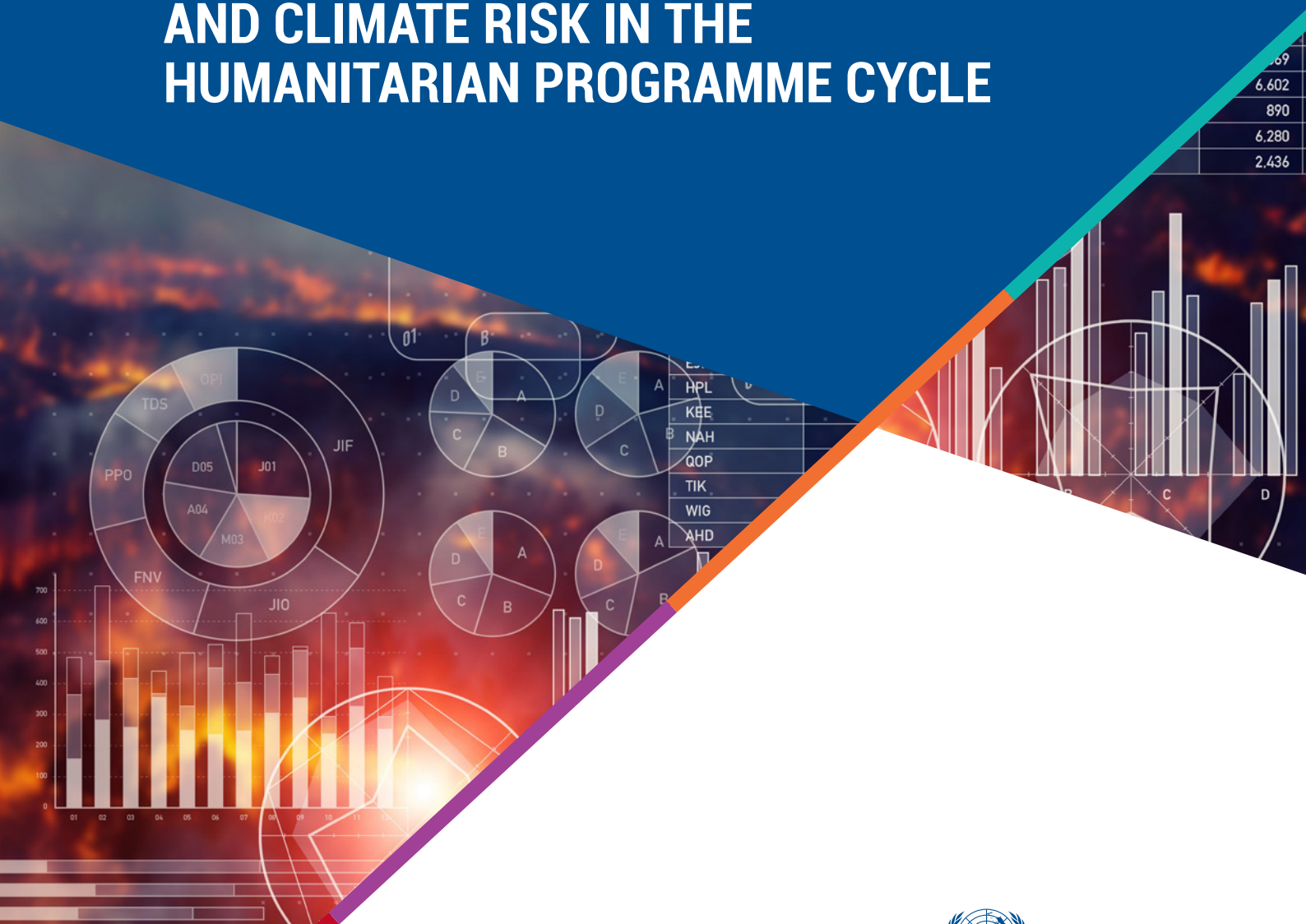


# Strengthening risk analysis for humanitarian planning

## INTEGRATING DISASTER AND CLIMATE RISK IN THE HUMANITARIAN PROGRAMME CYCLE



  
**SENDAI FRAMEWORK**  
FOR DISASTER RISK REDUCTION 2015-2030

 **UNDRR**  
UN Office for Disaster Risk Reduction

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# 1. Background



*“The world is experiencing an unprecedented moment of fragility and uncertainty. We have no option but to change how we reduce risk and manage crises. Few humanitarian planning documents fully analyse disaster-related risks and the impact of climate in humanitarian settings. Very few humanitarian appeals include disaster risk reduction or climate adaptation efforts. By bringing together humanitarian and development actors in protracted settings, we can address both needs and risks. To achieve this, more systematic approaches to risk analysis and planning are required.”*

**Mami Mizutori**

Special Representative of the Secretary-General for Disaster Risk Reduction

During the last decade, the costs of humanitarian appeals increased by 400 per cent<sup>1</sup>. According to OCHA’s financial tracking service, more than 50 per cent of the costs for international humanitarian response could not be covered in 2021<sup>2</sup>. Between 2030-2050, the impacts of climate change are anticipated to lead to skyrocketing humanitarian costs exceeding USD 20 billion per year<sup>3</sup>. While around 50 per cent of disaster impacts can be predicted with varying degrees of confidence<sup>4</sup>, only a fraction of funding is dedicated to risk reduction and preparedness, underscoring the need for more risk-sensitive humanitarian planning and action. In the Pathway for Peace study<sup>5</sup>, the United Nations and World Bank produced a business case to show that conflict prevention, besides saving millions of lives, is

also economically beneficial: preventing outbreaks of violence would create net savings close to USD 5 billion per year. Similarly, a study commissioned by USAID looking at Ethiopia, Kenya and Somalia, Economics of Resilience to Drought<sup>6</sup>, quantified the savings from earlier response: investing in more-proactive responses to avert humanitarian crises could reduce the cost to international donors by 30 per cent, as well as protecting billions of dollars of income and assets for those most affected.

In addition, the climate crisis is a threat multiplier, exacerbating and compounding vulnerabilities in places where humanitarians are already overstretched. Climate-related disasters interact with other drivers of humanitarian need to affect all areas of life: food

1 OCHA Humanitarian-Development Nexus

2 OCHA Financial Tracking Service 2021

3 The cost of doing nothing, IFRC, 2019

4 Analyzing gaps in the humanitarian and disaster risk financing landscape, ODI & Start Network, 2019

5 Pathways for Peace: Inclusive Approaches to Preventing Violent Conflict, United Nations, World Bank, 03/2018

6 Economics of resilience to drought in Ethiopia, Kenya and Somalia, USAID, 13/08/2020

security, health and nutrition, essential services, shelter, livelihoods and political stability. Impacts are greatest where recurring or overlapping disasters make it impossible for communities to recover between shocks. Left unabated, the climate crisis will become the primary driver of humanitarian needs. In 2020, among the 15 countries most vulnerable and least ready to adapt to climate change, 12 had a Humanitarian Response Plan (HRP), 12 received funding from the Central Emergency Response Fund (CERF)<sup>7</sup>, all were in a state of conflict or high institutional or social fragility, and 12 had concurrent public-health emergencies due to COVID-19. In eight of these countries, at least 15 per cent of surveyed populations experienced acute food insecurity or worse (IPC/CH Phase 3 or above). Fourteen countries had moderate to high risk of debt distress or were already in debt distress<sup>8</sup>.

Ensuring the Humanitarian Programme Cycle (HPC) includes a better risk analysis is therefore essential for both the population and the overall humanitarian community. Although humanitarian crises cannot always be prevented, the suffering associated with the impacts of various shocks, crises and disasters can be greatly reduced through strong, proactive and collaborative risk-informed programming.

In 2021, UNDRR released a checklist on [Scaling up Disaster Risk Reduction in Humanitarian Action 2.0](#), that outlines ways to make DRR more integral to humanitarian planning and programming at country and local levels, particularly in challenging contexts. This guidance is a companion to the checklist, designed to assist country teams in improving risk analysis in Humanitarian Needs Overviews (HNOs) to inform the Humanitarian Response Plans (HRPs). It outlines practical steps for analysing potential multiple and cascading hazards and their risk levels, determining how humanitarian situations might evolve over a given period of time. It will inform contingency planning, preparedness measures and early actions to reduce risk. It also helps to ensure strategies and programmes are sufficiently robust to withstand changes in the operational environment.

While HPC guidance and templates already require Humanitarian Country Teams to include projections and forecasts in annual strategic-planning exercises, only few apply a multi-hazard approach and consider interconnected and cascading risks in their response objectives. Addressing modern challenges requires transition from hazard-to-hazard risk assessments to more systemic and interconnected approaches. Conducting comprehensive risk analysis during strategic planning exercises a) expands humanitarian focus from acute and urgent needs to chronic vulnerabilities and exposure to future risks, stress and shocks and b) helps integrate reduction of extreme vulnerability into planning to facilitate recovery, and therefore aims at preventing new and reducing existing risk, all of which contributes to strengthening community resilience.

This guidance details a step-by-step approach tailored to the Humanitarian Programme Cycle and development agenda to ensure it is based on comprehensive and robust forward thinking. It is aimed especially at facilitators involved in strategic planning, to prepare and facilitate joint analysis workshops taking place during the development of Humanitarian Needs Overviews using the Joint Intersectoral Analysis Framework (JIAF). It also provides recommendations on how to use the outputs of scenario-development to strengthen Humanitarian Response Plans. Risk analysts and participants of joint analysis workshops can also benefit from the guidance by becoming familiar with key forecasting concepts and definitions, as well as the logical steps and examples presented in this document.

It is acknowledged that risk analysis and scenario development in the humanitarian sector do not always follow the standards used in academia and science in general. The proposed approach is adapted to the terminology in use in the humanitarian sector, builds on existing humanitarian risk analyses and scenario-development guidance<sup>9</sup> and takes into consideration the scarce resources and time commonly available to develop such analyses during the HNO and HRP development.

---

7 The Central Emergency Response Fund (CERF) was created in 2006 to enable timely and effective humanitarian assistance when new crises emerge.

8 See OCHA's Financial Tracking Service, ND-GAIN's Country Index, OCHA's Central Emergency Response Fund, FSIN's Global Report on Food Crises 2021, WHO's Health Emergency Dashboard, World Bank's List of Fragile and Conflict-affected Situations, and IMF's List of LICs Debt Distress Levels.

9 2021 Guidance - Analyzing risks and determining the most likely evolution of the humanitarian situation, 2015 Guideline Emergency Response Preparedness, IASC Task Team on Preparedness and Resilience, 2018 FEWSNET Scenario development for food security early warning and 2018 ACAPS How to build scenario in preparation or during humanitarian crises.

# 2. Risk-informed Humanitarian Programme Cycles

## a. Joint Analysis

Risk analysis, scenario building and response planning are more effective when undertaken by a multidisciplinary group to ensure their credibility and use. Discussions between risk experts will ensure greater quality of outputs, reducing the influences of an individual's bias on the process. In addition, findings obtained through facilitated and consultative processes are more likely to meaningfully inform planning compared with a risk analysis that was developed through a desk review. The main outputs of the joint analysis include:

- 1. Risk analysis:** the joint identification of potential hazards, their likelihood of occurrence and their expected impact on people, property, infrastructure, services and assets, and the environment on which they depend, based on the evaluation of exposure, vulnerability and capacities. A half-day workshop should be dedicated to validating the risk list and the risks' severity.
- 2. Scenario building:** the interaction between different risks and any other plausible developments - including events that have a positive impact on the situation - and the joint anticipation of humanitarian consequences. A half-day workshop should be dedicated to developing the most likely scenario and estimating its humanitarian impact.
- 3. Response planning:** the joint identification of risk-sensitive objectives and programmes that will mitigate the impact of the expected scenario, and ensure the HRP itself does not contribute, aggravate or create new risks. A half-day workshop should be dedicated to reviewing the response objectives and ensuring they are risk-sensitive.

Two modalities are available to support this process, depending on time and resources:

- **Assisted HNO drafting process:** A risk analyst

(consultant or assigned staff) conducts a desk review (with the help of the RiX - see section 3a) and develops the risk analysis and planning scenario. The Humanitarian Country Team may appoint a small team of technical focal points and information managers to support each step detailed in section 3 of this guidance. Results should be presented to the larger humanitarian and development community for discussion and validation during regular HPC meetings or workshops. After validation, the final results are endorsed by the Humanitarian Country Team.

- **Facilitated, collaborative analysis process:** As in the first option, an analyst supported by a small task team should lead the risk analysis, scenario building and response planning. Ideally, the task team should include facilitation, information management, analysis and scenario-development expertise from across the HDP nexus to ensure data and knowledge are shared between pillars. The team should be appointed early in the HPC development process (April-May) to ensure the risk work is integrated into the HPC planning. In this option, the task team coordinates the data and analysis process and organizes a dedicated workshop to jointly analyse risk. With appropriate preparations, three half-day modules should be sufficient to complete the analytical steps detailed in section 3 of this guidance. Attendance at the workshops should be carefully planned and include a mix of participants with context, intersectoral knowledge and multi-hazard expertise. Participants should commit to all three modules, to build upon the decisions and agreements of the previous workshops and progress quickly through the different steps<sup>10</sup>.

Whatever the modality chosen to conduct the analysis, the group conducting the analysis is referred to as 'risk experts' in the guidance below.

<sup>10</sup> Scenario building technical brief, ACAPS 08/2016

## b. The Joint Intersectoral Analysis Framework

The Joint Intersectoral Analysis Framework was developed in 2018 to support the development of the Humanitarian Needs Overview<sup>11</sup>. Its primary objective is to inform strategic decision-making, response analysis and response planning through a holistic, people-centred and inclusive joint intersectoral analysis process that is comprehensive and methodologically rigorous. It also provides humanitarian actors with a common way to process, structure and synthesize information regarding the population's unmet needs.

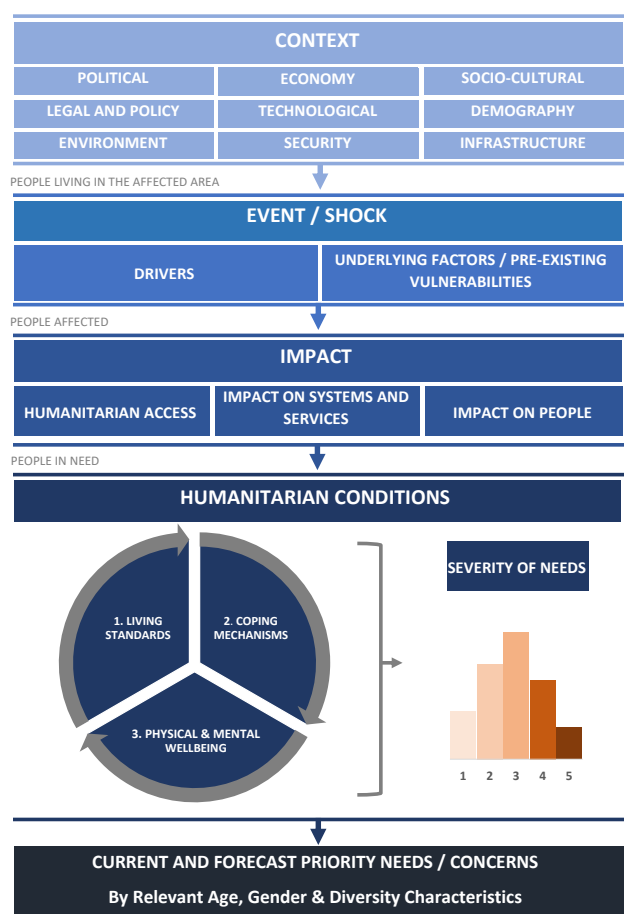
Through applying the JIAF, humanitarian actors can estimate the magnitude and severity of humanitarian needs, as well as develop a common narrative for the operational environment within which humanitarian actors operate.

The Framework is built on five main pillars<sup>12</sup> (context, event/shocks, impact, humanitarian conditions, current and forecast priority needs), each of which contains different sub-pillars to help organize information, visualize relationships and bring a consistent structure to the analysis.

**Measuring the severity of needs** is one of the primary objectives of the JIAF, as it allows it to identify geographical areas and affected groups with the most-severe needs, and subsequently to set priorities in geographical areas, issues or affected groups.

One other important feature of the JIAF is its **built-in causal relationships between pillars**, displaying a clear path between events, their impact and the resulting humanitarian conditions. This characteristic is particularly important for forecasting as it provides a logical and clear structure for unfolding the humanitarian consequences of aggravated situations or new shocks during scenario exercises.

**Figure 1. The Joint Intersectoral Analysis Framework (JIAF)**



Practically, the way the risk analysis approach and JIAF interact during the HNO development process can be summarized as follows:

1. In-country teams conduct an analysis of the current operational environment and assess the severity of needs and the key priorities, based on data collected by clusters and humanitarian actors.
2. In-country teams undertake a multi-hazard and interconnected-risk analysis, and agree on the most likely scenario<sup>13</sup> for the next 12 months. The most likely scenario provides the set of assumptions that allows anticipation of new or aggravated situations in all pillars and sub-pillars of the JIAF.
3. Using the most likely scenario, in-country teams forecast impact and humanitarian conditions and agree on future key priorities, e.g. geographic areas, or affected and vulnerable groups.

Once the HNO has been developed, country teams proceed in the strategic-planning process with the drafting of the Humanitarian Response Plan. The HRP requires setting strategic and specific objectives and identifying appropriate programmes that will address the current and forecast priorities previously identified, and reduce the anticipated impact of the scenario. All recommended programmes and activities should be linked transparently to the priorities identified in the HNO.

