INFORM
CLIMATE CHANGE

Quantifying the impacts of climate and socio-economic trends on the risk of future humanitarian crises and disasters

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INFORM

SHARING CRISIS ANALYSIS

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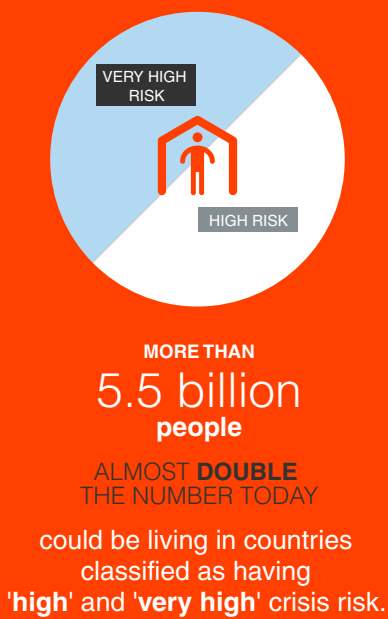
Key findings

This report presents the results of INFORM Climate Change. The analysis shows how the INFORM Risk Index, a composite index that measures the risk of a humanitarian crisis or disaster that could require international assistance, would be affected by the impacts of climate change and socio-economic trends. The Index is on a 0-10 scale and includes 5 classifications of country from 'very low' to 'very high' risk.

While there are uncertainties in this analysis relating to future greenhouse gas emissions and socio-economic development pathways, we can draw the following broad conclusions, which show that **climate change will increase crisis risk and could lead to extremely significant crisis impacts and related requirements for crisis prevention and humanitarian assistance.**

The results in this report refer to 'pessimistic' and 'optimistic' combinations of greenhouse gas emissions and socio-economic development.

By 2050, as a result of climate change and socio-economic trends:

VERY HIGH RISK

HIGH RISK

MORE THAN
5.5 billion
people
ALMOST **DOUBLE** THE NUMBER TODAY

could be living in countries classified as having '**high**' and '**very high**' crisis risk.

Crisis and disaster risks will **increase** IN ALL REGIONS

Africa and lower income countries and regions will be worst affected.

70%

MORE THAN
70%
of countries
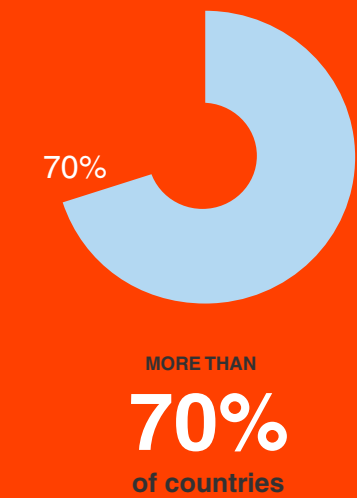
with large predicted increases in crisis risk will not have the resources to cope.

INCREASING CRISIS RISKS

Climate change will increase crisis risks. Under more pessimistic scenarios for greenhouse gas emissions and socio-economic development, by 2050, more than 1.6 billion people will be living in countries experiencing large increases in the risk of humanitarian crises and disasters (>0.3 point increase in risk score).

The number of countries classified as having 'high' or 'very high' crisis risk will increase from 36 today to 52 (45%).

More than 5.5 billion people – almost double the number today – will be living in these countries, which today account for almost all humanitarian crises, and in 2022 resulted in 274 million people in need of humanitarian assistance and financial requirements of US$41 billion.

The number of people living in 'very high' crisis risk countries will roughly triple from 580 million to 1.5 billion.

Even under more optimistic scenarios, there will be significant increases in the number of people annually affected by crises and the costs of helping them as we progress towards 2050.

AFRICA AND LOW INCOME COUNTRIES WORST AFFECTED

Crisis and disaster risks will increase in all regions, regardless of climate and socio-economic scenarios.

However, certain regions – especially Africa – will be worst affected. The countries likely to be hit hardest are generally located in Western, Southern and Eastern Africa. Other regions of Africa, Central and South America, and Western and Southern Asia also face increasing risks.

Lower income countries will be worst affected. While higher income countries may be able to absorb increases in risk, more than 70% of countries with large predicted increases will not have the resources to cope. This will especially be the case in low and lower-middle income countries, particularly in Africa.

Without increased efforts and resources to reduce vulnerability and increase coping capacity in these countries, they will face significant increases in crisis-related human and economic losses, which will further set back development.

DROUGHT MAJOR DRIVER OF INCREASED RISK

Increases in drought will be one of the most important drivers of increasing crisis risk. According to the IPCC, droughts may last for years leading to severe humanitarian crises caused by agricultural failures, loss of livestock, water shortages and outbreaks of diseases.

By 2050, more than 1.6 billion people – 4 times more than during the historical reference period – will be exposed to severe and extreme droughts. This will include almost 20% of the African population.

More than 300 million people will be exposed annually to river floods (50% more than today) and 70 million to coastal floods (almost double today). Epidemic risk associated with malaria, dengue and potentially other vector-borne or mosquito-borne diseases will increase significantly.

WE CAN STILL LIMIT RISK INCREASES THROUGH POLICY CHOICES

While we face substantial increases in crisis risks in any case, analysis of different greenhouse gas emission and socio-economic scenarios shows that we have an opportunity to substantially limit the impacts of climate change on the risk of humanitarian crises and disasters.

The **number of countries** that will have 'high' and 'very high' crisis risk by 2050 will increase by 45% under the pessimistic scenario and by 17% under the optimistic scenario.

The **number of people** living in those countries will increase by 90% under the pessimistic scenario and by 35% under the optimistic scenario.

Significant increases in risk – and resulting crisis impacts – in the coming years are guaranteed, but we can significantly reduce their magnitude through action on emissions, adaptation and sustainable development.

Introduction

As greenhouse gas concentrations continue to increase, extreme weather and climate-related risks are becoming amplified. Especially in countries with high vulnerability and low coping capacity, these risks can cause humanitarian crises and disasters. Major crises result in catastrophic human and economic losses, cost billions in humanitarian assistance and set back sustainable development.

This report presents results, analysis and findings from INFORM Climate Change, which provides quantified estimates of the impacts of climate change on the future risk of humanitarian crises and disasters. It addresses a major gap in climate and disaster risk research, which until now has predominantly based such risk forecasts on historical data that do not take into account future projections of climate-related impacts and socio-economic development.

INFORM Climate Change uses a new approach for understanding the impact of climate change on crisis and disaster risk. It incorporates climate hazard/exposure and socio-economic projections into the framework of the widely used INFORM Risk Index, which measures the risk of humanitarian crises that could result in a need for international assistance. The result is a projection of how crisis risk will change in the future.

The results are intended to inform policy choices across climate mitigation, climate adaptation, disaster risk reduction, sustainable development and humanitarian assistance.

ABOUT INFORM

INFORM is a multi-stakeholder forum for developing shared, quantitative analysis relevant to humanitarian crises and disasters. INFORM includes organisations from across the multilateral system, including the humanitarian and development sector, donors, and technical partners. The Joint Research Center of European Commission is the scientific and technical lead for INFORM.

INFORM is developing a suite of quantitative, analytical products to support decision-making on humanitarian crises and disasters. These help make decisions at different stages of the disaster management cycle, specifically climate adaptation and disaster prevention, preparedness and response. INFORM develops methodologies and tools for use at the global level and also supports their application at subnational level.

INFORM PRODUCTS

PRODUCT
INFORM Risk

APPLICATION
Development, risk reduction, crisis prevention, preparedness

ANALYSIS
Generalised risk of a crisis based on structural conditions

STATUS
Operational

PRODUCT
INFORM Warning

APPLICATION
Preparedness, early warning, early action

ANALYSIS
Indications of elevated risk, emerging crisis or crisis trigger

STATUS
In development

PRODUCT
INFORM Climate Change

APPLICATION
Recovery, risk reduction, sustainable development, climate change adaptation

ANALYSIS
Projected changes to structural crisis risk as a result of climate change

STATUS
Operational

PRODUCT
INFORM Severity

APPLICATION
Early action, crisis response

ANALYSIS
Severity of an existing crisis

STATUS
Operational

About INFORM Climate Change

INFORM Climate Change is a new INFORM product based on the INFORM Risk Index. It incorporates climate and socioeconomic projections to analyse how risk will change as a result of climate change under different emission and population scenarios. INFORM Climate Change is a result of collaboration between the Euro-Mediterranean Center on Climate Change and Joint Research Centre of European Commission.

Objectives

The objective of INFORM Climate Change is to inform decision-making around the risk of climate-amplified hazards, as well as how increased risks could be offset by improved vulnerability and coping capacity. Specifically, it is intended to:

- Lead to a shared and objective understanding of the impact of climate change on the risk of humanitarian crises

- Support policy-making that leads to greater resilience to the adverse impacts of climate change

- Support decisions on the allocation of DRR and climate adaptation resources that is consistent with SDG and Sendai targets

- Identify inequalities in climate impacts, for example on marginalised groups like people on the move

How it works

INFORM Climate Change incorporates climate and socioeconomic projections into the methodology of the INFORM Risk Index. Specifically, it uses a combination of:

- Representative Concentration Pathways (RCPs) describing the evolution of future atmospheric greenhouse gas concentrations and other radiative forcings

- Shared Socioeconomic Pathways (SSPs) that portray how socioeconomic factors may change over the next century

Together, these scenarios are used to project the Hazard and Exposure dimension of the INFORM Risk Index into the future, taking into account changes to climate-related hazards (river flood, drought, coastal flood and epidemics) and the distribution of exposed

populations. The epidemics component comprises malaria and dengue.

The population projections derived from SSPs are also applied to non-climate natural hazards (earthquake, tsunami) and non-modelled hazards (tropical cyclone wind). Tropical cyclone wind has not been included because changes cannot be modelled with sufficient geographic accuracy. Population and other socioeconomic projections are used to project conflict hazard. In future iterations of the tool, changes to vulnerability may also be included.

The projections are applied at different timeframes (2022, 2050, 2080) to calculate the Change in risk and the Vulnerability gap – the level of vulnerability reduction or coping capacity increase required for a country to preserve its current level of risk.

Approach and methodology

Components of risk covered by INFORM Climate Change Risk Index

INFORM CLIMATE CHANGE RISK INDEX					
DIMENSIONS					
Hazard and exposure		Vulnerability		Lack of coping capacity	
CATEGORIES					
Natural	Human	Socio-economic	Vulnerable groups	Institutional	Infrastructure
COMPONENTS					
Earthquake, Tsunami, River Flood, Coastal Flood, Cyclone, Drought, Epidemics	Current conflict intensity, Projected conflict risk	Development and deprivation (50%), Inequality (25%), Aid dependency (25%)	Uprooted people Other vulnerable groups	DRR Governance	Communication Physical infrastructure Access to health system

INFORM Climate Change vs INFORM Risk

INFORM Climate Change is essentially a future projection of the INFORM Risk Index – a composite index that measures the risk of humanitarian crises that could require international assistance. While the INFORM Risk Index is focused on the next 1-3 years, INFORM Climate Change analyses risk in the next decades.

The INFORM Risk Index covers 191 countries and includes around 80 indicators across three dimensions of hazard and exposure, vulnerability and lack of coping capacity. INFORM Climate Change modifies indicators in the hazard and exposure dimension of the INFORM Risk Index, based on projected climate and socio-economic trends.

The INFORM Risk Index is already used by actors across the multilateral system to understand the risk of crises and to prioritise resources for crisis and disaster prevention,

preparedness and response. The results of INFORM Climate Change therefore offer insights into how risk will change in the medium to long term and on the impacts of climate change on future crises.

Scenarios and timeframes

In order to understand how climate and socio-economic trends will affect crisis risk, INFORM Climate Change applies IPCC-led climate and socio-economic projections to modify how the INFORM Risk Index will change in the future. The scale from 0-10 and classification of risk from very low to very high remains the same. First, we developed a baseline INFORM Climate Change Risk Index, which is a slightly adapted INFORM Risk Index that allows comparison with future hazard projections. The scale from 0-10 and classification of risk from very low to very high remains the same. Then, we calculated changes of the Risk Index for combinations of emissions and demographic
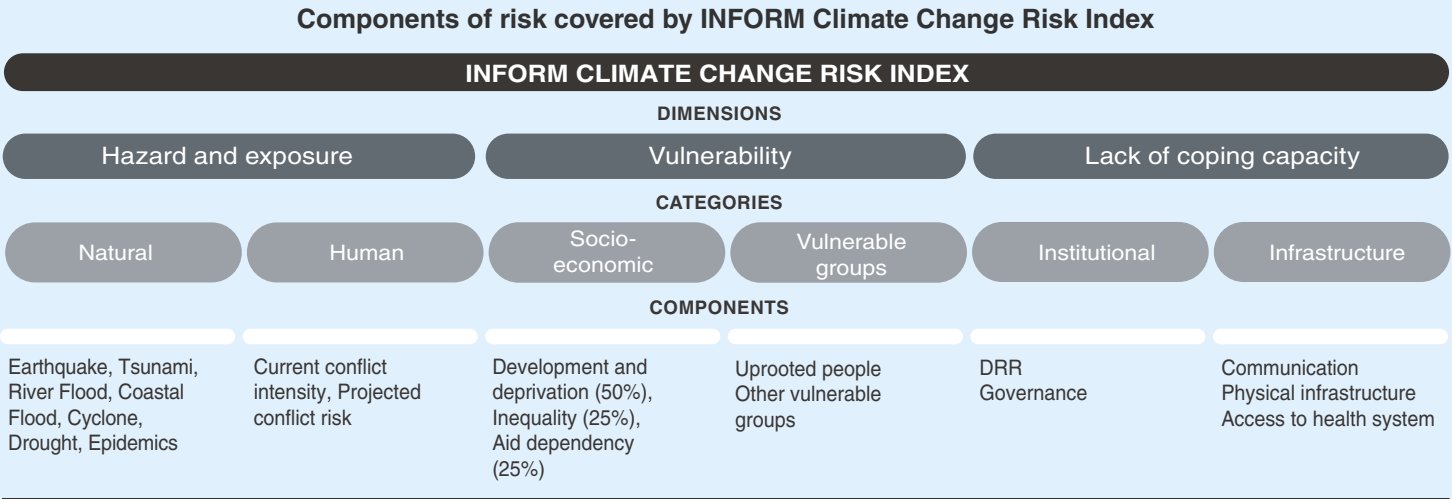
scenarios. For clarity, we present in this report the results from two scenario combinations, which we consider plausible and that represent significantly different possible futures.

These are referred to as:

PESSIMISTIC – RCP 8.5 (high emissions) and SSP 3 (Regional Rivalry – high challenges for both mitigation and adaptation, including higher population growth)

OPTIMISTIC – RCP 4.5 (moderate emissions) and SSP 1 (Sustainability – low challenges for both mitigation and adaptation, including lower population growth).

The impacts of these scenario combinations on crisis risk are calculated for mid-century (roughly 2050) and end-century roughly (2080). In this report, we present mainly results from 2050, as a more useful indication of impacts over the coming years and decades.
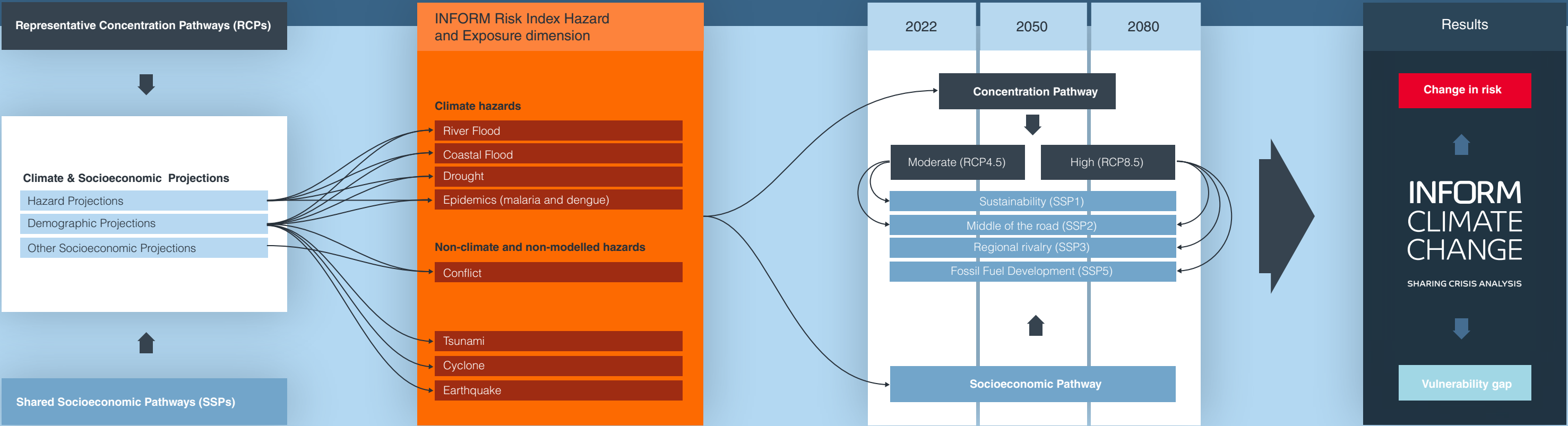

Climate projections

Representative Concentraion Pathways (RCPs) describe the evolution of future atmospheric greenhouse gas concentrations and other radiative forcings.
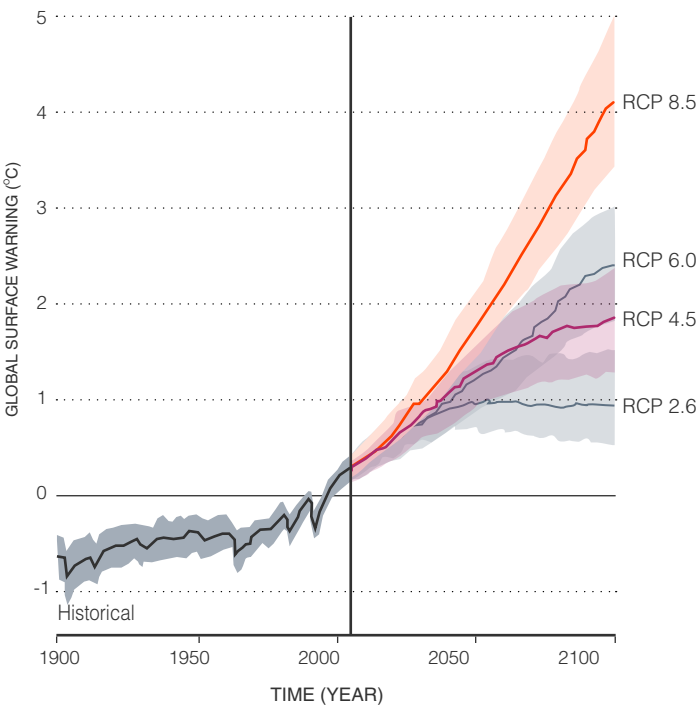
Global surface temperature change relative to 1850-1900 presented by the RCPs. Source: Knutti and Sedlácek (2013)

INFORM Climate Change scenario combinations

Pessimistic
RCP 8.5 + SSP 3

SSP3 envisages
• relatively low income growth
• low human capital investments
• high fertility and population growth rates in currently high fertility countries
• low or negative population growth in currently low fertility rate countries
• low migration
• slow urbanization.

