



# INFORM REPORT 2023

Shared evidence for managing  
crises and disasters

**INFORM**  
SHARING CRISIS ANALYSIS

EUR 31587 EN

# Shared analysis for better decisions

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For more information see <https://drmkc.jrc.ec.europa.eu/inform-index>

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#### Welcome to the INFORM 2023 report.

INFORM partners believe that the availability of shared analysis of crises and disasters can lead to better coordination of actors and better outcomes for at-risk and affected people. Specifically, INFORM creates a space and process for shared analysis that can support joint strategy development, planning and action to prevent, prepare for, respond to and recover from crises. This can bring together development, humanitarian and other actors to manage risk and respond better when crises do occur.

This report sets out INFORM's vision for a suite of products to support decision-making that are easy to use and open to everyone. This vision involves bringing scientific rigour to the process of analysing crises and pooling expertise to develop shared methodologies. By working together, we can reduce the investments required by individual organisations, assure the quality of our analysis and make it available for the common good.

INFORM products help improve the quality of evidence for decisions made at every stage of the crisis management cycle from prevention to response. In this report, you'll find the latest results of the INFORM Severity, INFORM Risk and INFORM Climate Change indexes, and analysis of past, current and potential future global crisis trends.

# 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 crisis prevention, preparedness and response. INFORM develops methodologies and tools for use at the global level and also supports their application at subnational level.

## INFORM principles

### Global

INFORM Global products cover 191 countries and Subnational products include all parts of the region or country they cover.

### Open

All INFORM products are freely available and the methodology and sources are open and transparent.

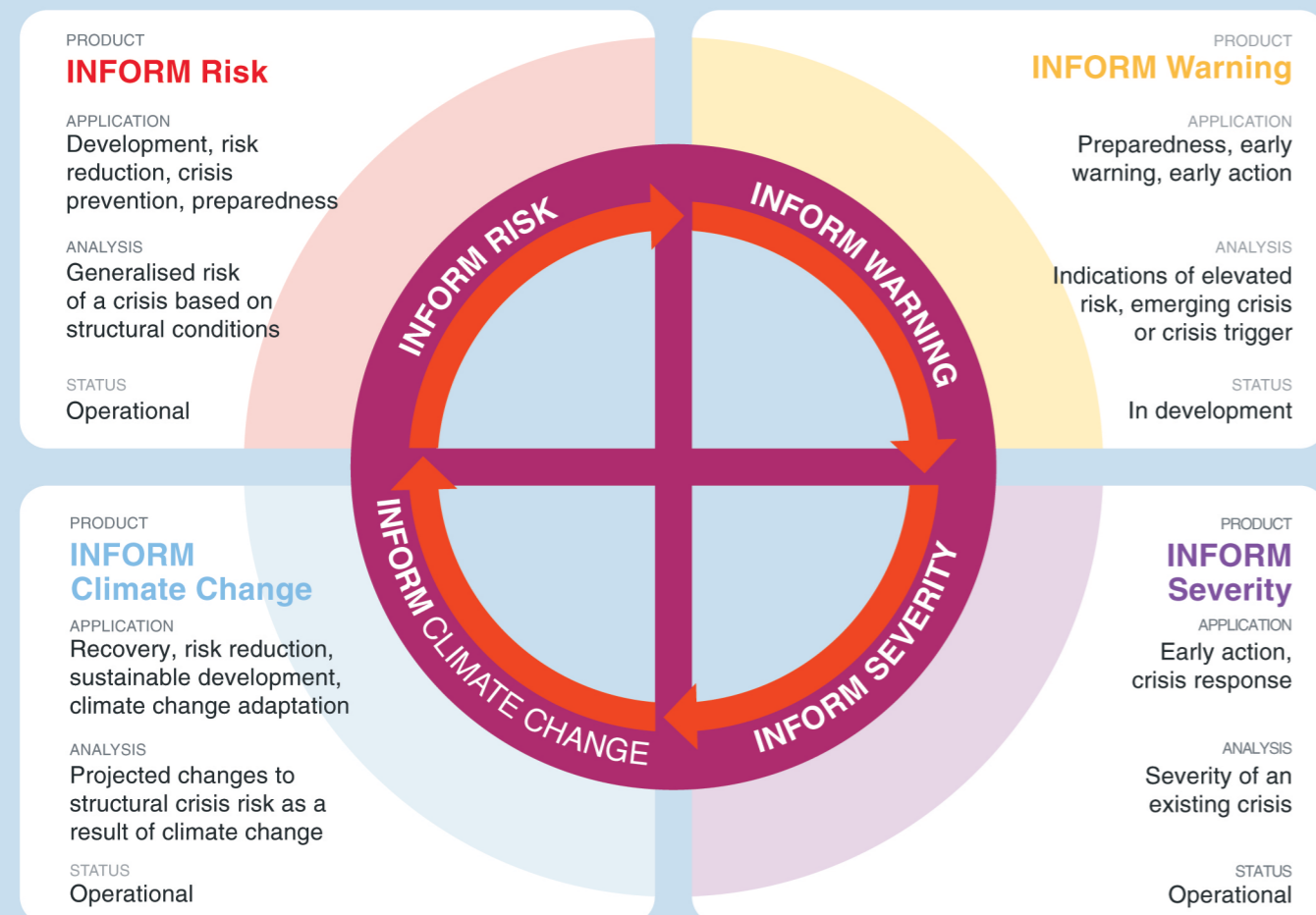
### Reliable

INFORM products use the best available methods and data. INFORM partners have committed to make them available into the future.

### Flexible

INFORM products can be easily adapted and included into the decision-making processes of users.

## INFORM products



## How INFORM products are used

INFORM products are used by all kinds of organisation and can be adapted to suit their decision-making processes. These are some examples:

### World Food Programme

The INFORM Risk and Severity Indexes are used in its Corporate Alert System.

Analyse emerging risks to trigger timely and adequate preparedness and response - and to support the inter-agency Early Warning, Early Action and Readiness Analysis process.

### DG ECHO

EUROPEAN COMMISSION  
DIRECTORATE-GENERAL FOR  
EUROPEAN CIVIL PROTECTION AND  
HUMANITARIAN AID OPERATIONS

INFORM products are used as part of its funding allocation algorithm.

Supports decision-making on its Annual Aid Strategy.

### OCHA

UNITED NATIONS OFFICE FOR THE  
COORDINATION OF HUMANITARIAN AFFAIRS

INFORM products are used to support decisions on funding from the CERF Underfunded Emergencies window.

### IFRC

INTERNATIONAL FEDERATION OF RED CROSS  
AND RED CRESCENT SOCIETIES

The INFORM Risk Index is used as a baseline risk analysis for its Priority Countries and INFORM Subnational Risk Models in its Community Risk Assessments.

In the Sahel region, the INFORM Sahel Subnational Risk Model has been used to support humanitarian and development planning, as well as the UN Integrated Strategy for the Sahel.

### WHO

WORLD HEALTH ORGANIZATION

The INFORM Epidemic Risk Index is used as the base of WHO's Dynamic Preparedness Metric, which helps inform countries of their preparedness status and support decisions, prioritisation and actions to manage health risks.

INFORM's approach and products are increasingly recognised to support several key components of the post-2015 humanitarian, DRR and development agenda. Shared analysis and joint humanitarian and development action are principles recognised by the World Humanitarian Summit outcomes, Sendai Framework and Sustainable Development Goals.

## Supporting INFORM

The approach of INFORM is inclusive and cost effective, with a small investment that has a multiplying effect through better targeted and more effective use of aid and development resources. INFORM has a long-term strategy to develop decision-support tools based on user needs and maintain them for sustainable use. Users across the multilateral system and at regional and country level now rely on these tools. INFORM's primary concern is long term sustainability. Therefore, it is seeking additional donors and technical partners that are willing to make a long term commitment to INFORM.

The background is a light blue color with several large, rounded, darker blue shapes scattered across it. Diagonal lines in three colors—dark blue, medium blue, and white—cut across the page from the top-left to the bottom-right. Three solid red circles are positioned at various points: one on the left edge, one in the center, and one at the bottom center. The text 'INFORM PRODUCTS AND RESULTS' is located in the upper right quadrant, with 'INFORM' in red and the other words in grey.

**INFORM**  
PRODUCTS AND  
RESULTS

# INFORM SEVERITY INDEX

The INFORM Severity Index summarises a wide range of already existing, quantitative information about crisis severity and presents it in a format that can be used more easily in decision-making.

It aggregates information from a range of credible, publicly available sources, such as UN agencies, governments and other multilateral organisations. Human analysts collect the data and enter it into the Index.

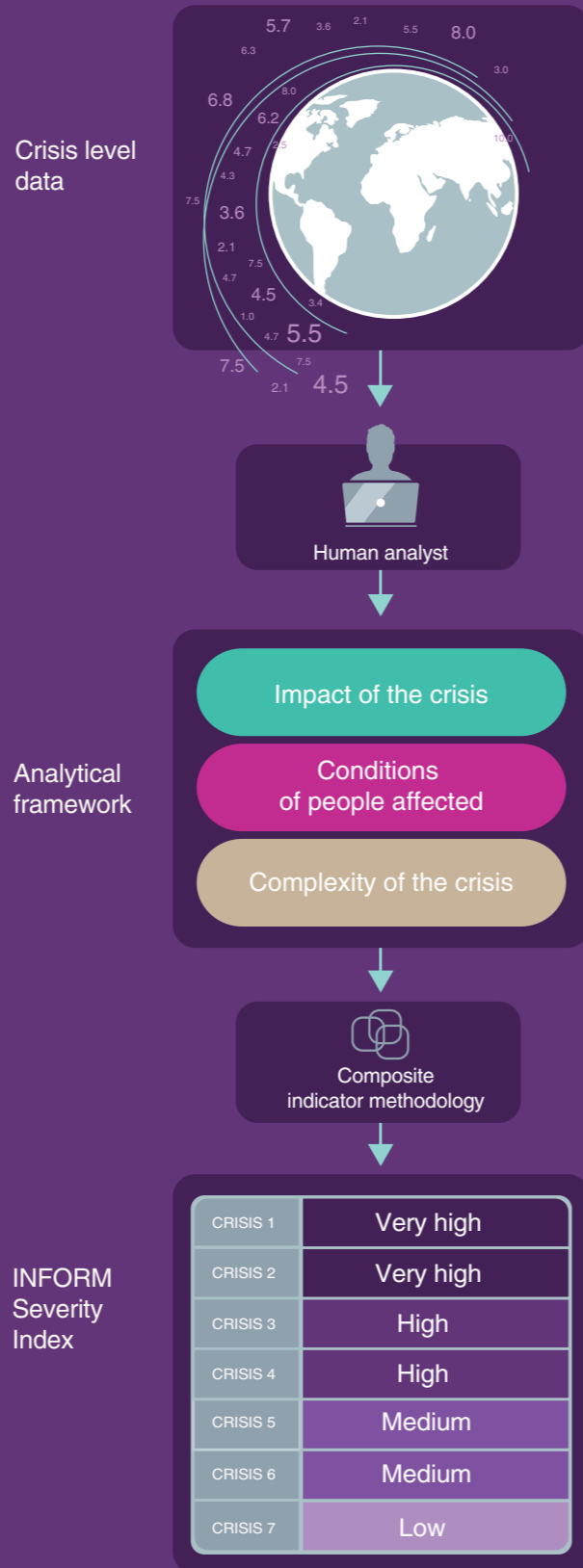
It is intended to lead to a shared and objective understanding of crisis severity that can support decisions on the allocation of resources and ensure all people affected by crises receive appropriate assistance.

## Objectives

The overall objective of the INFORM Severity Index is to measure the severity of humanitarian crises globally (i.e. between rather than within crises) and on an ongoing, up-to-date and regular basis. It seeks to communicate the current status of crises in a systematic, objective and understandable way. In its use - in combination with other sources of information - the INFORM Severity Index is intended to:

- Lead to a shared and objective understanding of crisis severity
- Contribute to decisions on the allocation of resources in a way that is proportionate with crisis severity
- Justify and advocate for action, especially in the case of forgotten or unrecognised crises.
- Monitor trends in crisis severity over time.

## How it works



## ANALYTICAL FRAMEWORK AND METHODOLOGY

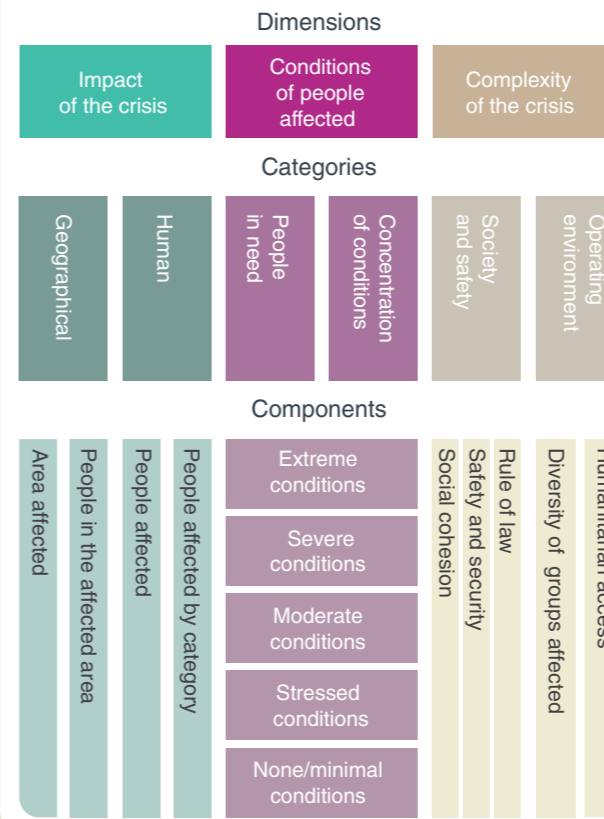
The INFORM Severity Index is a composite indicator that measures the severity of humanitarian crises against a common scale.

The analytical framework describes how the Index is constructed. Indicators are collected to populate the analytical framework for every crisis and these indicators are used to calculate the Index.

The Index covers:

- The impact of the crisis itself, in terms of the scope and of its geographical, human and physical effects;
- The conditions and status of the people affected, including information about the distribution of severity (i.e. the number of people in each category of severity within a crisis);
- The complexity of the crisis, in terms of factors that affect its mitigation or resolution.

## INFORM Severity Index



## RESULTS AND INTERPRETATION

The results are provided by crisis. Each crisis is categorised on a five-level scale from very low to very high severity.

It is also possible to access the values for different levels of the analytical framework, to better understand the main drivers of a crisis. All the underlying data, metadata and methodology are publicly available.

The Index is updated every month and can be used for trend analysis.

	INFORM Severity Index	INFORM Severity Index Category	INFORM Severity Index Category
Complex crisis in Afghanistan	4.5	5	Very High
Multiple crises in Bangladesh	2.7	3	Medium
Rohingya refugee crisis	2.7	3	Medium
Cyclone Amphan Bangladesh	2.2	3	Medium
Rohingya Regional Crisis	3.3	4	High
Conflict in Burkina Faso	3.5	4	High

Complex crisis in Afghanistan	
INFORM Severity Index	4.5
INFORM Severity Index Category	5
INFORM Severity Index Category	Very High
Impact of the crisis	4.9
Geographical	4.8
Human	5.0
Conditions of affected people	4.5
People in need	5.0
Conditions of people affected	4.0
Complexity of the crisis	4.2
Society and safety	3.9
Operating environment	4.5

## Using the Severity Index

The INFORM Severity Index can be used to support decisions that require an understanding of the severity of crises globally or to understand changes in crisis severity over time.