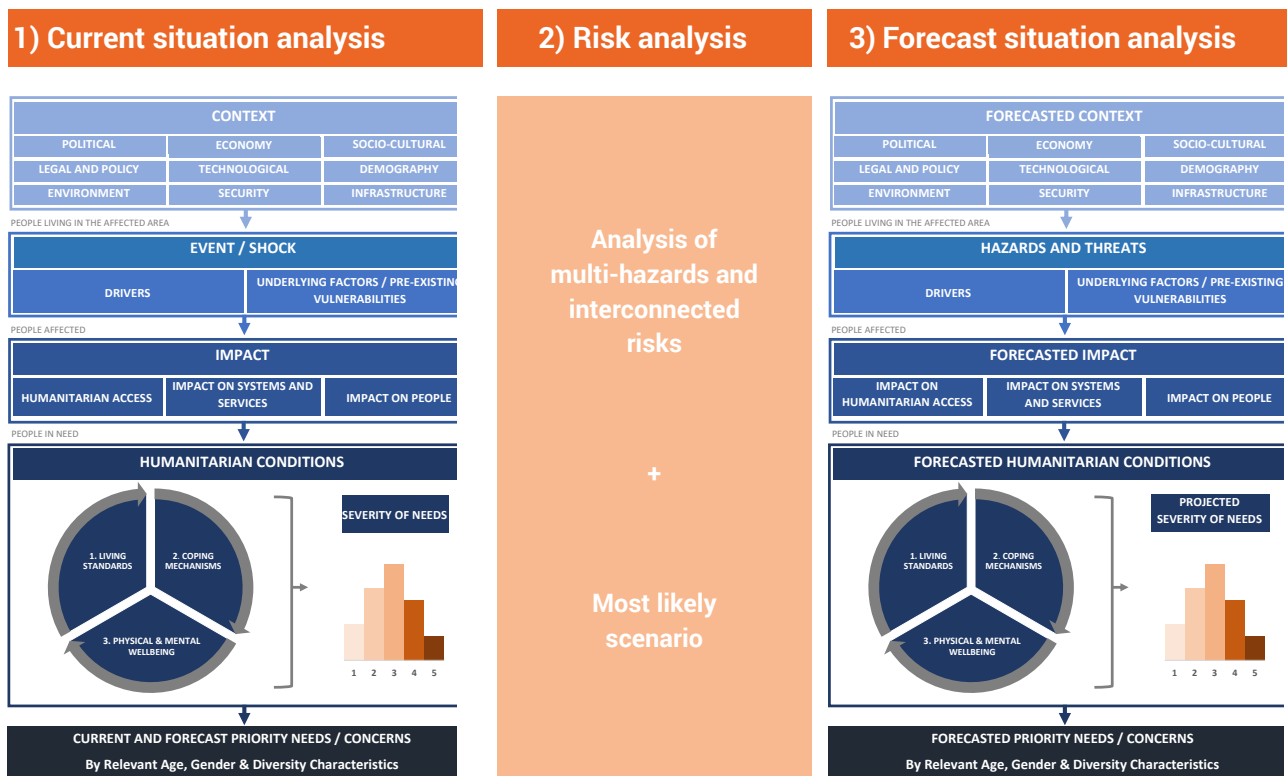
<sup>11</sup> 2022 JIAF Guidance, OCHA, 05/2021

<sup>12</sup> For more details on the JIAF pillars and their content, refer to the latest JIAF guidance available [here](#).

<sup>13</sup> Technically, several scenarios with different likelihood of occurrence and potential impact could be developed and planned for. For simplicity, the HPC requires only details and planning for the most likely scenario.



Figure 2. JIAF and risk analysis approach



### c. Understanding interconnected and cascading risks<sup>14</sup>

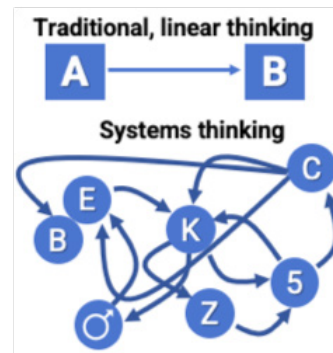
More comprehensive understanding and integration of systemic risk, as well as risk mitigation and preparedness in the humanitarian sector, will ensure a greater coherence across the humanitarian- development-peace nexus and better-balanced theories of change that respond to needs and transform the systems that contribute to conflict and fragility. Risk reduction needs to be cross-cutting across the nexus to ensure that the links between people’s immediate needs and pre-existing inequalities (i.e. gender, socio-economic, vulnerability to climate-induced shocks) and risks exacerbating them are tackled.

In the current globalized economic system, networks of communication and trade have led to a world that is more and more interconnected, where no process can function independently, but often connects and relies on other systems, generating highly interdependent social, technical and biological systems. This interdependency and interconnection lead to connected and systemic risks: climate change, for instance, is increasingly recognized as a systemic risk or a ‘risk multiplier’ with

potentially catastrophic impacts cascading through financial, ecological and social systems.

Similarly, humanitarian crises are more and more compounded by multiple hazards and several layers of vulnerabilities. The severity of the humanitarian situation in Yemen, with close to 21 million people in need, has been exacerbated by recurrent torrential rains and flooding, caused by climate change, leading to further displacement, crop and shelter damages and waterborne disease outbreaks, on top of the conflict<sup>15</sup>. In Haiti, yearly rainfall variability, droughts and sea-level rise exacerbate current needs and problems, impacting heavily on water, land, agriculture and forest resources<sup>16</sup>.

As these examples show, analysing one shock at a time narrows the focus,



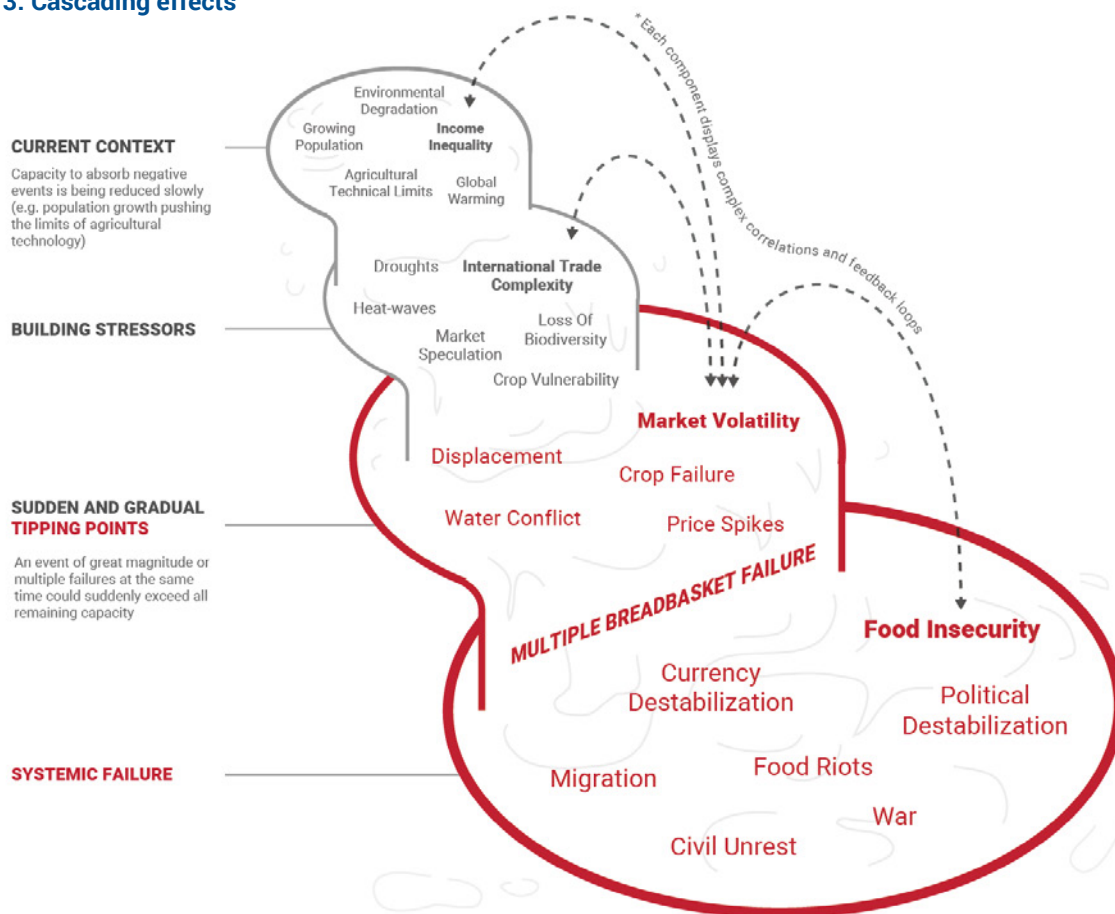
14 Chapter 2: Systemic risks, the Sendai Framework and the 2030 Agenda, UNDRR, 05/2019  
 15 Case Studies: Compounded Vulnerabilities and their Cascading Effects, draft report OCHA, 2022  
 16 Ibid

often leaving undetected fragilities or vulnerabilities. To make these complex, interconnected systems more manageable, a better understanding of the interdependencies of the society and a comprehensive analysis of risk is needed for accelerating risk-informed actions.

Humanitarian actors should change from analysing and managing hazards in isolation - a flood - to recognizing the systematic nature of such risk - seasonal, climate change, poor infrastructure - where shocks often cascade and compound in complex ways, with broad social, economic and environmental implications. We need to have a better understanding of the multiple risks inherent in the context, and their interlinkages and cascading nature, as well as the compounded vulnerability. Approaching risk from a system perspective allows the highlighting of the interactions between hazards and shocks, exposure and vulnerabilities across the different networks. This is the objective of the Global Risk Assessment Framework (GRAF), adopted by UNDRR, designed to “transcend traditional linear risk analyses” and “use scalable, systemic risk information to support more resilient development and humanitarian planning, public and private investment, and decision-making”<sup>17</sup>.

Systemic risk analysis involves zooming out to look for cause-and-effect relationships and understanding how system components influence one another within the whole system. Drivers of risk, such as unsustainable consumption, population growth, biodiversity loss, ecological degradation, unplanned urbanization, climate change, political instability and conflict, poor social services, financial instability and inequality, are increasing vulnerability in development and humanitarian contexts across the world. Drivers of risk should be analysed more broadly. It is also necessary to assess the possibility that a hazard could manifest into a shock or stress that might lead to disruptions in connected parts of the system. For example, an earthquake of a medium to high intensity will disrupt the road network, the telecommunications system, the judicial system, and so on, in addition to causing loss of lives, properties and livelihood. One event can also trigger another (referred to as a cascading hazard). For example, heavy rainfall leading to a landslide, or a volcanic eruption leading to a landslide that triggers a tsunami. Similarly, heavy rains can lead to the collapse of dams, causing flash floods and creating the conditions of a new epidemic hazard.

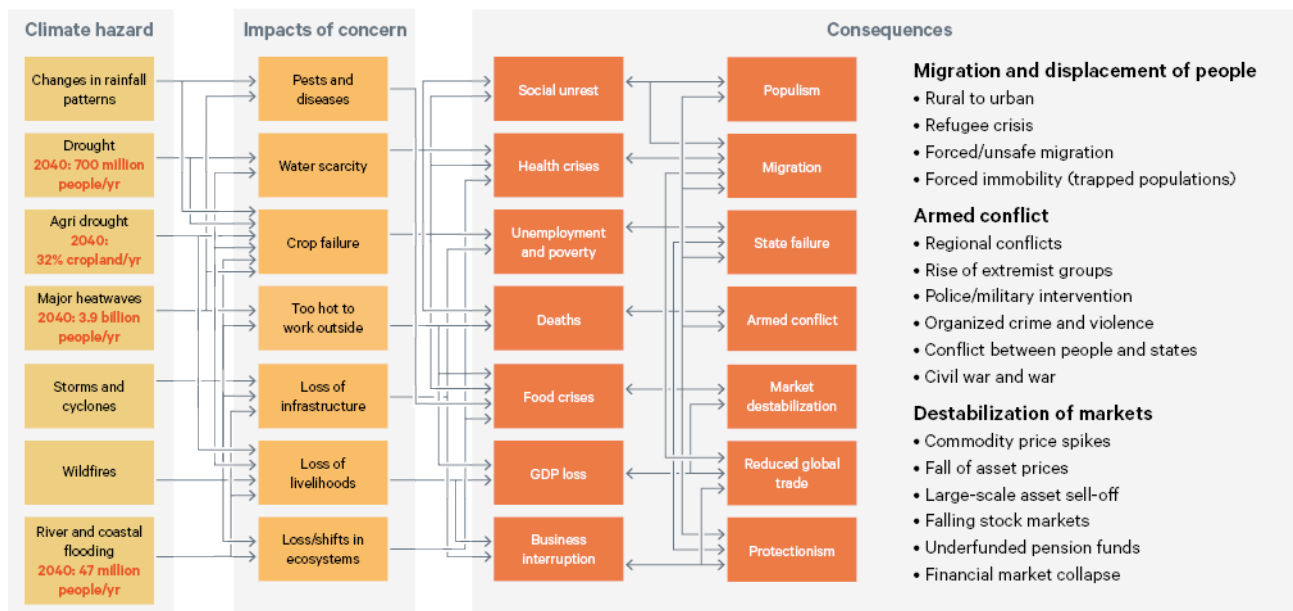
**Figure 3. Cascading effects**



17 Understanding disaster risk Global Risk Assessment Framework, GRAF, UNDRR.

Chatham House Climate Change risk assessment report in 2021<sup>18</sup> offered interesting visualizations of systemic risks such as climate change, displaying the interconnectedness of hazards, drivers and impacts:

**Figure 4. Major systemic risk dynamics identified by an expert elicitation process, Chatham House, 2021<sup>19</sup>**



This chain of cause and effects should be looked at as a whole to ensure preparedness and mitigation measures address both. This is particularly important as climate change is becoming one of the primary drivers of humanitarian needs:

- Disaster-related displacement risk has quadrupled since the 1970s. In 2020, disasters triggered more than three quarters (30.7 million) of new recorded internal displacements, 98 per cent of which were climate-related. Climate-related disasters caused an average of 23.1 million displacements every year from 2010 to 2019 . Additionally, 95 per cent of new conflict displacements in 2020 took place in countries vulnerable or highly vulnerable to the climate crisis .
- Within this decade, climate change could cause some 250,000 additional deaths annually from childhood

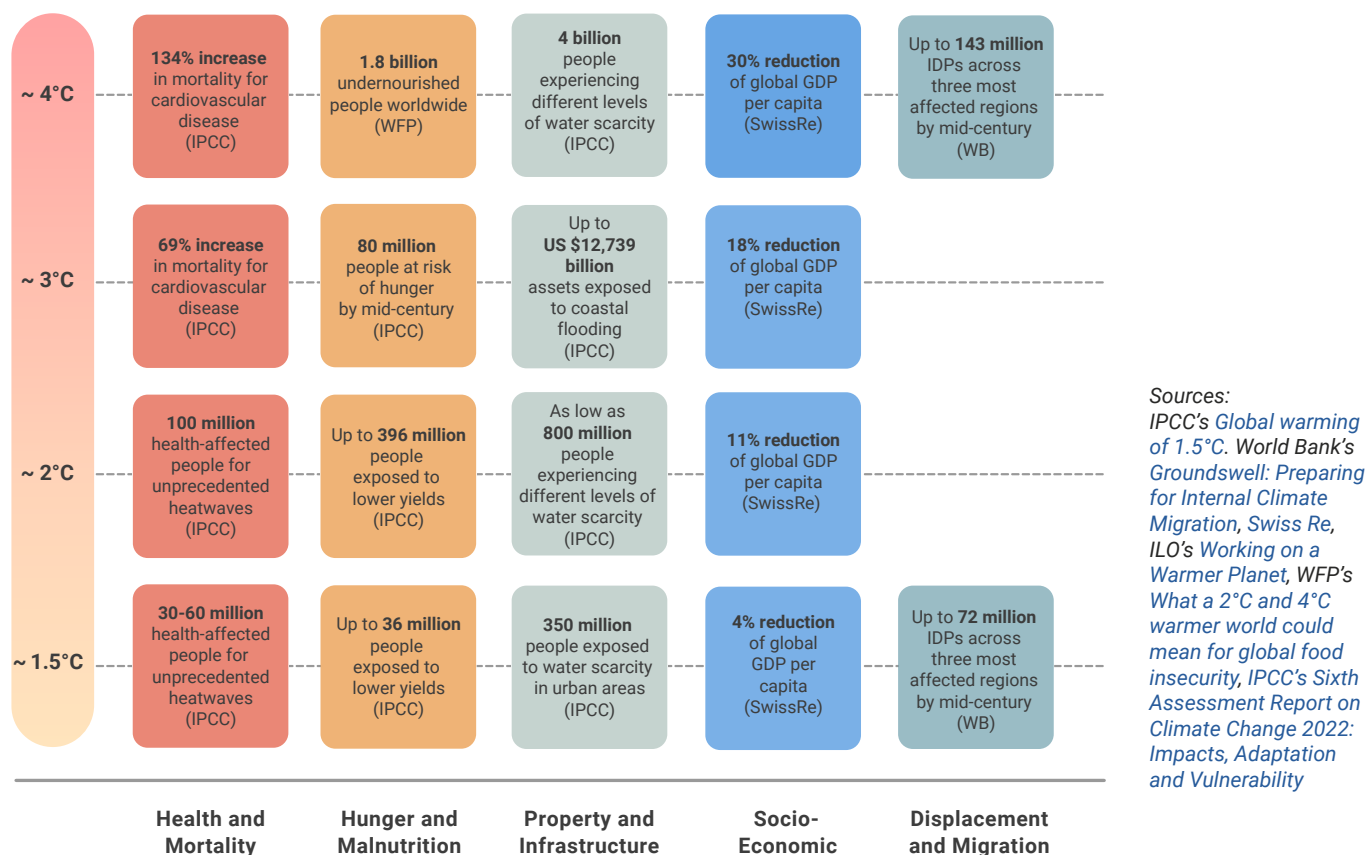
under-nutrition, malaria, diarrhoea and heat exposure in elderly people .

- Over 139 million people have been affected by both COVID-19 and climate-related disasters since the start of the pandemic, and more than 650 million people have been exposed to extreme heat .[iv]
- Climate-related disasters were the primary driver of acute food insecurity for 15.7 million people in 15 countries in 2020 . A 2°C rise in global warming would see a staggering 189 million additional people in food crisis. In a 4°C rise scenario, that number would reach 1.8 billion .
- Nearly half of the world’s children – roughly 1 billion – live in 33 countries classified as ‘extremely high risk’ due to climate-change impacts.

<sup>18</sup> Climate change risk assessment 2021, Chatham House, 14/09/2021

<sup>19</sup> Ibid.

**Figure 5. Humanitarian implications at different climate futures (UNOCHA, 2022)**



As mentioned above, the JIAF framework offers a robust structure for exploring and guiding the identification of main cause-and-effect relationships in humanitarian crises, as seen in the example below. The following

'problem tree' represents the main mechanisms compounding and cascading to create humanitarian outcomes using the JIAF structure, from top to bottom.