Optimistic
RCP 4.5 + SSP 1

SSP1 envisages
• global population peak in mid-century
• reasonably high pace in sustainable development
• lessened inequalities
• rapid technological growth based on low carbon energy sources
• high productivity of land.

Socio-economic projections

Trends in total world populations to 2100 according to the five SSPs. Source: Kc, Samir & Lutz, Wolfgang. (2014)

Interpreting the results

This report presents results at country level, which are aggregated to regional and global level to produce high level findings. The results from INFORM Climate Change are:

• **INFORM Climate Change (CC) Risk Index** for current risk (baseline - B) and future risk in 2050 and 2080, under both pessimistic (P) and optimistic (O) scenario combinations. The format of results is aligned with the INFORM Risk Index (scale of 0-10, classifications from very low to very high risk).

• **Change in risk** (0-10, large decrease to large increase in risk) to the Climate Change Risk Index between the current (baseline) and the future (2050, 2080), under both pessimistic and optimistic scenario combinations.

• **Vulnerability gap** (0-10, large decrease to large increase), which shows the change in Vulnerability and Lack of Coping Capacity (see INFORM Risk Index analytical framework) that would be required to

maintain the baseline level of risk (i.e. to compensate for future increases in risk due to climate, demographic and socio-economic factors).

We also present the change in the Hazard & Exposure dimension of the INFORM Climate Change Risk Index for individual hazards and the change in the **absolute numbers of people exposed** to individual hazards in the future, compared to the baseline. We cannot aggregate the number of people exposed to all hazards in a country or region, due to overlap between the hazards. However, we do present analysis of the total number of people living in countries at each risk class in the future. This Gap gives an indication of the change in the number of people likely to be affected by crises.

This report presents selected results, you can explore the full results in our INFORM Climate Change tool at **inform-index.org**

Example: Angola
Increasing risk and vulnerability gap in mid-century (2050)

Angola is currently a medium risk country, according to the baseline INFORM Climate Change Risk Index. Regardless of the climate and socio-economic scenarios chosen, it will become a high risk country by 2050. Its population will grow from 25 million to between 38 and 49 million. There will be an increase in all climate hazards, especially epidemics and drought. Conflict risk will increase under the more pessimistic scenario. There will be a large increase in the Vulnerability gap, which will need to be addressed through investments in adaptation and coping capacity to avoid very significant increases in climate risk.

Angola crisis risk in 2050

INFORM Climate Change Risk Index and selected components in 2050, taking into account climate and socio-economic trends

Country name and current INFORM Climate Change Risk Index value and category from very low to very high.

Results from INFORM Climate Change for mid-century (2050) risk, mid-century (2050) risk on a scale of 0-10, where 10 is highest risk. The following values are shown for both pessimistic and optimistic climate and socio-economic scenarios:

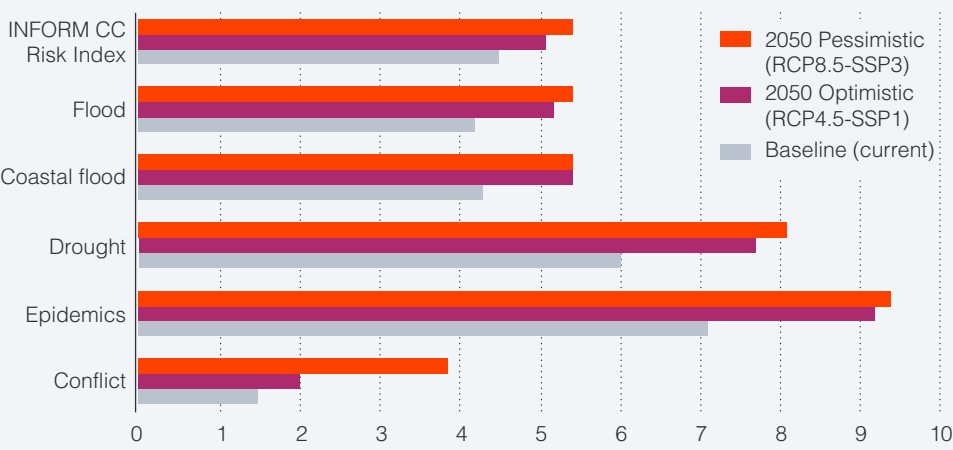INFORM Climate Change Risk Index value and category (very low to very high); the Change in risk (large decrease to large increase); the Vulnerability gap (large decrease to large increase). Note that because category thresholds are calculated to two decimal places, the same result rounded to one decimal place can appear in different categories.

Results from INFORM Climate Change for end-century (2080) risk.

Results from INFORM Climate Change for individual hazards. The results shown are for mid-century (2050) only and include:

The Change in the Hazard & Exposure value for each hazard, on a scale of 0-10, for the pessimistic scenario only; The change in the absolute number of people exposed to each hazard, for both the pessimistic and optimistic scenarios. A negative value means fewer people exposed. Because the INFORM Climate Change Risk Index uses both

relative and absolute measures of risk, in rare cases the Hazard & Exposure value can be negative, even if the absolute number is positive.

The Epidemic result relates to the combination of Malaria and Dengue. For conflict, the absolute number exposed cannot be calculated. Instead, the resulting change to the INFORM Human Hazard category is shown – see explainer on conflict for more details.

For reference, the total country population is shown for the baseline and for 2050, according to both pessimistic and optimistic scenarios.

COUNTRY	Baseline (current) risk (B) — INFORM Climate Change (CC) Risk Index 2022	MID-CENTURY (≈2050) CRISIS RISK — PESSIMISTIC (P) — INFORM CC Risk Index	PESSIMISTIC (P) — Change in risk	PESSIMISTIC (P) — Vulnerability gap	OPTIMISTIC (O) — INFORM CC Risk Index	OPTIMISTIC (O) — Change in risk	OPTIMISTIC (O) — Vulnerability gap	END-CENTURY (≈2080) PESSIMISTIC (P) — INFORM CC Risk Index	PESSIMISTIC (P) — Change in risk	PESSIMISTIC (P) — Vulnerability gap	OPTIMISTIC (O) — INFORM CC Risk Index	OPTIMISTIC (O) — Change in risk	OPTIMISTIC (O) — Vulnerability gap	Flood P — Change in Hazard and Exposure	Flood P — Change in absolute number of people exposed	Flood O — Change in absolute number of people exposed	Coastal flood P — Change in Hazard and Exposure	Coastal flood P — Change in absolute number of people exposed	Coastal flood O — Change in absolute number of people exposed	Drought P — Change in Hazard and Exposure	Drought P — Change in absolute number of people exposed	Drought O — Change in absolute number of people exposed	Epidemic P — Change in Hazard and Exposure	Epidemic P — Change in absolute number of people exposed	Epidemic O — Change in absolute number of people exposed	Conflict P — Change in Human Hazard and Exposure	Conflict O — Change in Human Hazard and Exposure	Total population Baseline (millions) 2022	Total Population 2050 Pessimistic (millions)	Total Population 2050 Optimistic (millions)
Afghanistan	8.0	8.1	0.1	0.2	8.0	0.0	0.1	8.1	0.1	0.3	8.1	0.1	0.2	-1.3	144,222	-316,231	0.0	0	0	2.8	35,800,562	18,888,348	0.1	110,532	-163,787	0.0	0.0	32.52	91.15	60.40
Albania	2.6	2.7	0.1	0.1	2.7	0.1	0.1	2.8	0.2	0.1	2.7	0.1	0.1	-0.9	-17,495	-24,955	0.0	3,806	-2,490	2.7	968,305	686,987	2.0	274,980	139,003	0.1	0.0	2.90	3.49	2.99
Algeria	3.9	4.1	0.2	0.2	3.8	-0.1	-0.2	4.2	0.3	0.3	3.7	-0.2	-0.3	0.3	165,281	177,699	2.7	7,664	6,713	2.8	21,588,265	12,421,963	0.3	975,090	545,437	0.1	-2.7	39.66	54.96	44.44

INFORM Climate Change results

These maps show the change in risk and vulnerability gap for mid-century (≈2050) under both pessimistic and optimistic climate and socio-economic scenarios.

KEY

- LARGE INCREASE
- INCREASE
- STABLE
- DECREASE
- LARGE DECREASE
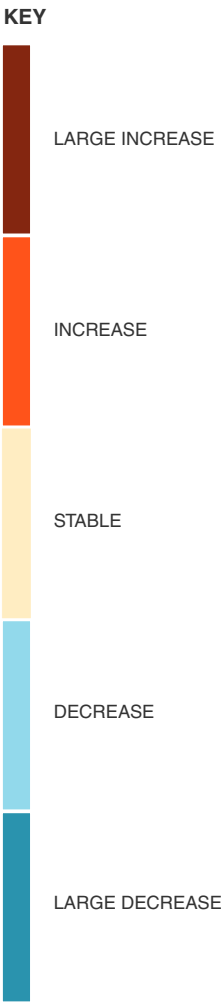
Pessimistic climate and socio-economic scenario (RCP 8.5 + SSP3)

Change in risk (2050-baseline)
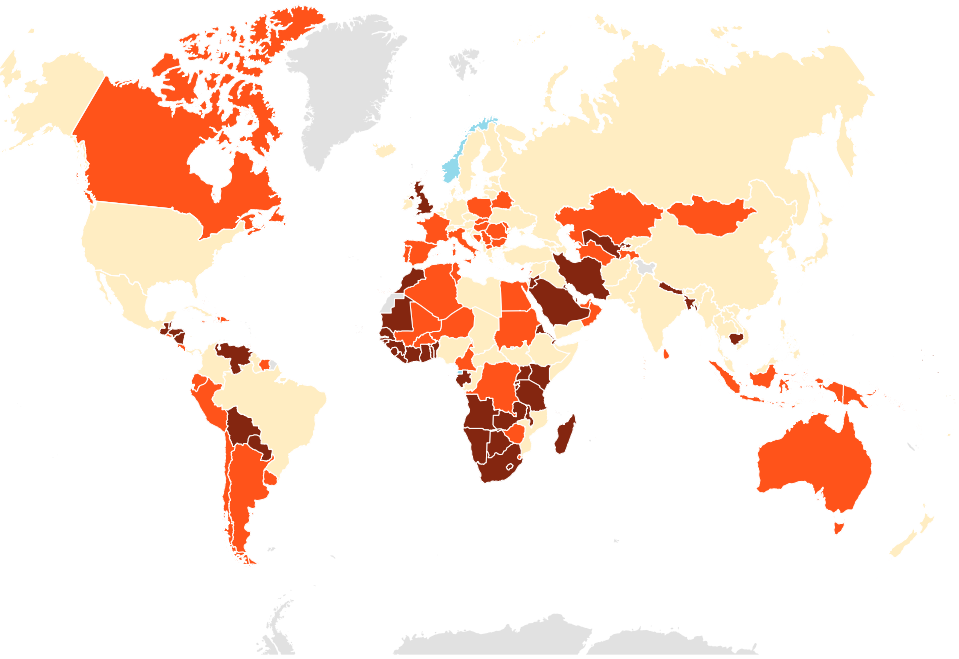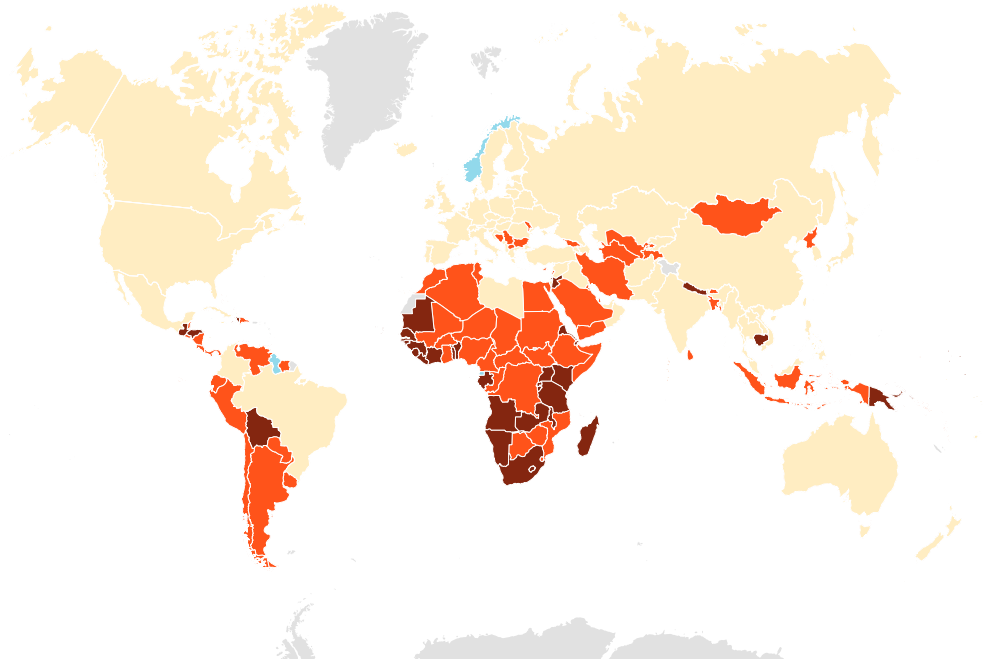
Vulnerability gap

Optimistic climate and socio-economic scenario (RCP 4.5 + SSP1)

Change in risk (2050-baseline)
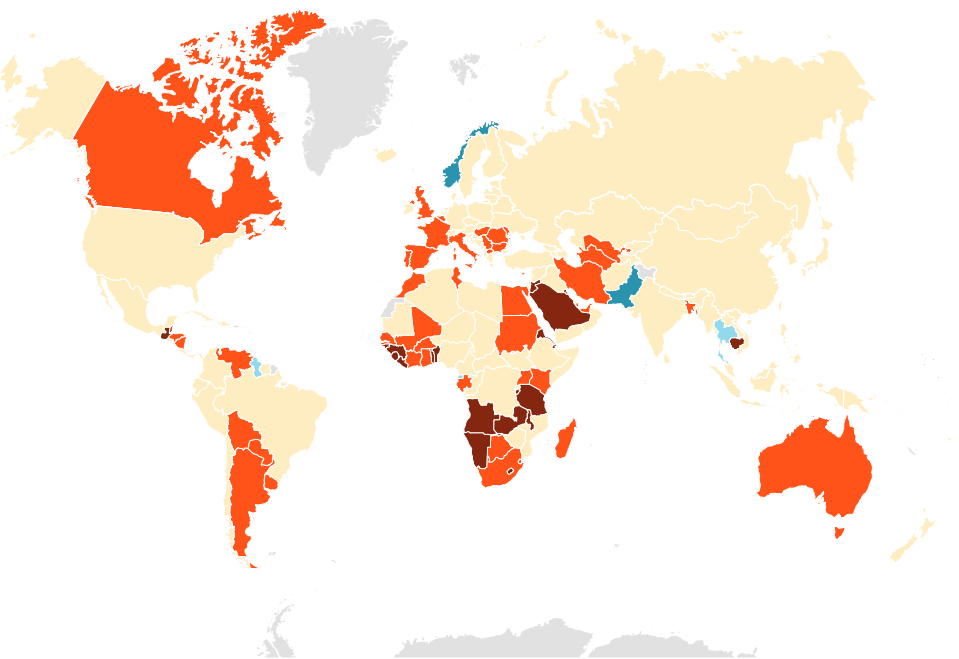
Vulnerability gap
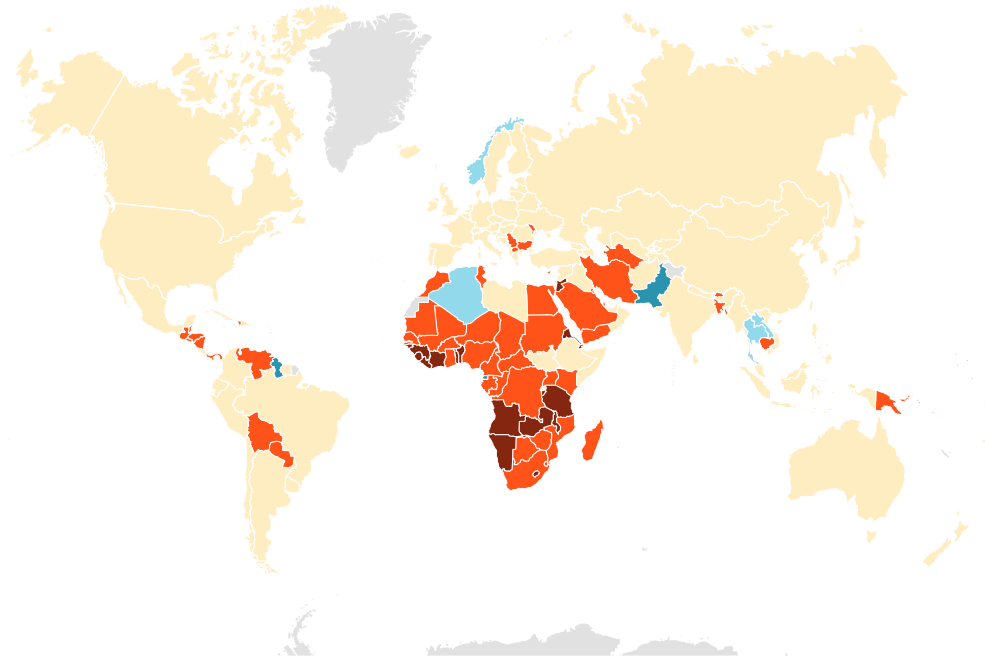
INFORM Climate Change results

This table shows top level results from INFORM Climate Change: the current INFORM Climate Change Risk Index, and – for mid-century (≈2050) under the pessimistic climate and socio-economic scenario – the INFORM Climate Change Risk Index, the change in risk and the vulnerability gap. More detailed results are shown in the Annex, and full results on www.inform-index.org.