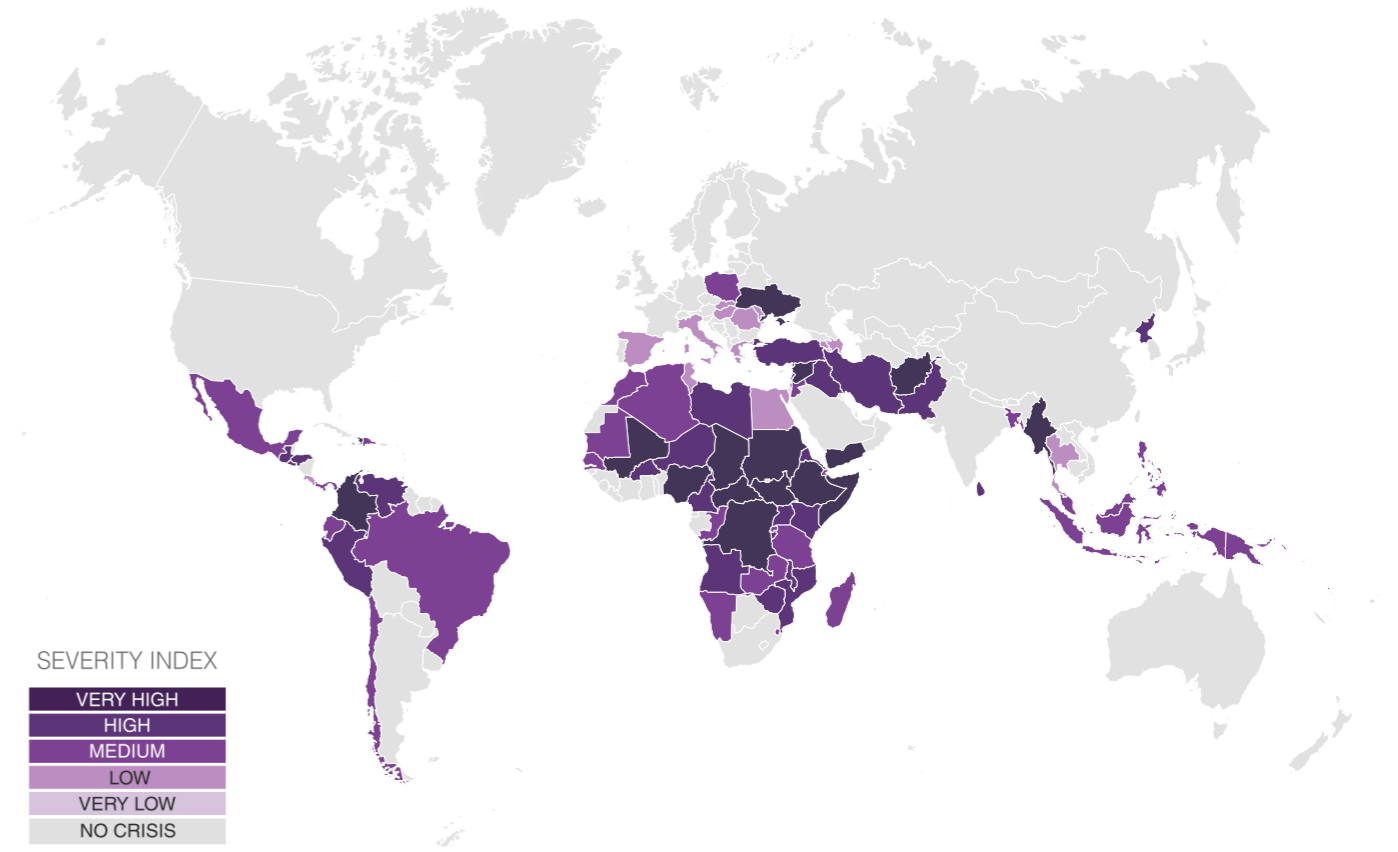
It should not be used for decisions about the operational response to a specific crisis. Crisis-specific information like needs assessments and appeals should be used to support these decisions.

The INFORM Severity Index is only one source of information that can support decisions about humanitarian crises. It should typically be complemented by risk, early warning and capacity information.

# Inform Severity Index results

## Country level, March 2023

COUNTRY	CRISIS	SEVERITY (Country level)	INFORM Severity category	3 MONTH TREND
Afghanistan	Complex crisis in Afghanistan	4.5	Very High	Stable
Algeria	Multiple crises in Algeria	2.7	Medium	Stable
Angola	Drought in South-West Angola	3.1	High	Decreasing
Armenia	Nagorno-Karabakh Conflict in Armenia	1.1	Low	Decreasing
Azerbaijan	Nagorno-Karabakh conflict in Azerbaijan	1.8	Low	Stable
Bangladesh	Rohingya refugee crisis	3.0	Medium	Stable
Brazil	Country level Brazil	2.7	Medium	Decreasing
Burkina Faso	Conflict in Burkina Faso	4.0	High	Increasing
Burundi	Complex in Burundi	3.5	High	Stable
Cameroon	Multiple crises in Cameroon	4.0	High	Stable
CAR	Complex crisis in CAR	4.1	Very High	Stable
Chad	Complex crisis in Chad	4.4	Very High	Stable
Chile	Venezuela displacement in Chile	2.5	Medium	Stable
Colombia	Complex crisis in Colombia	4.1	Very High	Stable
Congo	Complex crisis in Congo	2.2	Medium	Increasing
Costa Rica	Nicaraguan refugees in Costa Rica	1.5	Low	Decreasing
Djibouti	Multiple crises in Djibouti	2.7	Medium	Increasing
Dominican Republic	Venezuela displacement in Dominican Republic	2.2	Medium	Stable
DPRK	Complex crisis in DPRK	3.7	High	Stable
DRC	Complex crisis in DRC	4.5	Very High	Increasing
Ecuador	Venezuela displacement in Ecuador	2.8	Medium	Stable
Egypt	Syrian Refugee Crisis in Egypt	1.7	Low	Increasing
El Salvador	Complex crisis in El Salvador	3.1	High	Decreasing
Eritrea	Complex crisis in Eritrea	3.5	High	Stable
Eswatini	Food Security Crisis in Eswatini	2.3	Medium	Stable
Ethiopia	Complex crisis in Ethiopia	4.3	Very High	Increasing
Greece	Mixed migration flows in Greece	1.4	Low	Stable
Guatemala	Complex crisis in Guatemala	3.5	High	Stable
Haiti	Complex crisis in Haiti	4.2	Very High	Stable
Honduras	Complex crisis in Honduras	3.4	High	Increasing
Hungary	Displacement from Ukraine conflict in Hungary	1.5	Low	Decreasing
India	Conflict in Jammu and Kashmir	x	x	-
Indonesia	Papua Conflict	2.5	Medium	Stable
Iran	Afghan Refugees in Iran	3.7	High	Increasing
Iraq	Multiple crises in Iraq	3.9	High	Stable
Italy	Mixed migration flows in Italy	2.0	Low	Stable
Jordan	Syrian refugees in Jordan	2.7	Medium	Stable
Kenya	Multiple crisis in Kenya	3.7	High	Decreasing
Lebanon	Socioeconomic crisis in Lebanon	3.4	High	Decreasing
Libya	Complex crisis in Libya	3.8	High	Increasing
Madagascar	Multiple crisis in Madagascar	2.9	Medium	Increasing
Malawi	Complex crisis in Malawi	3.2	High	Increasing
Malaysia	International Refugees in Malaysia	2.3	Medium	Stable
Mali	Complex crisis in Mali	4.3	Very High	Increasing
Mauritania	Food Security in Mauritania	2.7	Medium	Stable
Mexico	Multiple crisis in Mexico	2.8	Medium	Stable
Moldova	Displacement from Ukraine conflict in Moldova	1.9	Low	Decreasing
Morocco	Mixed migration flows in Morocco	2.2	Medium	Stable
Mozambique	Multiple Crises in Mozambique	3.4	High	Decreasing
Myanmar	Multiple crises in Myanmar	4.5	Very High	Increasing
Namibia	Food Security Crisis in Namibia	2.4	Medium	Stable
Nicaragua	Socioeconomic crisis in Nicaragua	x	x	-



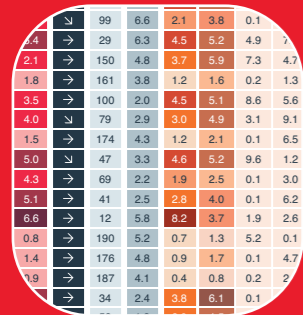
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COUNTRY	CRISIS	SEVERITY (Country level)	INFORM Severity category	3 MONTH TREND
Niger	Multiple crises in Niger	3.9	High	Increasing
Nigeria	Complex crisis in Nigeria	4.1	Very High	Stable
Pakistan	Complex crisis in Pakistan	3.8	High	Stable
Palestine	Conflict in Palestine	3.5	High	Stable
Panama	Venezuela displacement in Panama	2.3	Medium	Stable
Papua New Guinea	Highlands Violence	2.6	Medium	Decreasing
Peru	Venezuela displacement in Peru	3.2	High	Stable
Philippines	Multiple crises in the Philippines	2.6	Medium	Decreasing
Poland	Displacement from Ukraine conflict in Poland	2.5	Medium	Decreasing
Romania	Displacement from Ukraine conflict in Romania	1.4	Low	Decreasing
Rwanda	Burundi and DRC refugees in Rwanda	2.4	Medium	Stable
Senegal	Drought in Senegal	2.4	Medium	Stable
Slovakia	Displacement from Ukraine conflict in Slovakia	1.8	Low	Decreasing
Somalia	Complex crisis in Somalia	4.7	Very High	Increasing
South Sudan	Complex crisis in South Sudan	4.4	Very High	Stable
Spain	Mixed migration flows in Spain	1.8	Low	Stable
Sri Lanka	Socio-economic crisis in Sri Lanka	3.4	High	Stable
Sudan	Complex crisis in Sudan	4.4	Very High	Stable
Syria	Syrian conflict	4.6	Very High	Stable
Tanzania	International Displacement in Tanzania	2.6	Medium	Stable
Thailand	Multiple situations in Thailand	1.8	Low	Stable
Trinidad and Tobago	Venezuelan refugees in Trinidad and Tobago	2.0	Low	Stable
Tunisia	Mixed migration flows in Tunisia	1.8	Low	Stable
Türkiye	Complex situation in Turkey	3.4	High	Increasing
Uganda	International Displacement in Uganda	3.2	High	Stable
Ukraine	Conflict in Ukraine	4.1	Very High	Increasing
Vanuatu	Cyclone Judy and cyclone Kevin in Vanuatu	2.2	Medium	-
Venezuela	Complex crisis in Venezuela	4.0	High	Stable
Yemen	Conflict in Yemen	4.7	Very High	Stable
Zambia	Drought in Zambia	2.9	Medium	Stable
Zimbabwe	Complex crisis in Zimbabwe	3.5	High	Decreasing

# INFORM RISK INDEX

The INFORM Risk Index is the first global, objective and transparent tool for understanding the risk of humanitarian crises and disasters. It can help identify where and why a crisis might occur, which means we can reduce the risk, build peoples' resilience and prepare better for when crises do happen.

## Use INFORM Risk



**Prioritise countries by risk,** or any of its components



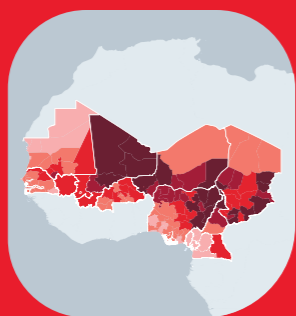
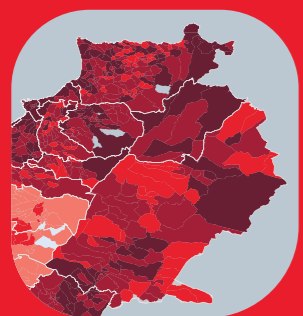
Decide how best to **reduce risk**



**Monitor** risk trends

## INFORM Risk is adaptable

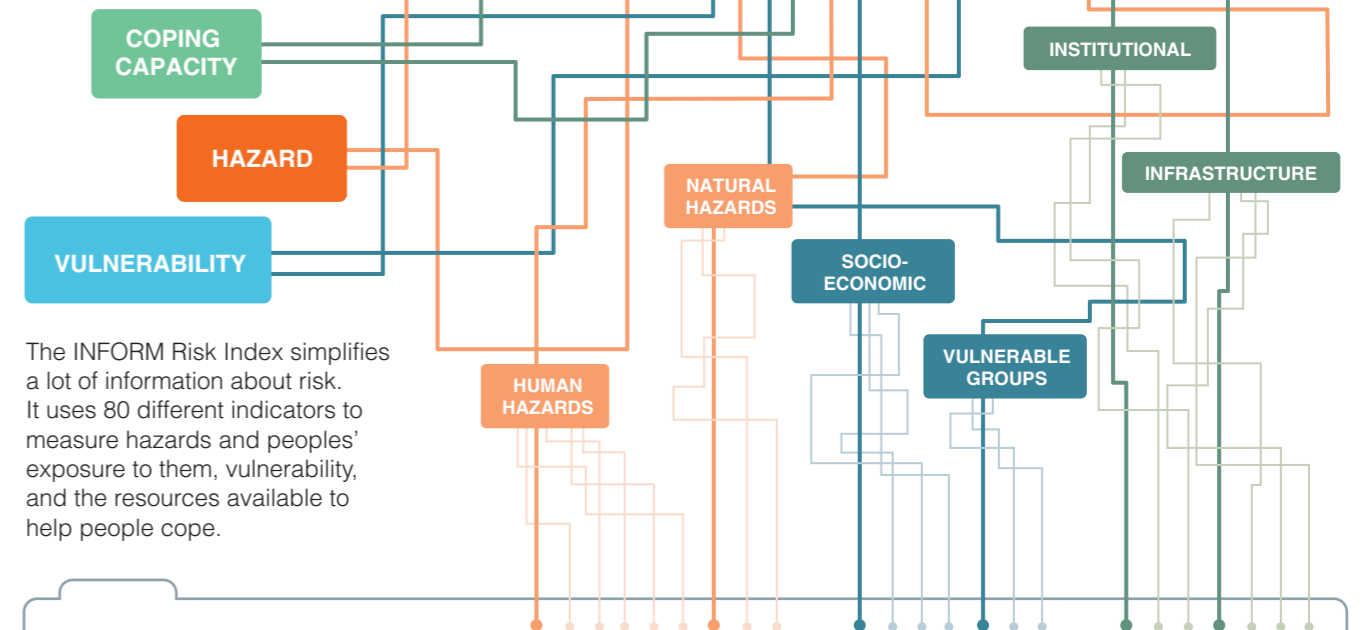
for your organisation or region and the same methodology can be used for national and regional risk assessment.



## Results and limitations of INFORM RISK

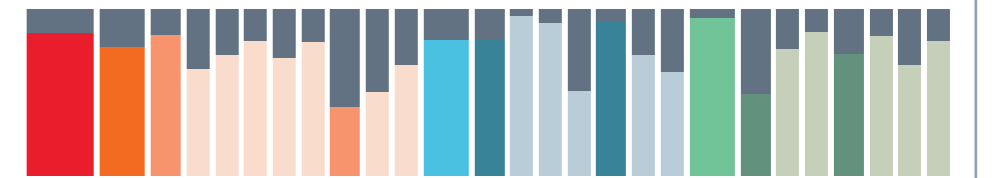
The INFORM Risk Index is a composite index, which is a simplified view of reality. Therefore, it should be used in conjunction with other sources of information. Full details of the methodology and a more detailed discussion of its limitations are available on the website.