20 IDMC, GRID 2021: Internal Displacement in a Changing Climate. Available at: [https://www.internal-displacement.org/sites/default/files/publications/documents/grid2021\\_idmc.pdf](https://www.internal-displacement.org/sites/default/files/publications/documents/grid2021_idmc.pdf)

21 UNHCR, Global Trends in Forced Displacement. Available at: <https://www.unhcr.org/flagship-reports/globaltrends/>

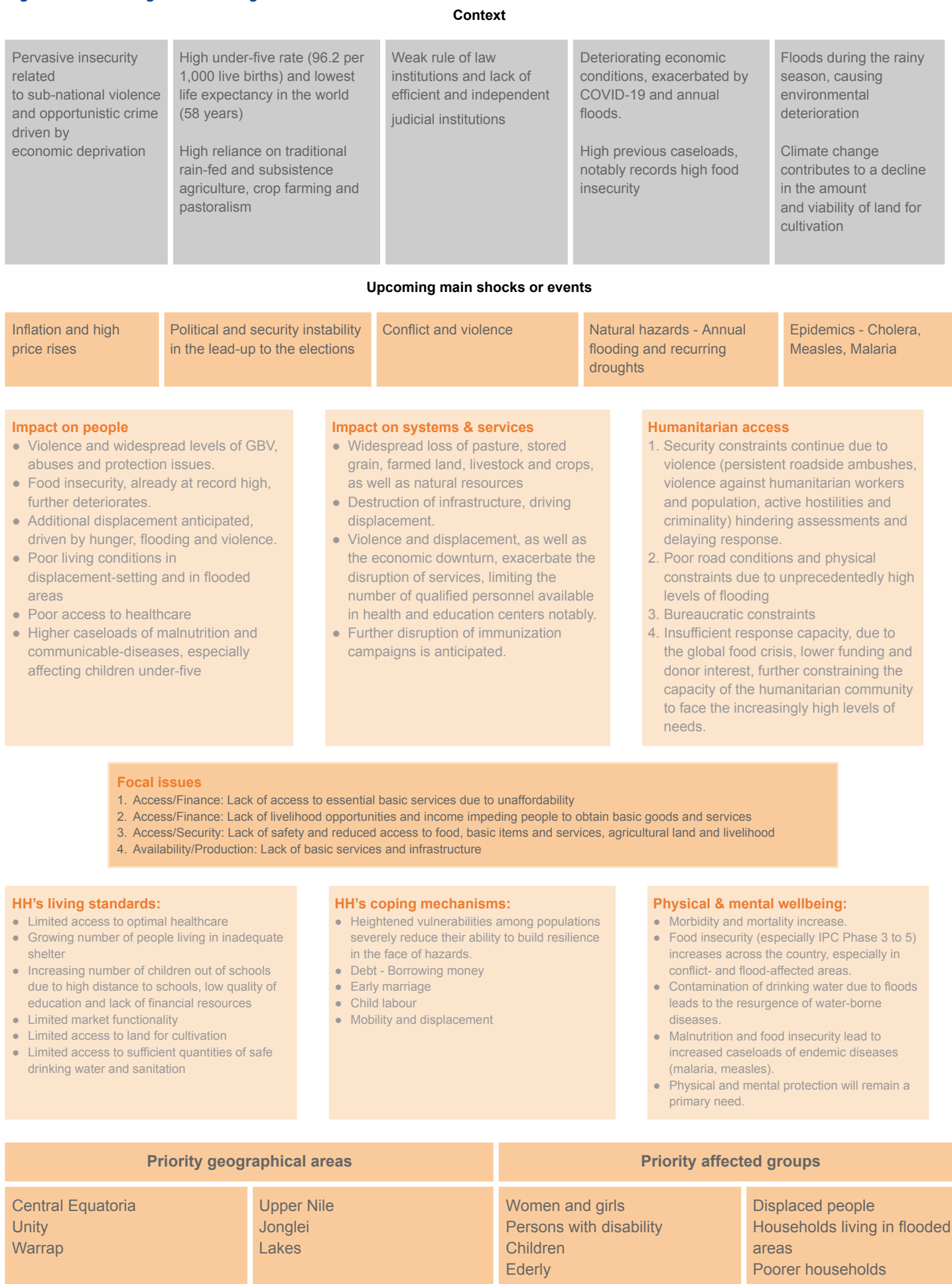
22 World Health Organization, Climate Change and Health. Available at: <https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health>

23 IFRC, The Compound Impact of Extreme Weather Events and COVID-19. Available at: [https://www.ifrc.org/sites/default/files/2021-09/RCCC%20IFRC%20Climate%20disasters%20COVID-20210910\\_V2.pdf](https://www.ifrc.org/sites/default/files/2021-09/RCCC%20IFRC%20Climate%20disasters%20COVID-20210910_V2.pdf)

24 Food Security Information Network, Global Report on Food Crises 2021. Available at: <https://www.wfp.org/publications/global-report-food-crises-2021>

25 World Food Programme. What a 2 Degree and 4 Degree Warmer World Could Mean for Global Food Insecurity. Available at: <https://www.wfp.org/publications/2017-2-and-4-degrees-infographic>

**Figure 6. Cascading effects using the JIAF model**



# 3. Step-by-step approach for risk informed strategic planning

Each year, UNOCHA updates the Step-by-Step guide to the Humanitarian Programme Cycle to be applied for the next round of strategic planning. The document, which is generally available in the [humanitarianresponse.info](https://humanitarianresponse.info) website (see [here](#) for 2022 version), details the different stages of the HPC process (both HNO and HRP) and is useful for in-country risk-analysis facilitators to identify when and how forward-looking analysis should take place to ensure a risk-sensitive approach.

It is not possible to create a common perspective on possible futures if there is no common understanding on the current state of the crisis and its main drivers.

Throughout the HPC, a risk-analysis approach should be applied, not too soon as to allow humanitarian actors to analyse the current and past situation, but not too late as to allow them to forecast and plan accordingly.

Every risk analysis should build on extensive discussion on the current situation (also called the baseline) as well as the past, to ensure each participant shares the same view on the current operational environment and humanitarian conditions, the drivers at play and recent trends. When available, the previous HNOs' results can be used as a comparison point to establish trends as well as the speed, rate and direction of changes.

The following chart presents a typical timeline for ensuring a risk-sensitive Humanitarian Programme

Cycle. The steps where risk information should be taken into account or further analysed are highlighted in blue. As discussed above, the Humanitarian Country Team should decide which modality is the most appropriate for their context: a series of facilitated workshops gathering 15 to 20 selected participants or group work by three to five risk experts with final presentation of results to the humanitarian and development community.

The critical element in the timeline is to undertake the risk analysis and the scenario development before the clusters or sectors start their analysis, as they will need clarity on the scenario they need to consider for their own forecasting exercises and so all sectors can project the number of people in need based on the same set of assumptions.

A set of [templates](#) is available to support the three steps and this guidance. Risk-sensitive analysis facilitators should use them to support the process in country. If workshops are the selected modality to complete the process, Annex 1 provides details for both the risk analysis and scenario-development workshop. Annex 2 provides details regarding the main risks concepts and definitions used in the humanitarian sector. Humanitarian staff participating for the first time in risk analysis for strategic planning processes are strongly encouraged to read this annex before the step-by-step section.

Figure 7. Process overview - HPC 2022 (UNOCHA, May 2021)

	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<b>Step 1 Agree on scope of the analysis and costing approach</b>	█						
1.1 Adapt HNO analysis framework to context and develop an analysis plan based on key questions needed to inform planning and decision-making	█						
1.2 Decide on most appropriate costing methodology for 2021	█						
1.3 Present analysis framework and costing plan to Humanitarian Country Team for endorsement	█						
<b>Step 2 Undertake secondary data review</b>		█	█				
2.1 Compile evidence base		█	█				
2.2 Further refine timeline for delivery of the analysis results and agree on roles and responsibilities		█	█				
2.3 Undertake secondary data review		█	█				
2.4 Identify and determine how to bridge critical information gaps		█	█				
<b>Step 3 Collect primary data</b>		█	█				
<b>Step 4 Conduct joint inter-sectoral needs analysis</b>		█	█	█			
4.1 Conduct inter-sectoral needs and severity analysis based on relevant data, indicators and other information		█	█	█			
4.2 Analyze risk and arrive at projections, identify indicators to monitor situation and needs		█	█	█			
4.3 Calculate current and projected number of people in need (PIN)		█	█	█			
4.4 Write up the draft analysis results		█	█	█			
4.5 Present to and seek endorsement and validation from the HCT (and government counterparts, where appropriate) on the analysis results and monitoring requirements		█	█	█			
<b>Step 5 Define the scope of the HRP and formulate initial objectives</b>			█	█			
5.1 Determine the scope of the HRP based on the results of the analysis of needs and risks			█	█			
5.2 Draft preliminary (inter-sectoral) strategic and specific objectives			█	█			
<b>Step 6 Conduct response analysis</b>				█	█		
6.1 Review appropriateness, relevance, and feasibility of different responses				█	█		
6.2 Articulate inter-sectoral and multi-sectoral response approaches based on the results from the response analysis, and prioritise (based on severity, time-criticality, and complementarities/ synergies)				█	█		
6.3 Estimate target population number				█	█		
<b>Step 7 Finalize strategic and specific objectives and indicators and prioritise</b>					█		
7.1 Finalize formulation of strategic and specific objectives					█		
7.2 Identify indicators to monitor strategic and specific objectives					█		
7.3 Cluster/sectors develop response plans and define cluster objectives					█		
7.4 Sub-national and/or government consultation/review draft HRP response parameters					█		
7.5 Present and seek endorsement by the HCT of the strategic objective and approach, number of people targeted, and response monitoring framework					█		
<b>Step 8 Formulate projects/activities and estimate cost of the response plan</b>						█	
8.1 Initiate drafting of HRP						█	
8.2 Project development, vetting and upload						█	
8.3 Estimate the cost of the response						█	
8.4 Secure HC/HCT endorsement						█	
8.5 Finalize and draft response plan						█	
<b>Step 9 Conduct After Action Review</b>							█

**Figure 8. Proposed agenda for including Risks Analysis in Humanitarian Programme Cycle**

#	Activity	Output	Estimated date
1	Kick-off workshop	Definition of scope of analysis	May-June
2	Context analysis	JIAF context analysis, including political, security, economic, demographic, environment, socio cultural, legal and policy	June-July
3	Shock analysis	Identification of shocks or events that have occurred during the year and their main drivers and underlying factors	August
4	Humanitarian access analysis	Identification of main humanitarian access constraints and impediments	August
5	Risk analysis	Identification of main risks for the coming 12 months, including risk scoring and classification	September
6	Scenario development	Identification of the most likely scenario	September
7	Sector analysis	Humanitarian clusters or sector undertake sector analysis and use the most likely scenario to project people in need estimates	October
8	Intersectoral analysis	Development of the Humanitarian Needs Overview	October
9	Response analysis	Identification of most appropriate and proportionate response options to address risks, definition of risk-sensitive objectives	November
10	Response planning	Development of the Humanitarian Response Plan	December

## a. Consolidate and maintain risk data across the nexus (RiX)

Risk-sensitive approaches build on what is known about the situation before the crisis and the current situation (descriptive and interpretive analysis), an understanding of causal mechanisms (explanatory analysis) and an exploration of possible future events or changes that may result in a deterioration of the situation (anticipative analysis). In other words, what can yesterday and today tell us about today and tomorrow?

At country level, risk data must be compiled in advance and a repository of documentation and datasets should

be maintained and regularly updated. If no in-country repository already exists, the Risk Information Exchange (RiX) from UNDRR would be a key resource, listing existing risk data and analyses across multiple hazards at country level, and it will support risk workshops facilitators, HCT and clusters, the IM working group and national disaster-management authorities in identifying relevant initiatives and datasets on hazards, exposure and vulnerability, and historical losses and damages from shocks and disasters.

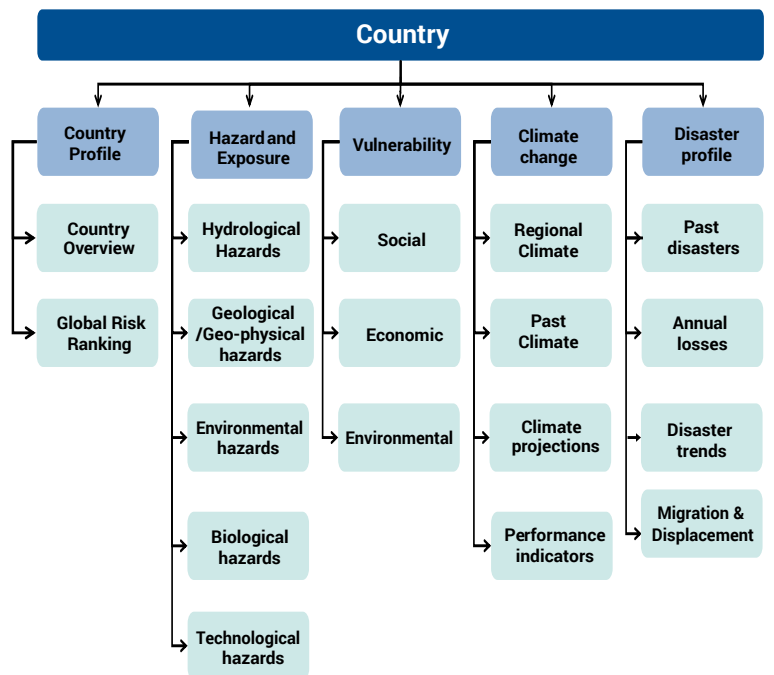
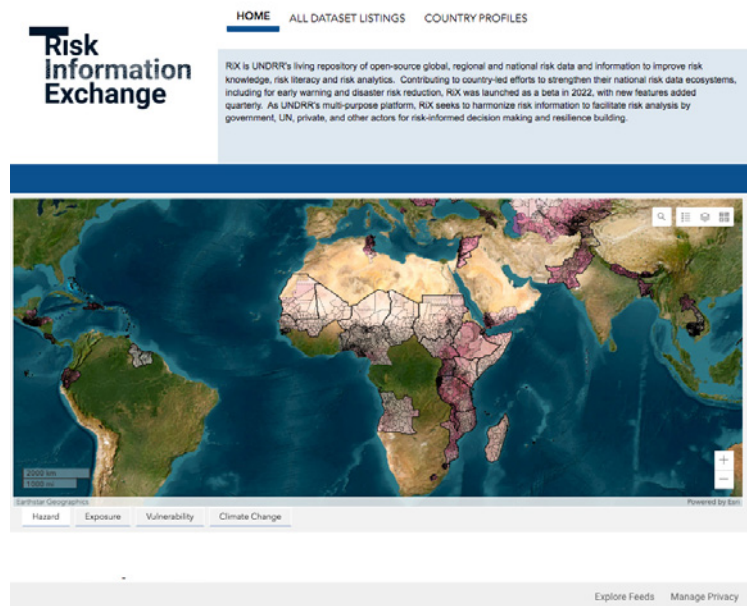


RiX includes data that can be filtered by risk component (hazard, exposure, vulnerability, impact and risk), hazard type (hydrometeorological, geological, environmental, biological and technological) and geographical areas. The following analysis products are recommended for supporting the Humanitarian Programme Cycle effectively and aligning with the Joint Intersectoral Analysis Framework.

- Context analysis<sup>26</sup>.** Facilitators should consolidate key indicators and provide an in-depth analysis (maximum two pages for each) for each sub-pillar of the JIAF context (political, environmental, sociocultural, demographic, economic, technological, legal and policy, security and infrastructure). The main objective is to understand the main drivers of the current crisis as well as to identify specific vulnerabilities of people or systems that can exacerbate or aggravate the impact of future shocks. For each sub-pillar, facilitators should identify key trends, vulnerabilities, conditions or future events (e.g. elections, peace talks) that might lead to new shocks or aggravate the impact of future shocks. For instance, the lack of building standards (Context/infrastructure) might contribute to exacerbated impact of floods or earthquakes. A failing political transition (Context/political) or military troop movement (Context/security) might lead to increased conflict activities. Absence of dam infrastructure maintenance (Context/infrastructure) might lead to drought. Increased young population (Context/demography) might lead to the saturation of the labour market and economic crisis. And so on. Note that climate-change information should be associated with the sub pillar Context/environment.

A list of guiding questions for the analysis of the JIAF context sub-pillar is provided below:

Figure 9. Pilot version of the RiX platform



26 JIAF uses an adaptation of PESTEL analysis for the context pillar. A PESTEL analysis is an acronym for a tool used to identify the macro (external) forces faced by a system or an entity. The letters stand for Political, Economic, Social, Technological, Environmental and Legal.

Figure 10. Process overview - HPC 2022 (UNOCHA, May 2021)

Sub-pillar	Current situation	Forecast situation
<p><b>Political</b></p>	<ul style="list-style-type: none"> <li>• What are the characteristics of the governance structure and the political environment? How responsive and accountable are governance systems?</li> <li>• How do formal and informal governance systems interact?</li> <li>• Does political mobilization occur by identity?</li> <li>• Does political or economic marginalization contribute to local grievances?</li> <li>• Are meaningful checks and balances present in government?</li> <li>• How peaceful are power transitions and elections?</li> <li>• To what extent do social institutions (both in the public and private sectors) demonstrate a capacity to make and meet commitments, deliver reliably a minimum of social services and be held accountable for their performance?</li> <li>• How does it influence the humanitarian situation?</li> <li>• What informal rules or customs influence party behaviour?</li> <li>• Who has control over party finances, where does the money come from, and what impact does this have on how decisions are made?</li> <li>• What is the level of confidence of people in state institutions and where does support for the government come from?</li> <li>• How has the state’s history shaped the access to political and economic power of different groups, relationships between them and perceptions of state legitimacy?</li> <li>• Are particular groups legally, or in practice, excluded from the political process?</li> </ul>	<ul style="list-style-type: none"> <li>• How is the current political situation contributing to humanitarian needs?</li> <li>• What are the main political risks?</li> <li>• How is the situation likely to evolve in the next 12 months?</li> </ul>
<p><b>Economic</b></p>	<ul style="list-style-type: none"> <li>• How stable is the current economy? Is it growing, stagnating, or declining?</li> <li>• Are key exchange rates stable, or do they tend to vary significantly?</li> <li>• What is the unemployment rate? Will it be easy to build a skilled workforce? Or will it be expensive to hire skilled labour?</li> <li>• How is globalization affecting the economic environment?</li> <li>• Are there any other economic factors to consider?</li> <li>• What is the overall economic situation?</li> <li>• What is the economy mostly based on? What are the main products imported and exported?</li> <li>• What is the expected direction of economic change: prevailing economic trends, trade and market cycles, expected economic interventions by governments and their consequences, other relevant economic trends?</li> <li>• Are the currency and the banking system stable? What is the level of trust in the local currency? Have there been recent significant volatilities in the market? What is the level of inflation?</li> <li>• What are the key growth sectors in both the formal and the informal economy and what is their potential to increase employment?</li> <li>• What barriers exist for youth and women to access decent rural employment? Why?</li> <li>• What options are available for youth and women?</li> </ul>	<ul style="list-style-type: none"> <li>• How is the current economic situation contributing to humanitarian needs?</li> <li>• What are the main economic risks?</li> <li>• How is the situation likely to evolve in the next 12 months?</li> </ul>

Sub-pillar	Current situation	Forecast situation
<b>Social-Cultural</b>  <b>Technological / Infrastructure</b>  <b>Environmental Demography</b>	<ul style="list-style-type: none"> <li>• What are the society's levels of health, education and social mobility? How are these changing, and what impact does this have?</li> <li>• What social attitudes and social taboos are at play?</li> <li>• How do religious beliefs and lifestyle choices affect the population?</li> <li>• What is the social composition and structure of the population (ethnicity, languages, minorities, tribal relationships, religious groups)?</li> <li>• Are there specific common and generalized cultural attitudes, beliefs, behaviour and practices that could have implications?</li> <li>• Is there ethnic or identity group mobilization on grievances? Why?</li> <li>• Are there patterns of social exclusion of women, youth and minority groups? Why?</li> <li>• Is there acceptance for customary conflict-management structures?</li> </ul>	<ul style="list-style-type: none"> <li>• How is the current sociocultural situation contributing to humanitarian needs?</li> <li>• What are the main sociocultural risks?</li> <li>• How is the situation likely to evolve in the next 12 months?</li> </ul>
	<ul style="list-style-type: none"> <li>• What is the state of the technological infrastructure?</li> <li>• What is the access to technology among the population (internet, 4G, telecommunications)?</li> <li>• What are the energy uses, sources and fuels?</li> <li>• What is the manufacturing capacity?</li> </ul>	<ul style="list-style-type: none"> <li>• How is the current technological and infrastructure situation contributing to humanitarian needs?</li> <li>• What are the main technological and infrastructure risks?</li> <li>• How is the situation likely to evolve in the next 12 months?</li> </ul>
	<ul style="list-style-type: none"> <li>• What are the climate conditions?</li> <li>• Are there environmental challenges with regard to air, soil or water pollution?</li> <li>• Will specific seasonal factors (e.g. rainy season, lean season) have a significant impact and when?</li> <li>• What are the natural resources (such as mines, forest, water) and how are they used?</li> <li>• Does the access to or management of natural resources produce disputes, tensions or conflict? Why? Is seasonality a contributing factor?</li> </ul>	<ul style="list-style-type: none"> <li>• How is the current environmental situation contributing to humanitarian needs?</li> <li>• What are the main environmental risks?</li> <li>• How is the situation likely to evolve in the next 12 months?</li> <li>• Do decreasing agricultural yields (e.g. climate variability, damage, soil salinity) threaten food security and increase community tensions?</li> </ul>
	<ul style="list-style-type: none"> <li>• How many people currently live in the geographical area?</li> <li>• What are their demographic characteristics?</li> <li>• How many people from different nationalities live in this area?</li> <li>• What is the population's growth rate and age profile? How is this likely to change?</li> </ul>	<ul style="list-style-type: none"> <li>• How is the current demographic situation contributing to humanitarian needs?</li> <li>• What are the main demographic risks?</li> <li>• How is the situation likely to evolve in the next 12 months?</li> </ul>