COUNTRY	Baseline (current) risk (B) — INFORM CC Risk Index 2022	MID-CENTURY (≈2050) CRISIS RISK — PESSIMISTIC (P) climate and socio-economic scenario — INFORM CC Risk Index	Change in risk	Vulnerability gap
Afghanistan	8.0	8.1	0.1	0.2
Albania	2.6	2.7	0.1	0.1
Algeria	3.9	4.1	0.2	0.2
Angola	4.5	5.4	0.9	1.8
Antigua and Barbuda	2.0	2.2	0.2	0.2
Argentina	2.9	3.2	0.3	0.2
Armenia	5.3	5.4	0.1	0.1
Australia	2.4	2.6	0.2	0.1
Austria	1.9	2.0	0.1	0.1
Azerbaijan	5.8	5.9	0.1	0.1
Bahamas	1.9	2.2	0.3	0.2
Bahrain	1.1	1.4	0.3	0.2
Bangladesh	5.5	5.9	0.4	0.5
Barbados	1.8	1.8	0.0	-0.0
Belarus	1.4	1.6	0.2	0.1
Belgium	1.9	2.0	0.1	0.1
Belize	3.3	3.7	0.4	0.6
Benin	4.1	4.9	0.8	1.8
Bhutan	3.2	3.3	0.1	0.3
Bolivia	3.5	3.9	0.4	0.7
Bosnia and Herzegovina	3.1	3.3	0.2	0.3
Botswana	2.9	3.3	0.4	0.6
Brazil	5.0	5.1	0.1	0.0
Brunei Darussalam	1.9	2.0	0.1	0.1
Bulgaria	2.2	2.5	0.3	0.2
Burkina Faso	6.4	6.6	0.2	0.6
Burundi	5.1	5.8	0.7	1.8
Cabo Verde	1.9	2.5	0.6	0.7
Cambodia	4.6	5.2	0.6	1.0
Cameroon	6.2	6.4	0.2	0.4
Canada	2.5	2.7	0.2	0.1
Central African Republic	7.7	7.8	0.1	0.4
Chad	7.8	7.9	0.1	0.3
Chile	3.3	3.5	0.2	0.2
China	3.9	4.0	0.1	0.1
Colombia	5.4	5.5	0.1	0.1
Comoros	3.8	4.4	0.6	1.4
Congo	5.2	5.3	0.1	0.4
Congo DR	7.6	7.8	0.2	0.5
Costa Rica	3.2	3.4	0.2	0.2
Côte d'Ivoire	4.7	5.2	0.5	1.1
Croatia	2.2	2.3	0.1	0.1
Cuba	2.4	2.4	0.0	0.0
Cyprus	2.6	2.8	0.2	0.2
Czech Republic	1.2	1.3	0.1	0.0
Denmark	1.4	1.5	0.1	0.1
Djibouti	4.4	4.9	0.5	1.2
Dominica	2.6	2.6	0.0	0.0
Dominican Republic	4.2	4.4	0.2	0.3
Ecuador	4.4	4.6	0.2	0.3
Egypt	4.8	5.0	0.2	0.2
El Salvador	4.3	4.6	0.3	0.5
Equatorial Guinea	3.8	3.6	-0.2	-0.3
Eritrea	4.0	4.9	0.9	1.9
Estonia	1.0	1.0	0.0	0.0
Eswatini	3.3	3.5	0.2	0.5
Ethiopia	6.8	6.9	0.1	0.2
Fiji	3.2	3.1	-0.1	-0.1
Finland	1.3	1.4	0.1	0.1
France	2.4	2.6	0.2	0.1
Gabon	3.7	4.1	0.4	0.7
Gambia	3.6	4.4	0.8	1.4
Georgia	3.1	3.2	0.1	0.2
Germany	2.4	2.5	0.1	0.1
Ghana	4.0	4.4	0.4	0.6
Greece	2.7	2.8	0.1	0.1
Grenada	1.7	1.7	0.0	0.0
Guatemala	5.1	5.8	0.7	1.2
Guinea	4.4	5.0	0.6	1.2
Guinea-Bissau	4.1	5.0	0.9	2.4
Guyana	4.3	4.2	-0.1	-0.2
Haiti	5.5	5.8	0.3	0.7
Honduras	4.9	5.4	0.5	0.9
Hungary	1.5	1.8	0.3	0.1
Iceland	1.3	1.3	0.0	0.0
India	5.5	5.5	0.0	0.1
Indonesia	4.4	4.7	0.3	0.2
Iran	4.3	4.8	0.5	0.7
Iraq	6.6	6.6	0.0	0.2
Ireland	1.7	1.7	0.0	0.0
Israel	2.6	2.7	0.1	0.1
Italy	2.5	2.7	0.2	0.1
Jamaica	3.0	3.2	0.2	0.2
Japan	2.3	2.3	0.0	0.0
Jordan	3.5	4.1	0.6	1.2
Kazakhstan	1.6	1.8	0.2	0.1
Kenya	4.6	5.1	0.5	1.0
Kiribati	3.0	3.7	0.7	1.5
Korea DPR	4.6	4.7	0.1	0.3

KEY   CLIMATE CHANGE RISK INDEX   VERY HIGH   HIGH   MEDIUM   LOW   VERY LOW

CHANGE IN RISK / VULNERABILTY GAP   LARGE INCREASE   INCREASE   STABLE   DECREASE   LARGE DECREASE

COUNTRY	Baseline (current) risk (B) INFORM CC Risk Index 2022	MID-CENTURY (≈2050) CRISIS RISK PESSIMISTIC (P) climate and socio-economic scenario		
		INFORM CC Risk Index	Change in risk	Vulnerability gap
Korea Republic of	2.1	2.1	0.0	0.0
Kuwait	1.7	2.2	0.5	0.4
Kyrgyzstan	2.7	2.8	0.1	0.1
Lao PDR	4.0	4.0	0.0	-0.1
Latvia	1.3	1.4	0.1	0.1
Lebanon	3.9	4.2	0.3	0.5
Lesotho	3.0	3.7	0.7	2.1
Liberia	5.3	6.0	0.7	1.8
Libya	6.2	6.3	0.1	0.1
Liechtenstein	1.1	1.1	0.0	0.0
Lithuania	1.4	1.5	0.1	0.0
Luxembourg	1.1	1.2	0.1	0.1
Madagascar	5.2	5.7	0.5	1.0
Malawi	4.5	5.1	0.6	1.4
Malaysia	3.4	3.5	0.1	0.1
Maldives	2.1	2.2	0.1	0.2
Mali	6.9	7.1	0.2	0.3
Malta	1.5	1.5	0.0	0.0
Marshall Islands	3.1	3.5	0.4	0.9
Mauritania	4.6	5.0	0.4	1.2
Mauritius	2.1	2.2	0.1	0.0
Mexico	5.0	5.0	0.0	0.1
Micronesia	2.9	3.0	0.1	0.2
Moldova Republic of	2.3	2.6	0.3	0.3
Mongolia	2.4	2.6	0.2	0.2
Montenegro	2.2	2.2	0.0	0.0
Morocco	3.5	4.1	0.6	0.6
Mozambique	7.2	7.3	0.1	0.2
Myanmar	6.2	6.3	0.1	0.2
Namibia	3.2	3.7	0.5	1.0
Nauru	2.4	2.4	0.0	0.0
Nepal	4.5	5.0	0.5	0.8
Netherlands	2.0	2.0	0.0	0.0
New Zealand	1.6	1.7	0.1	0.0

COUNTRY	Baseline (current) risk (B) INFORM CC Risk Index 2022	MID-CENTURY (≈2050) CRISIS RISK PESSIMISTIC (P) climate and socio-economic scenario		
		INFORM CC Risk Index	Change in risk	Vulnerability gap
Nicaragua	4.3	4.7	0.4	0.6
Niger	7.3	7.5	0.2	0.3
Nigeria	6.6	6.7	0.1	0.2
North Macedonia	2.1	2.3	0.2	0.2
Norway	1.9	1.7	-0.2	-0.2
Oman	2.4	2.6	0.2	0.2
Pakistan	6.0	5.9	-0.1	-0.1
Palau	2.5	2.6	0.1	0.2
Palestine	3.4	3.8	0.4	0.9
Panama	3.8	3.9	0.1	0.2
Papua New Guinea	5.5	5.8	0.3	0.7
Paraguay	2.7	3.1	0.4	0.5
Peru	4.5	4.8	0.3	0.5
Philippines	5.3	5.4	0.1	0.1
Poland	1.7	1.9	0.2	0.1
Portugal	1.7	1.9	0.2	0.1
Qatar	1.2	1.9	0.7	0.3
Romania	2.1	2.4	0.3	0.2
Russian Federation	3.3	3.3	0.0	-0.0
Rwanda	4.7	5.4	0.7	1.1
Saint Kitts and Nevis	1.9	1.9	0.0	0.0
Saint Lucia	1.9	1.9	0.0	0.0
Saint Vincent and the Grenadines	2.4	2.4	0.0	-0.1
Samoa	3.0	3.0	0.0	0.0
Sao Tome and Principe	1.9	2.4	0.5	1.4
Saudi Arabia	2.1	2.6	0.5	0.3
Senegal	4.5	5.2	0.7	1.2
Serbia	2.4	2.7	0.3	0.2
Seychelles	1.8	1.7	-0.1	-0.1
Sierra Leone	4.7	5.3	0.6	1.3
Singapore	0.6	0.7	0.1	0.0
Slovakia	1.5	1.7	0.2	0.1
Slovenia	1.3	1.3	0.0	0.0
Solomon Islands	4.1	4.3	0.2	0.4

COUNTRY	Baseline (current) risk (B) INFORM CC Risk Index 2022	MID-CENTURY (≈2050) CRISIS RISK PESSIMISTIC (P) climate and socio-economic scenario		
		INFORM CC Risk Index	Change in risk	Vulnerability gap
Somalia	8.8	8.8	0.0	0.2
South Africa	3.7	4.3	0.6	0.8
South Sudan	8.5	8.6	0.1	0.3
Spain	2.2	2.5	0.3	0.1
Sri Lanka	3.4	3.6	0.2	0.2
Sudan	6.4	6.6	0.2	0.4
Suriname	3.5	3.7	0.2	0.2
Sweden	1.8	1.9	0.1	0.1
Switzerland	1.5	1.5	0.0	0.0
Syria	7.0	7.0	0.0	0.1
Tajikistan	3.4	3.6	0.2	0.3
Tanzania	4.9	5.6	0.7	1.5
Thailand	4.1	4.1	0.0	0.0
Timor-Leste	4.5	4.6	0.1	0.3
Togo	4.1	4.8	0.7	1.6
Tonga	3.2	3.2	0.0	0.0
Trinidad and Tobago	2.6	2.9	0.3	0.3
Tunisia	3.0	3.3	0.3	0.3
Turkey	4.9	4.9	0.0	0.0
Turkmenistan	2.0	2.3	0.3	0.3
Tuvalu	2.7	2.7	0.0	0.0
Uganda	6.2	6.6	0.4	0.9
Ukraine	4.5	4.6	0.1	0.1
United Arab Emirates	1.6	1.8	0.2	0.1
United Kingdom	2.0	2.4	0.4	0.1
United States of America	3.1	3.2	0.1	0.1
Uruguay	2.1	2.3	0.2	0.2
Uzbekistan	2.5	2.9	0.4	0.3
Vanuatu	4.0	4.1	0.1	0.4
Venezuela	4.2	4.6	0.4	0.5
Viet Nam	3.7	3.8	0.1	0.1
Yemen	8.1	8.2	0.1	0.3
Zambia	4.2	5.0	0.8	1.7
Zimbabwe	4.4	4.6	0.2	0.5

KEY CLIMATE CHANGE RISK INDEX VERY HIGH | HIGH | MEDIUM | LOW | VERY LOW

CHANGE IN RISK / VULNERABILITY GAP LARGE INCREASE | INCREASE | STABLE | DECREASE | LARGE DECREASE

Global trends – increasing crisis risks

Climate change will increase crisis risks. Under more pessimistic scenarios for greenhouse gas emissions and socio-economic development, by 2050, more than 1.6 billion people will be living in countries experiencing large increases in the risk of humanitarian crises and disasters (>0.3 point increase in risk score).

The number of countries classified as having 'high' or 'very high' crisis risk will increase from 36 today to 52 (45%).

More than 5.5 billion people – almost double the number today – will be living in these countries, which today account for almost all humanitarian crises, and in 2022 resulted in 274 million people in need of humanitarian assistance and financial requirements of US$41 billion.

The number of people living in 'very high' crisis risk countries will roughly triple from 580 million to 1.5 billion.

Even under more optimistic scenarios, there will be significant increases in the number of people annually affected by crises and the costs of helping them as we progress towards 2050.

Countries at risk 2050
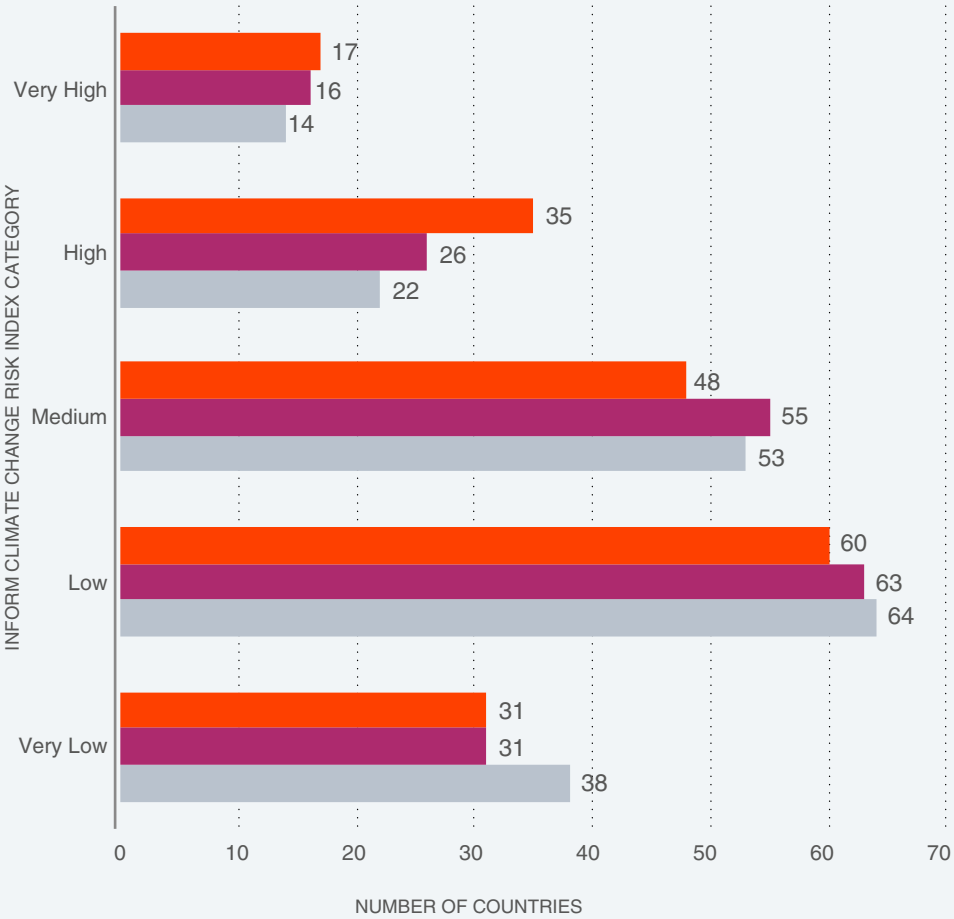
INFORM CLIMATE CHANGE RISK INDEX CATEGORY

Category	Pessimistic	Optimistic	Baseline
Very High	17	16	14
High	35	26	22
Medium	48	55	53
Low	60	63	64
Very Low	31	31	38

NUMBER OF COUNTRIES

People at risk 2050

INFORM CLIMATE CHANGE RISK INDEX CATEGORY

Category	Pessimistic	Optimistic	Baseline
Very High	1.53	1.04	0.58
High	4.14	3.03	2.42
Medium	2.69	2.56	2.74
Low	1.29	1.51	1.37
Very Low	0.166	0.187	0.199

TOTAL NUMBER OF PEOPLE (BILLIONS)
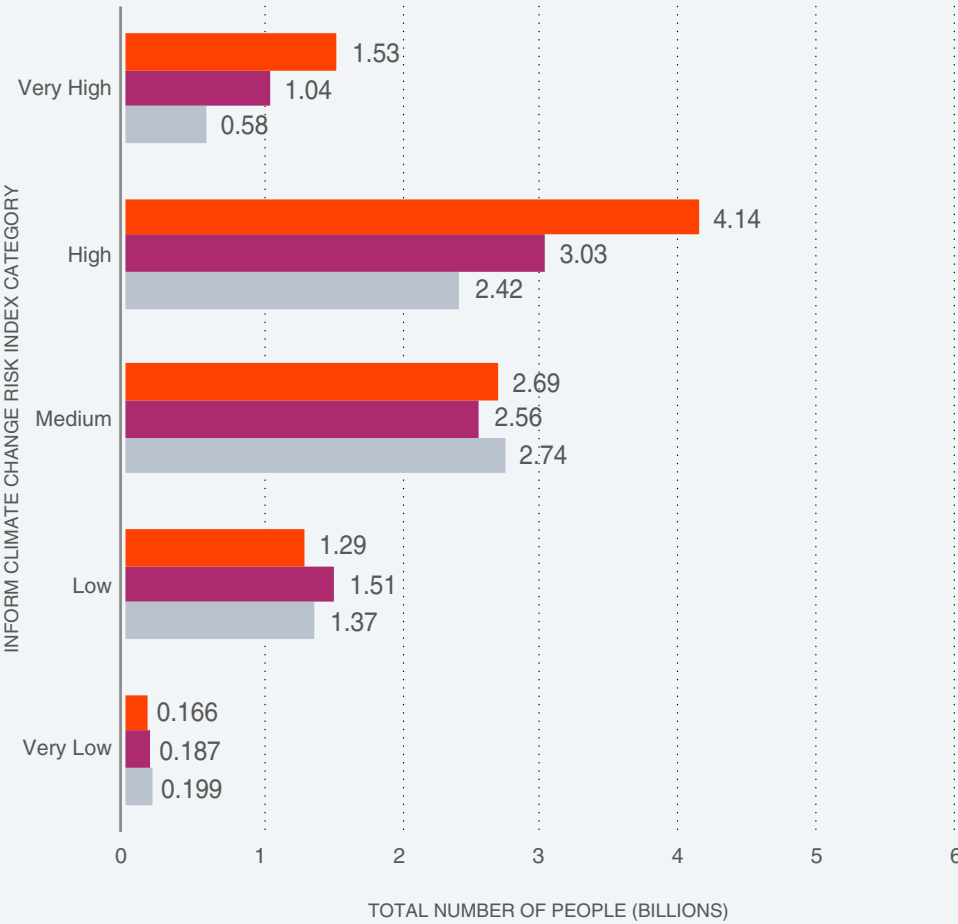
■ 2050 Pessimistic (RCP8.5-SSP3)   ■ 2050 Optimistic (RCP4.5-SSP1)   ■ Baseline (Current)

Number of countries in each category of the INFORM Climate Change Risk Index in mid-century (2050), taking into account the effects of climate change and socio-economic trends. Shown are the pessimistic scenario for 2050, optimistic scenario for 2050 and the baseline (current) risk.

Number of people living in countries classified according to the INFORM Climate Change Risk Index in mid-century (2050), taking into account the effects of climate change and socio-economic trends. Shown are the pessimistic scenario for 2050, optimistic scenario for 2050 and the baseline (current) risk.

Regional and income group trends – Africa and low income countries worst affected

Crisis and disaster risks will increase in all regions, regardless of climate and socio-economic scenarios.

However, certain regions – especially Africa – will be worst affected. The countries likely to be hit hardest are generally located in Western, Southern and Eastern Africa. Other regions of Africa, Central and South America, and Western and Southern Asia also face increasing risks.

Lower income countries will be worst affected. While higher income countries may be able to absorb increases in risk,

more than 70% of countries with large predicted increases will not have the resources to cope. This will especially be the case in low and lower-middle income countries, particularly in Africa.

Without increased efforts and resources to reduce vulnerability and increase coping capacity in these countries, they will face significant increases in crisis-related human and economic losses, which will further set back development.