## How it works

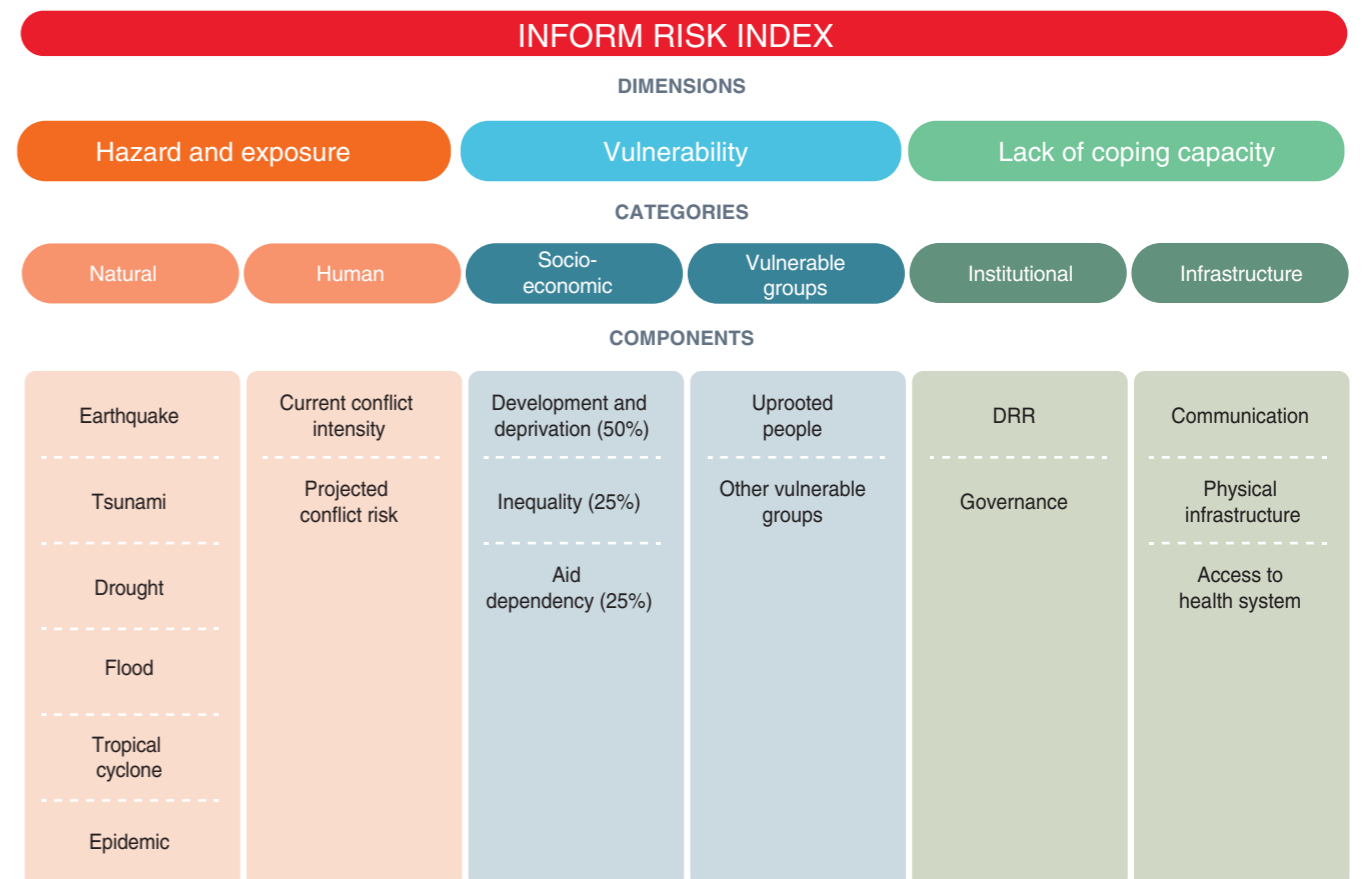


The INFORM Risk Index simplifies a lot of information about risk. It uses 80 different indicators to measure hazards and peoples' exposure to them, vulnerability, and the resources available to help people cope.

The INFORM Risk Index creates a risk profile for every country. Each has a rating between **0** and **10** for risk and all of its components, so it's easy to compare.



Components of risk covered by the INFORM Risk Index

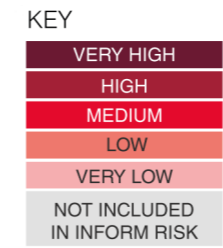
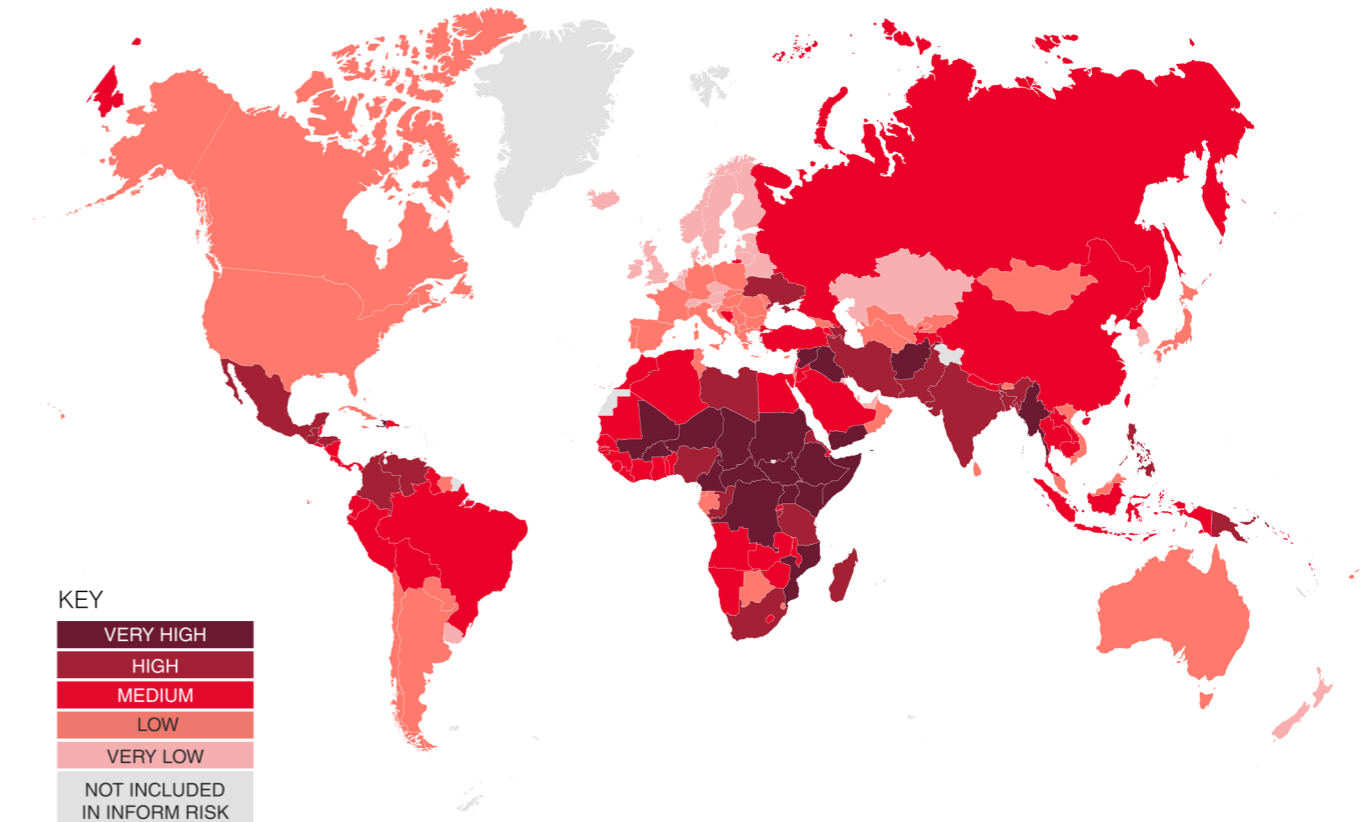


# INFORM Risk Index 2023 results

COUNTRY	RISK	3 YR TREND
Afghanistan	8.1	→
Albania	3.1	→
Algeria	3.6	→
Angola	4.6	↘
Antigua and Barbuda	2.2	→
Argentina	2.9	→
Armenia	4.6	↘
Australia	2.4	→
Austria	1.9	→
Azerbaijan	5.8	→
Bahamas	2.1	→
Bahrain	1.2	→
Bangladesh	5.5	→
Barbados	2.0	→
Belarus	1.8	→
Belgium	1.7	→
Belize	3.9	→
Benin	3.8	→
Bhutan	3.1	→
Bolivia	4.0	→
Bosnia and Herzegovina	3.5	→
Botswana	2.9	→
Brazil	4.5	↘
Brunei Darussalam	1.8	→
Bulgaria	2.7	→
Burkina Faso	7.0	↗
Burundi	6.0	→
Cabo Verde	2.4	→
Cambodia	4.4	→
Cameroon	6.5	↗
Canada	2.4	→
Central African Republic	8.5	↗
Chad	7.9	→
Chile	3.4	↗
China	3.7	→
Colombia	5.4	→
Comoros	3.7	→
Congo	5.1	→
Congo DR	7.6	→
Costa Rica	3.5	→
Côte d'Ivoire	4.5	→
Croatia	2.6	→
Cuba	2.3	→
Cyprus	2.9	→

COUNTRY	RISK	3 YR TREND
Czech Republic	1.8	↗
Denmark	1.2	→
Djibouti	4.8	→
Dominica	3.1	→
Dominican Republic	4.1	→
Ecuador	4.6	→
Egypt	4.7	→
El Salvador	4.3	→
Equatorial Guinea	3.4	→
Eritrea	6.2	↗
Estonia	1.3	↗
Eswatini	3.3	→
Ethiopia	7.0	→
Fiji	2.7	→
Finland	0.9	→
France	2.3	→
Gabon	3.1	→
Gambia	3.7	→
Georgia	3.4	→
Germany	2.1	→
Ghana	3.6	↗
Greece	2.8	→
Grenada	1.9	→
Guatemala	5.1	→
Guinea	4.6	→
Guinea-Bissau	3.8	→
Guyana	3.7	→
Haiti	6.5	→
Honduras	5.1	→
Hungary	2.0	→
Iceland	1.4	→
India	5.3	→
Indonesia	4.6	→
Iran	5.1	→
Iraq	6.6	→
Ireland	1.6	→
Israel	2.8	↗
Italy	2.6	→
Jamaica	3.1	→
Japan	2.2	→
Jordan	4.2	→
Kazakhstan	1.8	→
Kenya	6.7	↗
Kiribati	3.4	→

COUNTRY	RISK	3 YR TREND
Korea DPR	4.3	→
Korea Republic of	1.9	→
Kuwait	1.8	→
Kyrgyzstan	3.1	→
Lao PDR	3.9	→
Latvia	1.9	↗
Lebanon	4.5	↗
Lesotho	3.9	→
Liberia	4.7	↗
Libya	6.2	→
Liechtenstein	0.8	→
Lithuania	1.7	↗
Luxembourg	1.0	→
Madagascar	5.3	→
Malawi	4.6	→
Malaysia	3.0	→
Maldives	2.4	→
Mali	6.9	→
Malta	1.9	→
Marshall Islands	3.8	→
Mauritania	4.9	→
Mauritius	2.1	→
Mexico	5.1	→
Micronesia	3.6	→
Moldova Republic of	3.4	↗
Mongolia	2.6	→
Montenegro	2.7	↗
Morocco	3.5	→
Mozambique	7.2	→
Myanmar	6.8	↗
Namibia	4.0	→
Nauru	3.2	→

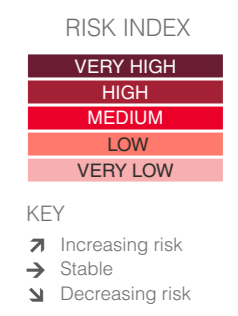
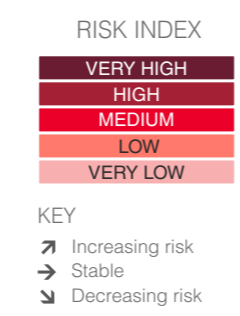


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COUNTRY	RISK	3 YR TREND
Nepal	4.4	→
Netherlands	1.5	→
New Zealand	1.6	→
Nicaragua	4.4	→
Niger	7.5	→
Nigeria	6.4	→
North Macedonia	2.5	→
Norway	0.9	→
Oman	2.6	→
Pakistan	6.1	→
Palau	3.3	↗
Palestine	4.6	→
Panama	3.9	→
Papua New Guinea	5.9	→
Paraguay	2.6	→
Peru	4.8	→
Philippines	5.2	→
Poland	2.5	↗
Portugal	2.0	↗
Qatar	1.4	→
Romania	2.7	↗
Russian Federation	4.1	↗
Rwanda	4.5	↘
Saint Kitts and Nevis	2.0	→
Saint Lucia	2.3	→
Saint Vincent and the Grenadines	2.3	→
Samoa	3.1	→

COUNTRY	RISK	3 YR TREND
Sao Tome and Principe	2.6	→
Saudi Arabia	3.5	↗
Senegal	4.2	→
Serbia	2.8	→
Seychelles	1.9	→
Sierra Leone	4.4	→
Singapore	0.5	→
Slovakia	2.2	↗
Slovenia	1.6	↗
Solomon Islands	4.5	→
Somalia	8.7	→
South Africa	5.3	↗
South Sudan	8.5	→
Spain	2.3	→
Sri Lanka	3.3	→
Sudan	7.1	→
Suriname	3.2	→
Sweden	1.4	→
Switzerland	1.4	→
Syria	6.9	→
Tajikistan	4.1	→
Tanzania	5.8	→
Thailand	4.0	→
Timor-Leste	4.0	→
Togo	4.1	→
Tonga	3.8	→
Trinidad and Tobago	2.6	→
Tunisia	3.0	→

COUNTRY	RISK	3 YR TREND
Türkiye	4.7	→
Turkmenistan	2.7	→
Tuvalu	3.5	→
Uganda	7.1	↗
Ukraine	5.1	↗
United Arab Emirates	1.7	→
United Kingdom	1.9	→
United States of America	3.2	→
Uruguay	1.8	↗
Uzbekistan	3.4	↗
Vanuatu	4.2	→
Venezuela	5.0	→
Viet Nam	3.4	→
Yemen	8.1	→
Zambia	4.3	→
Zimbabwe	4.5	→





# 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

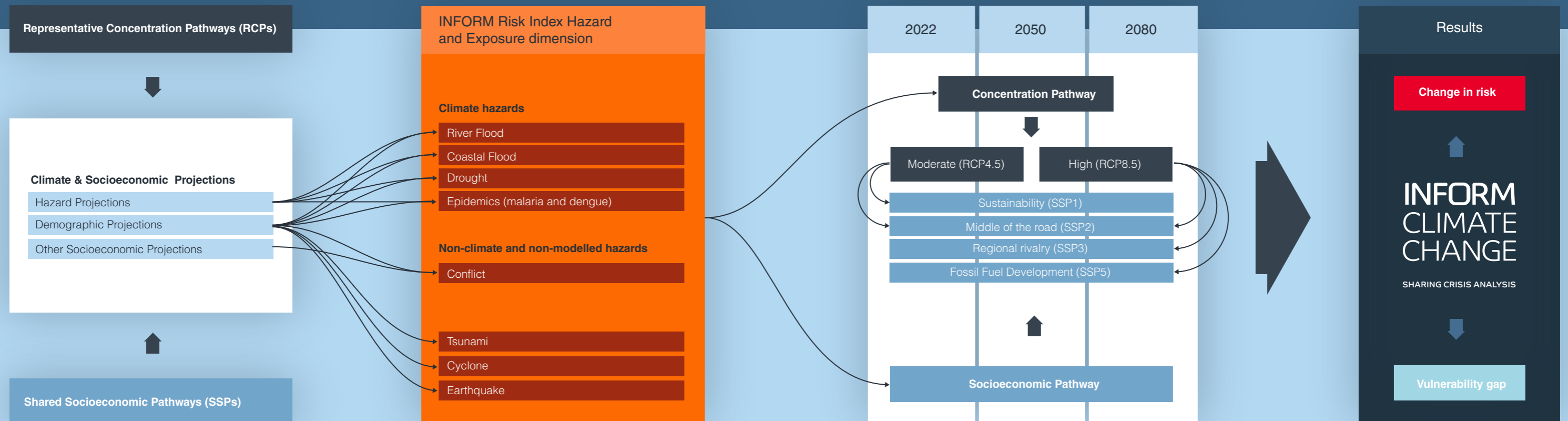
INFORM Climate Change incorporates climate and socioeconomic projections into the methodology of the INFORM Risk Index. Specifically, it uses a combination of:

- 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.