Sub-pillar	Current situation	Forecast situation
<b>Security</b>	<ul style="list-style-type: none"> <li>• Who are the main stakeholders who have an interest or are involved in a given issue or aspect of the crisis and have a significant capacity to influence its development (government, private companies, armed groups), as well as their relationships and capacities?</li> <li>• What is the general security context and statistics (banditry, robbery, criminality rates)?</li> <li>• Are there past or existing conflicts between state or non-state groups? When did the tensions or conflict start and why? What is at stake? Who are the main stakeholders? What is the level of conflict intensity? What are their main characteristics (intent, capacities, relationships)? Are their peace forces or resolution processes in the country? Where and why? Are there any sanctions or terrorist groups operating in certain areas?</li> <li>• Are there specific military interventions or troop movements occurring? Who is involved? What type of armaments or weapons are used?</li> <li>• Who is responsible or in charge to enforce law and order or security? What structures are in place to ensure security (national or municipal police, gendarmerie)</li> <li>• How is the security infrastructure of the country (centralized, fragmented)? What specific border control measures are in place?</li> </ul>	<ul style="list-style-type: none"> <li>• How is the current security situation contributing to humanitarian needs? Are there situations or declarations that indicate a possible conflict development or deterioration?</li> <li>• What are the main security risks?</li> <li>• How is the situation likely to evolve in the next 12 months?</li> </ul>
<b>Legal and policy</b>	<ul style="list-style-type: none"> <li>• What are the regulatory, rule of law and justice systems in place (customary, informal, community based, religious)?</li> <li>• How can the efficiency, timeliness, reliability and impartiality of those mechanisms be qualified?</li> <li>• Is the judiciary system independent from the political system (checks and balances)? Is any corruption reported?</li> <li>• Are there specific groups that have limited rights or access to the support of law?</li> <li>• What are the legal decisions or laws that have been adopted by the government or the local authorities and influence the activities of humanitarian actors or the ability of specific population groups to meet their basic needs or enjoy human rights?</li> <li>• Are there international decisions (e.g. embargo) that have an impact on the crisis or that limit the ability of specific population groups to meet their basic needs?</li> </ul>	<ul style="list-style-type: none"> <li>• How is the current legal and policy situation contributing to humanitarian needs?</li> <li>• What are the main legal risks?</li> <li>• How is the situation likely to evolve in the next 12 months?</li> </ul>

- **List of past shocks.** Identify and list past shocks and their humanitarian impact (e.g. number of people affected, houses partially or totally destroyed, number of displaced people, etc.). Note the most severe shocks recorded over the past 20 years and identify significant trends and patterns in the geographical areas of interest (e.g. evolution in number of incidents, shock recurrence, increase in intensity or frequency, type of people affected). A timeline of shocks or key events can be established to visually represent the results. RiX or other disaster databases (for instance [Desinventar](#)) can also be used as reference tools to build such lists.
- **List of hazards.** In addition to shocks that have occurred over the last 20 years, facilitators should identify potential hazards (existing threats which have not occurred in the past 20 years, where occurrence is still likely), the specific geographical areas susceptible to those hazards, the population and infrastructures potentially exposed to those hazards as well as their expected impact (e.g. displacement, destruction of assets, humanitarian access). Reviewing lessons learnt on the typical effects of similar hazards in comparable contexts (Flash appeals, ACAPS Disaster Summary sheets, country contingency plans), as well as experiences and studies from previous interventions in similar contexts (after-action review, programme evaluations) can also help estimating the impact of those hazards.
- **Upcoming events.** Refers to certain events expected to occur during the next 12 months, including ad hoc (e.g. presidential elections, peace talks, political transition) or recurring ones (rainy/flood season, winter, harvest period, lean season) that have the potential to influence the evolution of the situation. This list of upcoming events can be mapped against recurring shocks (e.g. malaria, cholera, tropical storms, floods) to establish a calendar of past and upcoming events for the country or specific geographical areas.

Figure 11. Example of seasonal hazard calendar<sup>27</sup>

Regional Bureau Bangkok - OD_B												
AFGHANISTAN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCTN	OV	DEC
rainy season		rainy/snow season									rainy/snow season	
flood/landslide risk	storm	snowmelt and flood + winter storms										
drought events	2002			2000	2009	2004	2006					
wheat, rice, maize, barley, pulses			spring wheat planting	rice, maize planting						winter wheat planting		
			poppy harvest	winter wheat harvest			spring wheat, maize harvest		rice harvest			
locust				2002/01, 2002, 2008								
lean season												

## b. Define the scope of forward-looking analysis: timeframe and geographic coverage

The first step in any analysis is to determine its strategic purpose to clearly identify its scope, secure the right participants, select the appropriate methodology and the best strategies to ensure the quality and credibility of the analysis, as well as correctly estimating the technical and financial resources required for its completion.

As this guidance is focusing on ensuring the HPC is risk-sensitive, the time period to be considered in the forecasting analysis should be the next year (12 months horizon). The geographic coverage should be similar to the one chosen in the HNO, either the entire country (South Sudan, Afghanistan...), or a specific geographical area (Northeast Nigeria, Cox's Bazar...). As the objective of the HNO would be to raise awareness on possible developments to the humanitarian community and plan for such outcomes in the HRP, the main research question would typically be: *How will the humanitarian situation in country X most likely develop over the next 12*

*months (scenario) AND what will be the humanitarian impact and conditions resulting from this scenario?*

Generally, the Inter-Cluster Coordination Group (ICCG), cluster and sector planning and programming stakeholders, IM and data, analysts and subject-matter experts will agree on the scope of analysis around June of each year during the Initial HPC kick-off workshop. During this workshop, hazards and vulnerabilities should be reviewed and discussed to ensure not only currently affected areas or population groups are included, but also other areas or population groups that could be affected by new hazards. Facilitators of the risk-sensitive approach should present the main findings of the previous step (context analysis, list of past shocks, list of hazards and upcoming events) during the workshop and facilitate the discussion regarding the selection of geographical areas and vulnerable groups to include in the new HNO.

### Key considerations for setting the scope of risk-sensitive analysis

- What main shocks have occurred over the last 20 years, and what impact did they have?
- What are the main hazards in the country?
- What has changed in the humanitarian context since last year?
- What geographical areas might be affected by hazards? How many people live in those areas?
- How are different population groups exposed to different hazards or shocks?
- What key events are expected in the next 12 months that might affect population, infrastructure or assets?

26 WFP Seasonal Calendar, 2010

## c. Review relevant information to draft a preliminary shock or hazard list

The risk experts appointed by the HCT should review the relevant data gathered in the preliminary phase to draft an initial list of shocks and hazards that will serve as a basis for further discussion on existing risks. The list of shock and hazards should apply only to the geographical areas and vulnerable groups identified during the previous step - Define the scope of forward-looking analysis.

In the support [templates](#) accompanying this guidance, step 1 to 3 should be filled for this step (1-Context analysis, 2-Timeline of events and 3-Seasonal calendar). For each selected hazard, risk experts should also review and validate the associated impact, underlying factors and mitigating factors, based on past experience and lessons learnt. The following template proposes guiding questions to consider for each hazard.

**Figure 12. Template hazard list**

Date	Hazard/shock	Impact	Underlying factors	Mitigating factors
When did the hazard occur in the past?	<ul style="list-style-type: none"> <li>• What main shocks or hazards are reported?</li> <li>• What type of shock was it (geophysical, meteorological, climatological, biological, technological or man-made)?</li> <li>• Was it a slow or sudden-onset disaster?</li> <li>• Were there warning signs?</li> </ul>	<ul style="list-style-type: none"> <li>• What are the intensity and characteristics of the shocks?</li> <li>• Did the shock create other shocks?</li> <li>• What are the geographical areas expected to be affected?</li> <li>• What are the groups most exposed and vulnerable to the hazard?</li> </ul>	<ul style="list-style-type: none"> <li>• What led to the shock or event? What were the main (physical, biological or human) forces, drivers and stakeholders behind the shock? What are their motivations, capacities and end goals?</li> <li>• What elements contributed to aggravating the shock, e.g. system or network vulnerabilities?</li> <li>• Was the forecast of the disaster properly communicated? Storm shelters available? Were evacuation procedures in place? How prepared was the population to cope with the shock?</li> <li>• Were there critical infrastructures in the proximity of the shock?</li> <li>• What time of the day did it occur? Was it on a weekday or during the weekend? During which season did the shock occur?</li> <li>• Is the area densely populated in the affected location? Is it overcrowded?</li> <li>• What type of shelter was affected by the shock (earthquake resistant or not)? What made the infrastructure more susceptible to the shock (building materials, shelter in flood-prone areas, altitude, time of day the shock occurred)?</li> <li>• Were there previous outbreaks of epidemic in the area? Is there a treatment or a cure available for the epidemic?</li> <li>• Are there underlying health issues making people more vulnerable to the shock (nutrition status, vaccination coverage...)? Was there appropriate WASH infrastructure?</li> <li>• Were there already past instances of conflict or tensions in the area? Had people already faced displacement?</li> </ul>	<ul style="list-style-type: none"> <li>• Were there actions taken before the shock that contributed to reducing the intensity or severity of the effects of the disaster?</li> <li>• Were actions taken, mechanisms or policies in place to raise awareness of the population regarding potential disasters in the area? Was an early-warning system in place?</li> <li>• Were actions taken, mechanisms or policies in place to protect the population from the impact of potential disasters in the area, e.g. evacuation centres?</li> <li>• Were actions taken, mechanisms or policies in place to ensure the construction or rehabilitation of structures resistant to the shock (earthquake-resistant, adapted to flooded environment...)?</li> <li>• Were actions taken, mechanisms or policies in place to prevent the construction of structures in highly exposed areas?</li> <li>• Was there a zoning plan? An evacuation plan?</li> <li>• Was there infrastructure in place to protect and preserve the environment, including sediment and erosion control, forest and vegetation management?</li> <li>• Were there emergency plans set up before the crisis?</li> <li>• Were key facilities and infrastructure protected from a potential disaster?</li> </ul>

The main output of this activity is a hazard list indicating information on past or potential hazard and shocks (including cascading shocks and effects), geographical

areas impacted, dates, severity and scope of impacts (number of people affected, houses destroyed, damages, displacement), underlying and mitigating factors.

**Figure 13. Shock and hazard list**

Date(s)	Shocks	Hazard type	Impact	Underlying factors	Mitigating factors
<ul style="list-style-type: none"> <li>• 23 April 2020</li> <li>• 21 March 2019</li> <li>• 16 May 2018</li> </ul>	<p>Hurricanes hit the coastal areas in the South provinces.</p> <p>Subsequently, floods for a two-month period.</p>	<p>Meteorological / wind-related</p> <p>Hydrological / floods</p>	<p>Total of:</p> <ul style="list-style-type: none"> <li>• 18,000 people displaced.</li> <li>• 12,000 houses destroyed in coastal areas.</li> <li>• \$9B damages to public infrastructure.</li> <li>• Disruptions in water and electricity supply and road infrastructure.</li> <li>• Inaccessible crops in flooded areas, loss of harvest.</li> </ul>	<ul style="list-style-type: none"> <li>• Uncontrolled urbanization.</li> <li>• Population growth.</li> <li>• Lack of hurricane-resistant infrastructure.</li> <li>• Climate change.</li> </ul>	<ul style="list-style-type: none"> <li>• Early-warning and evacuation procedures.</li> </ul>
June 2018 - current days	High intensity conflict in North provinces and local economy collapse due to insecurity.	<p>Societal / conflict</p> <p>Societal / economic</p>	<ul style="list-style-type: none"> <li>• 25,000 people displaced from Northern provinces.</li> <li>• 6,000 houses totally destroyed in Northern provinces.</li> <li>• Loss of harvest, destruction of assets.</li> <li>• 130 per cent inflation in affected areas and 350 per cent price increase.</li> </ul>	<ul style="list-style-type: none"> <li>• Five-year drought depleting resources and livelihood.</li> <li>• High inflation rate and cost of living.</li> <li>• Tribal tensions about water resources.</li> <li>• Failing resolution mechanisms and peace agreements.</li> </ul>	<ul style="list-style-type: none"> <li>• Arbitration from neighbouring countries.</li> <li>• Financial support from international organizations.</li> </ul>
Last occurred 12 years ago (Nov 2010) in central provinces	Ebola epidemic	Biological / Ebola	<ul style="list-style-type: none"> <li>• XXX people infected and XXX casualties.</li> <li>• Quarantine in three provinces.</li> <li>• Loss of livelihood.</li> </ul>	<ul style="list-style-type: none"> <li>• Cultural and burial habits.</li> <li>• High population movements during festivals.</li> <li>• Lack of epidemic preparedness.</li> <li>• Low testing capacity.</li> </ul>	<ul style="list-style-type: none"> <li>• Support from neighbouring countries.</li> <li>• Alert system.</li> <li>• Strong political leadership.</li> </ul>
Last occurred 150 000 years ago	Earthquake	Geohazards / seismogenic	<ul style="list-style-type: none"> <li>• Casualties.</li> <li>• Destruction of private and public buildings.</li> </ul>	Tectonic movements.	Absence of tectonic movement for the last 10,000 years.

The hazard list should include both shocks that have occurred in the past and other hazards that may occur in the next 12 months. The list should be structured by shock or hazard type<sup>28</sup>, meaning that even if a hazard has occurred several times in the past, it should still be considered as one row. Related shocks (e.g. hurricane >floods>epidemic) should also be noted in the column Hazard/shock to clearly identify cascading hazards.

A timeline of main shocks or events for the past years can also be provided as it is a requirement for HNOs. The timeline can include shocks or events which are not strictly speaking considered as hazards. However, provide with relevant context regarding the current situation in the affected areas. Those events typically pertain to the context pillar of the JIAF, i.e. events related to politics, demographics, sociocultural, economic, security and infrastructure. In addition, general impact can also be described for each shock or event.

**Figure 14. Example timeline of key events/shocks - Sudan 2021**

Date	Key events/shock	Humanitarian impact
2021	<p><b>August - present:</b> heavy rains and floods</p> <p><b>October - present:</b> military coup</p>	<ul style="list-style-type: none"> <li>• By 16 September, over 4,180 people in Jebel Awlia, Sharg An Neel, Um Bada and Um Durman localities in Khartoum State had been affected (UNOCHA 23/09/2021).</li> <li>• By 23 September, over 97,000 people had been affected in White Nile State since July 2021. This includes 36,000 South Sudanese refugees in Alagaya refugee camp and over 64,000 people in Guli and Aj Jabalain localities (UNOCHA 16/09/2021).</li> <li>• Eight people were killed and 170 injured in clashes between soldiers and street protesters (Al Jazeera 28/10/2021).</li> <li>• State of emergency declared, and internal and International flights temporarily suspended (officially until 29/10/2021).</li> </ul>
2020	<p><b>March - present:</b> COVID-19 outbreak</p> <p><b>August - October 2020:</b> floods</p>	<ul style="list-style-type: none"> <li>• As of 1 October, there are more than 40,000 confirmed cases, and almost 3,000 associated deaths (WHO 17/10/2021).</li> <li>• Schools remained closed for more than a year.</li> <li>• In 2020, COVID-19-related containment measures affected humanitarian access.</li> <li>• The pandemic affected commodity prices, trade, travel and financial flows contributing to subdued economic activity.</li> <li>• Almost 900,000 people across 18 states were affected in the worst flooding in the country in 100 years. Over 140 people died, 94,000 homes were destroyed, and 83,000 homes were damaged. An estimated 2.2 million hectares of agricultural land was flooded (UNOCHA 29/09/2021).</li> <li>• People were relocated to areas with no WASH facilities, contributing to water-disease outbreaks.</li> </ul>
2019	Political transition - present	<ul style="list-style-type: none"> <li>• Widespread demonstrations and civil unrest.</li> </ul>
2018	Economic crisis - present	<ul style="list-style-type: none"> <li>• High inflation and shortages of food, fuel and medicine.</li> <li>• Derailing political transition.</li> <li>• Local markets are disconnected from urban areas, and inflation tends to be higher.</li> </ul>
2013	Deterioration of the economic and security situation in South Sudan	<ul style="list-style-type: none"> <li>• Protracted displacement and overcrowded open areas and camps.</li> <li>• Donor and community fatigue. Relationships with host communities are tense. New influx and flooding are exacerbating social tensions.</li> <li>• In 2021, influx of more than 30,000 refugees from South Sudan into White Nile.</li> </ul>

In the support templates accompanying this guidance, the risk experts should discuss and fill step 4-Hazard list.

<sup>28</sup> You should refer to the list of hazard in Hazard definition and classification review, UNDRR 2020



## d. Assess risk severity

Once the list of shocks and hazards is established, risk experts can proceed with reviewing each hazard, their underlying and mitigating factors as well as the associated data (trends over the last 20 years, intensity, impact) to establish their likelihood of occurrence in the

next 12 months as well as their expected impact. In the case of a workshop, the facilitators can organize several groups of participants to work in parallel, each focusing on one hazard or shock type.

### 1. Assign a likelihood

For each shock or hazard, the risk experts should use the data gathered to estimate the probability of the hazard occurring again or for the first time in the next 12 months, following the likelihood scale available on the left. Historical data should be used to support the likelihood identification, as well as any third-party analysis available in the country to estimate likelihoods, e.g. INFORM. The main objective is to assign each hazard on the list a likelihood estimate, using the following scale:

Figure 15. Likelihood scale

1 -Very unlikely	2 - Unlikely	3 - Moderately likely	4 - Likely	5 - Very likely
<10%	10-33%	34-66%	67-90%	>90%
The event has a remote chance of occurring in the current year.  e.g. seasonal hazards that have happened once in the last 20 years.	The event has a low chance of occurring in the current year.  e.g. seasonal hazards that have happened one to three times in the last 20 years.	The event has a viable chance of arising in the current year.  e.g. seasonal hazards that have happened three to five times in the last ten years.	The event has a significant chance of arising in the current year.  e.g. seasonal hazards that have happened every second or third year.	The event is almost certain to arise.  e.g. seasonal hazards that have happened every year in the last five years.