Change in risk by sub-region 2050
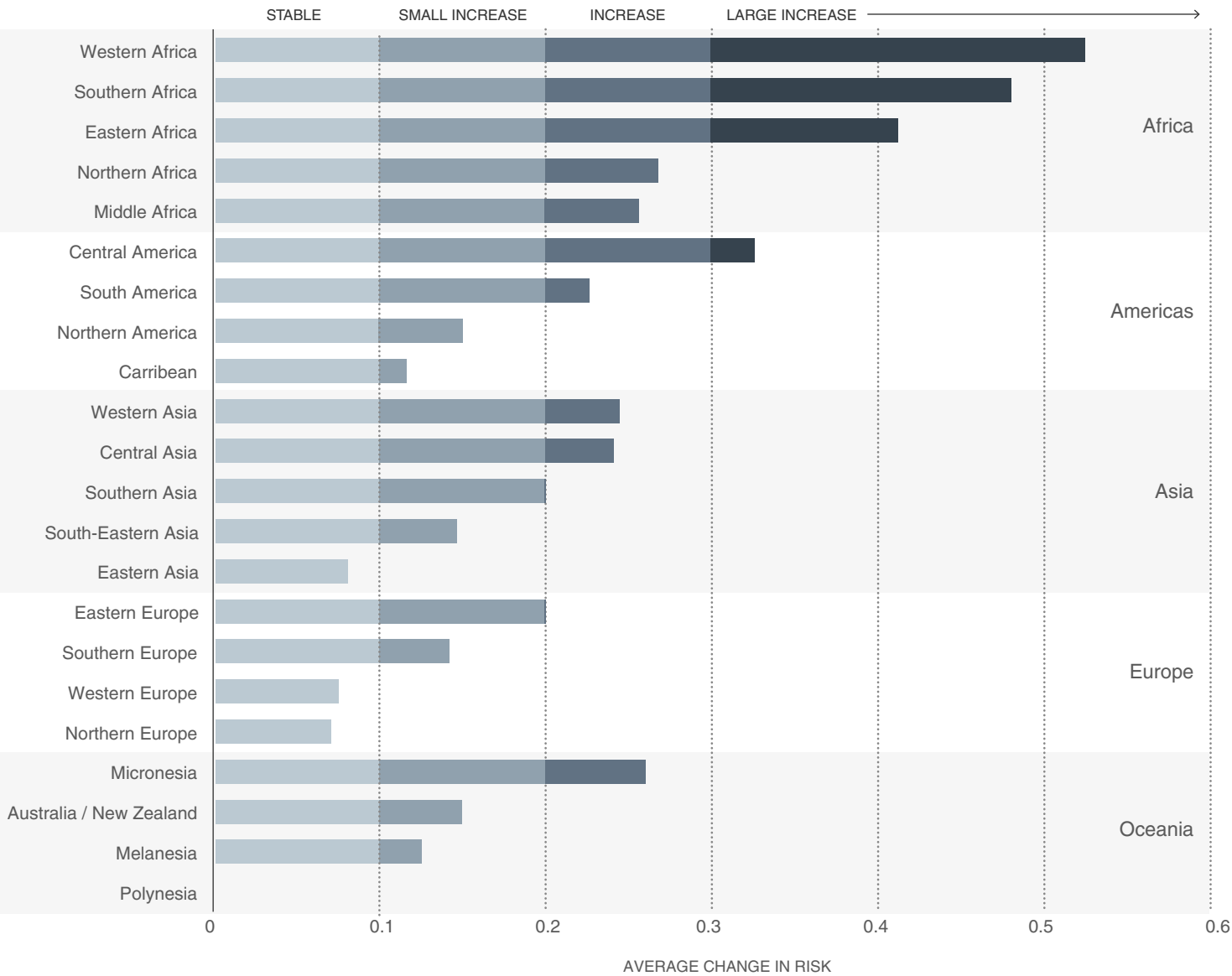
Vulnerability gap by region 2050
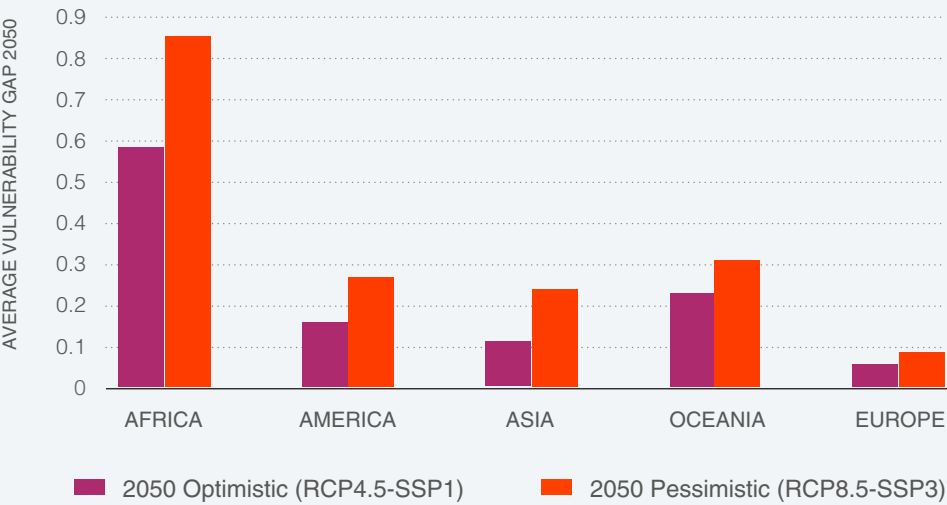
Average Vulnerability gap by region. The Vulnerability gap shown is for mid-century (2050) relative to the baseline (current) risk, under the pessimistic climate and socio-economic scenario.

Vulnerability gap by income group 2050
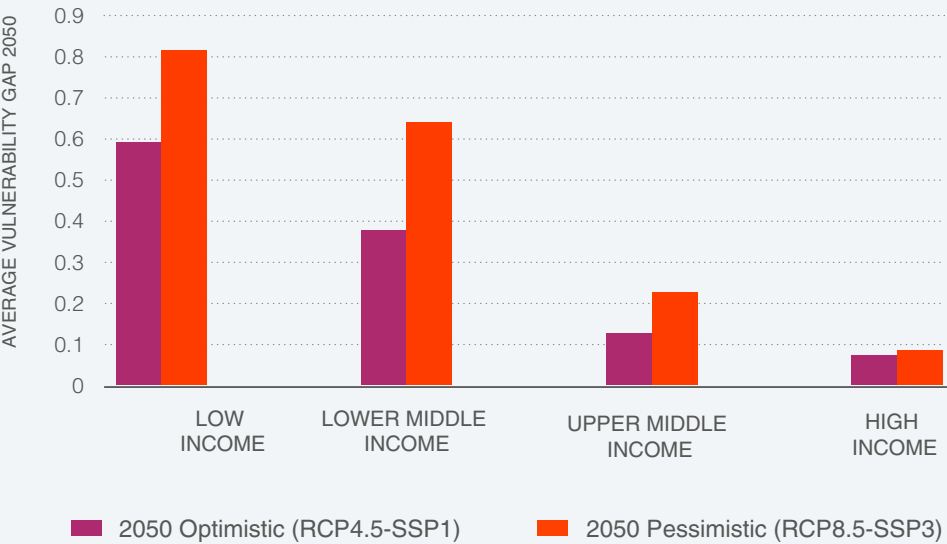
Average Vulnerability gap by income-group. The Vulnerability gap shown is for mid-century (2050) relative to the baseline (current) risk, under the pessimistic climate and socio-economic scenario.

Hazard trends – drought major driver of increased risk

Increases in drought will be one of the most important drivers of increasing crisis risk. According to the IPCC, droughts may last for years leading to severe humanitarian crises caused by agricultural failures, loss of livestock, water shortages and outbreaks of diseases.

By 2050, more than 1.6 billion people – 4 times more than during the historical reference period – will be exposed to severe and extreme droughts. This will include almost 20% of the African population.

More than 300 million people will be exposed annually to river floods (50% more than today) and 70 million to coastal floods (almost double today). Epidemic risk associated with malaria, dengue and potentially other mosquito-borne diseases will increase significantly.

River floods

By 2050, under the pessimistic scenario, more than 300 million people will be annually exposed to river floods (55% increase from today). The largest overall exposure, and the largest increase will be in Asia. Bangladesh and Vietnam have the largest exposure relative to total population. Changes in population density and distribution have a considerably larger effect on the increase of river flood exposure rather than climate change. Therefore, adaptation (e.g. protection, accommodation, advance and planned relocation) should be the main policy response.

Coastal floods

By 2050, under the pessimistic scenario, more than 70 million people will be annually exposed to coastal floods (almost double today). Asia has by far the largest projected exposure to coastal floods, regardless of climate scenarios. Netherlands, Vietnam, Bangladesh and small island states have the largest exposure relative to total population. Changes in population density and distribution play a larger role in defining exposure rather than climate change. Therefore, adaptation (e.g. protection, accommodation, advance and planned relocation) should be the main policy response.

Drought

By 2050, under the pessimistic scenario, more than 1.6 billion people – including almost 20% of the African population – will be exposed to severe and extreme droughts (nearly four-fold increase from today). Asia and Africa have the largest projected exposure to droughts, regardless of climate and socioeconomic scenarios. Countries in western Asia including Iraq, Jordan and Syria have the largest exposure relative to the total population. Contrary to floods, climate change rather than population growth is the more important driver of increased exposure to droughts. Therefore, both mitigation and adaptation should be the main policy responses.

Epidemics: mosquito-borne diseases

By 2050, under the pessimistic scenario, more than half of world population will be potentially at risk of malaria. This can be reduced significantly under the optimistic scenario. The largest increase in exposure will be in Asia and Africa. Europe - currently a mainly malaria free region - will experience a considerable increase. The number of people at risk of dengue will double.

Annual average exposure to river floods, 2050 · Annual average exposure to coastal floods, 2050 · Exposure to drought, 2050 · Exposure to mosquito-borne diseases, 2050

Legend:
- 2050 Pessimistic (RCP8.5-SSP3)
- 2050 Optimistic (RCP4.5-SSP1)
- Baseline (Current)

The number of people exposed to each climate-related hazard by sub-region in 2050 (pessimistic and optimistic scenarios) and the baseline (current). Note that the flood exposure estimates are not consistent with those for drought and epidemics due to the calculation method. See limitations.

TOTAL NUMBER OF PEOPLE EXPOSED (MILLIONS)
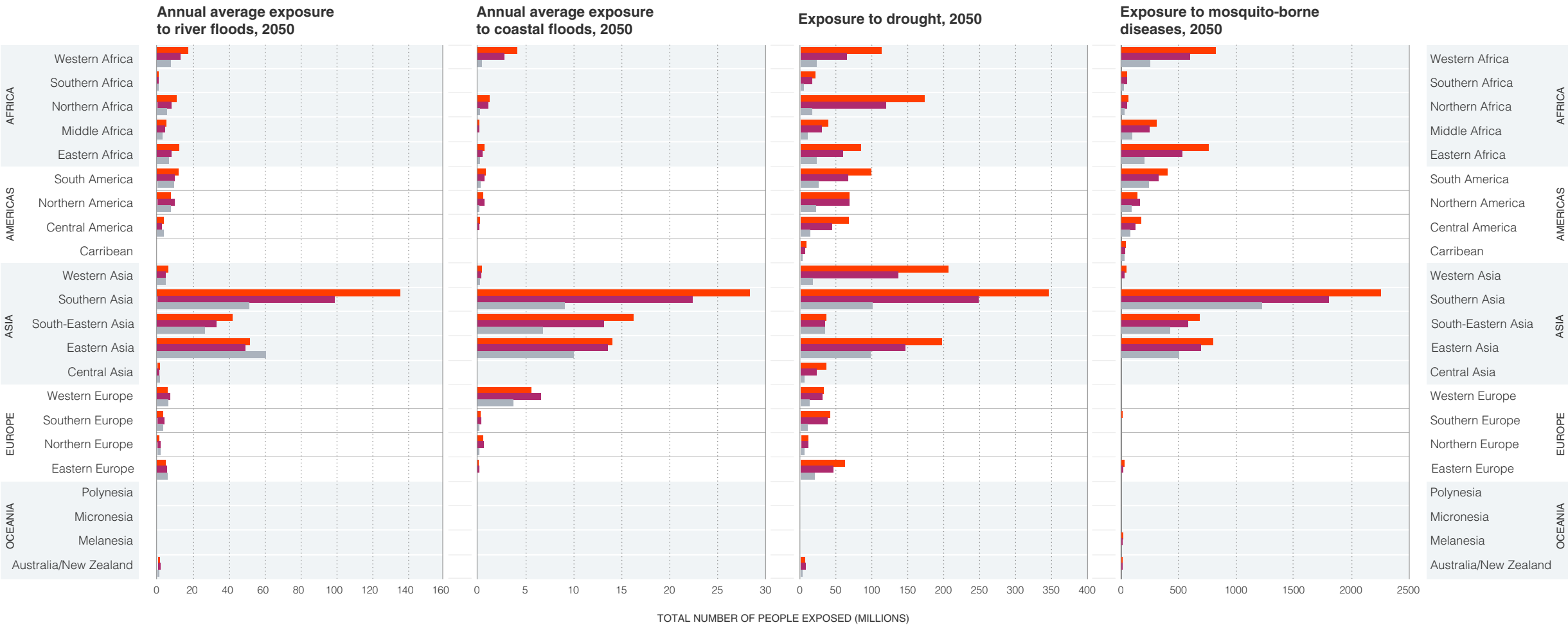
Explainer on conflict projections

Approach

Although climate does affect conflict, its direct influence is assessed as relatively weak, compared to other socio-economic factors. Future conflict risk is largely mediated by socio-economic development trajectories (IPCC, 2022).

Therefore, the approach used to include conflict in INFORM Climate Change is based on forecasts of conflict for each of the five Shared Socio-economic Pathways (SSPs) (Hegre et al., 2016). The dataset includes annual projections of armed conflict for each country over the SSPs, for 2014–2100.

For INFORM Climate Change, we replace the projected conflict risk component of the INFORM Risk Index with SSP-based conflict forecasts. Since there is still skepticism about the performance of long-term conflict forecasting, we combine them with existing conflict intensities. In this way, we are able to diminish the substantial uncertainty underlying future projections of such complex social phenomena.

The total risk score for the Human hazard category is then calculated by using the maximum score of either the actual conflict intensity or the projected intensity.

Results

Average projected probability of conflict in 2050 and 2080 for considered SSPs are shown below. In general, the global average conflict probability increases only in the case of SSP3 and decreases for other scenarios. At regional scale, Africa and Asia experience the largest average conflict probability, 0.28 (53% increase) and 0.24 (18% increase) respectively under SSP3 scenario. These patterns are largely repeated in 2080.

Results show that increases in socioeconomic development (GDP per capita and education) under SSP1, SSP2 and SSP5 leads to lower global conflict incidence with some regional differences, while larger populations, especially under SSP3, result in higher rates of conflict.

The results at regional scale are consistent with existing conflict clusters (Central Africa, the Middle East, and South Asia) with largest average conflict probability under all scenarios, especially SSP3. Africa continues to see high average projected conflict probability in the future under all SSPs, mainly driven by sustained population growth.

Change in average conflict probability in 2050 and 2080 by region

SCENARIO	YEAR		ASIA	AFRICA	EUROPE	AMERICAS	OCEANIA	WORLD
BASELINE	2015	Probability	0.206	0.181	0.026	0.049	0.006	0.118
SSP1	2050	Probability	0.128	0.154	0.022	0.046	0.006	0.089
		Change from baseline	-0.078	-0.027	-0.004	-0.003	0.000	-0.029
	2080	Probability	0.091	0.120	0.020	0.036	0.005	0.068
		Change from baseline	-0.115	-0.060	-0.006	-0.013	-0.000	-0.050
SSP2	2050	Probability	0.151	0.199	0.026	0.054	0.008	0.110
		Change from baseline	-0.055	0.018	-0.000	0.005	0.002	-0.008
	2080	Probability	0.108	0.167	0.022	0.041	0.006	0.087
		Change from baseline	-0.098	-0.013	-0.004	-0.007	-0.000	-0.031
SSP3	2050	Probability	0.242	0.276	0.038	0.097	0.013	0.166
		Change from baseline	0.036	0.095	0.011	0.048	0.008	0.048
	2080	Probability	0.263	0.326	0.038	0.116	0.018	0.189
		Change from baseline	0.057	0.146	0.012	0.067	0.012	0.071
SSP5	2050	Probability	0.124	0.146	0.022	0.041	0.007	0.085
		Change from baseline	-0.082	-0.035	-0.004	-0.008	0.001	-0.033
	2080	Probability	0.082	0.107	0.020	0.028	0.006	0.060
		Change from baseline	-0.124	-0.074	-0.007	-0.021	0.000	-0.057

Change in average conflict probability in 2050
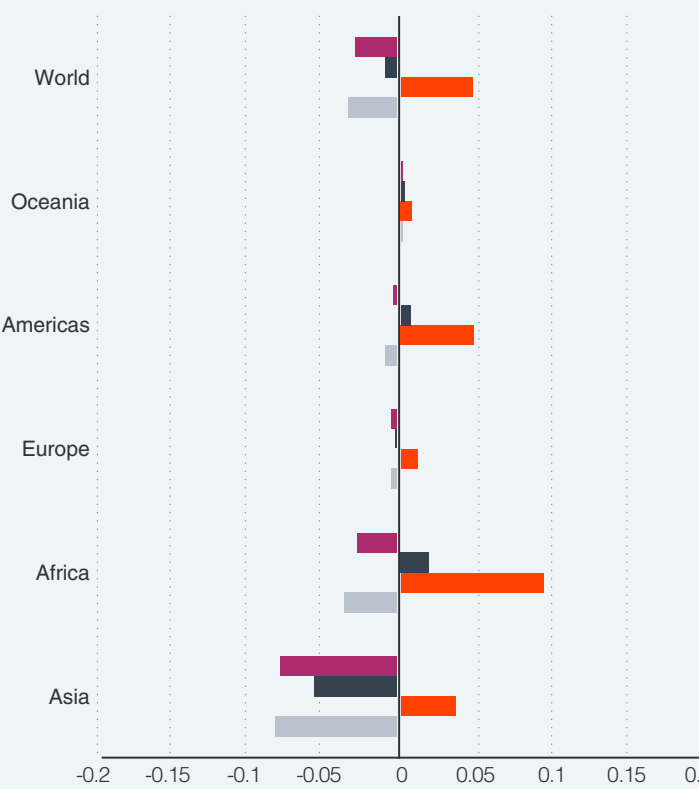
Change in average conflict probability in 2080

SSP1   SSP2   SSP3   SSP5
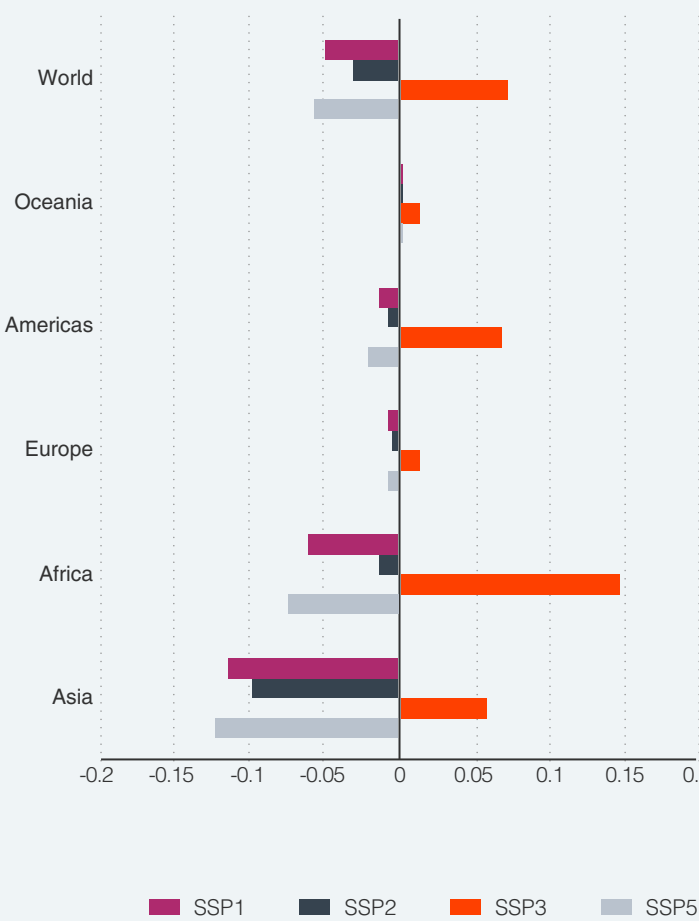
IPCC, 2022. Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press.

