WEATHERING RISK

Weathering Risk Climate Security Risk Assessment Methodology - Guide and Tools

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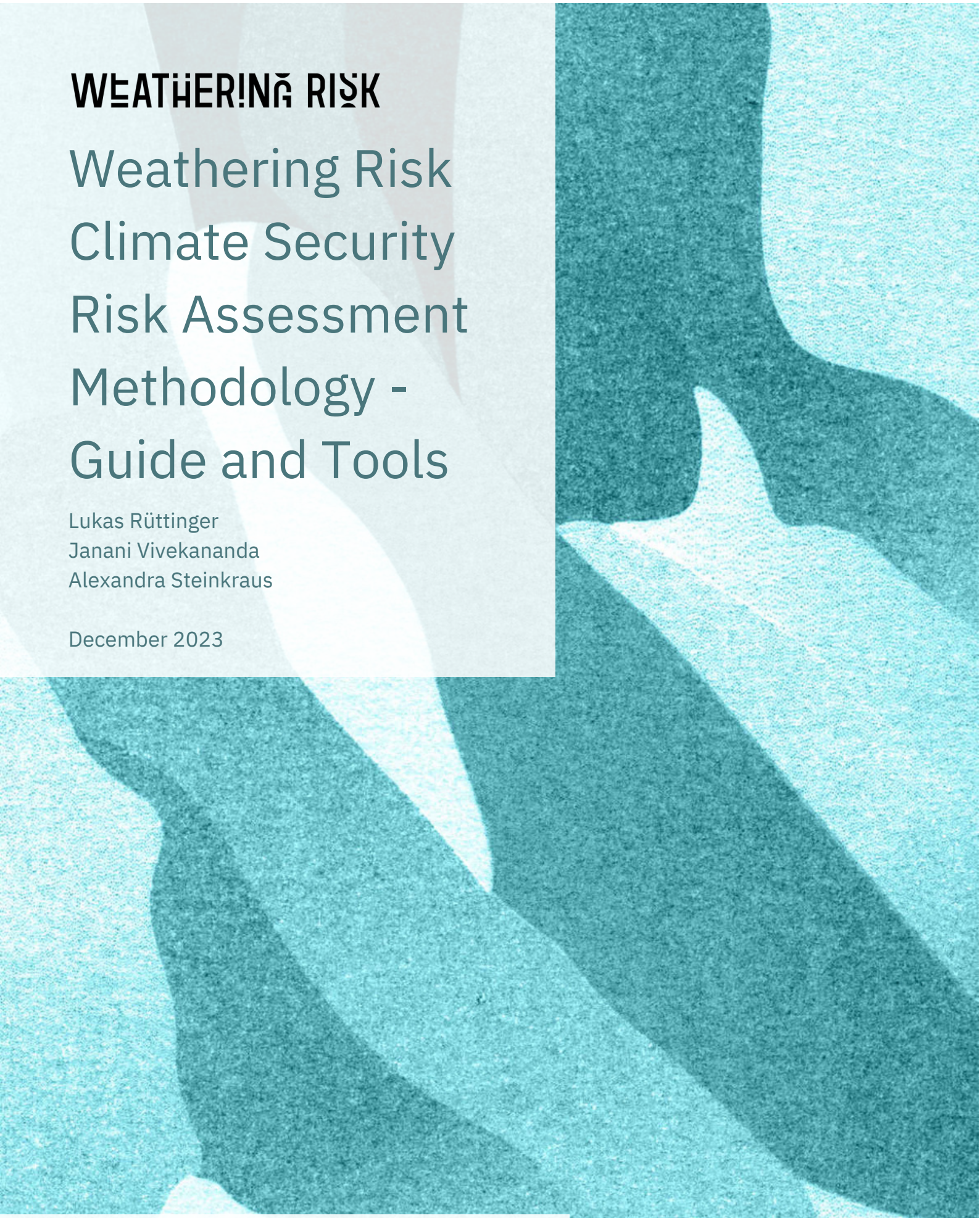

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1. Introduction

The climate crisis is one of the most serious risks to global peace and stability in the 21st century. Failure to understand and address interacting climate and conflict risks will undermine the sustainability of both peace and climate policies. The first step to reduce these risks then is to understand them through a thorough climate security risk assessment. This allows international organisations, practitioners and policy makers in multiple sectors to then prioritise entry points for action to promote sustainable peace and prevent the emergence and escalation of conflict linked to climate change impacts. This note sets out guidance and tools on how to do this.