# INFORM Climate Change Results

## Interpreting the results

INFORM Climate Change is based on the INFORM Risk Index methodology, so it measures changes in the risk of a humanitarian crisis that could overwhelm national capacity.

The results of INFORM Climate Change include the following:

- **INFORM Climate Change Risk Index baseline** – a slightly adapted INFORM Risk Index that allows comparison with future hazard projections.
- **INFORM Climate Change Risk Index** – this shows the future risk, taking into account climate and socio-economic changes for different scenarios and timeframes.
- **Change in risk** – this shows the change in the baseline risk index taking into account climate, demographic and socio-economic projections.
- **Vulnerability Gap** – this shows the change in Vulnerability and Lack of Coping Capacity (see INFORM Risk Index analytical framework), which would be required to maintain the baseline level of risk (i.e. to compensate for increases in risk due to climate, demographic and socio-economic factors).

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

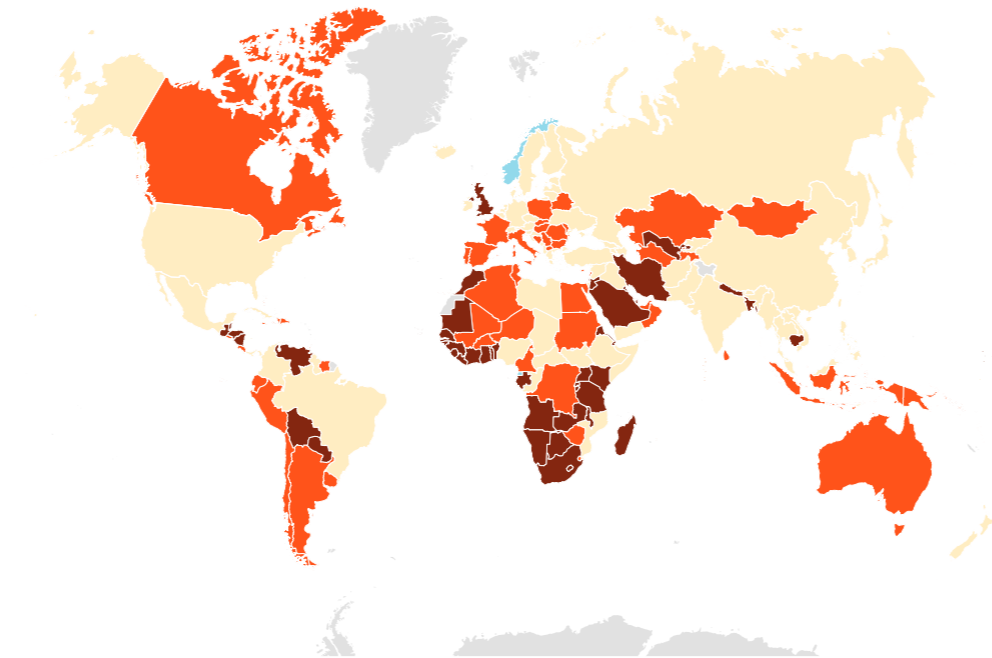
For a full explanation of the methodology, scenario selection, results and analysis, see the **INFORM Climate Change Report** and **webpage**.

## INFORM Climate Change scenario combinations

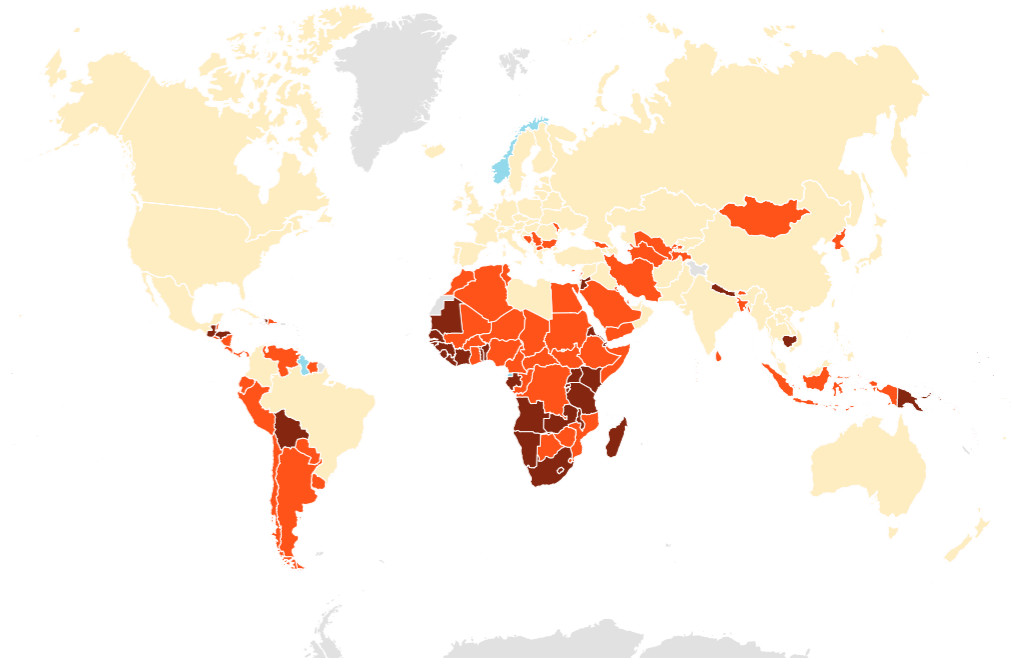
Pessimistic RCP 8.5 + SSP 3	Optimistic RCP 4.5 + SSP 1
<b>SSP3 envisages</b> <ul style="list-style-type: none"> <li>• relatively low income growth</li> <li>• low human capital investments</li> <li>• high fertility and population growth rates in currently high fertility countries</li> <li>• low or negative population growth in currently low fertility rate countries</li> <li>• low migration</li> <li>• slow urbanization.</li> </ul>	<b>SSP1 envisages</b> <ul style="list-style-type: none"> <li>• global population peak in mid-century</li> <li>• reasonably high pace in sustainable development</li> <li>• lessened inequalities</li> <li>• rapid technological growth based on low carbon energy sources</li> <li>• high productivity of land.</li> </ul>

### Pessimistic climate and socio-economic scenario (RCP 8.5 + SSP3)

**Change in risk (2050-baseline)**

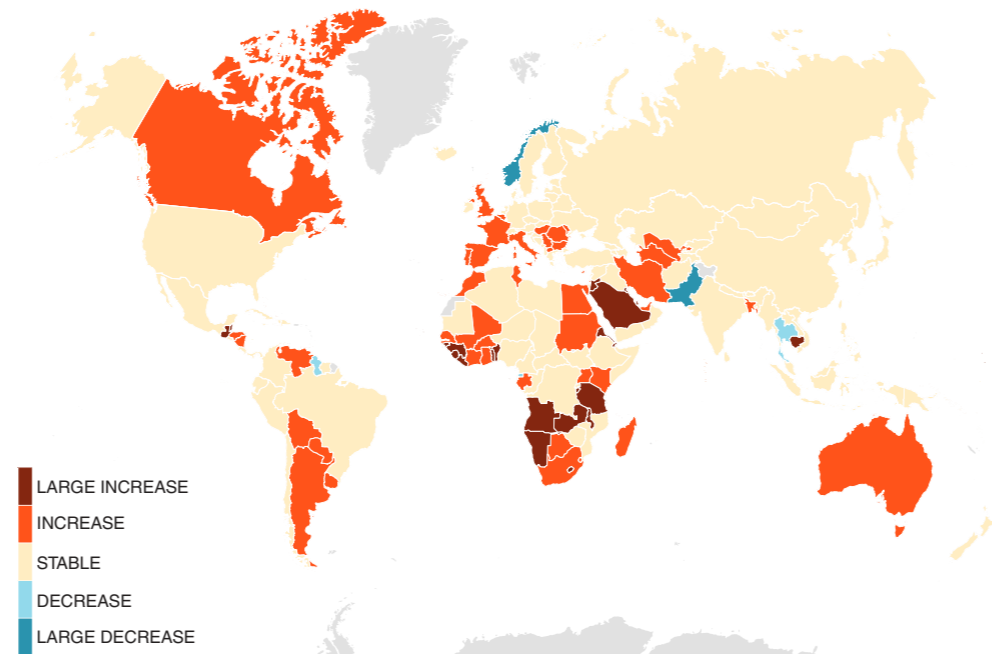


**Vulnerability gap**

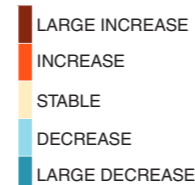
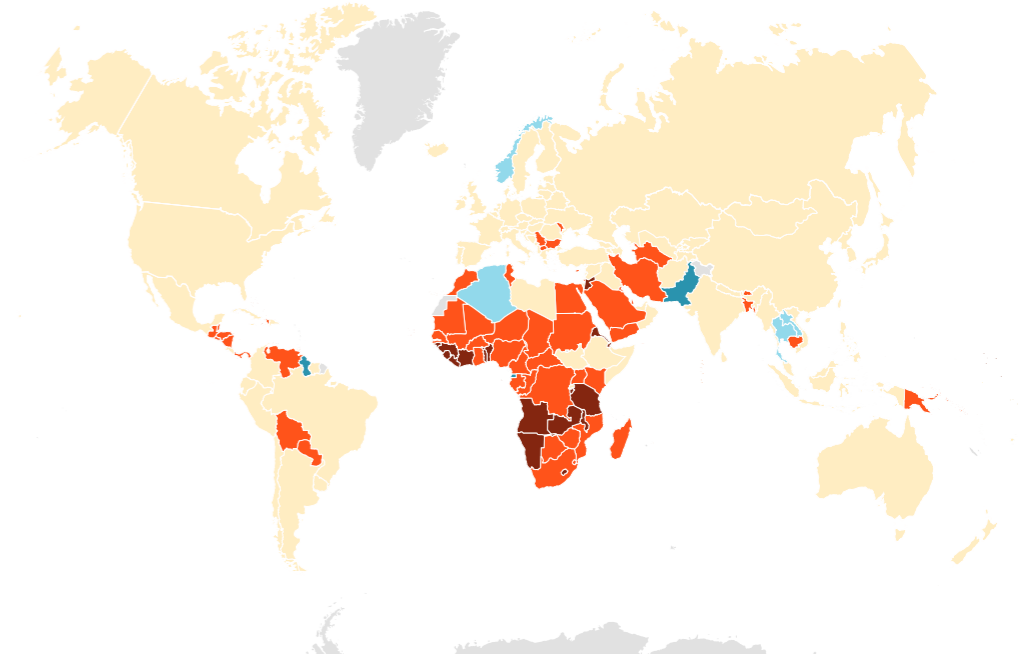


### Optimistic climate and socio-economic scenario (RCP 4.5 + SSP1)

**Change in risk (2050-baseline)**



**Vulnerability gap**



The depiction and use of boundaries are not warranted to be error free nor do they necessarily imply official endorsement or acceptance by the United Nations and European Union.

# 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.

COUNTRY	Baseline (current) risk (B)	MID-CENTURY (≈2050) CRISIS RISK		
		PESSIMISTIC (P) climate and socio-economic scenario		
		INFORM CC Risk Index 2022	INFORM CC Risk Index	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

COUNTRY	Baseline (current) risk (B)	MID-CENTURY (≈2050) CRISIS RISK		
		PESSIMISTIC (P) climate and socio-economic scenario		
		INFORM CC Risk Index	Change in risk	Vulnerability gap
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

COUNTRY	Baseline (current) risk (B)	MID-CENTURY (≈2050) CRISIS RISK		
		PESSIMISTIC (P) climate and socio-economic scenario		
		INFORM CC Risk Index	Change in risk	Vulnerability gap
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 / VULNERABILITY GAP LARGE INCREASE INCREASE STABLE DECREASE LARGE DECREASE

COUNTRY	Baseline (current) risk (B)	MID-CENTURY (~2050) CRISIS RISK		
		PESSIMISTIC (P) climate and socio-economic scenario		
		INFORM CC Risk Index 2022	INFORM CC Risk Index	Change in risk
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)	MID-CENTURY (~2050) CRISIS RISK		
		PESSIMISTIC (P) climate and socio-economic scenario		
		INFORM CC Risk Index 2022	INFORM CC Risk Index	Change in risk
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)	MID-CENTURY (~2050) CRISIS RISK		
		PESSIMISTIC (P) climate and socio-economic scenario		
		INFORM CC Risk Index 2022	INFORM CC Risk Index	Change in risk
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
Türkiye	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

# User example – WHO Dynamic Preparedness Metric

## A dynamic, evidence-based, risk-based preparedness metric

The World Health Organization (WHO) Dynamic Preparedness Metric (DPM) is a composite measure of health emergency risks for 196 countries. It aims to inform countries of their preparedness status and support prioritization and implementation of specific actions to improve their capacities. The DPM is based on the INFORM Epidemic Risk Index.

The dynamism of the DPM is achieved through frequently updated indicators (such as epidemic outcomes, seasonal hazards, humanitarian crisis severity) and by presenting risks for 5 different acute syndromes (respiratory, diarrhoeal, haemorrhagic, neurological and acute febrile illness). The DPM is updated quarterly using the latest available data.

## Interpreting DPM results

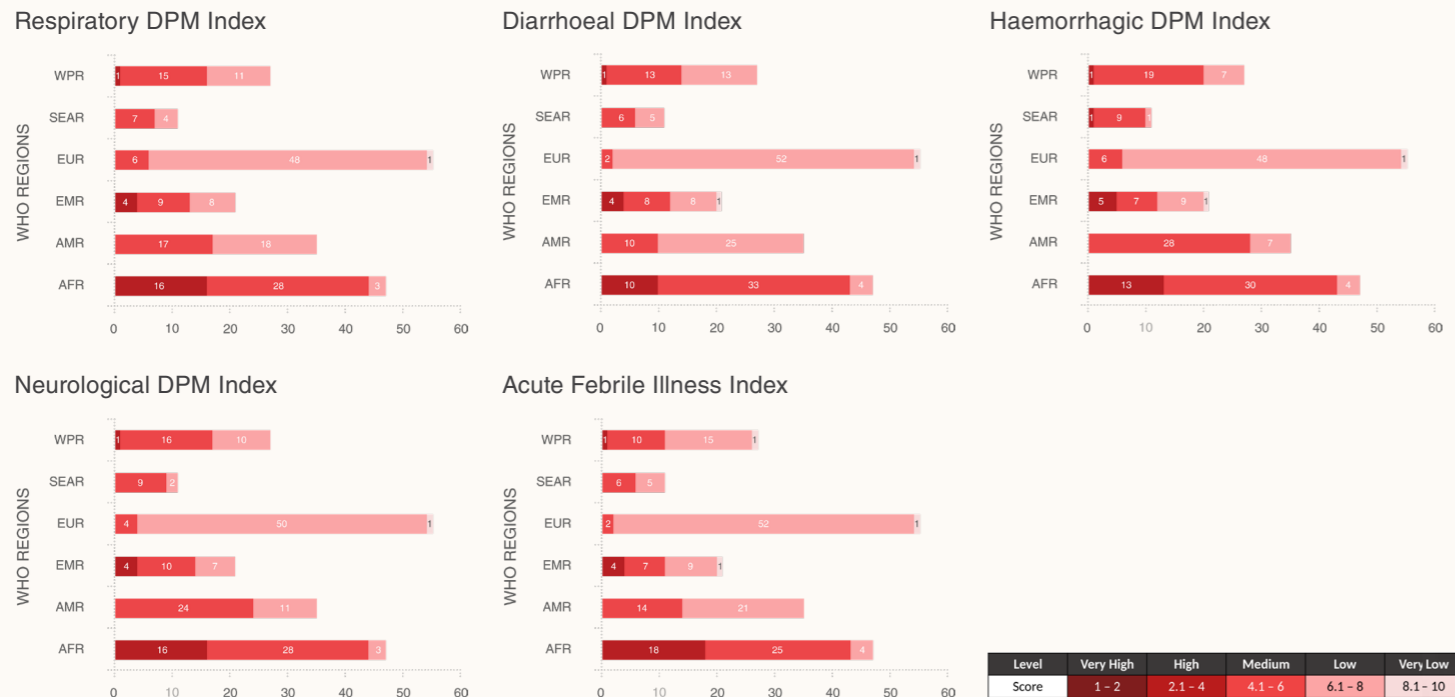
Risks in the DPM are determined by aggregating indicators across 3 main conceptual risk dimensions (hazard, vulnerability and capacity), using multisector open-source data to perform up-to-date contextual assessments.