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The projected probability of civil conflict in 2050 and 2080 stratified by socioeconomic scenario combination. The bars indicate the change in projected probability of civil conflict for each scenario compared to the baseline (2020 – SSP5).

Limitations and sources

Methodological limitations

Composite indicator: The composite indicators are simplification of reality. The simple 'big picture' results which composite indicators show may invite politicians to draw simplistic policy conclusions. Composite indicators should be used in combination with the sub-indicators to draw sophisticated policy conclusions (UNFPA, 2015).

Precision: Uncertainty analysis revealed considerable variations in scores while exposed to methodological modifications. Therefore, scores presented with a high level of precision could be perceived to be more accurate than they are. To avoid such issue, the INFORM Climate Change Risk Index results are clustered and all fall into one of five risk categories. These categories are generally robust and not influenced by methodological choices. The Index scores can provide further information about risk trends and help interpretation of the results. Be cautious interpreting values close to a category boundary (e.g. 3.4 vs. 3.6).

Representativeness: The usage of proxies limits the 'representativeness'. Certain phenomena that were addressed as important for the humanitarian risk assessment cannot be measured exactly in the way we want or adequate indicators are not available. In such situations, proxy measures are used which measure something that is close enough to reflect similar behaviour and can provide relative differences among the countries for ranking purposes. The proper representativeness of phenomena is limited to the presence of causes, consequences, measurable parts of the process or even accompanying processes. For example, the drought exposure is presented by the proportion of population living in the areas with severe and extreme Standardised Precipitation-Evapotranspiration Index (SPEI) values which is not able to cover potential economic impacts of droughts on livelihoods of targeted communities.

Risk assessment: The INFORM risk is calculated with a multiplicative equation where each of the dimensions are equally weighted (33% each). In this form INFORM's risk is more sensitive to Vulnerability and Lack of coping capacity, the internal forces of risk that can be most influenced by the DRR activities. IPCC considers vulnerability as a result of susceptibility to hazards and lack of coping and adaptive capacity while INFORM vulnerability reflects the susceptibility to hazards and has been combined with lack of coping capacity. Therefore, IPCC vulnerability components could be interchangeably assessed with the combined INFORM's vulnerability and lack of coping capacity. In this case, the combined vulnerability and lack of coping capacity and Hazard& Exposure dimensions can be equality weighted (50%) to better show the impacts of climate change amplified hazards. Nevertheless, for the sake of comparability with the original INFORM, and to better reflect the importance of DRR and CCA activities, we keep the original formula of the risk.

Vulnerability gap assessment: In countries with Very High current risk levels (mainly non-industrialized countries), an increase in climate change hazard does not result in considerable changes in risk and vulnerability gap since the risk is already at its highest level (upper bound of risk scores). Therefore, any conclusion on a low vulnerability gap in response to risk increase in such countries should be drawn with some caution.

Different metrics for exposure: It should be noted that the flood exposure estimates are somewhat inconsistent with those for drought and epidemics due to data availability reasons. The flood exposure is calculated as the integral sum of the potential population exposed for all flood frequencies for each ensemble member, and averaged over the models (so called expected annual exposed population) while the drought and epidemic exposure is based on the multi-model ensemble mean of the population exposed to conditions exceeding a certain threshold averaged over 30 years.

Data limitations

Climate-related hazards: high divergence of forcing from the different RCPs occur mainly beyond mid-century. Extending to the end of the century should include a larger suite of climate change scenarios ranging from the RCP2.6 to RCP 8.5. With the larger suite climate change scenarios, other RCP-SSP combinations should be considered as well. In this study only two RCPs were used due to data availability reasons. Furthermore, other climate-related hazards with large humanitarian impacts such as heatwaves, urban flood and extreme winds should also be considered. Such hazards will be added in the future releases.

Transition between CMIP5 and CMIP6 climate models: Climate models play a major role in assessing the impact of climate change and developing adaption and mitigation strategies. IPCC sixth assessment report is based on the Coupled Model Intercomparison Project Phase 6 (CMIP6) of the World Climate Research Programme. These models have a wider range of climate sensitivity compared to CMIP5 climate models considered in previous IPCC assessment reports (IPCC, 2021). Nevertheless, projections by CMIP5 and CMIP6 models show significant changes in temperature and precipitation in the future (Bourdeau-Goulet and Hassanzadeh, 2021). The hazard projections based on the CMIP6 climate models will be incorporated in the INFORM Climate Change Risk as soon as the bias-corrected simulations' data are available.

Historical period ensembles: It should be noted that the year range of historical period and the return periods (RPs) considered for the coastal flood and drought simulations are somewhat inconsistent with those for river flood and epidemics due to data availability reasons.

Small Island states: As a limitation, for very small countries (e.g., small Pacific Islands) drought is not computed due to their lack of representation in the driving CMIP5 models. The resolution of global climate models (GCMs) exceeds the size of countries (0.25°). Therefore, the exposure is binary for each land grid cell, i.e., either the total population is exposed, or no population is exposed. Since droughts typically affect large geographic areas, we assume no population exposed in those countries. The same challenge has been noted in several other studies using GCMs (e.g., Keener et al., 2012; Smirnov et al., 2016; The World Bank, 2016). To overcome this issue, Keener et al. (2012) suggests to downscale the global models by taking into consideration the regional and local phenomena influencing the regional climate system. Such methods will be applied in the future analysis of the INFORM Climate Change Risk Index.

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Sources

Civil conflict

Uppsala University, Peace Research Institute Oslo (PRIO)

Hegre, H. et al. Forecasting civil conflict along the shared socioeconomic pathways. Environ. Res. Lett. 11, 054002 (2016)

https://iopscience.iop.org/article/10.1088/1748-9326/11/5/054002/meta

Coastal flood

WRI

Ward, P. J. et al. Aqueduct Floods Methodology. World Resour. Inst. 1–28 (2020)

https://www.wri.org/data/aqueduct-floods-hazard-maps

Drought

CMCC

Marzi, S. et al. Assessing future vulnerability and risk of humanitarian crises using climate change and population projections within the INFORM framework. Glob. Environ. Chang. 71, 102393 (2021).

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Epidemics

UK Centre for the Mathematical Modelling of Infectious Diseases, London School of Hygiene and Tropical Medicine

Colón-González, F. J. et al. Projecting the risk of mosquito-borne diseases in a warmer and more populated world: a multi-model, multi-scenario intercomparison modelling study. Lancet Planet. Heal. 5, e404–e414 (2021).

https://osf.io/hpaey/, https://www.thelancet.com/journals/lanplh/article/PIIS2542-51962100132-7/fulltext

Population

UCAR, NCAR

Jones, B. & O'Neill, B. C. Spatially explicit global population scenarios consistent with the Shared Socioeconomic Pathways. Environ. Res. Lett. 11, 084003 (2016), Gao, J. Downscaling Global Spatial Population Projections from 1/8-degree to 1-km Grid Cells. NCAR Tech. Note NCAR/TN-537+STR (2017). doi:10.5065/D60Z721H

https://www.cgd.ucar.edu/iam/modeling/spatial-population-scenarios.html

River flood

WRI

Ward, P. J. et al. Aqueduct Floods Methodology. World Resour. Inst.1–28 (2020)

https://www.wri.org/data/aqueduct-floods-hazard-maps

INFORM Climate Change results

This report presents selected results, you can explore the full results in our climate change tool at **inform-index.org**

	Baseline (current) risk (B)	MID-CENTURY (≈2050) CRISIS RISK						END-CENTURY (≈2080) CRISIS RISK						CHANGE IN HAZARD & EXPOSURE AND ABSOLUTE NUMBERS EXPOSED FOR INDIVIDUAL HAZARDS 2050																TOTAL POPULATION		
		PESSIMISTIC (P) climate and socio-economic scenario			OPTIMISTIC (O) climate and socio-economic scenario			PESSIMISTIC (P) climate and socio-economic scenario			OPTIMISTIC (O) climate and socio-economic scenario			Flood			Coastal flood			Drought			Epidemic (Malaria & Dengue)			Conflict		2022	2050	
														P		O	P		O	P		O	P		O	P	O	B	P	O
COUNTRY	INFORM Climate Change (CC) Risk Index 2022	INFORM CC Risk Index	Change in risk	Vulnerability gap	INFORM CC Risk Index	Change in risk	Vulnerability gap	INFORM CC Risk Index	Change in risk	Vulnerability gap	INFORM CC Risk Index	Change in risk	Vulnerability gap	Change in Hazard and Exposure	Change in absolute number of people exposed	Change in absolute number of people exposed	Change in Hazard and Exposure	Change in absolute number of people exposed	Change in absolute number of people exposed	Change in Hazard and Exposure	Change in absolute number of people exposed	Change in absolute number of people exposed	Change in Hazard and Exposure	Change in absolute number of people exposed	Change in absolute number of people exposed	Change in Human Hazard and Exposure	Change in Human Hazard and Exposure	Total population Baseline (millions)	Total Population 2050 Pessimistic (millions)	Total Population 2050 Optimistic (millions)
Afghanistan	8.0	8.1	0.1	0.2	8.0	0.0	0.1	8.1	0.1	0.3	8.1	0.1	0.2	-1.3	144,222	-316,231	0.0	0	0	2.8	35,800,562	18,888,348	0.1	110,532	-163,787	0.0	0.0	32.52	91.15	60.40
Albania	2.6	2.7	0.1	0.1	2.7	0.1	0.1	2.8	0.2	0.1	2.7	0.1	0.1	-0.9	-17,495	-24,955	0.0	3,806	-2,490	2.7	968,305	686,987	2.0	274,980	139,003	0.1	0.0	2.90	3.49	2.99
Algeria	3.9	4.1	0.2	0.2	3.8	-0.1	-0.2	4.2	0.3	0.3	3.7	-0.2	-0.3	0.3	165,281	177,699	2.7	7,664	6,713	2.8	21,588,265	12,421,963	0.3	975,090	545,437	0.1	-2.7	39.66	54.96	44.44
Angola	4.5	5.4	0.9	1.8	5.1	0.6	1.2	5.7	1.2	2.1	5.0	0.5	1.1	1.2	462,618	315,048	1.1	20,603	15,797	2.1	6,320,397	3,845,534	2.3	33,803,642	22,851,479	2.3	0.5	25.01	49.39	38.16
Antigua and Barbuda	2.0	2.2	0.2	0.2	2.2	0.2	0.2	1.9	-0.1	-0.1	2.1	0.1	0.1	5.2	2,773	2,459	0.0	0	0	0.0	0	0	-0.2	-2,803	-3,758	0.0	0.0	0.09	0.07	0.06
Argentina	2.9	3.2	0.3	0.2	3.1	0.2	0.1	3.3	0.4	0.3	3.1	0.2	0.1	0.8	572,959	313,301	0.6	6,768	2,026	1.6	6,765,016	3,648,641	0.7	11,331,837	4,706,811	0.5	0.0	43.44	56.02	45.17
Armenia	5.3	5.4	0.1	0.1	5.3	0.0	0.0	5.4	0.1	0.1	5.3	0.0	0.0	-1.0	-19,790	-21,975	0.0	0	0	3.2	1,322,206	727,236	0.4	627	0	0.0	0.0	3.02	3.10	2.52
Australia	2.4	2.6	0.2	0.1	2.6	0.2	0.1	2.6	0.2	0.1	2.6	0.2	0.1	0.9	367,372	695,168	1.1	34,693	45,236	2.1	4,668,094	4,916,979	0.8	6,298,555	8,571,637	0.1	0.1	23.97	27.83	35.77
Austria	1.9	2.0	0.1	0.1	2.0	0.1	0.1	2.1	0.2	0.1	2.0	0.1	0.1	-0.1	-44,459	57,106	0.0	0	0	1.7	975,570	805,590	1.8	194,653	79,423	0.0	0.0	8.54	7.64	9.47
Azerbaijan	5.8	5.9	0.1	0.1	5.8	0.0	0.0	5.9	0.1	0.1	5.8	0.0	0.0	0.5	55,304	16,850	0.0	0	0	3.0	2,805,566	1,645,194	0.9	946,144	912,123	0.0	0.0	9.70	11.07	9.98
Bahamas	1.9	2.2	0.3	0.2	2.2	0.3	0.2	2.2	0.3	0.3	2.2	0.3	0.3	0.0	16	10	7.2	4,562	3,972	0.0	98	65	-0.5	-59,270	-60,493	0.0	0.0	0.39	0.06	0.05
Bahrain	1.1	1.4	0.3	0.2	1.4	0.3	0.2	1.6	0.5	0.3	1.5	0.4	0.2	1.1	2,567	2,915	2.1	4,166	4,266	0.0	0	0	0.0	0	0	0.2	0.0	1.38	1.55	1.61
Bangladesh	5.5	5.9	0.4	0.5	5.7	0.2	0.3	5.9	0.4	0.6	5.6	0.1	0.1	1.3	16,515,420	9,941,446	0.3	10,902,949	7,622,176	-0.2	-321,496	-1,324,697	1.1	100,211,951	60,370,348	2.7	0.5	161.05	218.19	175.15
Barbados	1.8	1.8	0.0	-0.0	1.8	0.0	-0.0	1.8	0.0	-0.0	1.7	-0.1	-0.1	0.0	0	0	0.0	0	0	0.0	0	0	-0.1	-9,579	-9,852	0.0	0.0	0.28	0.21	0.21
Belarus	1.4	1.6	0.2	0.1	1.5	0.1	0.1	1.7	0.3	0.1	1.6	0.2	0.1	-0.8	-48,317	-48,572	0.0	0	0	1.5	952,198	465,275	1.7	190,358	16,731	0.0	0.0	9.49	8.42	7.91
Belgium	1.9	2.0	0.1	0.1	2.1	0.2	0.1	2.1	0.2	0.1	2.1	0.2	0.1	0.0	-8,281	26,368	1.1	128,457	161,663	1.2	868,669	1,027,507	0.0	0	0	0.0	0.0	11.30	10.66	13.31
Belize	3.3	3.7	0.4	0.6	3.7	0.4	0.5	3.9	0.6	0.8	3.7	0.4	0.6	0.4	6,528	-1,631	5.2	2,110	1,311	2.4	68,476	32,459	1.4	195,474	80,328	0.0	0.0	0.36	0.52	0.36
Benin	4.1	4.9	0.8	1.8	4.6	0.5	1.4	5.1	1.0	2.1	4.6	0.5	1.4	2.9	554,053	479,779	2.9	21,852	16,203	1.6	1,713,855	651,369	2.3	13,907,164	10,364,782	0.8	-0.2	10.88	20.81	17.25
Bhutan	3.2	3.3	0.1	0.3	3.3	0.1	0.3	3.3	0.1	0.2	3.2	0.0	0.1	-2.8	-15,856	-19,536	0.0	0	0	0.3	49,173	112,214	3.6	1,035,466	793,737	0.3	0.0	0.81	1.39	1.10
Bolivia	3.5	3.9	0.4	0.7	3.8	0.3	0.5	4.1	0.6	0.9	3.8	0.3	0.6	0.4	144,050	10,959	0.0	0	0	2.6	5,839,020	2,774,638	1.7	7,169,489	3,820,723	0.3	0.0	10.73	18.39	12.27
Bosnia and Herzegovina	3.1	3.3	0.2	0.3	3.2	0.1	0.1	3.4	0.3	0.5	3.2	0.1	0.2	-1.7	-61,230	-63,685	0.0	0	0	2.0	656,151	471,445	2.6	745,217	399,918	0.0	0.0	3.80	3.38	3.28
Botswana	2.9	3.3	0.4	0.6	3.2	0.3	0.5	3.4	0.5	0.7	3.3	0.4	0.6	-0.5	-5,937	-5,482	0.0	0	0	2.7	740,647	522,089	0.9	496,904	577,018	0.0	0.0	2.26	2.44	2.52
Brazil	5.0	5.1	0.1	0.0	5.1	0.1	0.0	5.1	0.1	0.1	5.1	0.1	0.1	0.4	1,311,775	252,960	0.9	182,366	138,596	1.1	26,350,689	15,893,829	0.4	75,359,159	39,309,248	0.0	0.0	207.84	246.43	208.64
Brunei Darussalam	1.9	2.0	0.1	0.1	2.0	0.1	0.1	2.1	0.2	0.1	2.0	0.1	0.1	0.3	5,961	2,582	2.3	88	66	-0.5	-2,589	-5,075	2.6	305,894	231,144	0.0	0.0	0.42	0.53	0.46
Bulgaria	2.2	2.5	0.3	0.2	2.4	0.2	0.2	2.6	0.4	0.3	2.4	0.2	0.2	-0.3	-24,853	-24,427	0.0	0	0	2.6	2,092,266	1,223,596	3.0	1,730,273	1,368,758	0.0	0.0	7.13	6.41	6.15
Burkina Faso	6.4	6.6	0.2	0.6	6.6	0.2	0.5	6.6	0.2	0.7	6.6	0.2	0.6	0.8	251,627	142,899	0.0	0	0	1.9	5,928,197	2,586,445	1.8	35,416,908	20,423,258	0.0	0.0	18.08	46.72	32.31
Burundi	5.1	5.8	0.7	1.8	5.8	0.7	1.8	6.0	0.9	2.1	5.8	0.7	1.7	0.5	99,266	69,978	0.0	0	0	1.4	1,448,792	1,032,897	1.8	10,515,925	8,765,055	2.1	2.3	11.16	17.37	15.91
Cabo Verde	1.9	2.5	0.6	0.7	2.4	0.5	0.7	2.5	0.6	0.7	2.3	0.4	0.6	0.0	0	0	4.4	1,029	691	2.4	60,951	23,677	0.4	40,646	8,283	0.0	0.0	0.52	0.64	0.43
Cambodia	4.6	5.2	0.6	1.0	4.9	0.3	0.5	5.4	0.8	1.1	4.7	0.1	0.5	1.8	1,172,743	674,119	0.8	16,327	12,434	-0.3	-44,010	-88,825	2.0	10,881,373	5,762,773	3.1	0.2	15.46	20.72	15.71

KEY   CLIMATE CHANGE RISK INDEX   VERY HIGH   HIGH   MEDIUM   LOW   VERY LOW   CHANGE IN RISK / VULNERABILTY GAP   LARGE INCREASE   INCREASE   STABLE   DECREASE   LARGE DECREASE