**Assessing likelihood.** Typically, a likelihood scale is divided into three parts. Low likelihood on the left, neither likely nor unlikely in the middle (50/50 chance of occurring), and likely on the right side. The following is recommended for assessing likelihood in groups:

- **Decide which side of the ‘uncertainty divide’ the hazard is.** Consider the frequency of occurrence in the past 20 years and recent trends. Look at underlying factors to assess if the conditions are in place for the hazard to occur or materialize again, e.g. climate change, tectonic movements, military movement, hatred speeches. Using contrarian thinking, try to identify why the shock or event has not materialized yet and what more should happen for the hazard to occur. Think about what would make the hazard less likely and what would need to happen to be less concerned. Finally, decide if the hazard is more likely to happen than not, or if it is the other way around. If the group cannot decide that the hazard is more likely to occur than not, then the middle point in the scale can be selected to reflect pure uncertainty.
- **Risk experts can now focus only on the selected part of the scale.** The remaining unknown is how certain the group is about their assessment. Thinking of only half the scale and considering the balance of evidence at hand, on which side of the 25 per cent or 75 per cent mark most of the group is? Do the participants lean more towards certainty or uncertainty? With this question, the group can decide which point in the scale to finally select. The group can repeat this process of cutting the scale in half infinitely to get an increasingly refined understanding of their certainty.

## Example of likelihood assessment

Hazard/shock type	Hazard/shock identified	What makes it likely?	What makes it less likely?	Likelihood assessment
Meteorological / wind-related	Hurricane	<ul style="list-style-type: none"> <li>• Six hurricanes of category 3 over the past five years.</li> <li>• 14 hurricanes category 1 or 2 in the past 10 years.</li> <li>• No hurricane last year.</li> </ul>		Very likely - 5
Geo-hazard/ seismogenic	Earthquake		Not an area deemed at risk. Absence of tectonic movement for the last 10,000 years.	Very unlikely -1
Meteorological / precipitation-related	Drought	<ul style="list-style-type: none"> <li>• Two major drought periods over the past 10 years.</li> <li>• Rise in temperatures recorded.</li> </ul>	• Reforestation efforts.	Moderately likely - 3
Hydrological / flood	Floods	<ul style="list-style-type: none"> <li>• 10 major floods over the past two years.</li> <li>• Localized flooding occurs every year during the rainy season with different magnitudes.</li> <li>• Unmanaged urbanization along coastlines.</li> </ul>	<ul style="list-style-type: none"> <li>• Upgrade of the drainage infrastructure.</li> <li>• Eviction and demolition of houses along the coastlines.</li> </ul>	Likely -4
Societal/ economic	Hyperinflation	<ul style="list-style-type: none"> <li>• Currency devaluation accelerated over the past year.</li> <li>• Record high inflation.</li> <li>• Resignation of the Central Bank President.</li> </ul>	<ul style="list-style-type: none"> <li>• Influx of cash from abroad.</li> <li>• Loans granted by the IMF.</li> </ul>	Moderately likely - 3
Societal / conflict	Armed conflict	<ul style="list-style-type: none"> <li>• Multiple crises and power struggles over the past 10 years.</li> <li>• Upcoming presidential elections in eight months.</li> <li>• Troops mobilized at the border.</li> </ul>	<ul style="list-style-type: none"> <li>• Negotiations ongoing between armed groups.</li> <li>• Main political players calling for peace.</li> </ul>	Moderately likely - 3
Technological / industrial failure	Industrial accident	<ul style="list-style-type: none"> <li>• Old infrastructure.</li> <li>• Lack of consistent checks.</li> </ul>	<ul style="list-style-type: none"> <li>• Recent upgrade.</li> <li>• Experts currently in the country reviewing and replacing old equipment.</li> </ul>	Very unlikely - 2

In the support [templates](#) accompanying this guidance, risk experts should discuss and fill step 5-Likelihood Assessment.

## 2. Assess likely impact and assign an impact score

Once the likelihood of the hazard is set, the risk experts should assess the potential impact of the hazard. RiX can once again be used as a source of information on historic losses and damage trends to inform on the impact of past similar hazards. Assessing impact implies both an assessment of the number of people potentially affected by the hazard as well as the severity of the hazard. The following scale is proposed for assessing impact estimates.

**Figure 16. Impact scale**

1 - Negligible	2 - Minor	3 - Moderate	4 - Severe	5 - Critical
Minor additional humanitarian impact, 10,000-50,000 people affected.	Minor additional humanitarian impact, 50,000-100,000 people affected.	Moderate additional humanitarian impact, 100,000-250,000 people affected.	Substantive additional humanitarian impact, 250,000-500,000 people affected.	Massive additional humanitarian impact, >500,000 people affected.
Government capacity is sufficient to deal with the situation.	Current country level inter-agency resources sufficient to cover needs beyond government capability.	New resources up to 30 per cent of current operations needed to cover needs beyond government capacity. Regional support not required.	New resources up to 50 per cent of current operations needed to cover needs beyond government capacity. Regional support required.	New resources over 80 per cent of current operations needed to cover needs beyond government capacity. L3- scale emergency.

### Key considerations when assessing impact:

- Identify the potential geographical areas anticipated to be affected and the total population living in these areas. Use the latest census or DHS figures to have the latest information on the population data of a certain area that is foreseen as being affected. Then ask yourself the question, *"how much of the population would be affected by this risk?"* Try to come up with estimates: is it 25 per cent? 50 per cent? 100 per cent?
- Review historical losses, damages and people affected by identical hazards in the country or in neighbouring countries.
- Assess the vulnerabilities of the community. Are there physical (i.e. poor building design and construction, unregulated land use planning...), social (poverty, inequality, marginalization...), economic (dependence on industry, high share of informal work...) or environmental (over-consumption of natural resources, climate change...) factors that would further expose the population to the hazard?
- Assess the capacities of the community and country, the capacity of the population at risk to cope will influence how severe the needs would be if the risk materializes. Is it quite high or already stressed by previous disasters?
- Estimate upper and lower percentage bands of caseload. Unless in exceptional conditions that you would need to justify, the highest caseload resulting from a previous disaster in the same country is a good indicator for how bad a situation can get. Look at what the maximum number of people in need was before and over a course of how many months. That gives you an indication of what you cannot go over.
- Remember the 12-month outlook and what can realistically happen in that time frame.

Figure 17. Example of impact assessment

Shocks/hazard	Impact	Vulnerability	Capacity	Impact assessment
<b>Hurricane</b>	<p>Past category 3 hurricanes destroyed at least 60 per cent of the town, leading to a high number of casualties and more than 970,000 people affected.</p> <p>High disruptions of water, electricity and telecommunication systems.</p> <p>High population density in coastal areas.</p>	<p>Reconstructions from last hurricane still underway.</p> <p>High levels of people with disability and chronic illnesses in the coastal areas.</p> <p>Higher levels of dengue and malaria cases than usual already recorded.</p>	<p>Low investment in preparedness measures.</p> <p>Recent flooding in the area already left households' coping capacities depleted.</p>	Critical - 5
<b>Earthquake</b>	Not in an area deemed at risk.			<p>Negligible - 1</p> <p>No impact foreseen.</p>
<b>Drought</b>	The worst drought led to a 40 per cent decline in agricultural production.	More pronounced in the south-west part of the country where 100,000 people mostly rely on farming and agriculture-related activities.	No functioning social safety-net system.	Severe - 4
<b>Floods</b>	<p>50 per cent of the capital assessed to be in flood-prone areas.</p> <p>Last floods damaged 10 per cent of the city, left 50,000 PIN</p>	<p>Poorer households living in flood-prone areas.</p> <p>Higher levels of dengue and malaria cases than usual already recorded.</p>	<p>Recent upgrade of the drainage infrastructure.</p> <p>Emergency plan in place.</p> <p>Limited access of the population to WASH infrastructure.</p>	Moderate - 3
<b>Hyperinflation</b>	<p>High reliance on informal work.</p> <p>10 per cent of the population lives under the poverty line.</p>	High levels of unemployment among the youth.	No functioning social safety-net system.	Moderate - 3
<b>Armed conflict</b>	High population density at the border.	<p>High IDPs caseload already living in overcrowded camps without most services.</p> <p>Ethnic discrimination.</p>	<p>Outdated military equipment.</p> <p>Army lacking training.</p>	Severe - 4
<b>Industrial accident</b>	Located in isolated area.		<p>Recent upgrade.</p> <p>Experts currently in the country reviewing and replacing old equipment.</p>	Minor - 2

In the support [templates](#) accompanying this guidance, the risk experts should discuss and fill step 6-Impact Assessment.

### 3. Calculate the overall risk score

The final step involves multiplying the likelihood score (1-5) by the impact score (1-5) to obtain a final risk score (1-25) for each hazard. The following matrix can be used to categorize the final risk score.

Likelihood	5 - Very likely	5	10	15	20	25
	4 - Likely	4	8	12	16	20
	3 - Moderately likely	3	6	9	12	15
	2 - Unlikely	2	4	6	8	10
	1 - Very unlikely	1	2	3	4	5
		1 - Negligible	2 - Minor	3 - Moderate	4 - Severe	5 - Critical
		Impact				

The risk level can then be categorized based on the final score and using the following classification:

**Figure 18. Likelihood scale**

Very low risk	Low risk	Medium risk	High risk	Very high risk
<4	5-6	7-14	15-16	>16

Once the risk experts have filled in the templates and established a risk score for each hazard, results can be consolidated into a final risk list, ranked by severity. When establishing the list, make sure to record the geographical area potentially affected and the potential cascading shocks associated with the original hazard, to consider the chain of cause and effects in future analysis.

**Figure 19. Example of risk list with likelihood, impact and final risk scores**

Main hazard and associated shocks	Likelihood	Impact	Risk score
Hurricane in coastal areas>floods>epidemic	5	5	25
Drought in northern areas>financial crisis	3	4	12
Floods in central areas>epidemic	4	3	12
Armed conflict in northern areas>financial crisis	3	4	12
Hyperinflation>financial crisis>conflict	3	3	9
Industrial accident in western areas	2	2	4
Earthquake>financial crisis	1	1	1

In the support **templates** accompanying this guidance, the risk experts should discuss and fill step 7-Risk score.

Depending on the need, time and objective of the risk analysis, the following table, summarizing all the elements reviewed previously, can serve as an annex to the HNO and a baseline to build on the next year.

Shock	Timeframe	Geographical scope	Main vulnerable groups	Likelihood score	Expected impact	Impact score	People potentially affected
<b>Hurricane &gt; floods &gt; epidemic</b>	September-November	Coastal areas	Urban, poorer HH, people with disabilities, elderly.	5	<ul style="list-style-type: none"> <li>Increased mortality and morbidity.</li> <li>Destruction of key infrastructure and property.</li> <li>Waterborne disease outbreak.</li> </ul>	5	170,000
<b>Drought</b>	July-August	Southwest	Pastoralists, farmers, IDPs, rural, poorer HH.	3	<ul style="list-style-type: none"> <li>Food insecurity and market disruption.</li> <li>Loss of livelihoods and disposable income.</li> </ul>	4	100,000
<b>Floods</b>	April-June	Capital city	Urban HH, poorer HH.	4	<ul style="list-style-type: none"> <li>Displacement.</li> <li>Destruction of main food crops and markets.</li> <li>Destruction of property.</li> <li>Waterborne disease outbreak.</li> </ul>	3	50,000
<b>Conflict</b>	Closer to the election time	Border with country Y	IDPs, refugees, people living at the border, elderly, people with disabilities, urban HH.	3	<ul style="list-style-type: none"> <li>Increased mortality and morbidity.</li> <li>Displacement from conflict.</li> <li>Destruction of key infrastructure and food crops.</li> <li>Destruction of property.</li> </ul>	4	100,000
<b>Hyperinflation</b>	Over the next 12 months	All country, particularly main cities	Urban, poorer HH.	3	<ul style="list-style-type: none"> <li>Loss of purchasing power.</li> <li>Increased food insecurity.</li> <li>Higher school drop-out rates.</li> </ul>	3	40,000
<b>Industrial accident</b>	Not time-bound	Industrial sites in the north-east	People living in proximity of the site, workers.	2	<ul style="list-style-type: none"> <li>Increased mortality and morbidity.</li> <li>Destruction of key infrastructure and property.</li> </ul>	2	10,000
<b>Earthquake</b>	Not time-bound		All	1	<ul style="list-style-type: none"> <li>Increased mortality and morbidity.</li> <li>Destruction of infrastructure and property.</li> <li>Waterborne disease outbreak.</li> </ul>	1	-

## e. Identify possible evolution of highest rank risks

To avoid an overly complex exercise, only the hazards that scored high and very high in the risk list should be retained for this step. Once the main risks are selected, the risk experts should outline with more details exactly what the risks are and what they would entail. Assumptions on potential exposure and impact should be detailed, drawing from the previous tables and sources. The more detailed the assumptions, the easier the next step on scenario development will be.

The ranked risk list marks the end of the first step of the process. Results should be consolidated **in the support**

**templates accompanying this guidance under step 8-Risk Summary table.**

If the risk analysis was conducted by a small group of risk experts on behalf of the humanitarian and development community, the results should be disseminated widely or presented in official workshops to receive feedback.

Once the comments have been processed, the final list of risks should be endorsed by the Humanitarian Country Team before to proceed with the scenario development.

**Figure 20. Likelihood scale**

Highest ranked risks	Detailed risk assumptions
<b>Hurricane - very likely</b>	Based on historical records, a hurricane category 3 is very likely to occur in the next 12 months, leading to a high number of casualties and severe destruction of at least 60 per cent of the highly densely populated coastal city. Recent flooding in the area already left households' coping capacities depleted, further increasing their vulnerability. The hurricane is likely to lead to further flooded areas and epidemics, and a substantial increase in people in need, overwhelming the country's resources and requiring a scale-up in humanitarian activities.
<b>Drought - likely</b>	Based on meteorological forecasts, the March-May rainy season is likely to be 20 per cent below normal in the southwest farming livelihood area, leading to a significant decrease of at least 30 per cent in agricultural production, based on previous similar events. While such shock is unlikely to cause death, it would lead to significant and destructive impacts on rural and agricultural communities, leading to more widespread and sustained support being required.
<b>Floods - likely</b>	Based on meteorological forecasts and historical records, flooding is likely to occur during the April-June rainy season in the northern part of the country, leading to at least 10 per cent of the city underwater for a prolonged period of time. The impact of such floods is likely to be even more acute as poorer households in the area have had limited access to WASH infrastructure and health services have already been overwhelmed in the past months by a rise in dengue and malaria cases.
<b>Armed conflict - likely</b>	Based on recent troop movements and recurring historical tensions around election time, and considering that elections will be held in the time period of interest, an armed conflict could occur in the next twelve months between country X and country Y. Due to the high population density at the border and previous waves of displacement in the area, which have left many IDPs living in overcrowded and poorly serviced camps, the impact of such an event will aggravate the needs of already vulnerable people and lead to additional people in need.

## f. Detail the most likely evolution of the humanitarian situation and needs (scenario building)

Once the risk list has been established and validated, risk experts can proceed with the identification and development of the most likely scenario. Scenario building for HNOs is a two-step process, including the

identification of the main assumptions and the scenario outline and the details on the expected impact and humanitarian conditions that will arise as a consequence of the shock.

### 1. Define assumptions and scenario outline

The definition of the most likely scenario entails associating logically a couple of high risks together, using the information gathered in the previous steps and the views of experts in merging associated risks. By creating 'assumption sets', combining related assumptions from one or more risks and drivers, you can outline an integrated picture of the upcoming reality.

The best way to develop the most likely scenario is to focus first on the (positive or negative) evolution of current shocks, then add high-risk hazards to the mix - identified during the previous step - that might aggravate current conditions or create new crises. For instance, if the country is affected by a conflict for a few years and a peace process is ongoing and likely to succeed, then the scenario should start by highlighting the ongoing peace negotiations leading to improved stability and security

and the return of displaced people. If the same country is often affected by hurricanes, floods and subsequent epidemics during the rainy season in the coastal area, then the hurricane, flood and epidemic hazards and their consequences should also be considered in the most likely scenario. The scenario can be single hazard or multi-hazard, depending on the context and how likely the hazard occurrences are. At a minimum, the most likely scenario should include all high and very-high risks listed in the previous steps.

By convention, the scenario should be written in the present tense, as if it was occurring as we speak. The scenario outline should not be more than a few assumptions summarized in short sentences and detailing which hazards are occurring, their intensity, where and when exactly.

#### Figure 21. Single hazard scenario outline

**A hurricane category 3 hits city X on the main coast.** During the September-November hurricane season, a category 3 hurricane hit the main coastal city in the South.

#### Figure 22. Multi-hazards/Compounding risks scenario outline

**Flooding in the north and armed conflict between country X and Y at the border.** Sporadic air strikes over the first months of the year are quickly replaced by continuous bombing of bordering areas by both countries. At the beginning of the rainy season, country Y launches successful attacks on key strategic towns and takes control of the main roads. At the same time, during the March-May rainy season, moderate flooding occurs in the northern part of the country, leading to at least 10 per cent of the provincial city underwater for a week.

#### Figure 23. Cascading risks scenario outline

**A hurricane category 3 hits city X in the coastal area. As a result of heavy winds and pre-existing structural vulnerabilities, a key dam, diverting the river course, is destroyed, leading to the sudden flooding of inland areas.**

Once the scenario outline is set and agreed by the risk experts, it is time to break down the expected impact and humanitarian conditions. The JIAF structure is a great guide to support this objective. If a multi-hazard scenario is developed, participants can be split into groups to detail impact, humanitarian conditions and priorities for each considered hazard.



## Guiding questions for detailing impact and humanitarian conditions:

### For hazard X or a combination of hazard X, Y, Z:

- What will be the first, second and third-order impacts on people? (losses, damages, change in behaviour and social norms, displacement)
- What will be the impact on systems and services? (basic service coverage, functionality and provision, prices, market functionality, damages to physical infrastructure such as roads, buildings, power lines, water supply systems, sewage systems, communication systems)
- What will be the impact on humanitarian access? (access of relief actors to the affected population, access of the affected population to relief actors, security and physical constraints)
- What will be the impact on the ability of the population to meet basic needs?
- What will be the impact on the ability of the population to cope with the disaster?
- What will be the impact on the physical and mental well-being of the population? (new or aggravated diseases, epidemics, psychological trauma)
- What will be the most affected humanitarian sectors?
- What will be the most affected geographical areas?
- What will be the most affected population groups?
- What are the most vulnerable groups in the potentially affected areas?

In the support [templates](#) accompanying this guidance, the risk experts should discuss and fill step 9-Risk assumptions and scenario outline.

## 2. Detailed scenario development

Details on impact and humanitarian conditions resulting from the scenario do not need to be very precise or accurately quantified. More important is to define the set of assumptions that will allow humanitarian sectors or clusters to plan accordingly. The full scenario including details on impact and humanitarian conditions should not be more than one page in total.