The methodology and guidance were developed as part of Weathering Risk, a multi-lateral initiative that aims to facilitate risk-informed planning, enhance capacity for action and improve operational responses that promote climate resilience and peace. The first iteration of the Weathering Risk methodology consisted of five integrated steps to enable and guide our own risk assessments. However, not all of those steps were intended to be replicable. Based on two years of field testing through over twelve Weathering Risk assessments on the ground from the Pacific to the Levant, we adapted the original approach to make it easier, replicable and usable.

This approach builds upon other assessment methodologies, in particular the existing approaches that are used for climate impact, vulnerability and resilience assessments as well as peace and conflict analysis.[1]

[1] It also builds upon experiences and lessons learned from previous climate security assessments such as: Shoring up Stability; UNEP's Climate Change and Security project; UN Climate Security Mechanism's toolbox; Chatham House's climate change risk assessment.

2. Aims and Use Cases

The Weathering Risk methodology and approach allow users to:

- Identify and understand current and future climate-related security risks;
- Assess and understand current and future dimensions of resilience against climate-related security risks;
- Identify possible entry points and response measures.

While our methodology focusses on understanding and addressing localised climate security risks, it can be applied at different scales from the local to the regional and global. To this end this document outlines a comprehensive climate-security assessment methodology. It combines state-of-the-art quantitative and qualitative methods in an innovative way. Specifically, this assessment methodology:

- Integrates quantitative and qualitative methods to climate-security analysis;
- Includes high resolution climate impact data, conflict analysis and scenario methods;
- Is flexible in application in terms of geography and depth of analysis and
- Is forward looking.

The approach was specifically developed to build upon existing analysis and work even when climate data availability is limited. Valuable risk and resilience building entry point insights can still be ascertained with limited, macro-level or patchy climate data using this methodological approach.

The approach is specifically targeted at the following use cases and user groups:

1. **Enabling and informing national, sub-national and international policymaking for climate security of for example national ministries or international organisations**

2. **Supporting UN analyses and planning processes such as the Climate Security Mechanism (CSM) assessments, Climate Change Risk Management Framework and Common Country Assessments**

3. **Adding climate dimensions to peacebuilding and humanitarian interventions and informing peace programming**

4. **Anticipating conflict, informing preventive action and adding a peacebuilding dimension to climate change adaptation and mitigation (CCA/M), resilience and development programming**

3. Analytical Framework

Elements of the climate security assessment approach

A thorough climate and security analysis covers an assessment of the following aspects (see figure 1 below):