COUNTRY	Baseline (current) risk (B) — INFORM Climate Change (CC) Risk Index 2022	MID-CENTURY (≈2050) CRISIS RISK — PESSIMISTIC (P)			MID-CENTURY (≈2050) CRISIS RISK — OPTIMISTIC (O)			END-CENTURY (≈2080) CRISIS RISK — PESSIMISTIC (P)			END-CENTURY (≈2080) CRISIS RISK — OPTIMISTIC (O)			Flood — Change in Hazard and Exposure	Flood — P, Change in absolute number of people exposed	Flood — O, Change in absolute number of people exposed	Coastal flood — Change in Hazard and Exposure	Coastal flood — P	Coastal flood — O	Drought — Change in Hazard and Exposure	Drought — P	Drought — O	Epidemic — Change in Hazard and Exposure	Epidemic — P	Epidemic — O	Conflict — P, Change in Human Hazard and Exposure	Conflict — O	Total population Baseline 2022 (millions)	Total Population 2050 Pessimistic (millions)	Total Population 2050 Optimistic (millions)
		INFORM CC Risk Index	Change in risk	Vulnerability gap	INFORM CC Risk Index	Change in risk	Vulnerability gap	INFORM CC Risk Index	Change in risk	Vulnerability gap	INFORM CC Risk Index	Change in risk	Vulnerability gap																	
Cameroon	6.2	6.4	0.2	0.4	6.3	0.1	0.3	6.4	0.2	0.5	6.4	0.2	0.4	-0.4	44,563	-78,902	1.5	51,149	36,435	1.2	3,024,637	2,011,688	1.7	21,840,220	14,401,083	0.0	0.0	23.37	37.21	30.10
Canada	2.5	2.7	0.2	0.1	2.7	0.2	0.1	2.8	0.3	0.1	2.8	0.3	0.2	0.5	260,661	800,923	1.8	190,668	240,080	1.2	3,276,647	3,419,065	2.2	720,188	406,044	0.0	0.1	35.92	36.96	48.29
Central African Republic	7.7	7.8	0.1	0.4	7.8	0.1	0.3	7.8	0.1	0.4	7.8	0.1	0.3	0.1	32,271	16,652	0.0	0	0	1.2	536,561	400,451	1.4	3,821,621	2,561,679	0.0	0.0	4.91	8.03	6.58
Chad	7.8	7.9	0.1	0.3	7.9	0.1	0.3	8.0	0.2	0.4	7.9	0.1	0.3	1.5	588,412	386,363	0.0	0	0	1.4	2,672,887	1,822,158	2.0	19,372,156	12,943,281	0.0	0.0	14.01	28.32	21.95
Chile	3.3	3.5	0.2	0.2	3.4	0.1	0.1	3.6	0.3	0.2	3.5	0.2	0.1	-0.2	-19,555	-18,252	0.4	753	252	3.1	8,480,537	5,070,177	0.0	0	0	0.3	-0.1	17.95	21.58	18.93
China	3.9	4.0	0.1	0.1	3.9	0.0	0.0	4.0	0.1	0.1	3.9	0.0	-0.0	-0.1	-6,750,750	-10,401,273	0.1	4,245,915	3,514,562	0.4	98,129,936	45,893,056	0.3	265,168,644	160,655,982	1.0	-0.3	1,376.12	1,322.59	1,238.18
Colombia	5.4	5.5	0.1	0.1	5.4	0.0	0.1	5.5	0.1	0.2	5.4	0.0	0.1	0.2	250,318	-4,547	0.5	54,476	30,127	0.8	3,782,939	2,126,160	1.2	29,006,290	19,042,476	0.0	0.0	48.19	71.77	57.81
Comoros	3.8	4.4	0.6	1.4	4.1	0.3	0.7	4.5	0.7	1.7	4.2	0.4	0.9	2.3	10,599	4,616	2.6	2,958	1,535	0.7	11,335	1,953	0.9	197,302	84,100	0.4	-0.1	0.79	1.33	0.81
Congo	5.2	5.3	0.1	0.4	5.3	0.1	0.2	5.5	0.3	0.9	5.3	0.1	0.2	-2.2	37,354	42,610	3.0	888	732	1.8	1,279,501	1,110,460	0.1	13,508,708	10,916,047	0.2	-0.1	4.64	9.13	7.95
Congo DR	7.6	7.8	0.2	0.5	7.7	0.1	0.4	7.8	0.2	0.5	7.7	0.1	0.4	0.3	969,798	674,353	0.5	23	9	1.6	15,472,594	10,849,970	2.2	117,092,702	82,265,573	0.0	0.0	77.24	162.72	129.13
Costa Rica	3.2	3.4	0.2	0.2	3.3	0.1	0.1	3.4	0.2	0.2	3.3	0.1	0.1	-0.1	1,550	-11,853	1.1	2,425	1,337	1.4	658,248	488,420	2.1	3,682,522	2,832,629	0.2	0.0	4.81	7.05	6.15
Côte d'Ivoire	4.7	5.2	0.5	1.1	5.0	0.3	0.7	5.4	0.7	1.6	4.9	0.2	0.5	0.5	308,184	134,501	1.6	1,551	1,013	1.0	2,748,045	1,711,711	1.8	22,341,401	11,015,874	0.7	-0.2	22.70	39.18	26.70
Croatia	2.2	2.3	0.1	0.0	2.3	0.1	0.0	2.4	0.2	0.1	2.3	0.1	0.1	0.2	-8,617	-19,434	-1.6	-4,500	-4,523	1.6	448,694	278,927	3.4	1,693,015	1,202,634	0.0	0.0	4.24	3.73	3.67
Cuba	2.4	2.4	0.0	0.0	2.4	0.0	0.0	2.4	0.0	0.0	2.4	0.0	0.0	-1.3	-92,462	-78,460	2.4	8,949	6,741	1.3	601,358	419,739	0.1	-739,470	-1,585,263	0.1	0.0	11.39	9.79	8.63
Cyprus	2.6	2.8	0.2	0.2	2.8	0.2	0.2	3.1	0.5	0.5	3.0	0.4	0.4	-0.8	-7,067	-7,418	0.0	0	0	3.4	407,714	291,189	0.0	0	14,235	0.0	-0.1	1.17	1.38	1.42
Czech Republic	1.2	1.3	0.1	0.0	1.3	0.1	0.0	1.4	0.2	0.1	1.3	0.1	0.0	-0.5	-66,777	-22,053	0.0	0	0	1.6	1,316,906	906,814	1.2	26,538	3,291	0.0	0.0	10.54	9.72	12.11
Denmark	1.4	1.5	0.1	0.1	1.5	0.1	0.1	1.6	0.2	0.1	1.5	0.1	0.1	0.2	4,975	7,142	1.1	20,082	26,481	0.8	126,395	141,695	0.0	0	0	0.0	0.0	5.67	4.83	6.03
Djibouti	4.4	4.9	0.5	1.2	4.8	0.4	0.9	5.2	0.8	1.7	4.8	0.4	0.9	0.1	11,540	19,910	1.1	42	28	2.6	129,795	97,895	2.9	711,344	627,488	0.7	-0.1	0.88	1.35	1.18
Dominica	2.6	2.6	0.0	0.0	2.6	0.0	0.0	2.6	0.0	0.0	2.6	0.0	0.0	0.2	217	218	0.0	0	0	0.0	0	0	0.0	679	-1,266	0.0	0.0	0.07	0.08	0.07
Dominican Republic	4.2	4.4	0.2	0.3	4.3	0.1	0.1	4.5	0.3	0.4	4.3	0.1	0.1	0.3	51,315	11,362	-0.1	15	-1,001	2.5	3,042,887	1,986,103	1.2	6,185,605	2,886,808	0.5	0.0	10.52	15.57	11.65
Ecuador	4.4	4.6	0.2	0.3	4.5	0.1	0.1	4.7	0.3	0.4	4.5	0.1	0.1	-0.5	35,452	-123,513	1.2	228,996	123,902	0.9	1,456,457	655,785	0.9	6,911,072	3,344,752	0.7	0.2	16.15	24.03	18.09
Egypt	4.8	5.0	0.2	0.2	5.0	0.2	0.2	5.0	0.2	0.3	5.0	0.2	0.3	1.8	4,368,194	1,801,349	1.7	866,518	680,738	2.4	95,580,900	67,524,980	0.2	125	264	0.0	0.0	91.52	138.15	110.79
El Salvador	4.3	4.6	0.3	0.5	4.4	0.1	0.2	4.7	0.4	0.6	4.4	0.1	0.2	0.7	44,943	-4,895	2.1	12,192	4,626	2.1	1,428,768	670,500	1.2	3,446,740	712,435	0.7	-0.1	6.13	8.41	5.47
Equatorial Guinea	3.8	3.6	-0.2	-0.3	3.6	-0.2	-0.5	3.7	-0.1	-0.2	3.6	-0.2	-0.5	-5.2	-62,589	-65,950	0.6	91	66	0.5	43,452	27,810	1.9	778,557	623,965	0.1	0.0	0.82	1.43	1.26
Eritrea	4.0	4.9	0.9	1.9	4.5	0.5	1.2	5.1	1.1	2.2	4.5	0.5	1.2	0.4	20,656	16,635	0.8	46	37	2.3	2,129,035	1,753,477	2.3	8,793,573	6,763,604	1.3	-0.1	5.29	11.77	9.94
Estonia	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.1	0.1	0.0	1.0	0.0	0.0	-0.4	-3,797	-1,489	0.6	50	46	0.5	11,680	17,041	0.0	0	0	0.0	0.0	1.31	1.04	1.24
Eswatini	3.3	3.5	0.2	0.5	3.5	0.2	0.3	3.7	0.4	0.7	3.5	0.2	0.5	-1.9	-20,522	-21,698	0.0	0	0	1.9	232,206	164,314	0.6	370,554	284,380	0.0	0.0	1.28	1.58	1.47
Ethiopia	6.8	6.9	0.1	0.2	6.9	0.1	0.1	6.9	0.1	0.3	6.9	0.1	0.1	0.8	750,163	398,654	0.0	0	0	0.9	7,840,258	5,222,042	1.9	112,413,437	70,938,808	0.0	0.0	99.26	185.03	139.65
Fiji	3.2	3.1	-0.1	-0.1	3.1	-0.1	-0.1	3.2	0.0	0.0	3.1	-0.1	-0.1	-3.4	-29,336	-36,894	-0.2	-364	-859	2.9	53,268	38,911	1.5	297,074	154,119	0.0	-0.1	0.89	1.02	0.75
Finland	1.3	1.4	0.1	0.1	1.4	0.1	0.1	1.5	0.2	0.1	1.4	0.1	0.1	0.3	8,401	9,028	1.8	1,713	1,716	1.4	281,525	275,340	0.0	0	0	0.0	0.0	5.50	4.96	6.13
France	2.4	2.6	0.2	0.1	2.6	0.2	0.1	2.7	0.3	0.2	2.6	0.2	0.1	0.1	138,164	454,863	0.9	149,198	189,881	1.7	10,093,479	10,512,593	2.3	1,137,232	472,042	0.4	-0.1	64.41	64.55	77.83
Gabon	3.7	4.1	0.4	0.7	4.0	0.3	0.6	4.2	0.5	0.9	4.0	0.3	0.5	0.1	155,211	112,905	3.2	33,440	28,878	0.8	86,964	38,182	1.6	1,021,548	757,029	0.7	0.0	1.75	2.48	2.13
Gambia	3.6	4.4	0.8	1.4	4.2	0.6	1.1	4.6	1.0	1.6	4.3	0.7	1.3	2.4	101,493	60,489	2.5	81,457	57,291	3.1	461,218	179,848	1.8	1,998,849	1,178,915	0.4	0.0	2.00	3.80	2.75

KEY

CLIMATE CHANGE RISK INDEX: VERY HIGH | HIGH | MEDIUM | LOW | VERY LOW

CHANGE IN RISK / VULNERABILTY GAP: LARGE INCREASE | INCREASE | STABLE | DECREASE | LARGE DECREASE

COUNTRY	Baseline (current) risk (B) — INFORM CC Risk Index 2022	MID P — INFORM CC Risk Index	MID P — Change in risk	MID P — Vulnerability gap	MID O — INFORM CC Risk Index	MID O — Change in risk	MID O — Vulnerability gap	END P — INFORM CC Risk Index	END P — Change in risk	END P — Vulnerability gap	END O — INFORM CC Risk Index	END O — Change in risk	END O — Vulnerability gap	Flood — Change in Hazard and Exposure	Flood — P abs. exposed	Flood — O abs. exposed	Coastal flood — Change in Hazard and Exposure	Coastal flood — P abs. exposed	Coastal flood — O abs. exposed	Drought — Change in Hazard and Exposure	Drought — P abs. exposed	Drought — O abs. exposed	Epidemic — Change in Hazard and Exposure	Epidemic — P abs. exposed	Epidemic — O abs. exposed	Conflict — P	Conflict — O	Pop Baseline 2022	Pop 2050 P	Pop 2050 O
Georgia	3.1	3.2	0.1	0.2	3.1	0.0	0.1	3.3	0.2	0.4	3.2	0.1	0.2	-1.2	-48,603	-57,834	0.0	0	0	2.5	991,831	450,046	1.2	1,100,240	675,942	-0.1	-0.2	4.00	3.87	3.12
Germany	2.4	2.5	0.1	0.1	2.5	0.1	0.1	2.5	0.1	0.1	2.5	0.1	0.1	-0.1	-270,381	66,454	0.4	160,964	239,698	1.3	6,712,030	5,234,092	0.8	5,090	4,310	0.1	0.1	80.75	66.51	82.24
Ghana	4.0	4.4	0.4	0.6	4.2	0.2	0.3	4.5	0.5	0.8	4.2	0.2	0.4	-0.1	351,257	113,925	1.0	128,226	65,326	1.3	4,232,261	2,357,386	1.7	36,567,097	22,028,986	0.6	0.0	27.45	54.49	39.89
Greece	2.7	2.8	0.1	0.1	2.8	0.1	0.1	2.9	0.2	0.2	2.8	0.1	0.1	-0.6	-72,975	-43,758	1.5	13,751	14,605	3.2	2,817,784	2,707,507	2.0	405,748	313,913	0.0	0.0	10.96	9.13	10.94
Grenada	1.7	1.7	0.0	0.0	1.7	0.0	0.0	1.7	0.0	0.0	1.7	0.0	0.0	0.1	63	33	0.0	0	0	0.0	0	0	0.2	4,073	-626	0.0	0.0	0.11	0.13	0.09
Guatemala	5.1	5.8	0.7	1.2	5.5	0.4	0.7	6.0	0.9	1.4	5.4	0.3	0.6	0.0	35,040	-62,649	2.7	1,179	602	1.8	5,043,524	2,372,213	1.7	20,513,599	9,300,007	3.8	1.6	16.33	32.60	20.49
Guinea	4.4	5.0	0.6	1.2	4.9	0.5	0.9	5.2	0.8	1.4	4.9	0.5	0.9	1.1	249,518	130,704	1.7	231,076	142,305	2.0	2,798,943	1,211,020	1.9	10,812,024	5,114,873	0.6	0.2	12.61	19.67	13.61
Guinea-Bissau	4.1	5.0	0.9	2.4	4.8	0.7	2.0	5.3	1.2	2.7	4.9	0.8	2.1	2.5	78,319	51,462	4.2	88,472	80,953	2.5	403,012	175,392	1.4	1,170,429	692,807	0.6	-0.1	1.85	2.87	2.23
Guyana	4.3	4.2	-0.1	-0.2	4.1	-0.2	-0.5	4.3	0.0	0.0	4.1	-0.2	-0.5	-3.3	-20,464	-29,181	-1.4	-27,174	-29,834	3.2	212,237	109,879	-0.1	149,725	-102,764	0.0	-0.1	0.77	0.96	0.65
Haiti	5.5	5.8	0.3	0.7	5.6	0.1	0.5	5.9	0.4	1.1	5.6	0.1	0.2	-0.4	-9,081	-11,615	-0.4	-465	-760	2.1	1,815,931	1,091,383	1.0	5,984,756	2,781,099	0.9	0.2	10.72	14.63	11.33
Honduras	4.9	5.4	0.5	0.9	5.2	0.3	0.6	5.5	0.6	1.1	5.1	0.2	0.5	0.7	174,735	38,646	2.7	26,433	18,255	2.3	2,996,915	1,453,164	1.7	8,251,252	4,221,432	0.7	0.1	8.08	14.41	9.94
Hungary	1.5	1.8	0.3	0.1	1.7	0.2	0.1	1.9	0.4	0.1	1.8	0.3	0.1	0.6	24,360	46,988	0.0	0	0	2.3	1,861,274	1,430,731	2.9	1,706,216	1,005,354	0.0	0.0	9.86	7.60	9.25
Iceland	1.3	1.3	0.0	0.0	1.3	0.0	0.0	1.3	0.0	0.0	1.4	0.1	0.0	-0.6	-1,269	-622	-0.7	-1,962	-1,588	0.8	8,174	14,875	0.0	0	0	0.0	0.0	0.33	0.35	0.44
India	5.5	5.5	0.0	0.1	5.4	-0.1	-0.1	5.5	0.0	0.1	5.3	-0.2	-0.3	0.9	57,391,212	33,617,580	0.1	7,759,095	5,301,123	0.2	77,304,656	40,946,432	0.5	837,846,405	465,695,839	0.0	-1.7	1,311.15	1,934.16	1,519.76
Indonesia	4.4	4.7	0.3	0.2	4.5	0.1	0.1	4.7	0.3	0.3	4.4	0.0	0.0	0.2	3,224,560	440,173	0.1	1,585,069	1,211,950	0.3	3,611,162	2,341,376	0.5	80,374,136	51,557,926	2.8	0.0	257.56	296.05	262.34
Iran	4.3	4.8	0.5	0.7	4.5	0.2	0.2	4.9	0.6	0.8	4.4	0.1	0.3	0.1	252,094	-13,064	2.6	78,311	53,081	2.3	45,479,489	30,321,261	0.7	216,485	131,973	2.5	-0.5	79.16	102.92	87.71
Iraq	6.6	6.6	0.0	0.2	6.6	0.0	0.1	6.7	0.1	0.2	6.6	0.0	0.1	-1.5	833,711	-421,573	0.8	64,914	36,236	3.0	48,466,981	28,151,269	0.0	0	0	0.0	0.0	36.43	85.56	57.45
Ireland	1.7	1.7	0.0	0.0	1.7	0.0	0.0	1.8	0.1	0.1	1.8	0.1	0.1	0.7	40,059	70,161	0.7	4,339	4,939	0.3	69,953	165,901	0.0	0	0	0.1	0.1	4.70	4.99	6.14
Israel	2.6	2.7	0.1	0.1	2.6	0.0	-0.0	2.8	0.2	0.2	2.6	0.0	-0.0	0.1	11,731	41,272	0.0	0	0	3.0	2,843,808	2,208,987	0.0	0	0	0.8	-1.0	8.05	11.58	13.51
Italy	2.5	2.7	0.2	0.1	2.7	0.2	0.1	2.7	0.2	0.1	2.7	0.2	0.1	0.6	168,403	332,373	1.0	135,516	138,151	1.7	7,062,062	7,285,430	1.3	2,036,881	1,171,229	0.3	0.3	59.82	50.44	61.37
Jamaica	3.0	3.2	0.2	0.2	3.1	0.1	0.1	3.3	0.3	0.2	3.1	0.1	0.1	0.0	-158	-4,035	2.1	4,745	2,188	2.1	350,244	207,460	1.0	988,146	132,011	0.2	0.0	2.79	3.44	2.42
Japan	2.3	2.3	0.0	0.0	2.3	0.0	0.0	2.3	0.0	0.0	2.3	0.0	0.0	-0.5	-1,809,017	-732,906	0.0	-271,700	5,598	0.0	-607,360	476,328	0.7	15,276,238	17,139,892	0.0	0.2	126.57	91.62	109.70
Jordan	3.5	4.1	0.6	1.2	3.9	0.4	0.9	4.2	0.7	1.4	4.0	0.5	1.1	0.4	7,624	5,665	0.2	10	10	3.5	7,603,228	5,207,099	0.0	0	0	0.4	-0.1	7.59	14.00	12.02
Kazakhstan	1.6	1.8	0.2	0.1	1.7	0.1	0.1	1.9	0.3	0.1	1.8	0.2	0.1	-0.4	-25,452	-30,104	0.0	0	0	2.7	7,267,168	4,253,201	1.2	555,849	315,945	0.2	0.2	17.63	21.67	18.79
Kenya	4.6	5.1	0.5	1.0	4.8	0.2	0.4	5.3	0.7	1.4	4.8	0.2	0.5	0.9	698,596	368,215	-0.1	1,251	-2,606	0.9	4,740,485	1,724,591	1.5	58,741,016	35,323,505	1.0	0.2	46.12	95.84	70.22
Kiribati	3.0	3.7	0.7	1.5	3.7	0.7	1.5	3.7	0.7	1.6	3.7	0.7	1.5	0.0	0	0	8.1	1,821	1,447	0.0	0	0	1.8	1,055	848	0.0	0.0	0.11	0.01	0.01
Korea DPR	4.6	4.7	0.1	0.3	4.6	0.0	0.1	4.8	0.2	0.4	4.6	0.0	0.1	-0.9	-222,598	-275,844	1.0	50,657	40,788	0.4	574,994	102,714	2.1	8,708,689	6,187,407	0.2	-0.1	25.06	25.25	22.93
Korea Republic of	2.1	2.1	0.0	0.0	2.1	0.0	0.0	2.0	-0.1	-0.0	2.1	0.0	0.0	0.1	-46,414	125,176	0.0	-10,829	498	-0.3	-841,255	-348,010	0.8	6,605,918	6,298,027	0.0	0.0	50.29	39.49	46.36
Kuwait	1.7	2.2	0.5	0.4	2.2	0.5	0.3	2.3	0.6	0.4	2.2	0.5	0.3	4.1	77,657	41,067	2.0	41,712	40,025	3.7	1,145,319	992,835	0.0	0	0	0.0	0.0	3.89	4.20	4.18
Kyrgyzstan	2.7	2.8	0.1	0.1	2.7	0.0	0.1	2.9	0.2	0.3	2.7	0.0	0.1	-1.8	-92,610	-97,570	0.0	0	0	2.3	2,009,516	836,997	0.0	0	0	0.0	0.0	5.80	7.80	5.82
Lao PDR	4.0	4.0	0.0	-0.1	3.9	-0.1	-0.3	4.0	0.0	0.0	3.9	-0.1	-0.3	-2.9	-93,050	-170,078	0.0	0	0	-0.2	64,608	-14,443	1.4	4,408,725	2,085,295	0.2	-0.3	6.83	9.98	7.53
Latvia	1.3	1.4	0.1	0.1	1.4	0.1	0.1	1.6	0.3	0.2	1.5	0.2	0.1	-0.3	-6,527	11,648	3.2	550	438	0.7	45,905	12,910	0.0	0	0	0.0	0.0	1.97	1.84	1.77
Lebanon	3.9	4.2	0.3	0.5	4.0	0.1	0.1	4.3	0.4	0.7	4.1	0.2	0.2	-1.4	-13,383	-13,564	-0.6	-27	-27	2.6	1,277,503	704,855	0.0	0	0	0.3	-0.2	5.84	5.25	4.59
Lesotho	3.0	3.7	0.7	2.1	3.5	0.5	1.7	3.9	0.9	2.5	3.6	0.6	1.9	0.3	4,918	3,188	0.0	0	0	2.2	486,620	349,148	2.3	466,647	163,494	0.0	-0.1	2.13	2.82	2.55