At this step, the scenario should focus on intersectoral information only and avoid as much as possible going into sector-specific information. Risk statements should include: *An additional 35,000 people are displaced as a result of intercommunal conflict; 85,000 IDPs in camps return to their area of origin; ability to meet basic needs improves for 30 per cent of the southern population; an additional 20 per*

*cent of the population engages in crisis coping strategies, and similar.*

Humanitarian clusters will use the intersectoral assumptions developed during the previous step and discuss with their cluster members the sector-specific impacts and humanitarian conditions as well as the projected number of people in need. The scenario can be updated once sectoral information and figures are available, but this is not mandatory as doing this for all sectors would significantly increase the size of the scenario. Some key figures could be added such as a *15 per cent increase in food insecurity in northern provinces, a 25 per cent decrease in school enrolment, an expected 375,000 people in need of shelter.*

Figure 24. Example of single hazard scenario - hurricane category 3 hitting coastal city X

JIAF pillar	Assumptions
<b>Context</b>	<ul style="list-style-type: none"> <li>• Climate change accelerated the frequency of tropical storms in the last 10 years.</li> <li>• Weak preparedness capacity and alert systems.</li> <li>• Reconstructions from the last hurricane are still underway.</li> <li>• Acute poverty due to frequent hurricanes, floods and epidemics in the past five years.</li> </ul>
<b>Hazard/ Shock</b>	<p>Hurricane <b>category 3 hitting city X in the coastal area</b>. During the September-November hurricane season, a category 3 hurricane hit the main coastal city in the south where 1.3 million people reside in urban areas and 450,000 in rural areas. <b>Cascading effects:</b> The hurricane leads to further flooded areas.</p>
<b>Impact</b>	<ul style="list-style-type: none"> <li>• <b>Impact on people:</b> Up to 170,000 people are affected. High number of casualties and severe destruction of at least 60 per cent of the main highly densely populated city. Most of the damages sustained are in the housing and WASH sector. The greatest losses are sustained in the agriculture sector, with significant food reserves destroyed.</li> <li>• <b>Impact on services:</b> Destruction of public services, including roads, schools, health centres, markets, followed by heavy disruptions in electricity and telecommunication infrastructure and health facilities. Contaminated water, combined with the destruction of key pipelines, results in high scarcity of water. Evacuation and temporary shelters are quickly becoming overcrowded, as some were already occupied by the population affected by recent flooding.</li> <li>• <b>Humanitarian access:</b> Humanitarian access is limited in the first few weeks due to damaged roads, telecommunication networks and collapsed structures.</li> </ul>
<b>Humanitarian conditions</b>	<ul style="list-style-type: none"> <li>• <b>Living standards:</b> Lack of access to basic services due to severely reduced or non-functionality of critical service infrastructure. 50 per cent of households in the area would experience a decreased ability to meet basic needs.</li> <li>• <b>Coping mechanisms:</b> Recent flooding in the area already left households' coping capacities depleted.</li> <li>• <b>Physical and mental well-being:</b> High number of casualties. Contamination of drinking water due to floods leads to the resurgence of waterborne diseases.</li> </ul>
<b>Forecast priorities</b>	<ul style="list-style-type: none"> <li>• <b>Priority sectors:</b> Shelter, WASH, Health, Food.</li> <li>• <b>Priority affected groups:</b> Urban households living in coastal areas.</li> <li>• <b>Priority geographical areas:</b> Southern coastal areas.</li> <li>• <b>Priority vulnerable groups:</b> Poorer households, people with disabilities, elderly.</li> </ul>

Figure 25. Example of multi-hazard/compounding risks scenario - Conflict and floods

JIAF pillar	Assumptions
<b>Context</b>	<ul style="list-style-type: none"> <li>Recent troop movements at the border with country Y and recurring historical tensions between the two countries over the past 10 years.</li> <li>Previous waves of displacement in the area, leaving many IDPs living in overcrowded and poorly serviced camps.</li> <li>10 major floods over the past two years, with localized flooding occurring every year during the rainy season.</li> <li>Acute poverty due to frequent hurricanes, floods and epidemics in the past five years.</li> </ul>
<b>Hazard/shock</b>	<p><b>Flooding in the north and armed conflict between country X and Y at the border.</b></p> <ul style="list-style-type: none"> <li><b>Armed conflict:</b> Sporadic air strikes over the first months of the year are quickly replaced by continuous bombing of bordering areas by both countries. At the beginning of the rainy season, country Y launches successful attacks on key strategic towns and takes control of the main roads.</li> <li><b>Floods:</b> At the same time, during the April-June rainy season, moderate flooding occurs in the northern part of the country, leading to at least 10 per cent of the provincial city underwater for a week.</li> </ul>
<b>Impact</b>	<p><b>Armed conflict affecting 100,000 people:</b></p> <ul style="list-style-type: none"> <li><b>Impact on people:</b> Up to 40,000 inhabitants of country X flee inland, mostly to the neighbouring province, while those remaining are exposed to harsh reprisals. This projection is mostly based on the analysis of past displacement trends over the past years, which showed that 80 per cent of all displacement was to the neighbouring province.</li> <li><b>Impact on services:</b> Structural damage to key WASH infrastructure affects the entire region and leaves IDPs camps with even less access to such services.</li> <li><b>Humanitarian access:</b> Humanitarian access is severely constrained, due to rampant insecurity and the destruction of the road network.</li> </ul> <p><b>Floods affecting 50,000 people:</b></p> <ul style="list-style-type: none"> <li><b>Impact on people:</b> Evacuated and affected households are hosted in quickly overcrowded shelters. The destruction of main food crops and markets drives short-term displacement.</li> <li><b>Impact on services:</b> Damaged homes and key infrastructure including health centres. Heavy rains and flooding also result in loss of pasture, stored grain, farmed land and livestock.</li> <li><b>Humanitarian access:</b> Humanitarian access is limited until the water recedes.</li> </ul>
<b>Humanitarian conditions</b>	<ul style="list-style-type: none"> <li><b>Living standards:</b> Lack of access to basic services due to severely reduced or non-functionality of critical service infrastructure. Lack of water to meet households needs.</li> <li><b>Coping mechanisms:</b> Registered refugees or IDPs sharing aid with unregistered displacement communities. Open defecation. Rainwater is used as the main source of water.</li> <li><b>Physical and mental well-being:</b> In overcrowding camps, waterborne diseases proliferate, with weak health services unable to treat most patients. IPC 3+ among displaced communities. Rise in malnutrition. Contamination of drinking water due to floods leads to the resurgence of waterborne diseases, rapidly spreading as most resources have been diverted in the border areas.</li> </ul>
<b>Forecast priorities</b>	<ul style="list-style-type: none"> <li><b>Priority sectors:</b> Conflict: shelter, WASH, protection. Floods: shelter, WASH, health, food.</li> <li><b>Priority affected groups:</b> Conflict: IDPs, refugees, urban households. Floods: urban households.</li> <li><b>Priority geographical areas:</b> Conflict: border with country Y. Floods: capital and coastal areas.</li> <li><b>Priority vulnerable groups:</b> Conflict: IDPs in camps, refugees, people living at the border, elderly, people with disabilities. Floods: poorer households.</li> </ul>

Figure 26. Example of scenario for cascading hazard

JIAF pillar	Assumptions
<b>Context</b>	<ul style="list-style-type: none"> <li>• Climate change accelerated the frequency of tropical storms in the last 10 years.</li> <li>• Reconstructions from the last hurricane are still underway.</li> <li>• Structural weaknesses of the water infrastructure.</li> <li>• Weak preparedness capacity and alert systems.</li> </ul>
<b>Hazardshock</b>	<p><b>A hurricane category 3 hits city X in the coastal area. Cascading effects: As a result of heavy winds and pre-existing structural vulnerabilities, a key dam, diverting the river course, is destroyed, leading to the sudden flooding of inland areas.</b></p>
<b>Preliminary impact</b>	<ul style="list-style-type: none"> <li>• <b>Impact on people:</b> Up to 170,000 people are affected by the hurricane. High number of casualties and severe destruction of at least 60 per cent of the main highly densely populated city. Up to 80,000 people are affected by the subsequent flooding. Nearby towns close to 100 per cent destroyed and farming fields around completely underwater.</li> <li>• <b>Impact on services:</b> Destruction of public services, including roads, schools, health centres, markets, followed by heavy disruptions in electricity and telecommunication infrastructure and health facilities. Contaminated water, combined with the destruction of key pipelines, results in high scarcity of water. Evacuation and temporary shelters in coastal areas are quickly becoming overcrowded. Cities near the dam have been washed away, resulting in significant destruction of infrastructure, public services and housing, with no functioning telecommunications. Significant food reserves and humanitarian stocks have been destroyed in the flooding. Capacity is extremely stretched, having to respond to two simultaneous emergencies.</li> <li>• <b>Humanitarian access:</b> Humanitarian access is limited in coastal areas in the first few weeks, due to damaged roads, telecommunication networks and collapsed structures. Humanitarian access to flooded areas is near impossible in the first few days, due to high water level and heavy destruction.</li> </ul>
<b>Humanitarian conditions</b>	<ul style="list-style-type: none"> <li>• <b>Living standards:</b> Lack of access to basic services due to severely reduced or non-functionality of critical service infrastructure. 50 per cent of households in the area would experience a decreased ability to meet basic needs.</li> <li>• <b>Coping mechanisms:</b> Recent flooding in the area already left households' coping capacities depleted.</li> <li>• <b>Physical and mental well-being:</b> High number of casualties. Contamination of drinking water due to floods leads to the resurgence of waterborne diseases.</li> </ul>
<b>Forecasted priorities</b>	<ul style="list-style-type: none"> <li>• <b>Priority sectors:</b> Health, shelter, WASH, telecommunications.</li> <li>• <b>Priority affected groups:</b> Urban households living in coastal areas and inhabitants around the dam.</li> <li>• <b>Priority geographical areas:</b> Southern coastal areas and inland areas close to the dam.</li> <li>• <b>Priority vulnerable groups:</b> Poorer households, people with disabilities, elderly.</li> </ul>

In the support [templates](#) accompanying this guidance, the risk experts should discuss and fill step 10-Scenario.

This step marks the end of the scenario development step. The risk experts should share the scenario widely to receive feedbacks and comments and, once incorporated, seek formal endorsement of the most likely scenario by the Humanitarian Country Team. The HCT should ensure that all cluster leads access the final scenario and take it into account for their people in need projection.

## g. Develop response objectives and programmes aligned with risk analysis

UNOCHA developed in May 2021 the Response Analysis and Prioritization Guide to support the development of Humanitarian Response plans and supplement the Humanitarian Programme Cycle (HPC) Step-by-Step Guide on humanitarian response planning steps. It provides definitions, structured approaches and tools to facilitate response analysis and prioritization, formulation of strategic and specific objectives, and estimation of the number of people targeted in the Humanitarian Response Plan.

Response analysis is a joint intersectoral process that facilitates the identification of appropriate, relevant and feasible interventions and modalities to respond to the humanitarian needs of population and subpopulation groups, as identified in the HNO. It consists of formally reviewing the range of interventions

possible to address identified needs, to select those that will meet these needs in the most effective and efficient way.

### **Response analysis for HRPs is conducted in three steps:**

1. The formulation of an initial set of intersectoral strategic objectives for the HRP.
2. The formulation of an initial set of intersectoral and sectoral specific objectives for each of the draft strategic objectives. This essentially breaks down the broad focus of each strategic objective into more-precise objectives geared towards specific aspects of the humanitarian needs, specific subgroups within broad population group categories, and specific

locations. The set of specific objectives for a given strategic objective, should be complementary and each specific objective should contribute to the achievement of the respective strategic objective.

3. The review of the appropriateness, relevance and feasibility of different interventions and intervention modalities, and the definition of who should be targeted with what and where, for each specific objective.

### **The formulation of strategic and specific objectives is iterative:**

- A first broad formulation of strategic objectives is done based on the scoping of humanitarian conditions in the HNO, which enables to focus on the main problems, population groups and subgroups, and locations.
- Specific objectives are then formulated for each strategic objective, based on the review and selection of interventions most likely to address specific dimensions of the humanitarian conditions and needs, for certain population groups and subgroups, in certain geographic areas. Specific objectives are generally specific to clusters or sectors.
- Once specific objectives are finalized, including a quantification of the target groups and clear response approach, the initial formulation of the corresponding strategic objective is fine-tuned to better reflect the nature of the humanitarian consequences and needs that are addressed, and the type and number of population groups and subgroups targeted, as well as geographic locations.

## 1. Definition of strategic objectives

Traditionally, HRP include three to four strategic objectives. They reflect the ultimate improvements to people's lives and livelihoods that the plan intends to achieve during the planning period, by decreasing or eliminating the humanitarian needs identified in the HNO.

While it might happen that some strategic objectives are focused on reducing risks or improving resilience, the current trend is to keep them focused on humanitarian needs. An HRP will typically include:

- One life-saving strategic objective, e.g. Provide timely multisectoral life-saving assistance to crisis-affected people to reduce mortality and morbidity.
- One strategic objective on restoring or maintaining access to essential goods and services, e.g. Improve vulnerable people's access to livelihoods and life-sustaining basic services.
- One strategic objective on protection, e.g. Mitigate protection risks and respond to protection needs through humanitarian action.

Those strategic objectives have a well-defined

humanitarian scope, with the notable exception of the protection objective, traditionally focused on reducing threats and concerns as well as protection issues. Their wording is often standardized across HRP and as they focus on specific programming phases (e.g. life-saving, access to basic services and goods), it is not recommended to modify them.

In some instances, a fourth strategic objective might be dedicated to improving resilience, e.g. Vulnerable people of all gender and diversities are supported in building their resilience and living their lives in dignity (Afghanistan 2022) or Strengthen the resilience capacities of at least 80 per cent of people in at least 75 per cent of regions to cope with shocks, reduce vulnerabilities and improve livelihood strategies and disaster preparedness by the end of 2022 (Mali 2022).

The choice to have a separate strategic objective on resilience, risk mitigation or reduction ultimately belongs to the Humanitarian Country Team. The risk experts can contribute to their wording to ensure a specific pane of the response is focused on relevant disaster risk reduction, resilience building and preparedness measures.

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## 2. Definition of specific objective

If a dedicated strategic objective is available, then the risk experts should contribute to the identification and drafting of specific objectives aiming to reduce vulnerabilities or increase the resilience of the population. The specific objectives should be intersectoral and clearly detail the population targets.

If the HRP doesn't include a dedicated strategic objective on risk reduction, decreasing vulnerability or increasing resilience, then inter-sector specific objectives or the specific objectives provided by the clusters could be tailored to be more risk-sensitive. This will require the risk experts to provide specific support to the clusters (for instance by presenting the risk list and the scenario to each cluster individually) and recommendations to the HCT (for instance by reviewing the draft list of specific objectives, comparing it to the risk list or the scenario and highlighting gaps, forgotten geographical areas or groups at risk).

Each strategic objective should be accompanied by outcome indicators. An example from the [IASC 2022 response analysis and prioritization guidance](#) is provided below.

It is important to remember that the risks being addressed

in the HRP are only those included in the most likely scenario. While the temptation to include objectives or interventions addressing all hazards or risks in the country may be high, the HRP is primarily focused on alleviating the consequences of unmet needs and reducing the vulnerability and increasing resilience to the shocks identified in the most likely scenario.

Other risks identified during the process should be addressed by other planning instruments such as the Common Country Analysis or specific governmental disaster risk reduction strategies. The risk experts should follow up with relevant institutions to ensure the broad spectrum of risks in a country are being addressed adequately.

To develop a target population number, it is helpful to consider the additional number of people in need. Technically, the concept of people at risk does not exist in humanitarian strategic planning. The only figures required are the current number of people in need and the projected number of people in need for the next 12 months. The difference between the projected and the current PIN is the closest figure there is – conceptually - from the total number of people at risk. While imperfect, this figure can be used for planning purposes.

**Figure 27. Strategic objectives and outcome indicators**

STRATEGIC OBJECTIVES	OUTCOME INDICATORS	INDICATOR REGISTRY CODE / COUNTRY EXAMPLE
[Number] [target population] [in geographical locations] have recovered access to productive livelihood activities by [date].	Number of assets built, restored or maintained to targeted beneficiaries, by type and unit of measure (e.g. hectares of land where conservation activities were implemented, length and type of irrigation systems restored, hectares recovered for farming)	F-Output-7
	Number and percentage of households having recovered adequate shelter without external support	S1-2-5
	Change in HH ownership of productive assets	F-8
Enhanced resilience capacity of [number] [target population] [in geographical areas] by [date].	Percentage of [target population] who feel the support they receive empowers them to live without aid in the future.	Perception indicator (AAP/CE), example from Chad HRP
	Percentage of shelter interventions incorporating hazard mitigation measures	S-1-2-6
	Number of areas where local government across sectors use knowledge, innovation and education to build a culture of preparedness, safety and resilience. This is to be differentiated by age / sex	R-4
SUPPORTING SPECIFIC OBJECTIVES		
Self-sufficiency of [number] [target population] restored through predictable access to livelihoods by [date].	Percentage of economically active [within target population] who are employed (short or long term) by [date].	R-8
	Number and Percentage of households in need of income support	R-5
Pre-crisis level access to public basic services is restored to [number] [target population, e.g. returnees] by [date].	Percentage of [target population] accessing public basic services.	Sudan multi-year Strategy
	Number and Percentage of population with access to basic community infrastructure not covered by other sectors or clusters	R-18

### 3. Choosing relevant programmes

Either in a workshop or by directly supporting clusters, the risk experts should discuss objectives and actions required to prepare for and mitigate the expected impact of the most likely scenario and ensure the Humanitarian Response Plan programmes and activities are risk-sensitive.

A comprehensive analysis of the humanitarian capacity in a country is required at this stage to ensure a complete mapping of available resources with the most likely scenario, the identification of critical capacity gaps to fill and preventive actions to initiate or reinforce. Some

preparedness actions - activities implemented before the shock to mitigate its impact effectively - can also be identified, such as evacuation procedures, prepositioning of resources, training of first responders. Different risk-informed response options can be considered:

- **Disaster-risk management:**<sup>29</sup> Although DRM includes disaster preparedness and response activities, it goes beyond managing the impact of disasters and aims at reducing the impact of disaster. As such, it involves broader structural and

integrated institutional changes and strategies (e.g. land planning, awareness-raising, policy-making and legislation), as well as building the resilience, strengths, attributes and resources available within a community, society or organization.

- **Preparedness measures**<sup>30</sup> aim to establish a standing capacity to respond to a range of different situations that may affect a country or region by putting in place a broad set of measures. This includes, for example, early-warning systems, ongoing risk and vulnerability assessment, capacity building, the creation and maintenance of standby capacities and the stockpiling of humanitarian supplies.
- **Contingency planning**<sup>31</sup> is a tool used to analyse the impact of potential hazard events so that adequate and appropriate arrangements are made in advance to respond in a timely, effective and appropriate way to the needs of the affected populations.

- **Anticipatory or early actions**<sup>32</sup> are actions taken in advance of a crisis, before either the shock or its peak impact, by targeting vulnerable populations most at risk. They involve implementing a formal mechanism predetermining who gets how much money, to do what, based on which signal, so that a problem can be caught before it becomes a crisis. These actions are implemented only if there is a high probability of such a shock occurring and peaking, and if the implementation is extremely time-critical. Anticipatory action makes sense when it is possible to:

- predict with a high likelihood what is going to happen
- identify pre-agreed thresholds and triggers for intervention, as well as feasible and impactful actions in the prediction window
- create a joint response plan and activities, backed by pre-arranged financing mechanisms.