Results are scored between 1.0 and 10.0. Low scores represent poor performance (high risk) and high scores represent good performance (low risk). The notion that higher is better is consistently applied across all DPM scores.

## Example analysis of country prioritisation

The results of DPM can be used for global or regional prioritization based on country syndromic risk or any of its components. Countries are exposed to risk differently depending on the type and nature of the communicable disease, current vulnerabilities and existing capacities. Here we use the DPM to measure variation in risk across different syndromes for countries within WHO regions.

### Analysis of the number of countries in each WHO region in each risk class of the DPM for 5 different acute syndromes



## Further information

The password protected DPM Dashboard provides the access point to all DPM results, including country, regional and global profiles. Further information: <https://extranet.who.int/sph/dpm>. To gain access, please contact [ehs@who.int](mailto:ehs@who.int) specifying the motivation for your request.

Kandel N, Chungong S. Dynamic preparedness metric: a paradigm shift to measure and act on preparedness. The Lancet Global Health 2022, 10(5):E615-616, doi:10.1016/S2214-109X(22)00097-3

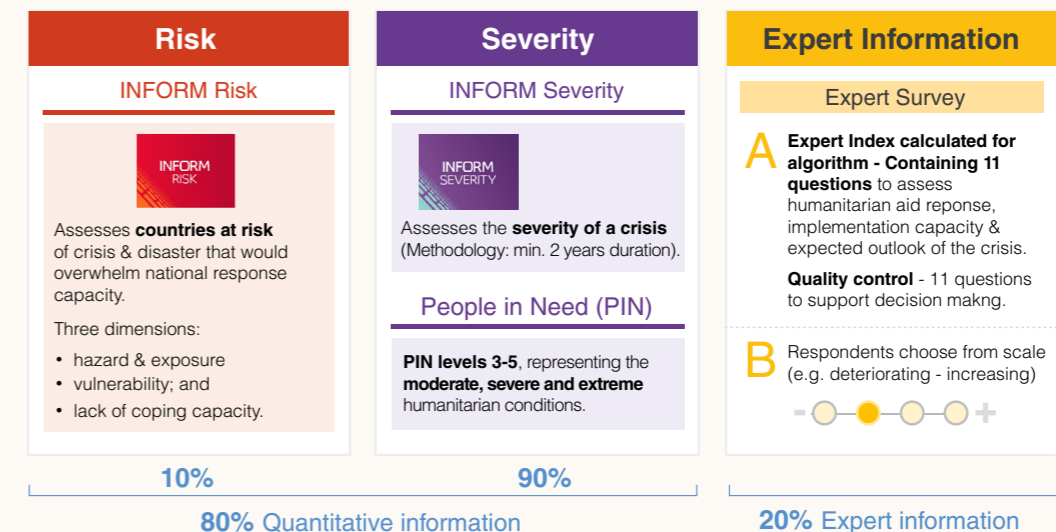
# User example – European Commission Humanitarian Aid Funding Allocation

The European Commission Directorate-General for European Civil Protection and Humanitarian Aid Operations (DG ECHO) uses INFORM's products in its evidence-based funding allocation methodology. DG ECHO states the following as reasons for using INFORM's products:

- Fulfil ECHO's requirements
- Transparent and freely accessible tools
- Global coverage
- Cover multiple types of hazards

- Based on scientific rigour and validated by large community
- Offer a common approach to the humanitarian aid community for analysis of risks and crises to allow comparability and prioritisation
- Offer a common and objective language to humanitarian actors
- Help to respect the humanitarian principles
- Constitute a powerful tool to align response planning by different humanitarian actors

## DG ECHO's evidence-based funding allocation methodology relies on



$$\text{Funding Allocation Index} = \text{Funding Allocation}_{\text{Country } i} = \frac{\text{Funding Allocation Index}_{\text{Country } i} \times \text{Total available Budget}}{\sum_{c=1}^{\text{Number of countries}} \text{Funding Allocation Index}_{\text{Country } c}}$$

## Further information

[https://civil-protection-humanitarian-aid.ec.europa.eu/what/humanitarian-aid\\_en](https://civil-protection-humanitarian-aid.ec.europa.eu/what/humanitarian-aid_en)

The background features a dynamic composition of abstract elements. Large, light blue rounded rectangular shapes are scattered across the page. Overlaid on these are numerous parallel lines in various shades of blue and dark grey, all oriented diagonally from the top-left towards the bottom-right. Three prominent red circles are also present, one in the center and two partially visible on the left and bottom edges. The overall aesthetic is clean, modern, and energetic.

**INFORM**  
ANALYSIS

# Increasing numbers of crises in 2022

The INFORM Severity Index is released monthly. Here we analyse findings from the Index from calendar year 2022. We focus on country-level crises. We use the terms open and closed for crises that, respectively, met or failed to meet the criteria for inclusion in the Index.

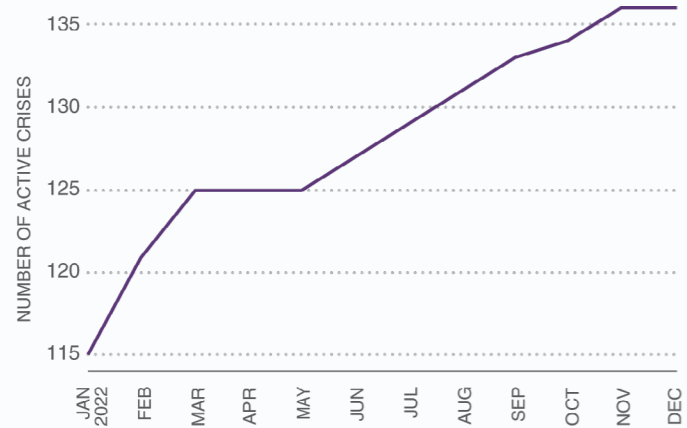
## Number of crises and their severity in 2022

In 2022 the number of crises rose from 115 in January to 136 in December, corresponding to an increase of 18.5%. Most of the crises that were included in the Index in January 2021 (113) were still included in December 2021. In addition:

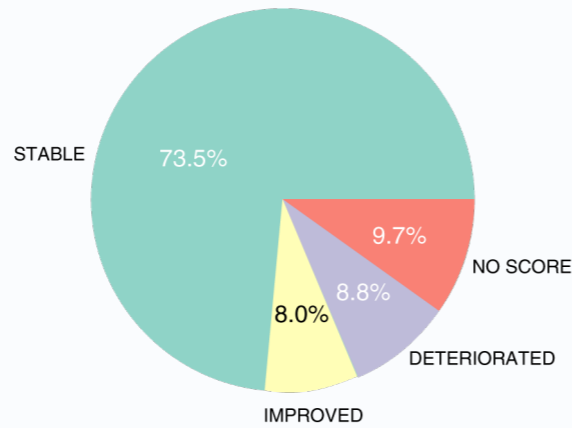
- 23 new crises were opened
- 2 crises were closed

Of the 115 crises open for the whole year, there were 83 which maintained a stable severity category. 10 crises deteriorated and 9 improved. Crises with significant increases in severity in 2022 included: drought in Kenya; violence in the Darfur and Kordofan regions of Sudan and associated refugee flows into Chad; the conflict in Ukraine; and cyclone seasons in Madagascar and Mozambique. Several migration and displacement situations also deteriorated markedly, including in Costa Rica, Ecuador, Libya and Malaysia.

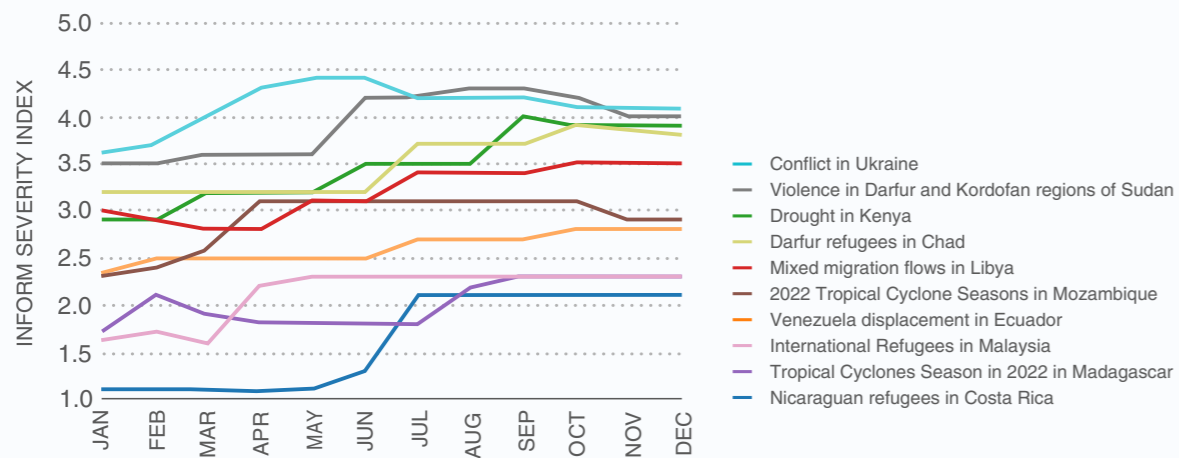
Number of crises in the INFORM Severity Index 2022



Trends in crisis severity during 2022

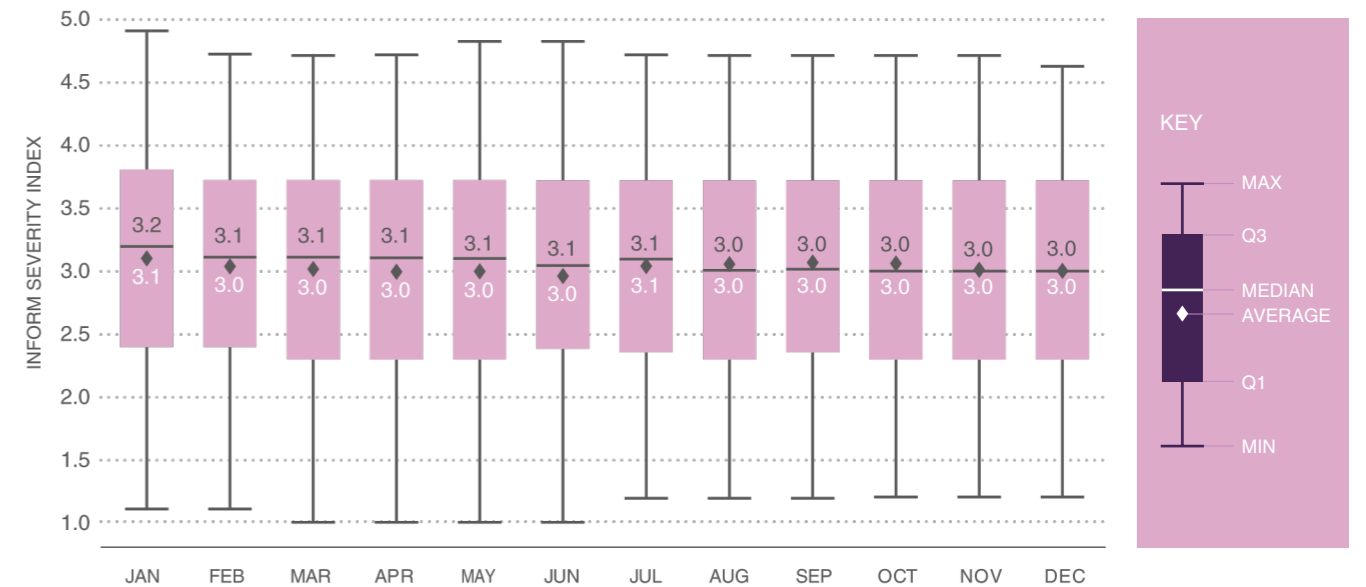


Crises with the highest increases in severity in 2022



The global average severity score of active crises decreased slightly during 2022, as a result of the low severity of several new crises opened during the year.

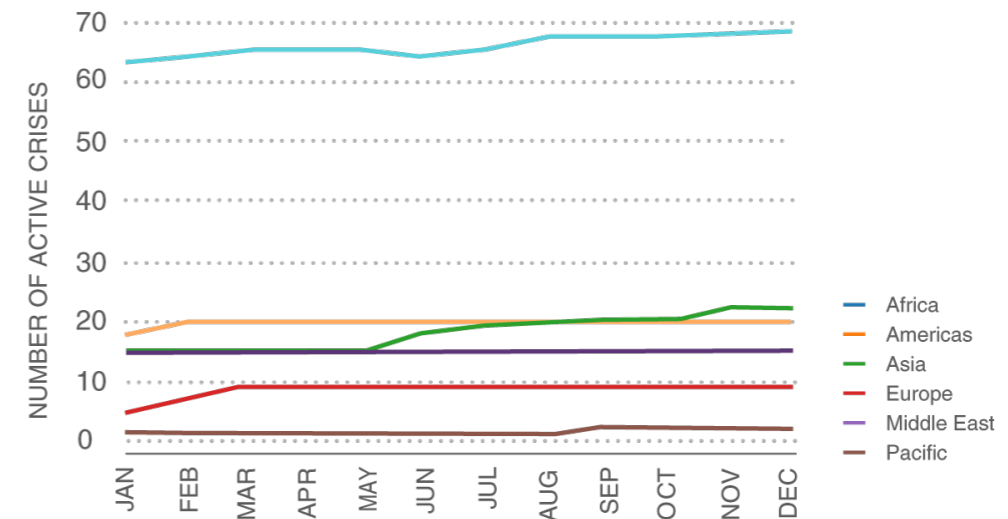
Average Severity Index score of all country-level crises during 2022



## Regional perspectives

The majority of the active crises in 2022 were in Africa. Both Europe - mainly due to the escalation of the Ukraine conflict - and Asia experienced an increase in the number of active crises.