KEY

CLIMATE CHANGE RISK INDEX: VERY HIGH | HIGH | MEDIUM | LOW | VERY LOW

CHANGE IN RISK / VULNERABILTY GAP: LARGE INCREASE | INCREASE | STABLE | DECREASE | LARGE DECREASE

	Baseline (current) risk (B)	MID-CENTURY (≈2050) CRISIS RISK — PESSIMISTIC (P)			MID-CENTURY (≈2050) CRISIS RISK — OPTIMISTIC (O)			END-CENTURY (≈2080) CRISIS RISK — PESSIMISTIC (P)			END-CENTURY (≈2080) CRISIS RISK — OPTIMISTIC (O)			Flood (P)		Flood (O)	Coastal flood (P)		Coastal flood (O)	Drought (P)		Drought (O)	Epidemic (P)		Epidemic (O)	Conflict (P)	Conflict (O)	Total pop. Baseline (millions)	Total Pop. 2050 Pessimistic (millions)	Total Pop. 2050 Optimistic (millions)
COUNTRY	INFORM CC Risk Index 2022	CC Risk Index	Change in risk	Vuln. gap	CC Risk Index	Change in risk	Vuln. gap	CC Risk Index	Change in risk	Vuln. gap	CC Risk Index	Change in risk	Vuln. gap	Change in Hazard & Exposure	Change in abs. people exposed	Change in abs. people exposed	Change in Hazard & Exposure	Change in abs. people exposed	Change in abs. people exposed	Change in Hazard & Exposure	Change in abs. people exposed	Change in abs. people exposed	Change in Hazard & Exposure	Change in abs. people exposed	Change in abs. people exposed	Change in Human Hazard & Exposure	Change in Human Hazard & Exposure	B	P	O
Liberia	5.3	6.0	0.7	1.8	5.8	0.5	1.5	6.1	0.8	2.1	5.8	0.5	1.5	0.1	292,689	195,131	2.8	23,556	19,129	1.8	918,681	504,955	2.5	8,212,045	6,664,999	1.2	0.6	4.51	11.08	9.50
Libya	6.2	6.3	0.1	0.1	6.3	0.1	0.1	6.3	0.1	0.1	6.3	0.1	0.1	-0.8	-25,894	-14,143	1.3	26,846	20,491	3.6	4,509,511	2,722,070	0.8	3,737	31	0.0	0.0	6.28	10.60	8.71
Liechtenstein	1.1	1.1	0.0	0.0	1.1	0.0	0.0	1.1	0.0	0.0	1.1	0.0	0.0	0.0	-190	-246	0.0	0	0	0.4	-194	-325	0.0	0	0	0.0	0.0	0.04	0.02	0.02
Lithuania	1.4	1.5	0.1	0.1	1.5	0.1	0.1	1.5	0.1	0.1	1.5	0.1	0.0	-1.0	-23,677	-21,115	1.0	3,203	2,740	1.6	285,302	168,808	0.0	0	0	0.0	0.0	2.88	2.95	2.63
Luxembourg	1.1	1.2	0.1	0.1	1.1	0.0	0.0	1.3	0.2	0.1	1.2	0.1	0.1	-1.5	-6,072	-5,188	0.0	0	0	1.8	74,163	75,325	0.1	0	0	0.0	0.0	0.57	0.60	0.79
Madagascar	5.2	5.7	0.5	1.0	5.5	0.3	0.5	5.8	0.6	1.2	5.5	0.3	0.5	-0.5	348,580	-105,316	0.0	33,276	1,662	2.2	5,619,683	4,038,969	1.5	37,673,588	22,674,127	1.5	0.5	24.24	52.33	37.13
Malawi	4.5	5.1	0.6	1.4	4.9	0.4	1.0	5.4	0.9	1.8	4.9	0.4	1.0	1.1	498,845	203,326	0.0	0	0	1.8	5,476,759	3,471,291	1.6	37,418,552	22,822,653	1.0	-0.1	17.26	47.53	33.28
Malaysia	3.4	3.5	0.1	0.1	3.3	-0.1	-0.1	3.6	0.2	0.2	3.3	-0.1	-0.1	-0.2	556,587	104,627	0.9	530,938	345,882	0.0	397,840	-115,217	1.3	19,784,212	13,848,994	0.5	-1.1	30.33	44.77	37.46
Maldives	2.1	2.2	0.1	0.2	2.1	0.0	0.1	2.2	0.1	0.2	2.2	0.1	0.2	0.0	0	0	5.8	402	135	0.0	0	0	0.4	152	169	0.0	0.0	0.36	0.01	0.02
Mali	6.9	7.1	0.2	0.3	7.1	0.2	0.3	7.1	0.2	0.4	7.1	0.2	0.3	0.9	639,336	356,350	0.0	0	0	2.6	9,503,508	5,199,085	1.9	31,708,950	19,857,000	0.0	0.0	17.61	42.11	30.42
Malta	1.5	1.5	0.0	0.0	1.5	0.0	0.0	1.5	0.0	0.0	1.5	0.0	0.0	0.0	60	73	0.0	0	0	0.0	0	0	0.5	710	367	0.0	0.0	0.42	0.21	0.21
Marshall Islands	3.1	3.5	0.4	0.9	3.5	0.4	0.9	3.5	0.4	0.9	3.5	0.4	1.0	0.0	0	0	5.7	329	288	0.0	0	0	0.0	52	46	0.0	0.2	0.05	0.00	0.00
Mauritania	4.6	5.0	0.4	1.2	4.7	0.1	0.3	5.2	0.6	1.5	4.7	0.1	0.3	-0.1	68,244	28,524	-1.1	-1,146	-1,346	3.4	3,247,144	1,891,887	-0.5	1,928,534	1,230,129	1.1	-0.4	4.10	7.08	5.40
Mauritius	2.1	2.2	0.1	0.0	2.2	0.1	0.0	2.2	0.1	0.0	2.1	0.0	0.0	0.0	0	0	0.6	637	621	1.5	62,992	39,520	1.3	290,996	251,414	0.0	0.0	1.27	1.36	1.25
Mexico	5.0	5.0	0.0	0.1	5.0	0.0	0.1	5.1	0.1	0.1	5.0	0.0	0.1	-0.4	-329,147	-1,102,901	1.3	79,012	42,369	1.7	42,313,584	25,077,128	0.9	52,651,596	26,571,760	0.0	0.0	126.93	174.79	133.49
Micronesia	2.9	3.0	0.1	0.2	2.9	0.0	0.0	3.0	0.1	0.2	2.9	0.0	0.0	0.0	0	0	0.0	0	0	0.0	0	0	2.1	4,768	2,898	0.0	0.0	0.10	0.04	0.03
Moldova Republic of	2.3	2.6	0.3	0.3	2.5	0.2	0.2	2.7	0.4	0.4	2.5	0.2	0.2	0.4	-9,374	-17,426	0.0	0	0	2.6	741,035	284,008	2.9	874,516	519,258	0.0	0.0	4.07	2.70	2.14
Mongolia	2.4	2.6	0.2	0.2	2.5	0.1	0.1	2.8	0.4	0.4	2.5	0.1	0.2	-2.4	-61,002	-67,991	0.0	0	0	2.6	1,364,935	781,740	1.2	19,333	2,502	0.0	0.0	2.95	4.23	3.40
Montenegro	2.2	2.2	0.0	0.0	2.2	0.0	0.0	2.3	0.1	0.1	2.2	0.0	0.0	-4.0	-22,680	-22,731	-0.7	-30	-36	2.8	144,400	117,635	1.8	81,527	81,260	0.0	-0.1	0.63	0.60	0.55
Morocco	3.5	4.1	0.6	0.6	3.7	0.2	0.3	4.2	0.7	0.7	3.6	0.1	0.1	-1.9	-560,969	-524,878	1.1	41,381	31,584	3.0	17,694,284	8,389,485	2.2	156,651	32,824	2.3	0.0	34.39	44.95	33.76
Mozambique	7.2	7.3	0.1	0.2	7.3	0.1	0.2	7.4	0.2	0.3	7.3	0.1	0.2	0.3	549,015	133,714	0.9	280,815	197,127	1.5	4,449,756	3,582,147	1.8	27,918,006	18,506,598	0.0	0.0	27.95	46.47	37.27
Myanmar	6.2	6.3	0.1	0.2	6.3	0.1	0.1	6.4	0.2	0.2	6.3	0.1	0.1	1.6	1,031,946	332,117	1.0	471,058	263,427	-0.7	-1,313,262	-1,557,553	1.1	12,262,471	2,940,976	0.0	0.0	53.86	53.59	44.10
Namibia	3.2	3.7	0.5	1.0	3.6	0.4	0.8	3.9	0.7	1.2	3.6	0.4	0.8	-0.9	-10,668	-17,988	0.2	12	8	2.7	1,073,917	710,279	1.8	1,626,347	1,252,095	0.3	0.0	2.47	3.64	3.22
Nauru	2.4	2.4	0.0	0.0	2.4	0.0	0.0	2.4	0.0	0.0	2.4	0.0	0.0	0.0	0	0	0.0	0	0	0.0	0	0	0.2	76	65	0.0	0.0	0.01	0.01	0.01
Nepal	4.5	5.0	0.5	0.8	4.5	0.0	0.2	5.1	0.6	1.0	4.5	0.0	0.1	-0.2	208,925	-63,289	0.0	0	0	0.4	1,536,402	1,242,096	1.5	37,050,229	20,947,457	2.6	-0.4	28.34	60.49	43.79
Netherlands	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.1	0.1	0.0	2.1	0.1	0.0	0.0	96,473	381,838	0.3	1,516,330	2,369,521	0.8	450,574	467,675	0.0	0	0	0.1	0.1	16.91	15.49	18.72
New Zealand	1.6	1.7	0.1	0.0	1.7	0.1	0.0	1.7	0.1	0.1	1.7	0.1	0.0	1.4	62,187	135,433	1.5	3,795	4,121	0.8	98,644	112,690	1.5	69,836	376	0.1	0.1	4.53	4.50	5.43
Nicaragua	4.3	4.7	0.4	0.6	4.5	0.2	0.4	4.7	0.4	0.7	4.5	0.2	0.4	-0.1	22,114	-39,438	3.0	21,064	11,559	2.2	1,921,901	937,003	1.8	4,936,188	1,752,006	0.4	-0.3	6.07	9.22	6.11
Niger	7.3	7.5	0.2	0.3	7.4	0.1	0.3	7.5	0.2	0.3	7.4	0.1	0.3	0.1	474,954	98,816	0.0	0	0	2.0	7,712,406	3,258,612	2.0	53,300,329	27,925,601	0.0	0.0	19.92	63.17	38.43
Nigeria	6.6	6.7	0.1	0.2	6.7	0.1	0.2	6.7	0.1	0.2	6.7	0.1	0.2	0.7	5,218,889	3,046,739	1.4	2,442,453	1,646,475	0.9	41,813,287	19,589,371	1.0	315,658,522	205,856,543	0.0	0.0	182.14	430.93	326.01
North Macedonia	2.1	2.3	0.2	0.2	2.3	0.2	0.2	2.4	0.3	0.3	2.3	0.2	0.2	0.1	3,359	10,276	0.0	0	0	2.8	765,647	577,165	1.9	202,162	98,321	0.0	-0.1	2.08	2.26	2.24
Norway	1.9	1.7	-0.2	-0.2	1.6	-0.3	-0.2	1.7	-0.2	-0.2	1.7	-0.2	-0.1	-3.6	-315,857	-282,304	-1.3	-11,840	-11,006	0.0	-14,782	40,529	0.0	0	0	0.1	0.1	5.21	5.10	6.58
Oman	2.4	2.6	0.2	0.2	2.5	0.1	0.1	2.7	0.3	0.2	2.5	0.1	0.1	0.7	5,645	49,132	-0.2	-2,874	-3,754	3.4	1,511,694	1,019,313	0.9	157,150	46,684	0.6	-0.1	4.50	4.86	4.14