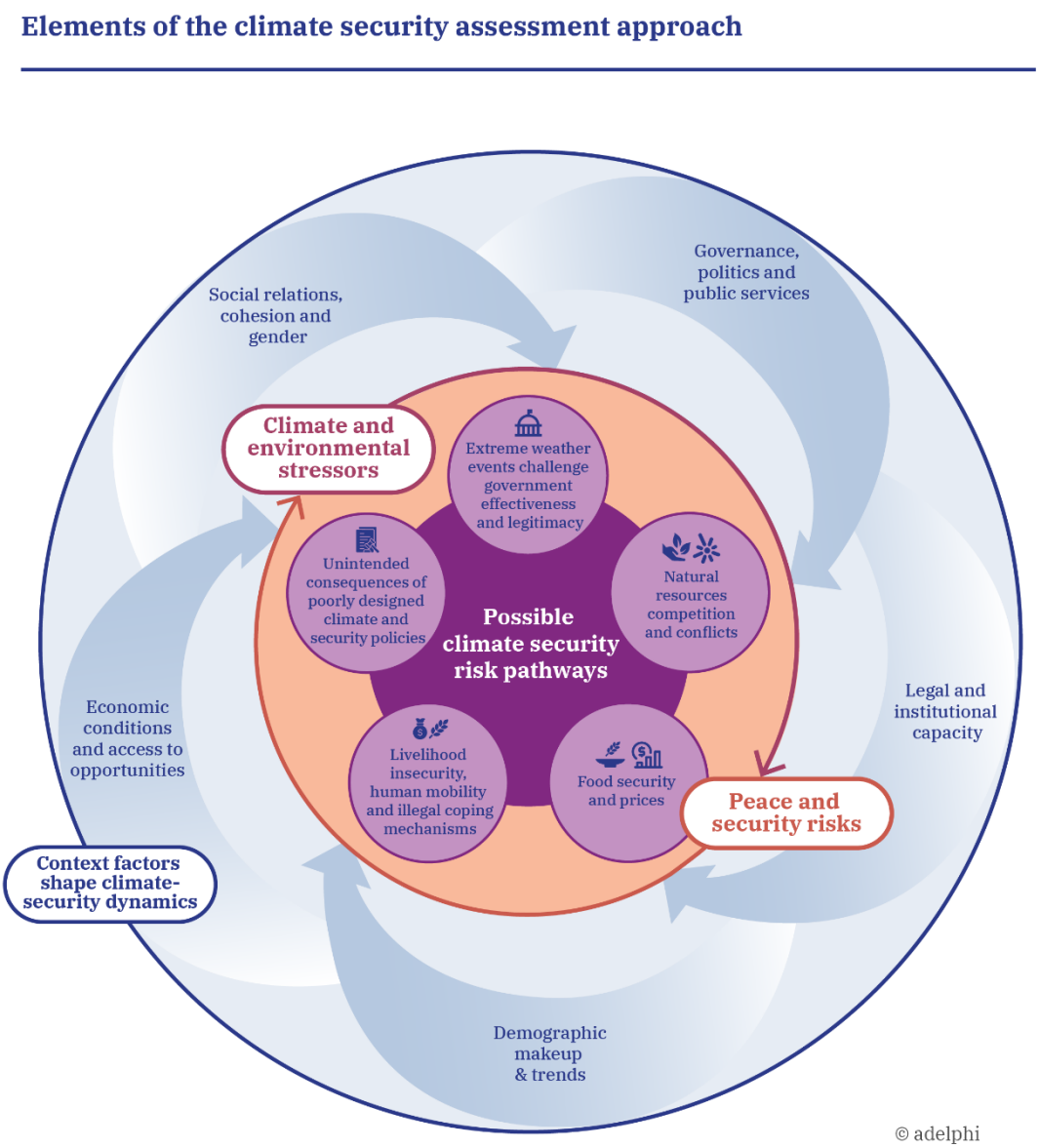

Figure 1: Elements of the climate security assessment approach

- **Climatic changes and their direct impacts**, for example temperature rise and its impacts on agriculture or flooding and its impact on infrastructure as well as other **non-climate related environmental issues** such as pollution (**climate and environmental stressors**);
- **The peace and security context** which includes the history and state of economic, social and political (in)stability, past and ongoing security risks and conflict dynamics,

the drivers and causes of insecurity, and the main actors that have an impact on security and stability (**peace and security risks**)

- The interactions between climate impacts, security and peace or **climate-security risk pathways** that:
    - link certain climatic impacts with specific security risks and conflicts; for example, how more pressure on natural resources such as land and water can increase competition and tensions over access and availability of these resources and
    - show how security risks and conflicts effect resilience, the environment and climate risks for example how insecurity can contribute to increased environmental degradation which in turn can undermine the resilience of local communities.
- Important **context factors** shaping **vulnerability and resilience** to climate and security risks, including a variety of factors like gender equality and social inclusion (**cross-cutting topics**). These **context factors** normally play a decisive role in all pathways and should be at the centre of the analysis.

You likely do not need to start from scratch. This assessment approach builds upon and uses existing available analysis. For example, climate impact assessments can provide necessary information for the climate lens -or a conflict analysis can be used to offer an overview of in-depth information on the context factors shaping vulnerability and resilience. If you already have existing climate or conflict analysis, this framework can help to identify gaps where additional information is needed to develop a comprehensive climate security assessment.

The order in which the elements are presented here does not imply an order in which the assessment has to take place. The analysis can start at any point in the framework and the different parts necessarily overlap. The overlaps underline the links between the different elements and are not meant to duplicate certain steps. It is important to cover all the elements of the analytical framework and assess the interactions between them. Cross-cutting elements such as gender, social inclusion and governance are integrated across the different elements.

Definitions and conceptual foundations

Security: Our analytical framework uses the concept of *human security*, a people-centred approach to security which includes economic, food, health, environmental, personal, community and political security.[2]

Instability and fragility: We use the OECD definition: "the combination of exposure to risk and insufficient coping capacity of the state, system, and/or communities to manage, absorb, and mitigate those risks".[3]

Insecurity: Political instability, (organised) crime, urban violence, terrorism and *violent conflict* are different ways in which insecurity manifests itself and multiple kinds of instability occur simultaneously and interact with each other. Our framework covers all

[2] For all dimensions and a definition of human security see UNDP (2006) and Adger et al 2014.

[3] Desai & Forsberg, 2020

of these. We recommend that users are as specific as possible about which kinds of insecurity, instability and conflicts they are referring to and assessing.