**Figure 28. Strategic objectives and outcome indicators**

Scenario outline	Existing capacities	Additional response activities required
A hurricane category 3 will lead to 80,000 people with damaged shelters and a likely rise in dengue and malaria cases, as well as waterborne diseases.	<p>An early-warning system is in place. However, no drill has been conducted among the population. The government has the capacity to respond to primary search.</p> <p>Some evacuation and temporary shelters are in place, although some are still occupied by the population affected by recent flooding. Food reserves are scarce. However, INGO X, Y and Z plan to start new food and shelter activities next month.</p> <p>Health services have been overwhelmed. However, neighbouring countries are planning to send reinforcements in the coming weeks. INGO A and NGO B, C and D are scaling-up their health activities.</p>	<p>Emergency evacuation procedures to be drafted and training of first responders, as well as drills among the population, in anticipation of such shock. Contingency planning to be developed.</p> <p>Pre-positioning of food and water supplies, and mosquito nets in the evacuation shelters.</p> <p>Additional shelter sites to be identified and prepared.</p>
Conflict in the border region will lead to the displacement of 40,000 people, of which half are likely to be staying with host families.	<p>The government has the capacity to respond to the food needs of 10,000 people.</p> <p>Existing camp facilities at the border are already overwhelmed.</p>	<p>Strengthening and scaling-up of camp management services (shelter, WASH, health, protection) would be required to absorb additional displaced populations.</p> <p>New protection and health response is likely to be needed.</p>

As the HRP process is often iterative, it is recommended that the risk experts review initial and final drafts to ensure all impacts anticipated in the scenario are mitigated, at both inter-sector and sectoral level.

29 UNDRR Disaster risk reduction & disaster risk management, [Prevention web](#)

30 [OCHA Key elements in preparedness and contingency planning](#)

31 *Ibid.*

32 [OCHA Anticipatory Toolkit](#)



# Annex 1

## Workshop agenda

This annex provides details on the two half-a-day workshops for risk analysis and scenario development.

Workshop 1 - Risk analysis		
Objective: Participants establish and rank the most severe risks in crisis-affected areas.		
Step	Activities	Duration
Workshop preparation	<ul style="list-style-type: none"> <li>Workshop facilitators fill tabs 1. Context analysis, 2. Timeline of events, 3. Seasonal calendar and 4. Hazard list.</li> </ul>	10-15 days
	<ul style="list-style-type: none"> <li>Workshop facilitators select participants, explain the process, set dates and clarify expected contribution</li> </ul>	1 day
	<ul style="list-style-type: none"> <li>Workshop participants get familiar with the methodology and read the UNDRR guidance on strengthening risk analysis for humanitarian planning, especially Annex 2 on concepts and definitions.</li> </ul>	2 hours
Workshop	<ul style="list-style-type: none"> <li>Workshop facilitators present the overall process, the expected outputs and detail expected participants' contribution</li> <li>Participants review and validate the Hazard list (template 4. Hazard list)</li> <li>Participants assess the likelihood of the hazard (template 5. Likelihood assessment)</li> <li>Participants assess the impact of the hazard (Template 6. Impact assessment)</li> <li>Participants calculate the risk score for each hazard or combination of hazards (template 7. Risk score)</li> </ul>	5 hours
Post-workshop	Workshop facilitators review the group work and complete the template 8. Risk summary table, share with participants for final comments, finalize the risk list and share with the HCT for endorsement.	1-2 days

## Workshop 2 - Scenario development

Objective: Participants identify and detail the most likely scenario for the next 12 months

Step	Activities	Duration
<b>Workshop preparation</b>	Workshop participants get familiar with the methodology and read the UNDRR guidance on strengthening risk analysis for humanitarian planning, especially Annex 2 on concepts and definitions.	2 hours
<b>Workshop</b>	<p>Workshop facilitators present the overall process, the expected outputs and detail expected participants' contribution</p> <p>Workshop facilitators explain the JIAF framework, definitions and concepts</p> <p>Participants develop risk assumptions and scenario outline (template 9.Scenario outline)</p> <p>Participants detail the most likely scenario (template 10.Scenario)</p>	5 hours
<b>Post-workshop</b>	Workshop facilitators review the scenario and consolidate inputs from the participants, share with participants for final comments and finalize the most likely scenario and share with the HCT for endorsement.	1-2 days

## Workshop 3 - Response planning

Objective: Ensure response plan, objective and overall strategy are risk sensitive

Step	Activities	Duration
<b>Workshop preparation</b>	<ul style="list-style-type: none"> <li>Workshop facilitators review the strategic and specific objectives proposed by the HCT and the humanitarian clusters and identify areas for improvements</li> </ul>	1 day
<b>Workshop</b>	<ul style="list-style-type: none"> <li>Workshop facilitators present the overall process, the expected outputs and detail expected participant's contribution</li> <li>Participants review the draft strategic and specific objectives and compare the expected outcomes to the most likely scenario to identify gaps</li> <li>Participants recommend better strategic or specific objectives and ensure logical linkages between each</li> <li>For each risk-sensitive objective, participants assess existing capacities and provide programmatic recommendations</li> <li>Participants ensure all elements of the most likely scenario are addressed by the Humanitarian Response Plan</li> </ul>	2 hours
<b>Post-workshop</b>	Workshop facilitators review the group work, consolidate recommendations and share with the HCT for endorsement.	1-2 days

# Annex 2

## Definitions and concepts

To facilitate or participate in risk analysis and scenario development, it is essential to speak the same language. Below are the main definitions and concepts used in the humanitarian sector.

### 1. Hazard, disaster, shock, stress<sup>33</sup>

A hazard is a process, phenomenon or human activity that may cause loss of life, injury or other health impacts, property damage, loss of livelihood, social and economic disruption or environmental degradation. As mentioned above, one hazard can trigger another one. In that case, risk analysts will refer to a compound hazard.

Hazard is often used interchangeably with the concept of disaster or shock, although the disaster concept typically implies an impact dimension that overwhelms the country's capacities to respond and the shock concept usually refers to the suddenness of the hazard, as opposed to stresses, which unfold over a long period of time. A shock can also refer to the moment at which a slow-onset hazard passes its 'tipping point' to becoming an event with more damaging impacts.

**A disaster is a serious disruption to the functioning of a community or a society, involving widespread human, material, economic or environmental losses and impacts that exceed the ability of the affected community or society to cope using its own resources, to face a potentially damaging hazard or other phenomena.**

For instance, rise in temperatures in a specific geographical area could be first defined as a hazard, and would become a shock once the temperatures pass a certain threshold and a disaster once the effects on a community agricultural production start to become widespread or severe. As such, a disaster can be avoided with proper investment in resilience building<sup>34</sup>. While the hazard and shock would still happen, the effects on communities could be limited.

<sup>33</sup> Hazard definition and classification review, UNDRR 2020.

<sup>34</sup> What is a disaster? IFRC.

**Figure 29. Hazard categories and list**

Hazards are commonly categorized as natural (earthquakes, floods, epidemic...) or human-made (armed conflict, technological accidents...) <sup>35</sup>.

- **Meteorological and hydrological hazards** are those resulting from the state and behaviour of the Earth's atmosphere, its interaction with the land and oceans, the weather and climate it produces, and the resulting distribution of water resources. These include tropical cyclones, drought, riverine floods and heatwaves.
- **Geohazards** are hazards with a geological origin and are divided into three hazard clusters: two of which – seismogenic and volcanogenic – are the result of Earth's internal geophysical processes (i.e. earthquakes), and a third – shallow geohazards – are the result of surface or near-surface processes, generally resulting in erosion or some type of mass movement.
- **Environmental hazards** arise through the degradation of the natural systems and ecosystem services upon which humanity depends. This includes biodiversity loss, land salinization, loss of permafrost, loss of sea ice.
- **Chemical hazards** have immediate (acute) effects, as well as chronic effects, often resulting from long-term exposures with adverse health outcomes. The CBRNE (chemical, biological, radiation, nuclear, or explosion) hazard cluster is wider than military weapons, and includes endemic diseases, epidemics, industrial chemicals, explosion hazards, pollution and terrorist threats. Corrosive, flammable and toxic chemicals also pose several types of hazards.
- **Biological hazards** cover hazards of organic origin, which can cause significant loss of life, affecting people and animals at the population level, as well as plants, crops, livestock, and endangered fauna and flora, and can lead to severe economic and environmental losses. This includes pathogenic microorganisms, toxins and bioactive substances that occur naturally or are deliberately or unintentionally released. Bacteria, viruses, parasites, venomous animals and mosquitoes carrying disease-causing agents are also examples of biological hazards.
- **Technological hazards** arise from the possibility of failure of an existing technology as well as from emerging technologies. Radiation and nuclear materials can lead to hazards, including accidents at nuclear power plants, industrial radiation device accidents, and misuse of nuclear weapons. Conventional explosive hazards include millions of landmines not yet located, as well as improvised explosive devices used in mining activities, and are also considered in this category. Cybersecurity threats, such as malware, attacks, misconfiguration due to human error and power failure are also considered under technological hazards.
- **Societal hazards** are brought about entirely or predominantly by human activities and choices, and have the potential to endanger exposed populations and environments. They are derived from socio-political, economic and cultural activity, human mobility and the use of technology, but also from societal behaviour – whether intentional or unintentional.
- **Extra-terrestrial hazards** are those originating outside the Earth, such as asteroid and meteorite impacts or solar flares.

## 2. Risks and drivers

A risk is the probability of an uncertain event (or chain of events) that may lead to potential loss of life, injury or destroyed or damaged assets to a system, society or community in a specific period of time, determined as a function of hazard, exposure, vulnerability and capacity (see more details on each concept below). Compounding risk involves the risk of hazard events occurring simultaneously, combined with conditions that amplify the overall impact <sup>36</sup>. Cascading risk is an extreme event in which effects ripple and increase in progression over time, due to the interdependency of pre-existing vulnerable systems, such as supply chains and critical infrastructures, generating secondary events of strong impact <sup>37</sup>.

<sup>33</sup> Hazard definition and classification review, UNDRR 2020.

<sup>34</sup> What is a disaster? IFRC.

<sup>35</sup> For a full list of hazards and their definition, refer to UNDRR Hazard Information Profiles (July 2020) which identifies 302 unique hazards in total, including 88 biological hazards, 60 hydrometeorological hazards, 53 technological hazards, 35 geohazards, 25 chemical hazards, 24 environmental hazards, 9 extraterrestrial hazards and 8 societal hazards.

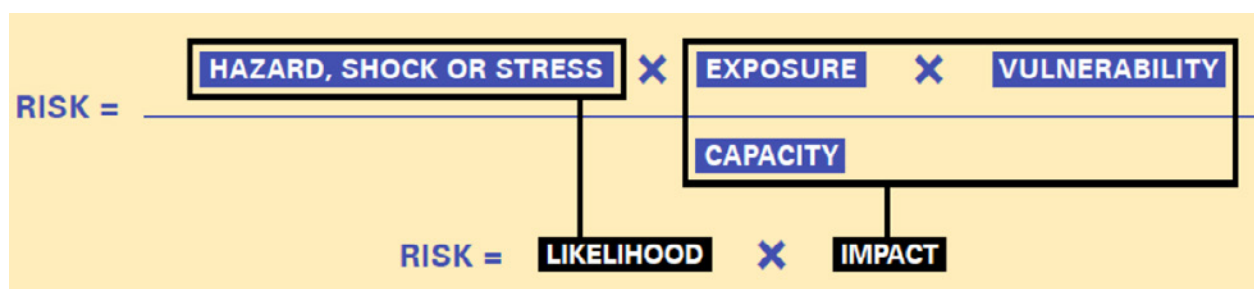
<sup>36</sup> Pescaroli, G. and Alexander, D. (2018). Understanding Compound, Interconnected, Interacting, and Cascading Risks: A Holistic Framework. Risk Analysis. 10.1111/risa.13128

<sup>37</sup> Pescaroli, G. and Alexander, D. (2015). A definition of cascading disasters and cascading effects: Going beyond the "toppling dominos" metaphor. In: Planet @ Risk, 2(3): 58-67, Davos: Global Risk Forum GRF Davos.



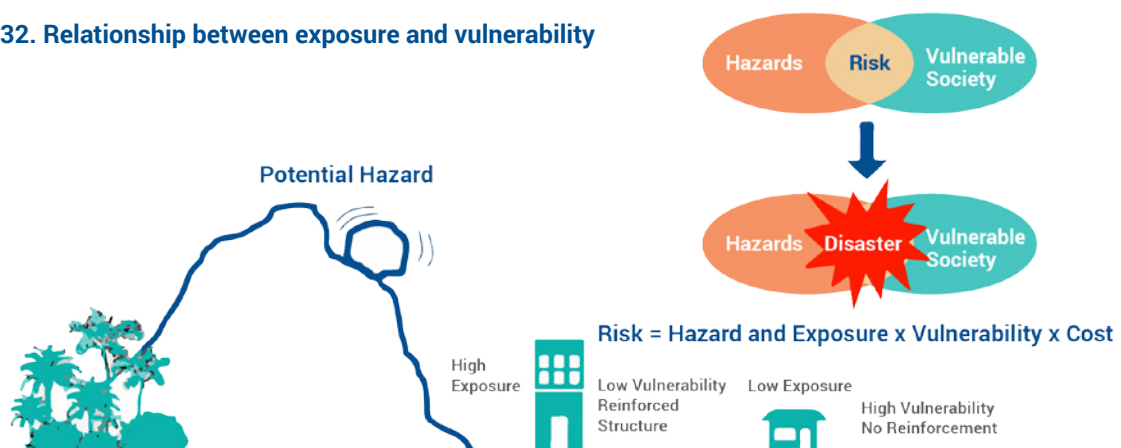
- The degree of **exposure of the population or system** affected by the hazard: The situation or presence of people, infrastructure, housing, production capacities and other tangible assets located in hazard-prone areas, including areas that, while not directly exposed to the hazard, might feel the knock-on effects (such as host areas of displaced population). For example, this would be the geographic area exposed to high winds in the event of a storm. This answers the question, "Who and what are exposed to each specific hazard?"
- The type and level of **vulnerabilities of the population or system** affected by the hazard: The conditions that increase the susceptibility of a population or community, assets or systems to the impacts of hazards. This could be physical, social, cultural, economic, demographic, political, legal, security and environmental factors or processes. This answers the questions, "Who is especially vulnerable? What characteristics make these individuals or groups particularly susceptible to the hazard's impact?"
- The **capacity of the population and country** to manage and reduce the risk effects: The combination of all the strengths, attributes, risk-management processes and resources available within an organization, community or society, to manage, mitigate and reduce disaster risks and strengthen resilience. It refers to mitigating factors, procedures, standards, actions or preventative elements (including risk reduction activities) that reduce the shock intensity, and its destructive impact on people, properties and assets. Capacities may include infrastructure, institutions, human knowledge and skills, preparedness measures, building standards and collective attributes such as social relationships, leadership and management. For example, this can be the ability to move, savings, remittances, diversity of livelihoods, access to community support. This answers the question, "What capacities do communities, authorities, institutions or systems have to prevent, mitigate, prepare for, respond to and recover from a specific shock?"

**Figure 31. Risk equation**



There is no risk to human life if there is no direct physical exposure, no matter how severe the hazard event may be. If a category 5 hurricane in the Pacific Ocean is not reaching any inhabited land, the hazard severity may be high, but the exposure would be null, and as such would not be considered a risk to people. However, as a result of the hurricane, debris and fallen trees could affect the water quality downstream in inhabited areas, as well as potentially lead to damages to hydropower infrastructures, which could then result in knock-on effects on electricity-reliant services, such as health and education, affecting people's quality of life much later and resulting in increased humanitarian needs. Similarly, high exposure is not always synonymous with high vulnerability or impact. Disaster risk reduction measures, standards and policies in a country may have significantly reduced vulnerability as shown in the illustration below.

**Figure 32. Relationship between exposure and vulnerability**



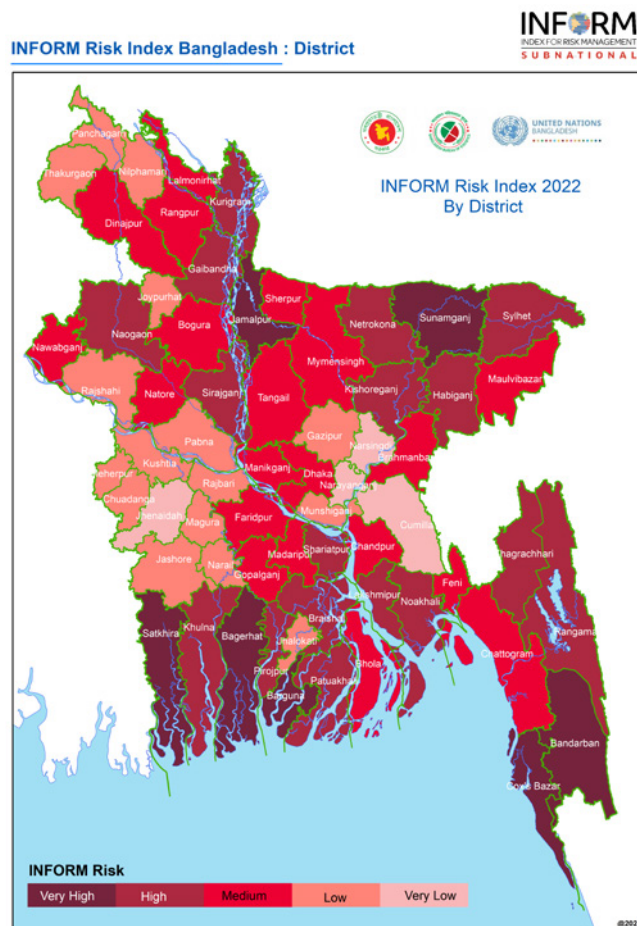
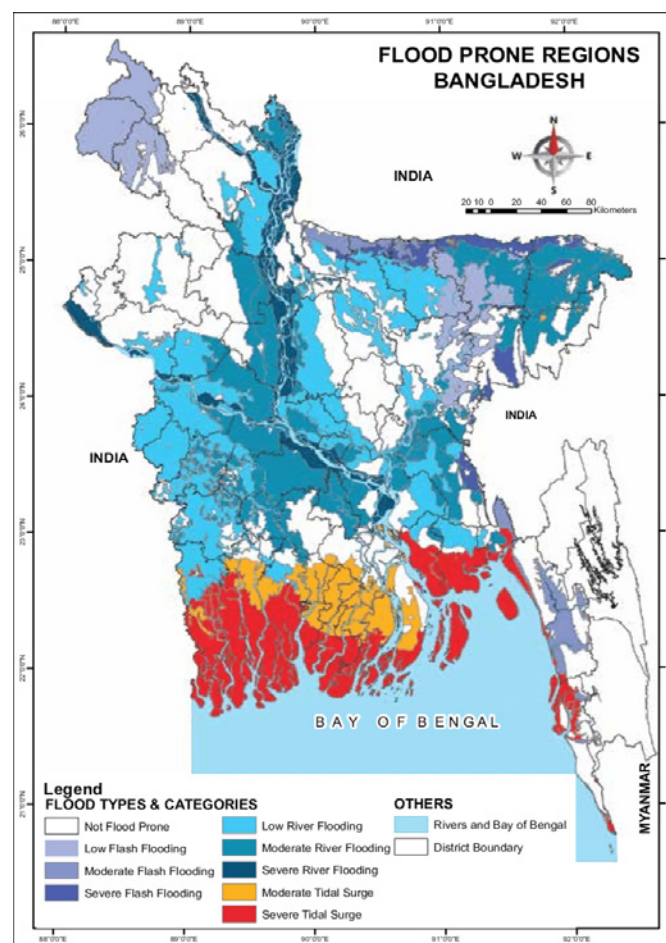
Risk severity is often calculated using a simplified risk equation and multiplying likelihood (the probability of a hazard or shock occurring in a given time frame) to the expected impact (the consequences or effects of such an event).