Number of crises by region in 2022



# Risk predicts the likelihood of a crisis and its severity

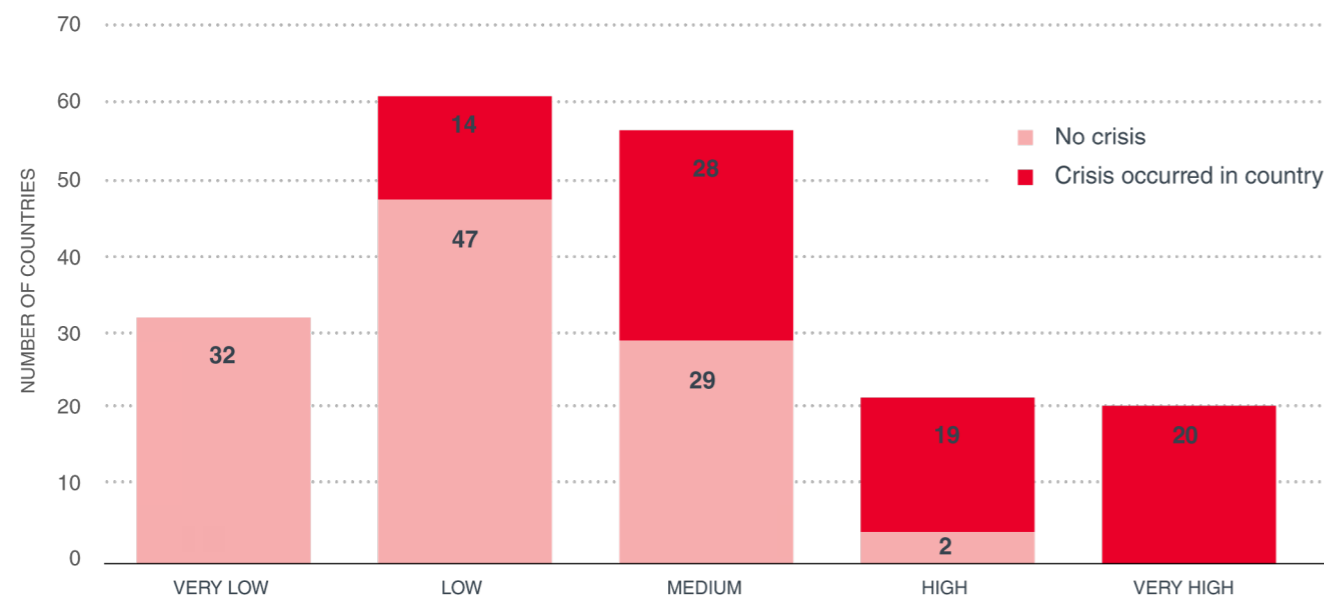
Here we compare the INFORM Risk Index and INFORM Severity Index results. While the Risk Index can tell us about the structural risk of crisis in a country and how it evolves over time, the Severity Index tells us how this risk ultimately translates into an actual crisis.

## Likelihood of a crisis

From the below chart - a comparison of the INFORM Risk Index 2023 (published September 2022) and results from the INFORM Severity Index for Jul-Dec 2022 - we can see that the Risk Index is quite good at predicting the likelihood of a crisis. For example:

- All countries classified as Very High risk experienced a crisis.
- 90% of High Risk countries experienced a crisis.
- Almost all crises happened in countries classified as Medium to Very High risk.
- No countries in the Very Low risk category experienced a crisis.

**Risk category of countries (according to INFORM Risk Index 2023) where actual crises occurred (INFORM Severity Index Jul-Dec 2022)**

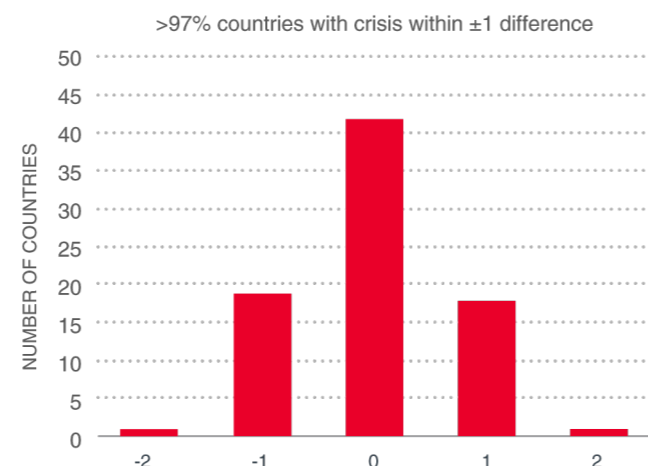


## Severity of a crisis

A comparison of the INFORM Risk and Severity Indexes also allows us to understand the relationship between a country's risk and the likely severity of an actual crisis.

- 52% of countries had the same Risk and Severity Index category for 2022.
- >97% of countries had a Risk and Severity Index category that was the same or +/- one category.

**Difference in category between INFORM Risk Index 2023 and INFORM Severity Index Jul-Dec 2022**

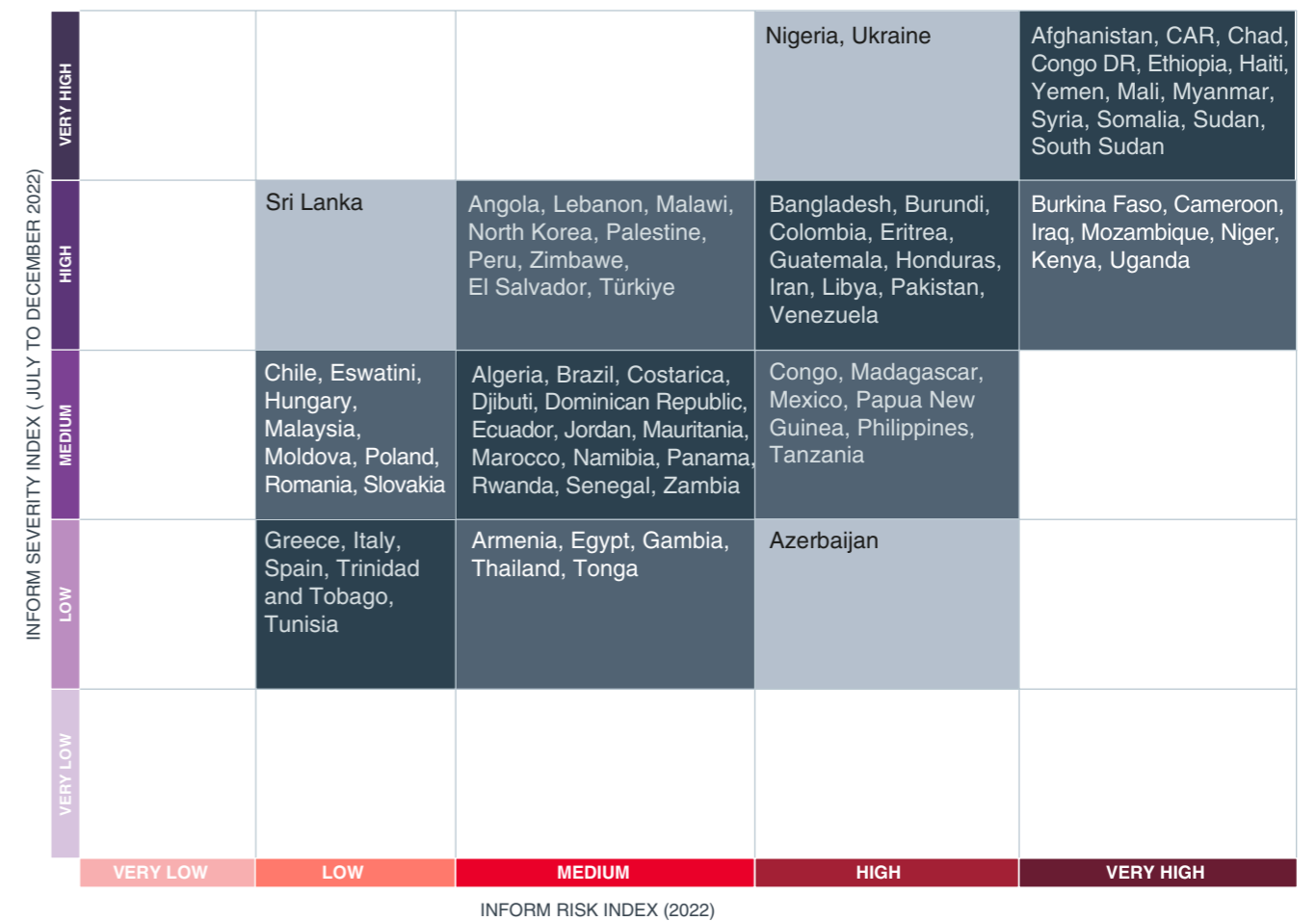


## Correlation between risk and severity

The below chart shows the position of countries on a matrix of risk and severity.

Countries that experienced a crisis (INFORM Severity Index Jul-Dec 2022) are shown according to the severity of the crisis and the risk of crisis in the country (INFORM Risk Index 2023). The maximum severity category is shown for countries that experienced more than one crisis. The intensity of the colour shows the number of countries in each position in the matrix (i.e. the correlation between risk and severity).

There is a strong correlation between a country's risk and the severity of a crisis that occurs there. The higher the risk level of a country, the more likely it is to have a severe crisis.





# Globally, crisis risk is increasing, despite improvements in coping capacity

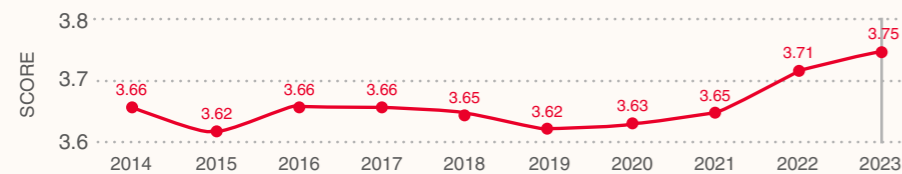
Here we analyse trends in the INFORM Risk Index over the last 10 years of releases (2014-2023). The INFORM Risk Index can be interpreted as the structural risk relating to humanitarian crises. Therefore, it changes quite slowly over time and long-term trends can offer insight into how the structural factors that result in crises are changing over time. Over the last 10 years, we can see some large scale changes in the distribution of risk globally.

## Global trends in crisis risk

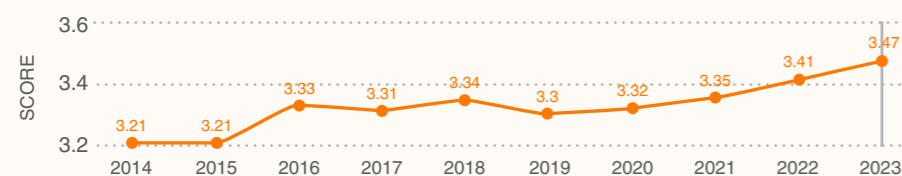
Over the last ten years, there has been a general increase in the risk of humanitarian crises at global level. While there has been an improvement in coping capacity, this has been negated by large increases in the number of people exposed to hazards, and to their vulnerability. In other words, while development of institutions and infrastructure has helped decrease risks, this has not kept pace with the increased exposure to natural hazards and conflict, combined with socioeconomic challenges. Conflict, displacement and shocks like Covid-19 crisis were important drivers of increasing crisis risks in the last decade.

### Global trends in the INFORM Risk Index and its dimensions 2014-2023

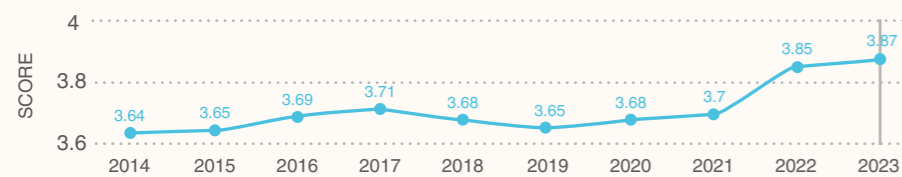
INFORM Risk Index Average Trend



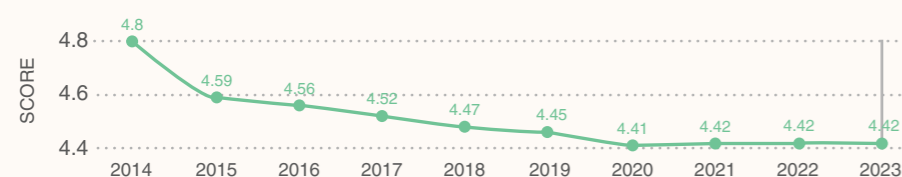
Hazard & Exposure Index Average Trend



Vulnerability Index Average Trend



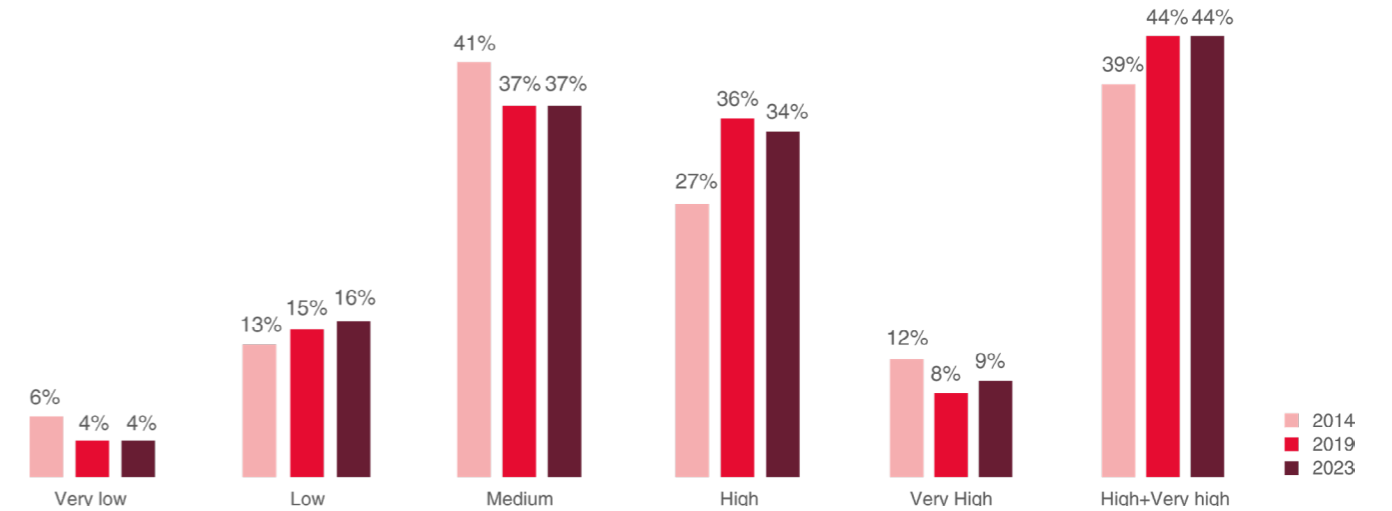
Lack of Coping Capacity Index Average Trend



# Increases in the number of people at risk

In 2023, almost 45 percent of the global population lives in countries classified as having "High" and "Very high" risk of humanitarian crises. In 2014, the proportion was 39 percent. This equates to a 22 percent increase in the absolute number of people. Meanwhile, only 20 percent of the global population lives in countries where the risk is classified as "Low" or "Very low".

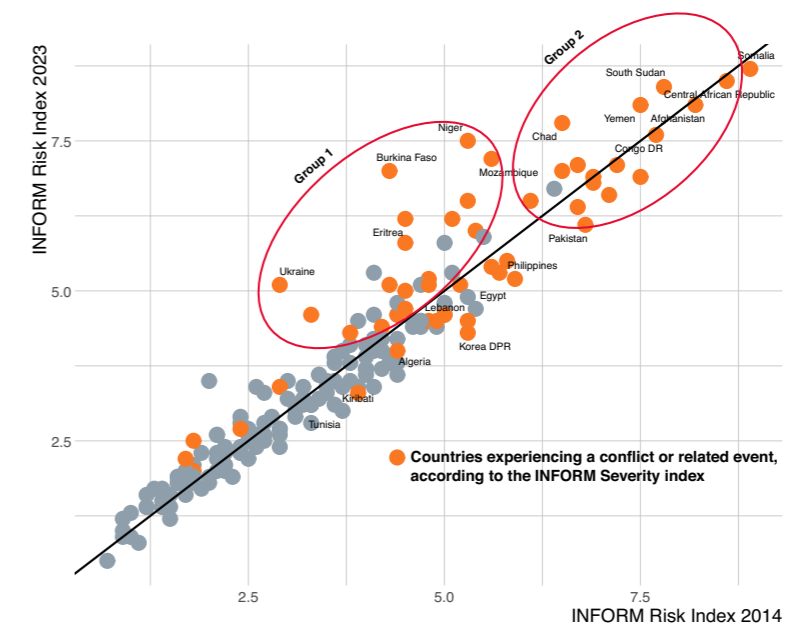
### Population ratio (relative to total population) living in each risk class in 2014, 2019 and 2023



# Conflict is the main cause of large increases in the risk of crises

Large increases in crisis risk over the last decade are largely correlated to changes in human hazards (conflicts, violence, political instability) (Group 1). With a few exceptions, countries not affected by conflicts experienced far less significant changes in risk. Likewise, almost all the countries with very high risk levels (Group 2) are those affected by conflict.