Climate impacts: Climate-related risks, including *climate-related security risks,* are driven by a range of climatic hazards including *slow onset changes* such as temperature rise, ocean acidification and changes in precipitation patterns, as well as *sudden onset events* such as storms floods, and extreme rainfall events. These hazards are also referred to as *climatic stressors or shocks*. The impact of these climate stressors, including on security and peace, is dependent on 1) the exposure of a certain community, economic sector, or geographic area to these hazards, and 2) its vulnerability, i.e. the degree to which geophysical, biological, socio-economic and political systems are susceptible to, and unable to cope with, adverse impacts of climate change.[4]

Climate-related security risks are thus driven by one or more climatic stressors that have certain direct and/or indirect impacts on human security and challenge the peace and stability of states and societies. They are systemic risks that emerge through complex interactions between climate change and different social, economic, environmental, demographic and political factors.[5] These interactions can be clustered around a number of specific impact pathways.[6] This framework provides guidance on how to navigate this complexity and unpack these interactions and pathways.

[4]This is based on the definition of the IPCC (2018) and the conceptual approach put forward by the UN Climate Security Mechanism (2020).

[5] This follows other research projects on the topic, in particular CASCADES.

[6] See the 10 Insights on Climate Impacts and Peace for a more detailed discussion.

4. Assessment approach and tools

The following sections sets out how to explore the different elements described above and how to identify responses to climate-related security risks by providing practical guidance and tools.

A combination of quantitative and qualitative data is most effective for assessing climate-related security risks. For example, when exploring the knock-on effects of climate impacts, such as how increased extreme weather events impact livelihoods, social cohesion, political instability, trust in governments, and gender-based violence, qualitative data is often not extensive enough, while quantitative models don't always capture complex feedback loops and people-centred interactions that characterize climate security risk pathways. The following sections explain how to bring together the available quantitative data with qualitative approaches to get the best possible picture of the context.[7]

A climate-security risk assessment starts with a set of questions for each of the elements described above (climate and environmental stressors, peace and security risks, etc.). A general research framework with questions is presented in Annex 1 which sets out a number of general questions to guide an assessment. This research framework should be adapted and used to develop your own context-specific applied research framework and questions (see the example of the applied research for the Pacific in Annex 1 as an example). Your applied research framework can then be used to develop a set of field research interview questions. See the Mali interview questionnaire in Annex 1 as an example of how this could look. Annex II provides a set of quantitative tools and dashboards that can help to give a good overview over climate and conflict related hazards as well as contextual vulnerabilities.

A gender-sensitive and intersectional research approach is key when assessing climate-related security risks. It ensures that findings are disaggregated by gender, age, sexual orientation and identity groups to better understand the heterogeneity of risks and dimensions of resilience across contexts and actor groups. A special focus should be put on capturing the voices and perspectives of marginalised groups that are harder to reach, including those of women, people with disabilities and youth. How to do this will be explained in each of the following sections and in particular in the section on vulnerability and resilience.

4.1 Climate and Environmental Stressors

A key step of any climate security risk assessment is an analysis of past, current and future climate and environmental changes. It is important to understand how the climate and environment have been changing and how they will in the future. A good starting point are existing climate impact or vulnerability assessments that might be available for the context you are looking at. As part of this analysis, it is also important and makes sense to look at the full breadth of environmental issues. Those that are linked to climate change and variability for example, such as deforestation or

[7] For an overview article on the topic see here.

biodiversity loss, and those that are not, but have an important impact on the context such as water pollution or small-scale mining.

While looking at environmental and climate issues, you will encounter data limitations. For example, while projections of future temperature rise are often available and reliable, projections for precipitation, water availability or drought are often much harder to come by and usually more uncertain. In addition, localised environmental and climate data may be a limited for a given context. Nevertheless, for the sake of climate security assessments, working with good enough data is better than waiting for perfect information.

In case of data limitations, it is important to very clearly identify those climate and environmental risks where uncertainty is high and then understand what kind of uncertainty it is. The kind of uncertainty often already contains information that is actionable and important: For example, the direction of change could be uncertain (uncertainty if there will be more or less rain in the future). In this case, you need to identify actions that will work in both cases. It could also be the amount of change (uncertainty about how much less rain there will be). Sometimes the direction and amount of change are uncertain, but what is certain is that there will be more variability (more years with more and more years with less rain).

The next step is to understand how vulnerable different groups are to these changes and uncertainties and what kind of capacities they have to cope with and adapt to them. Here it is important to understand how different groups experience these risks differently for example woman vs men, young vs. old and those marginalised vs. those with more resources and power. This granular understanding of the uncertainties different groups face and their coping capacity can then be used to identify low regrets and no regrets intervention points that work in different future scenarios.[8]

Starting points and open access data sources are included in the following table:

[8] Low or no regret interventions are actions that create a benefit no matter how future developments play out. For example, actions that create benefits under conditions of increasing or decreasing rain fall.