Methodologies to assess risk severity go from basic determinist methods, which consider the possible impact of particular risks but not their probability, to highly developed quantitative approaches. In the development and humanitarian sector, two types of quantitative methodologies exist:

- Probability models using large amounts of data to assess the severity of a hazard risk. These models often use large, fine-grained datasets, such as population demographics, epidemiological, climate history, remote-sensing and other forms of geographic information system data for analysis. Most of their applications in the humanitarian sector are in the field of climate modelling and monitoring of geological risks<sup>38</sup>. The map below shows flood and storm-prone areas where risk severity is colour-coded.
- Another family of quantitative methods is ‘composite indicators’, where several indicators from different sources are aggregated, for easy cross-comparison, to produce an overarching likelihood value (index) for overall risk. This is more widely used where there is a need for categorization of a risk occurring (e.g. high risk vs low risk), rather than precise estimates. This is the case, for instance, of the Risk INFORM initiative<sup>39</sup>, calculating every year the likelihood that a country will require external assistance in the next 12 months, for all world countries; or INFORM Sub-National<sup>40</sup>

In the humanitarian sector, it is not rare that quantitative data or modelling capacities are lacking, particularly when dealing with conflict risks. In that case, qualitative or semi-quantitative risk methodologies can be used, relying on expert judgment. To support the scoring, risk matrices are used to rate and compare the risk levels associated with different hazards.

Figure 33. INFORM Sub-National Bangladesh, 2022

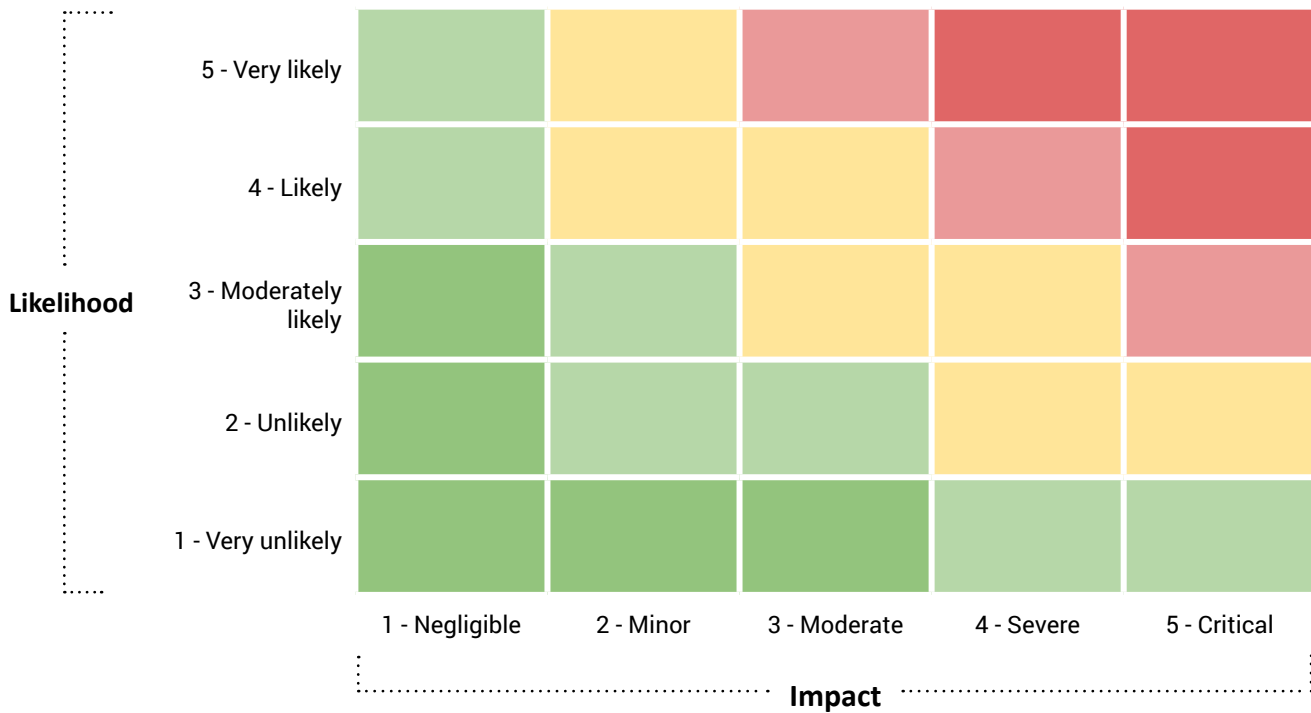


38 Calculating risk in humanitarian crises to improve response capacities, ACAPS, July 2021

39 Risk INFORM, available at <https://drmc.jrc.ec.europa.eu/inform-index/>

40 Risk INFORM Sub-National Bangladesh, available at [https://www.humanitarianresponse.info/sites/www.humanitarianresponse.info/files/documents/files/inform\\_sub\\_national\\_risk\\_index\\_2022\\_bangladesh\\_v1\\_report.pdf](https://www.humanitarianresponse.info/sites/www.humanitarianresponse.info/files/documents/files/inform_sub_national_risk_index_2022_bangladesh_v1_report.pdf)

**Figure 34. Risk matrix**



To use a risk matrix properly, the likelihood and impact scales must be defined:

- Likelihood.** A likelihood of 0 per cent means that there is no perceived chance of an event happening (negative certainty), while 100 per cent means absolute certainty that the event will occur (positive certainty). It follows from this that 50 per cent means complete uncertainty, where things could literally go either way. 75 per cent is halfway between uncertainty and being sure that something will happen, while 25 per cent is halfway between uncertainty and being sure that something will not happen. We can visualize this on a basic linear scale where verbal qualifiers (unlikely, likely, etc.) have been associated with probability percentages, e.g. >10 per cent, etc. Traditional likelihood scales use an even distribution for each probability range, like the one below:

<b>Very low risk</b>	<b>Low risk</b>	<b>Medium risk</b>	<b>High risk</b>	<b>Very high risk</b>
<b>0 - 20%</b>	<b>21 - 40%</b>	<b>41 - 60%</b>	<b>61 - 80%</b>	<b>81 - 100%</b>

However, skewed likelihood scales can also be used to ensure the discussion remains focused on the most likely risks<sup>41</sup> and that near certain hazards are prioritized for planning:

<b>Very low</b>	<b>Low</b>	<b>Moderate</b>	<b>High</b>	<b>Very high</b>
<b>&lt; 10%</b>	<b>10 - 33%</b>	<b>34 - 66%</b>	<b>67 - 90%</b>	<b>&gt; 90%</b>

- Impact** refers to the expected consequences of a risk. The focus is on humanitarian impact, i.e. the number of people whose need for humanitarian assistance is likely to increase if the risk occurs. This includes new humanitarian caseloads, people with an increased severity of needs, and people with new compounding sectoral needs. The impact assessment should include the magnitude and the intensity of humanitarian needs. The magnitude is generally expressed as a number of people affected by the shock or requiring additional humanitarian assistance. This may include people who previously did not require humanitarian assistance, people whose needs' severity has increased as a result of the shock (e.g. from moderately to severely in need), and people with compounding

<sup>41</sup> Medow and Lucey's unequal ranges of probability



sectoral needs (e.g. in need of WASH, health and food assistance, compared with only food assistance previously). Since estimating the number of people in need for each risk is a complex and time-consuming operation, it is recommended to calculate only the number of people affected. If the risk is unlikely to cause an increase in humanitarian needs, it should not be included. This is particularly important for escalation risks, where the situation might change without leading to an actual increase in humanitarian needs. Impact ranges might vary from one context to another, depending on the population size in the country. In the proposed scale in figure 35, adapted from the [IASC Emergency Readiness and Preparedness Guidance 2015](#), the affected population range has been calibrated for a country with a total population of 2 million people.

Another way to measure impact is by assessing the amount of in-country additional resources required to address subsequent unmet needs and the need for external assistance. This implies assessing vulnerabilities and capacity in the potentially affected geographical area.

**Figure 35. INFORM Sub-National Bangladesh, 2022**

1 - Negligible	2 - Minor	3 - Moderate	4 - Severe	5 - Critical
Minor additional humanitarian impact, 10,000-50,000 people affected	Minor additional humanitarian impact, 50,000-100,000 people affected	Moderate additional humanitarian impact, 100,000-250,000 people affected	Substantive additional humanitarian impact, 250,000-500,000 people affected	Massive additional humanitarian impact, >500,000 people affected
Government capacity is sufficient to deal with the situation.	Current country level inter-agency resources sufficient to cover needs beyond government capability.	New resources up to 30 per cent of current operations needed to cover needs beyond government capacity. Regional support not required.	New resources up to 50 per cent of current operations needed to cover needs beyond government capacity. Regional support required.	New resources over 80 per cent of current operations needed to cover needs beyond government capacity. L3- scale emergency.

Once likelihood and impact estimates have been agreed upon, the two scores can be multiplied to obtain the final risk severity score. The final score will range from 1 (very low risk) to 25 (very high risk).

## 4. Humanitarian scenario

A scenario will combine multiple or compounding hazards to describe a possible course of events over a given period of time and forms the basis for planning assumptions. It is a fictionalized narrative or outline of how a situation will be at a specific time in the future. In the JIAF context, a scenario describes how the situation will evolve for each pillar, i.e. context, shock, impact, and details the expected humanitarian conditions over the next 12 months. While several scenarios are generally planned for, only the most likely scenario is requested for the Humanitarian Programme Cycle, meaning that the most severe risks identified during the risk analysis will be combined into a single narrative. An example of a scenario based on the JIAF methodology can be found below.

Analysis pillar	Assumptions
<b>Context</b>	<p>"Decades of conflict and recurring climate shocks have led to a prolonged humanitarian crisis, with some of the worst health and nutrition outcomes, with ones the highest rates of child, infant and maternal mortality. Somalia's government still struggles to establish itself outside major towns and face recurring threats from Al-Shabaab insurgency and inter-clan conflict. According to ACLED, Somalia has since 1997 experienced the most incidents of armed organized violence against civilians in the world (<a href="#">Brookings 10/2019</a>), resulting in close to 3 million people internally displaced (UNHCR 02/2022). The clan-based distribution of political power is based on the 4.5 formula, according to which the Somali population is divided into five groups along clan lines, with four groups being the major clans and the fifth ones including all the others, worth only half the value of each of the other four groups in terms of political representation. As a result, people with minority clan affiliations and marginalized groups are systematically denied and/or excluded from accessing services, opportunities, as well as humanitarian assistance, resulting in particularly high levels of vulnerability and exposure to risk.</p> <p>Unemployment and loss of wages have led to a record-high poverty level, with more than 70% of the population considered poor (WB). The dominance of pastoralism and rain-fed agriculture, on which 80% of the population depends on (WB), makes the population highly vulnerable to recurring climate shocks and natural disasters, aggravated by climate change."</p>
<b>"Hazard/Shock"</b>	<p>"In 2023, insecurity is expected to continue with associated restrictions on humanitarian operations across the country. Although there has been some political stability with the formation of a new government, the security situation remains extremely volatile. Intense fighting between Somali armed forces and Al-Shabaab militants will continue, notably in Hirshabelle state's Hiraan, Middle and Lower Shabelle regions and South West. Intercommunal fighting and violence by armed groups are likely to increase as well, especially during the post-rainy and harvest season, mostly driven by scarcer natural resources, lack of livelihood opportunities and economic deterioration and farming land ownership disputes. Political unrest in Somaliland following the delays in high-stakes elections is also at risk of escalating.</p> <p>According to long-range forecast, persistent drought conditions are expected throughout 2023, making it the sixth poor season, is expected to worsen the level of humanitarian needs across most of Somalia. Over the next 12 months, flooding is also anticipated, in areas that have already faced similar shocks over the past years. Combined with drought, this will further endanger agricultural productivity in 2023. Subsequent crop failure will further increase the risk of tensions over resources and conflict, due to the early migration of pastoral communities and the relocation of displaced households.</p> <p>Disease outbreaks, such as cholera and measles, as well as high levels of endemic diseases, such as malaria, driven by limited WASH and health coverage, very low immunization rates (only 11% among children under 2) and unaffordability, will lead to additional health needs. "</p>
<b>Impact</b>	<p>"As a result, the humanitarian situation in Somalia is likely to continue to deteriorate in 2022-2023.</p> <p>Societal: Population displacement due to drought and conflict is likely to continue to increase sharply. With already 1.1 million people displaced due to drought from January 2021 to August 2022 (<a href="#">UNHCR, IOM &amp; OCHA 08/2022</a>), it is likely that at least the same amount is expected over the outlook period, due to aggravated conditions following compoud shocks and more severe needs. Levels of acute food insecurity will further rise and deteriorate, especially if assistance is not scaled up and sustained. With already 6.7 million people across Somalia expected to face Crisis (IPC Phase 3) or worse acute food insecurity outcomes between October and December 2022, including more than 300,500 people facing Famine conditions, the food security situation is likely to deteriorate further as the drought conditions continue through another season. Acute malnutrition case admissions among children under age five will continue to rise sharply. According to FEWSNET, the total estimated acute malnutrition burden for Somalia from August 2022 to July 2023 is approximately 1.8 million children, meaning more than 54% of the total population of children are likely to be malnourished (FEWSNET 08/2022). Pregnant and lactating women will also be at risk of malnutrition. Continued discrimination and denial of access to services, assistance and redress for marginalized groups, along clan, gender, disability and ethnic lines, will further compound the needs. Floods and conflict will cause substantial damages to infrastructure, property, crops and livestock and result in delayed planting.</p> <p>Community: IDP populations in existing settlements will continue to increase, and new IDP settlements will likely be set-up in the most affected areas (Bay, Banadir and Gedo regions). IDPs in both urban and peri-urban areas will face increased risk of secondary displacement due to forced evictions. Low access to services, especially healthcare and WASH, but also education, protection and shelter, will continue to drive needs. Unaffordability will also be a key challenge as staple food prices will increase and be further out of reach for most poor rural, urban and displaced families. <i>continue &gt;</i></p>

<p><i>(Impact continued)</i></p>	<p>Scarcity of drinkable water, due to drought and contaminated water due to floods, will continue. The targeting of infrastructure, notably wells and telecommunication services, by Al-Shabaab will further reduce the availability of water and likely lead to increased inter-communal fighting over scarce water resources. Looting and destruction of property and livelihood assets will further compound the needs.</p> <p>Household: Pastoral households already highly indebted, notably due to the high costs of water, food and livestock feed and livestock migration to more distant areas in search of pasture and water, will face continuous challenges and loss of income, resulting in increased vulnerability and needs. Rising mortality among cattle, resulting in a significant decline in saleable animals, will further decrease their income. Farmers and households relying on farming activities will continue to be negatively affected by poor harvests and reduced income. Due to the erosion of livelihoods limiting households' coping capacity, with social support systems already overstretched in many parts of the country, households are likely to face more dire conditions over the next year. As a result debt, early marriage, child labour, displacement and negative livelihood coping strategies will likely increase.</p> <p>Individuals: People with minority clan affiliations and other marginalized groups will continue to bear the brunt of the needs, facing marginalization and exclusion, as in 2011, 60 to 70% of people who died during the famine were persons with minority clan affiliations and from other marginalized group (Protection cluster). Water and mosquito-borne diseases, especially in flooded areas, will lead to increased mortality and morbidity, especially among under-five. People living in crowded locations, with poor water and sanitation conditions, especially in IDPs settlements, will face a higher risk of disease outbreaks, including COVID-19. Heightened levels of gender-based violence is also forecast, including conflict-related sexual and gender-based violence, intimate partner violence associated with deteriorating household economy and non-partner violence associated with displacement, insecure living environment and low access to basic services. Protection risks include indiscriminate attacks against civilians and civilian infrastructure including hospitals and schools, widespread forced displacement, unlawful impediments and restrictions to freedom of movement, forced recruitment of young men and children into armed groups, exploitation, neglect and abuse against children, forced evictions, use of IED attacks resulting in high civilian casualties and presence of explosive ordinances. Family separation is also likely to increase as a consequence of seeking assistance and protecting property, land and/or livestock. Mental health needs will increase due to repeated shocks and lack of access to healthcare.</p> <p>Humanitarian access: Insecurity will remain the main impediments to scale-up humanitarian response and further restrict population access to services and markets. Suspension and/or disruption in interventions, including supplies delivery, will limit the reach of humanitarian programming. Movement restrictions and road blockages in active conflict areas and towns (road closures, increased IED threat, checkpoints, and screening) will continue to impede assistance. Physical constraints, driven by poor, damaged and unmaintained infrastructure and floods, will also further restrict humanitarian access. The targeted destruction of telecommunication services by Al-Shabaab will also limit the ability of humanitarian actors to deliver aid remotely (notably affecting the cash response)."</p>
<p><b>Forecasted priorities</b></p>	<p>"Priority affected groups: Pastoral households, households relying on farming activities, poor households, displaced households, persons with minority clan affiliations and other marginalized groups, urban households (especially vulnerable to rising food prices), households along the rivers (floods), women and girls, elderly, persons with disabilities and injuries, pregnant and lactating women, children under 5, UASC and separated families, households without an adult member able to earn an income, female-headed households</p> <p>Priority geographical areas: Areas with limited reach: Middle Juba, Tayeglow or newly accessible areas: Mahas, Buloburte parts of Beletwyne</p> <p>Drought: Bay, Bakool, Mudug, Galgaduud, Bari, Nugaal, Sanaag, Sool, Togdeheer (<a href="#">FEWSNET 08/2022</a>)</p> <p>Risk of famine: Hawd Pastoral of Central and Hiiraan; Addun Pastoral of Northeast and Central; Coastal Deeh Pastoral of Central; Sorghum High Potential Agropastoral of Middle Shabelle; and IDP settlements in Mogadishu, Garowe, Galkacyo, and Dollow. Baidoa and Burhakaba districts and displaced people in Baidoa town of Bay region in southern Somalia (<a href="#">FEWSNET 08/2022</a>) Jubaland (especially Jamaame)</p> <p>Drought-related displacement: Bay, Banadir, Bari, Gedo regions (UNHCR, IOM, OCHA)</p> <p>Floods: Somaliland, Hirshabelle, South West, Jubaland (HNO 2022)</p> <p>Conflict: Central and South Somalia, Somaliland"</p>