**Change in risk as measured by the INFORM Risk Index between 2014 and 2023. Countries that experienced a conflict are identified.**



# Climate change and socio-economic trends will increase 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).

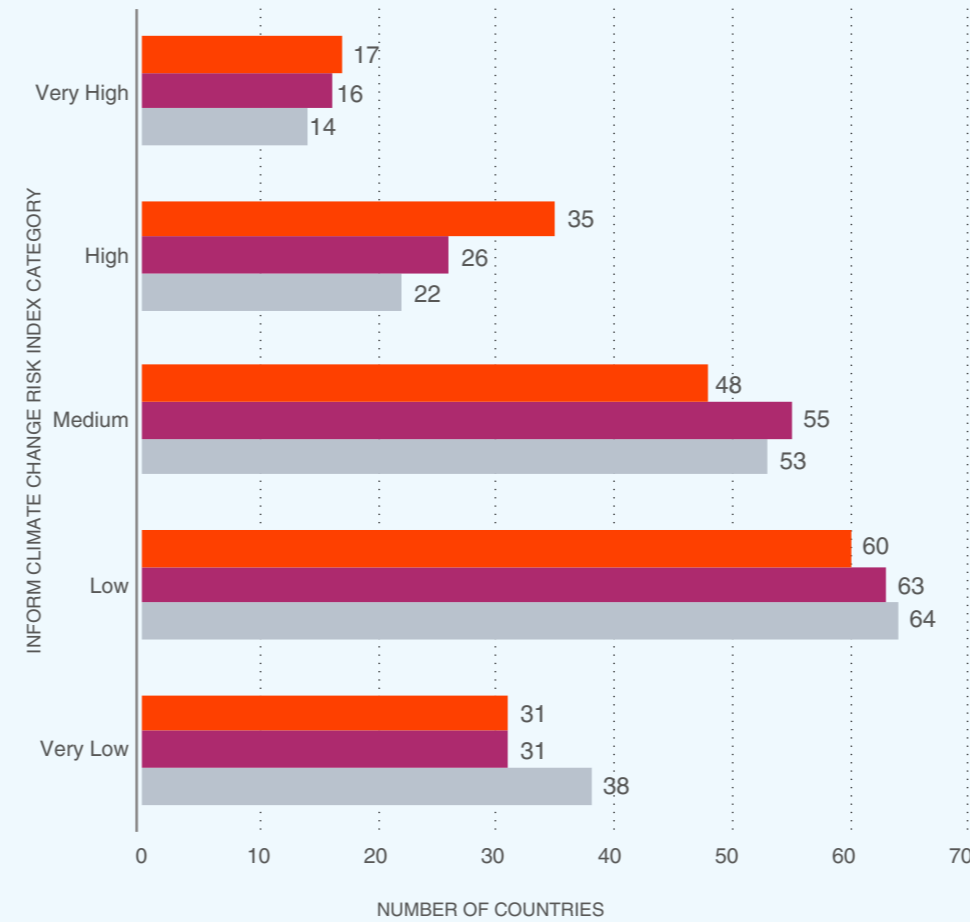
The number of countries classified as having 'high' or 'very high' crisis risk will increase from 36 today to 52 (45%).

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.

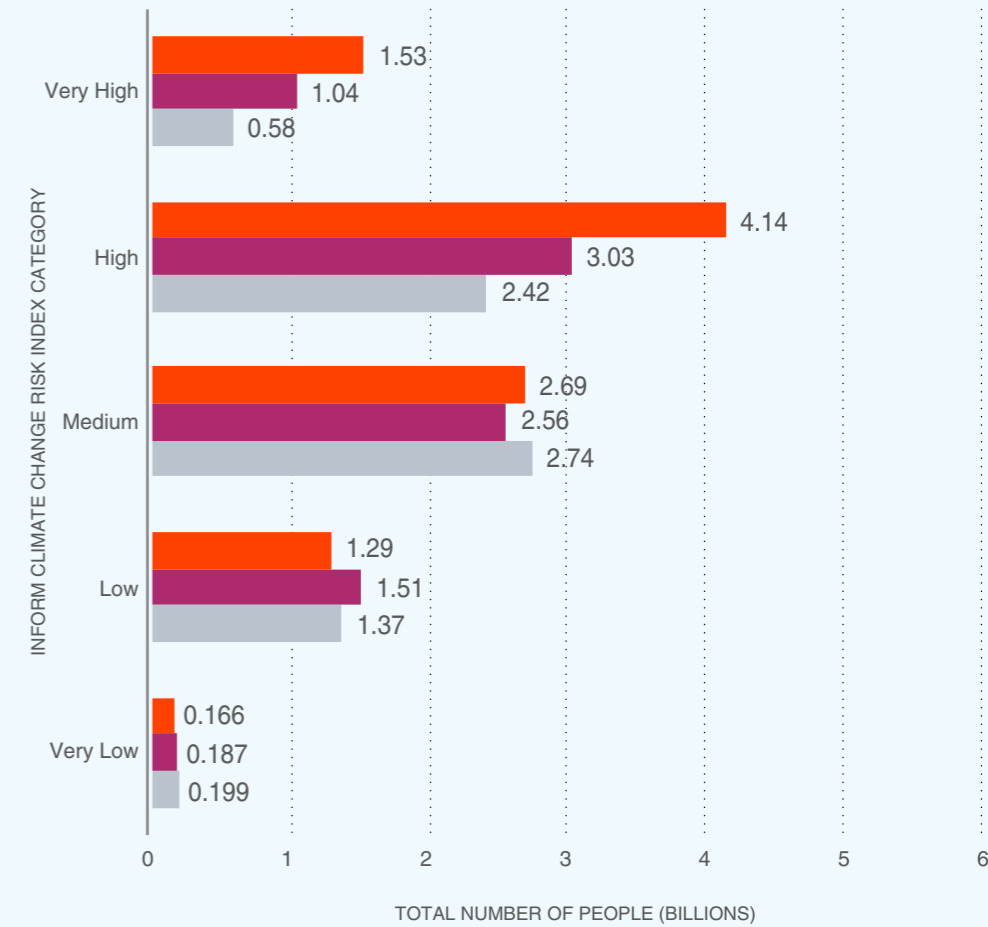
The number of people living in 'very high' crisis risk countries will roughly triple from 580 million to 1.5 billion.

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**



**People at risk 2050**



■ 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.

# Africa and low income countries will be worst affected by increasing climate change-related crisis risk

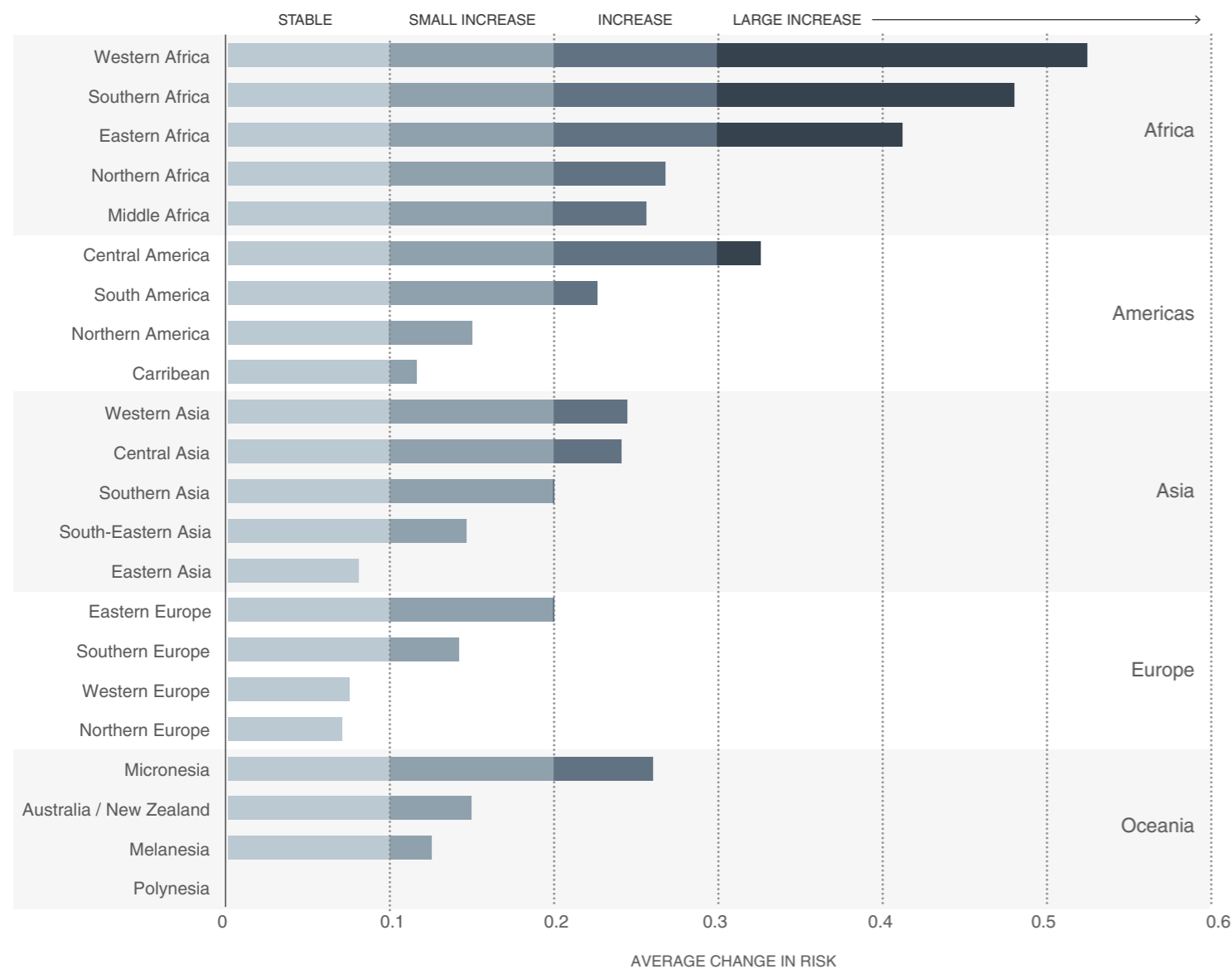
Crisis and disaster risks will increase in all regions, regardless of climate and socio-economic scenarios.

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.

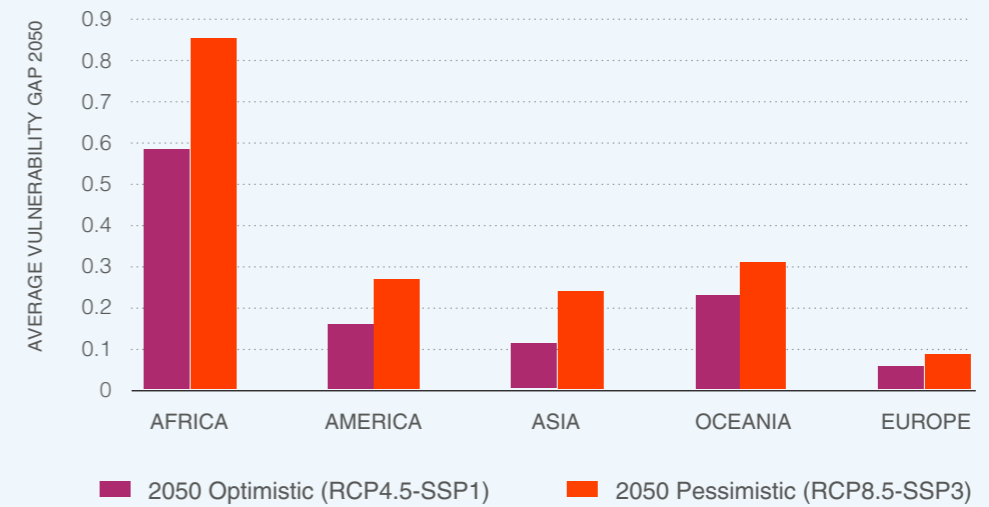
Lower income countries will be worst affected. While higher income countries may be able to absorb increases in risk, more than 70% of countries with large predicted increases will not have the resources to cope. This will especially be the case in low and lower-middle income countries, particularly 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 (pessimistic scenario RCP8.5-SSP3)

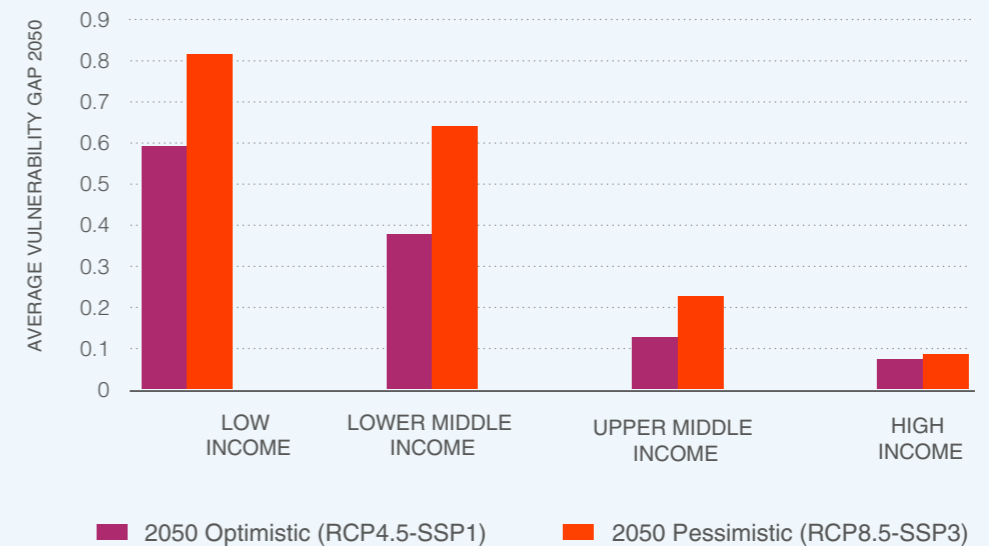


## Vulnerability gap by region 2050



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.

