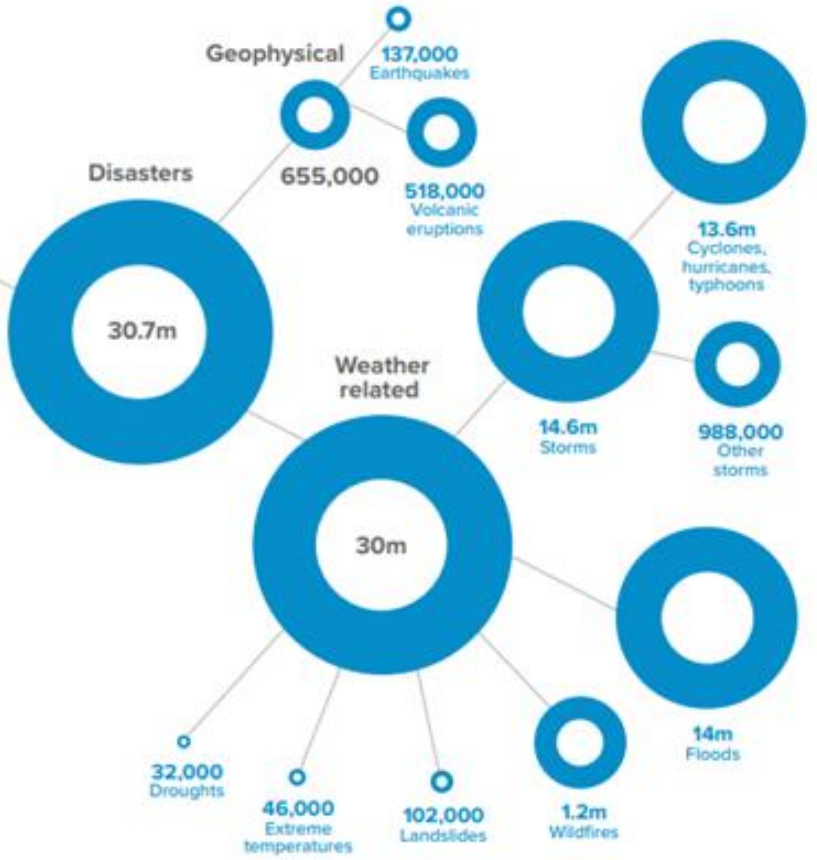


Figure 9: Disaster displacements in 2020 by location

Due to rounding, some totals may not correspond with the sum of the separate figures.

Source: Internal Displacement Monitoring Centre (2021) Global Report on Internal Displacement 2021

Who will suffer the most?

Some of the worst impacts on sustainable development are expected to be felt among agricultural and coastal dependent livelihoods, indigenous people, children and the elderly, poor labourers, poor urban dwellers in African cities, and people and ecosystems in the Arctic and Small Island Developing States

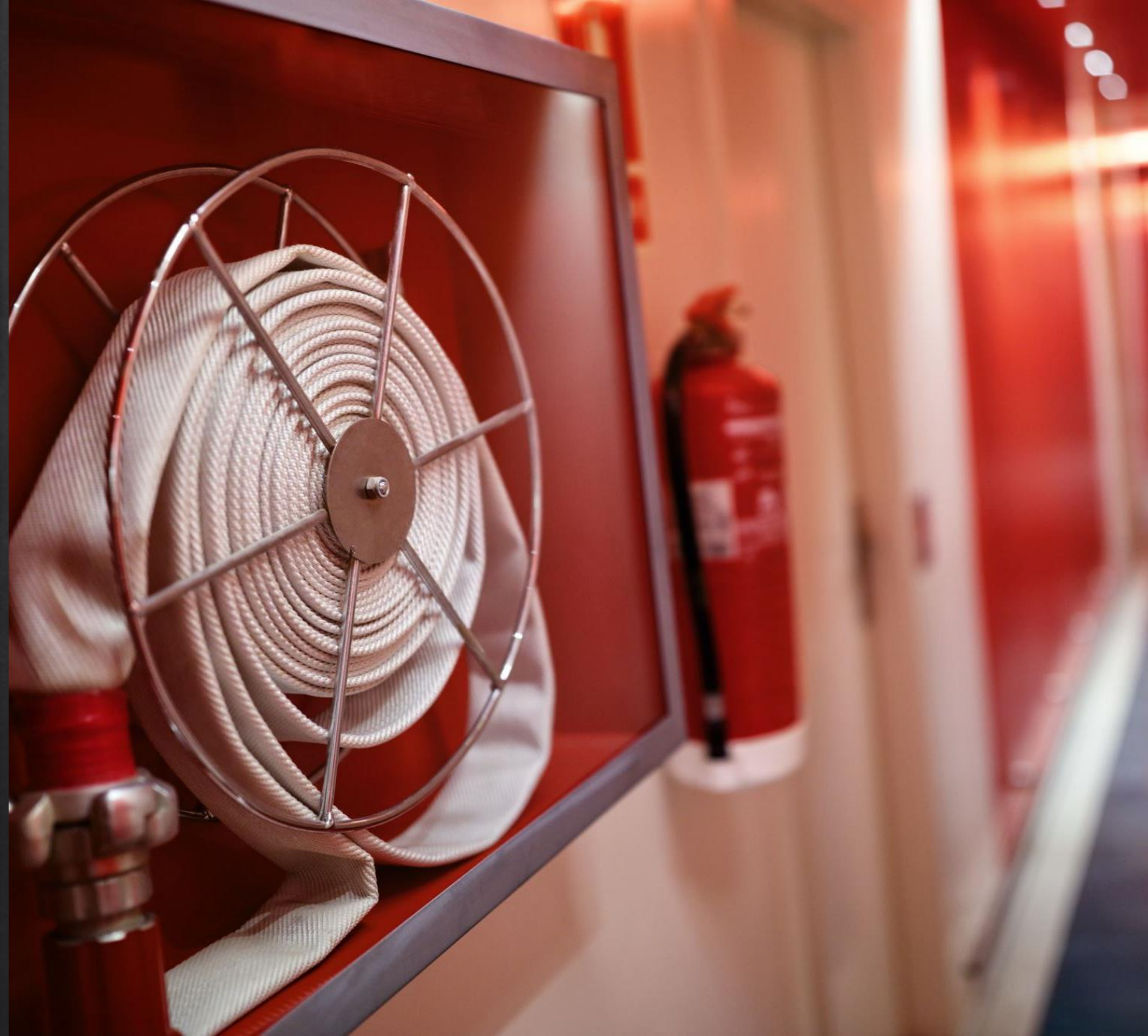
Source: IPCC (2019) Global warming of 1.5°C