KEY

CLIMATE CHANGE RISK INDEX: VERY HIGH | HIGH | MEDIUM | LOW | VERY LOW

CHANGE IN RISK / VULNERABILTY GAP: LARGE INCREASE | INCREASE | STABLE | DECREASE | LARGE DECREASE

COUNTRY	Baseline (current) risk (B) — INFORM Climate Change (CC) Risk Index 2022	MID-CENTURY (≈2050) CRISIS RISK — PESSIMISTIC (P) — INFORM CC Risk Index	P — Change in risk	P — Vulnerability gap	OPTIMISTIC (O) — INFORM CC Risk Index	O — Change in risk	O — Vulnerability gap	END-CENTURY (≈2080) CRISIS RISK — PESSIMISTIC (P) — INFORM CC Risk Index	P — Change in risk	P — Vulnerability gap	OPTIMISTIC (O) — INFORM CC Risk Index	O — Change in risk	O — Vulnerability gap	Flood P — Change in Hazard and Exposure	Flood P — Change in absolute number of people exposed	Flood O — Change in absolute number of people exposed	Coastal flood P — Change in Hazard and Exposure	Coastal flood P — Change in absolute number of people exposed	Coastal flood O — Change in absolute number of people exposed	Drought P — Change in Hazard and Exposure	Drought P — Change in absolute number of people exposed	Drought O — Change in absolute number of people exposed	Epidemic P — Change in Hazard and Exposure	Epidemic P — Change in absolute number of people exposed	Epidemic O — Change in absolute number of people exposed	Conflict P — Change in Human Hazard and Exposure	Conflict O — Change in Human Hazard and Exposure	Total population Baseline (millions) B	Total Population 2050 Pessimistic (millions) P	Total Population 2050 Optimistic (millions) O
Pakistan	6.0	5.9	-0.1	-0.1	5.7	-0.3	-0.5	6.0	0.0	0.1	5.6	-0.4	-0.9	1.2	8,716,413	4,080,640	2.3	451,538	313,268	1.7	87,197,641	59,076,225	-0.1	48,265,698	30,110,375	-1.5	-3.2	188.90	344.04	249.54
Palau	2.5	2.6	0.1	0.2	2.6	0.1	0.2	2.6	0.1	0.2	2.6	0.1	0.2	0.0	0	0	2.5	11	10	0.0	0	0	1.6	1,166	980	0.0	0.0	0.02	0.01	0.01
Palestine	3.4	3.8	0.4	0.9	3.6	0.2	0.7	3.9	0.5	1.2	3.7	0.3	0.8	-0.3	-4,146	-4,710	0.7	165	101	2.8	2,733,565	1,145,053	0.0	0	0	0.0	0.0	4.66	8.95	5.88
Panama	3.8	3.9	0.1	0.2	3.9	0.1	0.2	4.0	0.2	0.3	3.9	0.1	0.2	0.4	45,360	35,369	1.9	38,688	29,971	0.6	155,951	124,832	1.3	2,155,960	1,391,038	-0.1	-0.1	3.93	5.56	4.57
Papua New Guinea	5.5	5.8	0.3	0.7	5.6	0.1	0.3	5.8	0.3	0.9	5.6	0.1	0.3	-1.3	-50,057	-98,494	1.5	16,094	11,115	0.9	572,629	283,734	1.8	6,637,539	4,248,416	0.7	0.0	7.62	12.43	9.85
Paraguay	2.7	3.1	0.4	0.5	3.0	0.3	0.4	3.2	0.5	0.6	3.0	0.3	0.4	1.4	104,486	78,592	0.0	0	0	1.8	1,425,100	680,281	1.2	4,793,461	2,653,888	0.4	-0.1	6.62	11.06	8.42
Peru	4.5	4.8	0.3	0.5	4.6	0.1	0.2	4.9	0.4	0.6	4.6	0.1	0.2	-0.2	91,493	-184,781	3.8	31,883	17,975	2.6	9,338,154	4,905,359	0.4	4,181,809	1,446,678	0.6	-0.5	31.37	39.67	29.16
Philippines	5.3	5.4	0.1	0.1	5.4	0.1	0.1	5.4	0.1	0.1	5.4	0.1	0.1	1.1	2,748,948	1,769,879	0.8	1,114,612	697,893	-0.5	-219,109	232,881	0.9	69,534,558	40,831,311	0.0	0.0	100.70	161.13	123.89
Poland	1.7	1.9	0.2	0.1	1.8	0.1	0.0	2.0	0.3	0.1	1.9	0.2	0.1	0.5	96,121	159,302	0.7	27,322	30,954	1.4	3,715,888	2,644,464	1.2	18,193	0	0.2	0.2	38.60	31.02	36.44
Portugal	1.7	1.9	0.2	0.1	1.9	0.2	0.1	1.9	0.2	0.1	1.9	0.2	0.1	0.6	23,790	184,805	1.8	26,169	31,973	2.2	1,692,801	1,449,863	0.0	0	0	0.4	0.0	10.35	8.95	11.00
Qatar	1.2	1.9	0.7	0.3	1.8	0.6	0.3	2.0	0.8	0.3	1.8	0.6	0.3	1.8	8,150	12,823	4.9	4,811	5,141	3.9	1,259,072	1,222,556	0.0	0	0	0.5	0.0	2.24	2.95	3.16
Romania	2.1	2.4	0.3	0.2	2.3	0.2	0.1	2.5	0.4	0.2	2.3	0.2	0.1	-0.5	-115,623	-129,646	0.0	0	0	2.6	5,288,015	3,054,802	3.2	4,416,584	2,664,915	0.2	0.2	19.53	18.77	17.24
Russian Federation	3.3	3.3	0.0	-0.0	3.2	-0.1	-0.1	3.3	0.0	-0.0	3.1	-0.2	-0.2	-0.4	-714,323	-527,314	1.0	27,386	23,509	1.5	17,480,952	11,167,888	1.8	7,448,962	5,015,971	-1.2	-1.8	143.46	134.02	130.54
Rwanda	4.7	5.4	0.7	1.1	4.8	0.1	0.1	5.5	0.8	1.3	4.6	-0.1	-0.3	1.4	185,861	135,515	0.0	0	0	1.6	2,623,699	1,462,912	2.6	22,017,573	13,462,979	1.8	-0.7	11.61	25.96	19.86
Saint Kitts and Nevis	1.9	1.9	0.0	0.0	1.9	0.0	0.0	1.9	0.0	0.0	1.9	0.0	0.0	0.1	99	82	0.0	0	0	0.0	0	0	0.2	807	127	0.0	0.0	0.06	0.05	0.05
Saint Lucia	1.9	1.9	0.0	0.0	1.9	0.0	0.0	1.9	0.0	0.0	1.9	0.0	0.0	0.0	0	0	0.0	0	0	0.0	0	0	0.1	748	440	0.0	0.0	0.18	0.19	0.16
Saint Vincent and the Grenadines	2.4	2.4	0.0	-0.1	2.3	-0.1	-0.3	2.4	0.0	-0.1	2.3	-0.1	-0.3	-0.8	-596	-622	0.0	0	0	0.0	0	0	-0.1	-2,261	-5,312	0.0	0.0	0.11	0.10	0.07
Samoa	3.0	3.0	0.0	0.0	2.9	-0.1	-0.1	3.0	0.0	0.1	2.9	-0.1	-0.1	0.0	0	0	0.0	0	0	0.0	0	0	-0.1	2,836	-25,655	0.0	0.0	0.19	0.22	0.12
Sao Tome and Principe	1.9	2.4	0.5	1.4	2.4	0.5	1.4	2.4	0.5	1.4	2.2	0.3	1.1	0.0	14	-6	3.0	112	70	0.0	0	0	0.3	9,318	-10,997	0.0	0.0	0.19	0.19	0.12
Saudi Arabia	2.1	2.6	0.5	0.3	2.5	0.4	0.2	2.7	0.6	0.3	2.5	0.4	0.2	1.1	353,496	343,186	1.2	39,188	32,565	3.4	35,541,620	28,399,634	1.2	4,391,679	2,638,449	0.8	0.1	31.55	56.34	49.94
Senegal	4.5	5.2	0.7	1.2	4.8	0.3	0.4	5.5	1.0	1.4	4.7	0.2	0.4	0.7	346,427	180,216	2.0	557,334	261,005	2.8	7,761,751	2,535,243	1.4	21,566,862	9,505,323	2.2	-0.5	15.09	31.41	19.37
Serbia	2.4	2.7	0.3	0.2	2.6	0.2	0.2	2.8	0.4	0.4	2.7	0.3	0.2	-1.2	-56,815	-57,773	0.0	0	0	2.2	2,753,315	2,033,989	3.0	2,457,699	1,473,286	0.0	0.0	6.98	9.73	9.40
Seychelles	1.8	1.7	-0.1	-0.1	1.7	-0.1	-0.1	1.7	-0.1	-0.1	1.7	-0.1	-0.1	0.0	0	0	-2.7	-4,583	-4,617	0.0	0	0	1.7	3,442	2,976	0.0	0.0	0.10	0.07	0.06
Sierra Leone	4.7	5.3	0.6	1.3	5.1	0.4	0.9	5.5	0.8	1.6	5.1	0.4	0.8	1.0	205,193	158,655	1.1	13,942	10,508	1.4	794,885	450,722	1.4	5,973,621	4,459,961	1.2	0.4	6.45	11.71	9.96
Singapore	0.6	0.7	0.1	0.0	0.7	0.1	0.0	0.7	0.1	0.0	0.7	0.1	0.0	1.0	22,685	19,297	1.3	1,717	1,860	0.0	0	0	0.1	31,281	92,269	0.0	0.0	5.60	4.89	5.19
Slovakia	1.5	1.7	0.2	0.1	1.6	0.1	0.0	1.7	0.2	0.1	1.6	0.1	0.0	0.1	-12,824	24,924	0.0	0	0	2.1	922,500	593,848	1.3	28,193	0	0.0	0.0	5.42	4.73	5.71
Slovenia	1.3	1.3	0.0	0.0	1.3	0.0	0.0	1.4	0.1	0.0	1.3	0.0	0.0	-0.4	-7,164	1,966	-0.6	-1,115	-719	1.8	320,945	291,977	1.7	96,583	30,229	0.0	-0.1	2.04	2.06	2.58
Solomon Islands	4.1	4.3	0.2	0.4	4.2	0.1	0.3	4.3	0.2	0.5	4.2	0.1	0.3	0.0	9	1	0.5	1,541	532	0.9	8,883	3,104	1.6	301,953	178,694	0.0	0.0	0.58	0.82	0.63
Somalia	8.8	8.8	0.0	0.2	8.8	0.0	0.1	8.9	0.1	0.3	8.8	0.0	0.1	0.0	353,314	-199,698	-1.1	-8,700	-11,342	2.0	3,208,199	1,131,468	1.9	14,813,051	5,625,042	0.0	0.0	10.79	22.67	13.12
South Africa	3.7	4.3	0.6	0.8	4.0	0.3	0.5	4.5	0.8	1.0	4.0	0.3	0.5	0.0	43,716	106,561	0.3	85	33	2.2	13,334,094	10,275,861	1.3	22,884,311	22,005,985	2.1	0.6	54.51	61.13	61.81

KEY CLIMATE CHANGE RISK INDEX — VERY HIGH | HIGH | MEDIUM | LOW | VERY LOW   CHANGE IN RISK / VULNERABILTY GAP — LARGE INCREASE | INCREASE | STABLE | DECREASE | LARGE DECREASE

COUNTRY	Baseline (current) risk (B) — INFORM Climate Change (CC) Risk Index 2022	MID-CENTURY (≈2050) PESSIMISTIC (P) — INFORM CC Risk Index	Change in risk	Vulnerability gap	MID-CENTURY (≈2050) OPTIMISTIC (O) — INFORM CC Risk Index	Change in risk	Vulnerability gap	END-CENTURY (≈2080) PESSIMISTIC (P) — INFORM CC Risk Index	Change in risk	Vulnerability gap	END-CENTURY (≈2080) OPTIMISTIC (O) — INFORM CC Risk Index	Change in risk	Vulnerability gap	Flood P — Change in Hazard and Exposure	Flood P — Change in absolute number of people exposed	Flood O — Change in absolute number of people exposed	Coastal flood P — Change in Hazard and Exposure	Coastal flood P — Change in absolute number of people exposed	Coastal flood O — Change in absolute number of people exposed	Drought P — Change in Hazard and Exposure	Drought P — Change in absolute number of people exposed	Drought O — Change in absolute number of people exposed	Epidemic P — Change in Hazard and Exposure	Epidemic P — Change in absolute number of people exposed	Epidemic O — Change in absolute number of people exposed	Conflict P — Change in Human Hazard and Exposure	Conflict O — Change in Human Hazard and Exposure	Total population Baseline 2022 (millions)	Total Population 2050 Pessimistic (millions)	Total Population 2050 Optimistic (millions)
South Sudan	8.5	8.6	0.1	0.3	8.5	0.0	0.1	8.6	0.1	0.3	8.5	0.0	0.1	-0.5	113,625	-96,684	0.0	0	0	0.9	955,189	509,441	0.8	7,624,734	2,878,655	0.0	0.0	12.27	18.24	13.59
Spain	2.2	2.5	0.3	0.1	2.4	0.2	0.1	2.6	0.4	0.2	2.4	0.2	0.1	-0.2	-118,262	48,925	0.9	29,957	39,157	2.6	13,538,776	11,973,224	1.9	307,782	153,801	1.3	0.0	46.11	42.88	52.67
Sri Lanka	3.4	3.6	0.2	0.2	3.4	0.0	0.0	3.7	0.3	0.3	3.4	0.0	-0.0	1.1	395,028	138,405	0.5	1,429	1,106	-0.6	-175,509	-92,785	0.9	8,171,680	4,064,793	1.3	-0.3	20.72	26.19	21.21
Sudan	6.4	6.6	0.2	0.4	6.6	0.2	0.3	6.7	0.3	0.5	6.6	0.2	0.4	0.5	967,683	472,942	1.8	1,501	634	2.0	13,425,116	9,655,189	0.5	27,821,018	18,022,053	0.0	0.0	40.28	74.13	57.34
Suriname	3.5	3.7	0.2	0.2	3.5	0.0	0.0	3.8	0.3	0.4	3.5	0.0	0.1	0.0	-10,115	-35,139	0.7	11,465	8,410	2.2	134,714	101,967	0.7	255,938	96,285	0.0	0.0	0.54	0.75	0.59
Sweden	1.8	1.9	0.1	0.1	1.9	0.1	0.1	1.9	0.1	0.1	1.9	0.1	0.1	-0.5	-63,063	-21,691	1.4	5,700	6,382	0.9	368,959	452,952	0.0	0	0	0.0	0.0	9.78	9.24	11.83
Switzerland	1.5	1.5	0.0	0.0	1.5	0.0	0.0	1.6	0.1	0.0	1.6	0.1	0.0	-0.4	-50,475	-21,604	0.0	0	0	1.1	417,318	495,320	0.0	0	0	0.0	0.0	8.27	7.03	8.63
Syria	7.0	7.0	0.0	0.1	7.0	0.0	0.0	7.1	0.1	0.2	7.0	0.0	0.1	-0.4	1,623	20,496	0.0	0	0	3.4	19,948,186	11,466,339	-0.9	-5,791	-5,791	0.0	0.0	18.51	39.13	29.56
Tajikistan	3.4	3.6	0.2	0.3	3.5	0.1	0.2	3.8	0.4	0.5	3.5	0.1	0.2	-1.1	-64,165	-107,290	0.0	0	0	2.3	2,825,516	1,241,825	0.0	0	0	0.2	0.0	8.48	10.94	7.23
Tanzania	4.9	5.6	0.7	1.5	5.4	0.5	1.1	5.9	1.0	1.9	5.3	0.4	1.0	0.8	1,015,995	424,339	1.8	141,895	95,399	1.2	6,917,803	4,101,485	2.1	88,662,182	53,105,099	2.3	0.6	53.40	118.85	83.72
Thailand	4.1	4.1	0.0	0.0	3.9	-0.2	-0.2	4.1	0.0	0.0	3.8	-0.3	-0.3	0.8	1,124,241	771,493	1.1	459,062	433,243	-0.4	-907,468	213,526	0.8	17,317,497	11,996,624	-1.3	-3.3	68.08	74.98	69.36
Timor-Leste	4.5	4.6	0.1	0.3	4.5	0.0	0.0	4.7	0.2	0.5	4.5	0.0	0.0	-1.9	-13,615	-21,637	1.0	4,146	1,683	0.8	122,769	24,324	0.5	1,485,828	382,091	0.1	0.0	1.19	2.90	1.59
Togo	4.1	4.8	0.7	1.6	4.6	0.5	1.4	4.9	0.8	1.8	4.6	0.5	1.4	0.4	50,316	22,214	3.5	10,036	12,188	1.3	845,724	370,010	1.9	6,034,256	4,472,286	0.4	0.0	7.26	11.09	9.52
Tonga	3.2	3.2	0.0	0.0	3.1	-0.1	-0.1	3.2	0.0	0.0	3.1	-0.1	-0.1	0.0	0	0	0.0	0	0	0.0	0	0	-0.1	-1,395	-4,662	0.0	0.0	0.11	0.10	0.06
Trinidad and Tobago	2.6	2.9	0.3	0.3	2.9	0.3	0.3	3.0	0.4	0.3	2.8	0.2	0.2	0.6	3,896	1,087	3.6	614	368	2.8	252,706	142,959	0.9	52,670	-89,803	0.0	0.0	1.36	1.21	1.04
Tunisia	3.0	3.3	0.3	0.3	3.3	0.3	0.2	3.4	0.4	0.3	3.3	0.3	0.2	0.0	53,288	95,156	1.3	100,588	91,832	2.8	4,738,917	2,920,383	1.3	1,226,298	766,819	0.3	0.0	11.25	13.41	11.73
Turkey	4.9	4.9	0.0	0.0	4.9	0.0	0.0	4.9	0.0	0.1	4.9	0.0	0.0	-0.7	-422,036	-627,115	0.3	11,096	6,270	2.5	40,105,161	20,929,947	0.7	547,147	273,952	0.0	0.0	78.67	108.17	86.42
Turkmenistan	2.0	2.3	0.3	0.3	2.3	0.3	0.3	2.4	0.4	0.3	2.3	0.3	0.3	0.1	11,293	-5,037	0.0	0	0	3.4	4,665,565	3,013,731	0.6	1,723	8,345	0.1	0.0	5.40	7.31	5.86
Tuvalu	2.7	2.7	0.0	0.0	2.7	0.0	0.0	2.7	0.0	0.0	2.7	0.0	0.0	0.0	0	0	0.0	0	0	0.0	0	0	0.4	31	27	0.0	0.0	0.01	0.00	0.00
Uganda	6.2	6.6	0.4	0.9	6.4	0.2	0.4	6.7	0.5	1.1	6.2	0.0	0.0	1.7	917,062	574,420	0.0	0	0	1.4	7,692,934	3,175,940	1.7	89,754,442	52,280,619	0.8	0.0	39.17	112.68	76.06
Ukraine	4.5	4.6	0.1	0.1	4.5	0.0	0.1	4.6	0.1	0.2	4.5	0.0	0.1	-0.5	-259,821	-229,913	0.0	0	0	2.0	7,826,820	4,127,506	2.9	4,199,838	2,784,682	0.0	0.0	44.82	38.35	37.32
United Arab Emirates	1.6	1.8	0.2	0.1	1.8	0.2	0.1	1.8	0.2	0.1	1.8	0.2	0.1	-0.2	-2,761	69,062	-1.0	-122,962	-118,738	4.9	6,962,095	7,013,356	-0.7	-2,866	-2,866	0.0	0.1	9.14	13.80	15.12
United Kingdom	2.0	2.4	0.4	0.1	2.2	0.2	0.1	2.4	0.4	0.2	2.2	0.2	0.1	0.3	166,922	362,941	1.2	393,473	456,097	1.2	3,715,613	3,909,264	0.0	0	0	2.1	0.4	64.70	62.65	76.39
United States of America	3.1	3.2	0.1	0.1	3.2	0.1	0.1	3.3	0.2	0.1	3.3	0.2	0.1	0.0	63,597	1,428,313	0.8	232,800	299,488	0.9	43,646,044	43,235,980	0.5	47,102,493	67,278,248	0.8	0.5	321.74	323.67	398.34
Uruguay	2.1	2.3	0.2	0.2	2.3	0.2	0.2	2.4	0.3	0.3	2.3	0.2	0.2	0.5	14,935	2,721	3.4	16,096	12,185	0.9	145,742	55,984	0.3	238,001	-20,477	0.1	-0.1	3.43	3.82	3.09
Uzbekistan	2.5	2.9	0.4	0.3	2.7	0.2	0.2	3.0	0.5	0.3	2.7	0.2	0.2	0.2	155,754	19,476	0.0	0	0	2.7	13,965,601	7,704,332	0.9	5,449	2,132	0.5	0.0	30.04	39.16	30.35
Vanuatu	4.0	4.1	0.1	0.4	4.0	0.0	0.0	4.1	0.1	0.4	4.1	0.1	0.2	-0.5	-71	-1,667	0.4	165	96	2.0	5,518	3,873	1.4	94,197	67,515	0.0	0.0	0.26	0.40	0.31
Venezuela	4.2	4.6	0.4	0.5	4.4	0.2	0.2	4.7	0.5	0.6	4.4	0.2	0.3	-0.1	62,687	-26,517	1.0	72,315	44,014	2.3	8,815,995	4,836,476	1.2	23,048,425	14,666,004	1.1	0.0	31.14	46.61	37.42
Viet Nam	3.7	3.8	0.1	0.1	3.7	0.0	0.1	3.8	0.1	0.1	3.7	0.0	0.0	0.5	5,700,306	2,452,574	0.1	5,227,048	3,340,952	-0.1	208,745	-858,770	0.9	32,994,629	20,291,659	0.3	0.0	93.46	110.24	96.31
Yemen	8.1	8.2	0.1	0.3	8.2	0.1	0.2	8.3	0.2	0.4	8.2	0.1	0.3	1.3	403,593	456,617	1.4	70,563	47,330	2.6	15,186,456	8,864,900	1.0	24,323,918	13,913,173	0.0	0.0	26.83	69.05	46.69
Zambia	4.2	5.0	0.8	1.7	4.6	0.4	1.1	5.2	1.0	2.0	4.6	0.4	1.1	0.3	245,808	40,942	0.0	0	0	2.0	5,513,259	3,073,006	2.1	29,526,582	16,384,256	1.3	-0.1	16.19	38.01	25.56
Zimbabwe	4.4	4.6	0.2	0.5	4.5	0.1	0.3	4.8	0.4	0.8	4.5	0.1	0.3	-2.9	-439,853	-478,613	0.0	0	0	1.9	2,980,151	1,590,294	1.6	6,411,815	1,936,508	0.1	0.1	15.62	16.76	12.34

KEY

CLIMATE CHANGE RISK INDEX: VERY HIGH | HIGH | MEDIUM | LOW | VERY LOW

CHANGE IN RISK / VULNERABILTY GAP: LARGE INCREASE | INCREASE | STABLE | DECREASE | LARGE DECREASE

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