# Looking back, looking forward

## Historical risk trends and climate change

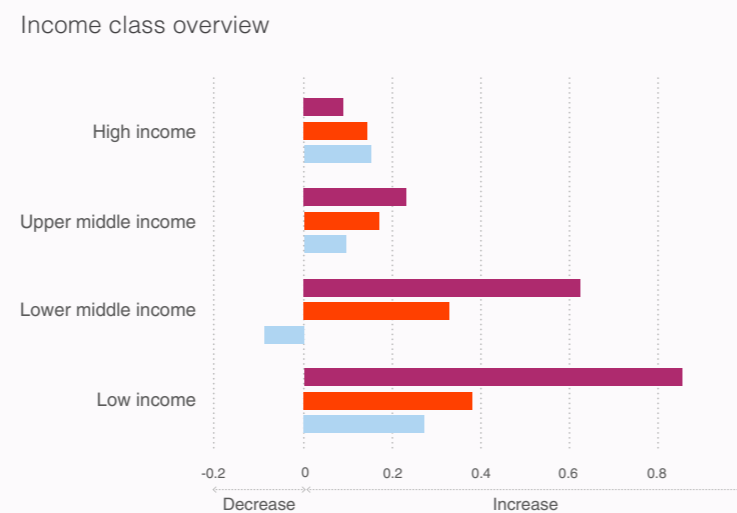
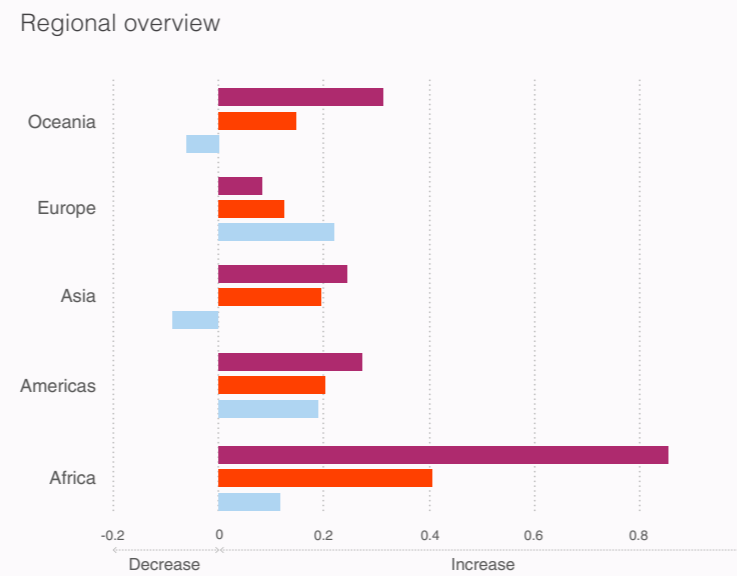
Here we combine analysis of risk trends over the last decade from the INFORM Risk Index with estimates of how risk will change in the future from INFORM Climate Change. The crisis risk pathway of individual countries in recent years influences how they will be able to cope with future climate challenges.

## Risk increase in Africa and low income countries

From a comparison between regions and income groups of recent past and future risk trends, several points emerge:

- On average, countries in Asia and Oceania were able to reduce their crisis risk over the last decade. If these countries continue their progression, they will have less difficulty facing the increasing risks that come with climate change. However, where climate adaptation strategies are weak, this progress could be negated by climate impacts.
- Despite some improvements in coping capacity, Africa and low income countries largely failed to tackle increasing crisis risks in the last decade. 6 out of 10 countries with largest increases in risk during last 10 years are located in Africa.
- Africa and low income countries are worst affected by climate-related crisis risks. This is true in terms of both the likely increase in risk and the highest vulnerability gap. The latter represents the amount of vulnerability reduction and coping capacity increase that would be required to maintain the current level of crisis risk. Therefore, they will require the largest investments in crisis prevention and risk management to avoid potentially devastating risk increases in future.

**Regional and income class overview of recent crisis risk trends (2014-2013 INFORM Risk Index) and future Change in risk and Vulnerability gap in 2050 (INFORM Climate Change, Pessimistic scenario combination RCP8.5-SSP3)**



**Looking back**  
■ Change in risk 2014-2023

**Looking forward**  
■ Vulnerability gap in 2050 Pessimistic (RCP8.5-SSP3)  
■ Change in risk in 2050 Pessimistic (RCP8.5-SSP3)

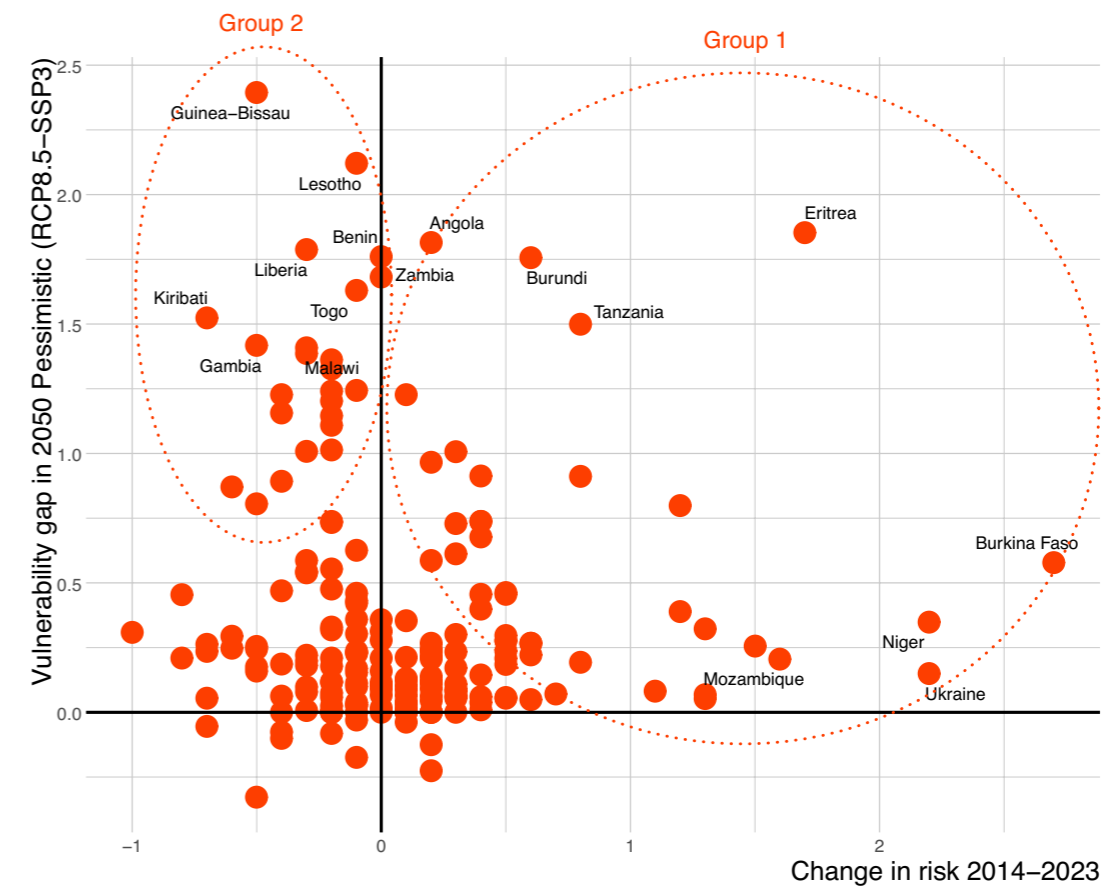
# Crisis risk trajectories

## Getting on the right path

Analysing past and future risk trends of individual countries can help us understand how well placed they are to cope with future crisis risks. Here we compare risk trends over the last 10 years from the INFORM Risk Index with the vulnerability gap in 2050 from INFORM Climate Change. The vulnerability gap represents the amount of adaptation (vulnerability reduction, coping capacity increase) that will be required to maintain the current level of risk. We can identify two groups of countries of interest.

- Firstly (Group 1), countries that have struggled with increases in crisis risk over the last ten years AND are facing high vulnerability gaps in the future as a result of climate change. These countries will require particularly high adaptation efforts to mitigate future crisis risks.
- Secondly, (Group 2), countries that are facing a high vulnerability gap in the future but have made reductions in crisis risk over the last decade. This could suggest that these countries are on a good risk reduction trajectory, although they will require continued improvements to cope with future crisis risks.

**Comparison of recent crisis risk trends (2014-2013 INFORM Risk Index) and future vulnerability gap in 2050 (INFORM Climate Change, Pessimistic scenario combination RCP8.5-SSP3) for individual countries**



# Research example: Quantifying future crisis severity in Ethiopia

## Increasing drought-related humanitarian needs

The current drought in Ethiopia, the worst since 1984, coupled with the Russian invasion of Ukraine are estimated to have increased the number of food insecure in the drought-affected regions from 0.3M people in February 2022 to 12M in February 2023. The resulting 2022 Humanitarian Response Plan (HRP) had 3.09B USD in requirements, about double the amount allocated in each of the past 5 years. The Drought Response Plan (DRP), which represents 1.66B USD of the HRP, targeted 17M people, of which 9.9B were facing Crisis, Emergency, or Famine (High acute malnutrition or higher). About 98 USD is allocated per person facing high acute malnutrition or higher.

## RECEIPT project and storylines

The European Union Horizon 2020 funded project RECEIPT (Remote climate effects and their impact on European sustainability, policy and trade) acts to assess remote climate change impacts on a variety of European risks including those related to agriculture and food production, finance, foreign cooperation and development, global manufacturing chains, and coastal infrastructure. These risks in RECEIPT are assessed using a concept called storylines, i.e., physically self-consistent cause-effect pathways of past events or plausible future events to evaluate the effects of a wide variety of factors, including those related to climate change hazards, climate change adaptation measures, and socioeconomics.

## Storyline development and the INFORM Severity Index

In this storyline, a team from the Risk Assessment and Adaptation Strategies division at the Euro-Mediterranean Center on Climate Change explored the extent to which food crises may become more severe under future climate change is explored with the aim to understand how food crises can be prevented by food security policies and European development co-operations and development aid. The role of climate and population change is considered using FAO food security projections (RCP4.5-TSS and RCP-8.5-SSS) and UN population projections. The number of food insecure people is integrated into the INFORM Severity framework which can be used to provide guidance for decisions regarding humanitarian aid.

## Quantifying future changes in crisis severity and funding requirements

In a food insecurity crisis, INFORM Severity Index considers people in need (PIN) of humanitarian assistance as people under stress levels 3, 4 and 5, which according to the (IPC, 2004) classifications are in a situation of crisis (3), emergency (4) and famine (5). In this analysis, the impact of climate change and agricultural practices on drought-related crisis needs are assessed. The number of people in need are estimated and are integrated into the INFORM Severity Index, to understand possible future changes in crisis severity. An estimate of drought response funding requirements is made based on the per person allocation from the 2022 DRP.

## Scenarios assessed and their impacts on people in need (PIN), funding requirements and INFORM Severity Index value

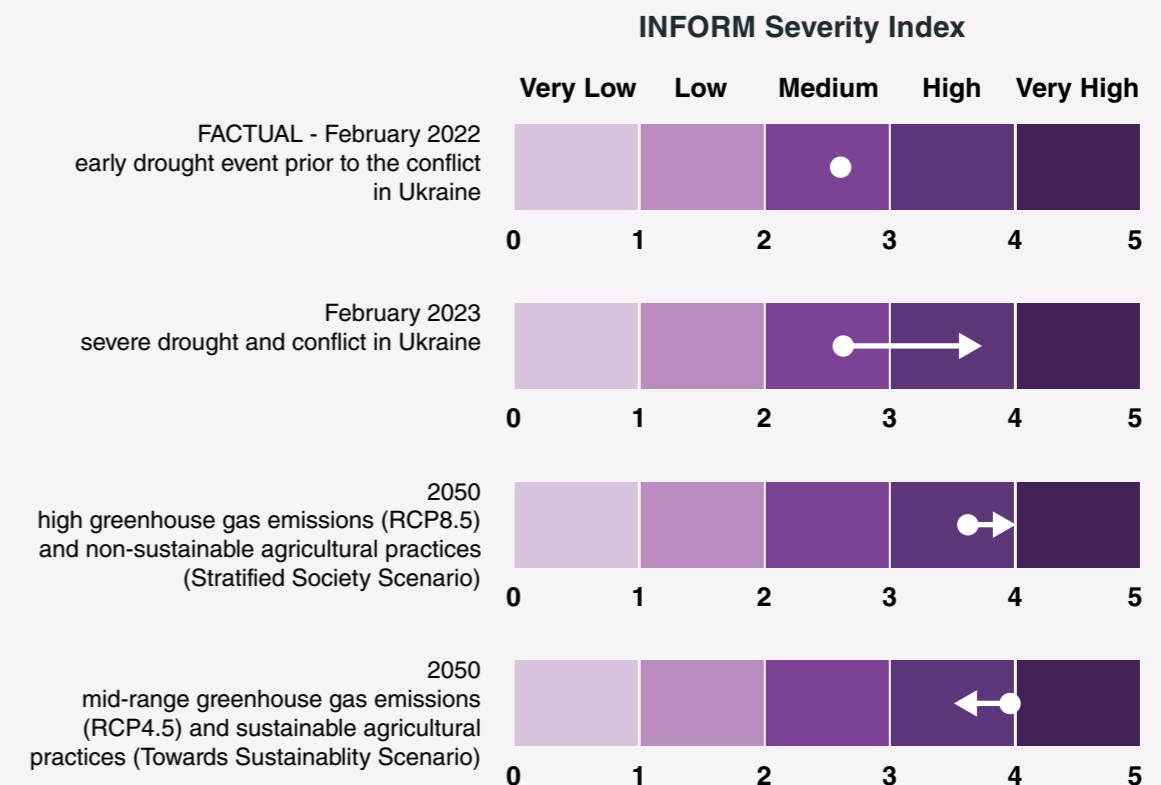
	Scenario	People in need	Funding requirements based on adjustment of 2022 DRP	INFORM Severity Index
1	FACTUAL – February 2022 – early drought event prior to the conflict in Ukraine	300,000		2.7 (Medium)
2	February 2023 – severe drought and conflict in Ukraine	12 million	USD 1.2 billion	3.7 (High)
3	2050 – high greenhouse gas emissions (RCP8.5) and non-sustainable agricultural practices (Stratified Society Scenario)	25.5 million	USD 2.5 billion	4.0 (Very High)
4	2050 – mid-range greenhouse gas emissions (RCP4.5) and sustainable agricultural practices (Towards Sustainability Scenario)	4.7 million	USD 0.8 billion	3.5 (High)

## Climate change mitigation and sustainable agriculture reduce future aid needs

The results of this analysis show how different climate change and agricultural practices affect future crisis severity and funding requirements. High greenhouse gas emissions scenarios combined with non-sustainable agricultural practices lead to significant future increases in drought-related crisis severity and needs in Ethiopia. Conversely, more moderate greenhouse gas emissions and sustainable agriculture lead to more modest increases, comparable with current conditions.

Improving and implementing climate policies that focus on mitigation and reduction of carbon emissions and agricultural policies that focus on sustainable practices will therefore have substantial positive consequences on food security and future aid needs.

## Impact of the assessed scenarios on the INFORM Severity Index



Further information:

<https://climatestorylines.eu/>

Bovienzo, D., Marzi, S., Monteleone, L., Mysiak, J., and Pal, J.: Current and future evolution of drought risk in Ethiopia: A framework to inform disaster risk reduction and climate change adaptation policies, EGU General Assembly 2023, Vienna, Austria, 24–28 Apr 2023, EGU23-14314, <https://doi.org/10.5194/egusphere-egu23-14314>, 2023.

J.J.M. van den Hurk, B., Baldissera Pacchetti, M., Boere, E., Ciullo, A., Coulter, L., Dessai, S., Ercin, E., Goulart, H.M.D., Hamed, R., Hochrainer-Stigler, S., Koks, E., Kubiczek, P., Levermann, A., Mechler, R., van Meersbergen, M., Mester, B., Middelaris, R., Minderhoud, K., Mysiak, J., Nirandjan, S., van den Oord, G., Otto, C., Sayers, P., Schewe, J., Shepherd, T.G., Sillmann, J., Stuparu, D., Vogt, T., Witpas, K., 2023. Climate impact storylines for assessing socio-economic responses to remote events. *Clim. Risk Manag.* 40, 100500. <https://doi.org/https://doi.org/10.1016/j.crm.2023.100500>

# INFORM

INFORM is a collaboration of the Inter-Agency Standing Committee and the European Commission. The Joint Research Centre of the European Commission is the scientific and technical lead of INFORM. This report is based on the data available at <https://drmkc.jrc.ec.europa.eu/inform-index>.

This report is produced by the United Nations Office for the Coordination of Humanitarian Affairs on behalf of all INFORM Partners.

## INFORM Steering Group

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## INFORM Partners

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