Vulnerability to Climate Change (2020)

Country	ND-GAIN	HRP	State of conflict	Public health emergencies	Food Insecure Population	Debt risk	Natural disasters
Chad	28.40	Yes	Medium	Measles, Polio	12%	High risk	39
CAR	28.95	Yes	Medium	Measles, Polio	47%	High risk	32
Eritrea	31.15	–	Fragile	–	-	–	4
Guinea-Bissau	31.95	–	Fragile	–	8%	High risk	10
DRC	32.28	Yes	Medium	Measles, Polio, Cholera, Plague	28%	Moderate risk	110
Sudan	32.71	Yes	Fragile	Diphteria, Rift Valley Fever	21%	Debt distress	54
Niger	33.09	Yes	Medium	Measles, Polio	10%	Moderate risk	64
Afghanistan	33.50	Yes	High	Dengue. Polio	42%	High risk	147
Liberia	33.75	–	Fragile	Measles, Lassa Fever	20%	Moderate risk	14
Somalia	33.94	Yes	High	Cholera	22%	Debt distress	68
Yemen	34.68	Yes	Medium	Cholera, Polio	54%	Moderate risk	45
Zimbabwe	34.90	Yes	Fragile	–	35%	Debt distress	39
Mali	35.01	Yes	Medium	Measles	6%	Moderate risk	36
Haiti	35.40	Yes	Fragile	Diptheria	46%	High risk	83
Burundi	35.46	Yes	Fragile	Cholera, Measles	14%	High risk	52

Table: Global Humanitarian Overview 2022 • Source: University of Notre Dame (ND-GAIN), OCHA (HRP), World Bank (Conflict), WHO (Health emergencies), FSIN Network (Food insecurity), IMF (Debt risk), CRED (Natural disasters)

What can we do?



Limiting global warming to 1.5°C rather than 2°C above preindustrial levels would make it markedly easier to achieve many aspects of sustainable development, with greater potential to eradicate poverty and reduce inequalities. Impacts avoided with the lower temperature limit could reduce the number of people exposed to climate risks and vulnerable to poverty by 62 to 457 million, and lessen the risks of poor people to experience food and water insecurity, adverse health impacts, and economic losses, particularly in regions that already face development challenges. Avoided impacts expected to occur between 1.5°C and 2°C warming would also make it easier to achieve certain SDGs, such as those that relate to poverty, hunger, health, water and sanitation, cities and ecosystems.

Source: IPCC (2019) Global warming of 1.5°C

Sustainable development promotes livelihood security, it enhances the adaptive capacities of vulnerable communities and households. Examples include :

- SDG 11 supporting adaptation in cities to reduce harm from disasters;
- access to water and sanitation (SDG 6)
- with strong institutions (SDG 16);
- SDG 2 and its targets that promote adaptation in agricultural and food systems;
- and targets for SDG 3 such as reducing infectious diseases and providing health cover are consistent with health-related adaptation

Source: IPCC (2019) Global warming of 1.5°C

Source:https://www.iom.int/sites/g/files/tmzbdl486/files/country/docs/mozambique/iomsdgsenport.pdf

Sources

- IPCC (2021) *Climate Change 2021 The Physical Science Basis*
- IPCC (2019) *Global warming of 1.5°C*
- IPCC (2020) *Climate Change and Land*
- Internal Displacement Monitoring Centre (2021) *Global Report on Internal Displacement 2021*
- International Organization for Migration (2021) *World Migration Report 2022*
- International Organization for Migration (2020) *World Migration Report 2020* and it's interactive data visualization *https://worldmigrationreport.iom.int/wmr-2020-interactive/*
- The UK Government Office for Science in London (2011) *Migration and Global Environmental Change. Final Project Report*
- World Economic Forum (2017*) Migration and Its Impact on Cities*
- OECD-FAO (2021*) Agricultural Outlook 2021-2030*
- World Meteorological Organization (2021*) 2021 State of climate services. Water*
- https://environmentalmigration.iom.int/environmental-migration
- https://sdgs.un.org/goals
- https://www.migrationdataportal.org/themes/forced-migration-or-displacement
- https://www.iom.int/sites/g/files/tmzbdl486/files/country/docs/mozambique/iomsdgsenport.pdf
- https://www.wfp.org/publications/hunger-map-2020

Thank you