Name	Brief description	Geographic coverage	Resolution	Provided by
ISIpedia	Climate-impacts encyclopaedia, including past & future climatic changes & impacts	Global	Grid	Potsdam Institute for Climate Impact Research
AGRICA Climate Risk and Adaptation Platform	Dashboard on current & future climatic risks & sectoral impacts for African countries	Regional	Grid	Potsdam Institute for Climate Impact Research
WB Climate Knowledge Portal	Maps of historic & future climate, related vulnerabilities & impacts	Global	Grid	World Bank
Strata - The Earth Stress Monitor	Maps environmental and climate hotspots	Regional	Subnational	United Nations Environment Programme
FAO Earth Map	Maps and statistics showing key climate & environmental trends	Global	Grid	Food and Agriculture Organization of the United Nations
Global Hotspot Explorer	Maps climate change impacts on water, energy and land	Global	Grid	International Institute for Applied Systems Analysis
ND-Gain Country Index	Index of vulnerability to climate change & other global challenges + readiness to improve resilience	Global	National	University of Notre Dame
ResourceWatch	Dashboards on Climate, Energy, Forests, Ocean, Food, Society, Cities, Water	Global	Grid	World Resources Institute
Aqueduct Water Risk Atlas	Maps water-related risks such as floods, droughts & water stress	Global	Grid	World Resources Institute
Global Drought Monitor	Dashboard showing drought monitoring through indices (e.g., Palmer Index and SPI)	Global	Grid	National Oceanic and Atmospheric Administration
World Atlas of Desertification	Maps on land degradation & global environmental change	Global	Grid	European Commission
EM-DAT/The International Disaster Database	Data on occurrence & effects of mass disasters in the world	Global	Subnational	Centre for Research on the Epidemiology
Global Climate Stations summary	Dashboard with stationary climate information (temperature, humidity, wind speeds etc.)	Global	Other	National Oceanic and Atmospheric Administration
Global Flood Database	Dashboard on flood data combined with human settlement data to map flood exposure	Global	Grid	Cloud to Street & The Flood Observatory (DFO)

Table 1: Overview of selected tools for climate and environmental analysis. See Annex II for more information on these databases.

In addition to quantitative data and projections, it is also important to understand how individuals and groups perceive environmental and climate changes. To avoid limiting respondents' responses based on differential understandings of what climate change might mean (especially given translation barriers in certain languages), it might be advisable in certain contexts to rather asks respondents to share experiences of all weather and environment related changes to their lives and human security than specifically asking for their understanding of how climate change impacts their lives. It is then the role of the research team to code and analyse findings where it is required to delineate climate change impacts from other environmental risks such as pollution. It is also the role of the research team to understand why there might be differences between perceptions of environmental and climate change and quantitative data. For an interesting case of diverging perceptions and quantitative scientific evidence see this report on Lake Chad that found that against popular opinion the lake stopped shrinking.

Key takeaways:

- Start by looking at existing climate and environmental assessments.
- Look at the full breadth of environmental issues that are affecting your context.
- Working with good enough data is better than waiting for perfect information.

Key questions:

- What sudden-onset changes such as, storms and floods, are affecting the population/region?
- What are the longer-term effects of climate change and variability in the region (such as temperature increase, glacial retreat or sea-level rise)?
- What are predicted future climate-related impacts on different sectors such as the economy (including agriculture), water, biodiversity and health?
- Are there specific regions, groups, communities, economic or cultural assets that are particularly exposed to environmental risks and climatic pressures and shocks?
- What are other important environmental issues that are affecting livelihoods and communities?

4.2 Peace and security risks

In addition, to understanding climate and environmental issues, another key step is to develop a thorough understanding of the peace and security context which includes an analysis of the past and current drivers, dynamics, and actors of insecurity and conflict. For best results, a climate-security risk assessment should, where ever possible, include field research and interviews with a broad range of stakeholders in addition to a thorough and locally grounded literature review. As mentioned above, a special focus should be put on capturing the voices and perspectives of marginalised groups. This takes additional resources and time to identify groups and individuals and to create spaces and formats in which they feel encouraged and comfortable sharing their perspectives, especially on sensitive, conflict-relevant issues. The Weathering Risk methodological approach centres around community-level storytelling, allowing

respondents to share their truths and experiences without limitations.[9] All field research needs to be conducted using conflict-sensitive research methods[10].

Where field research is not possible, secondary conflict analysis data can be used. Analysis should be as granular as possible, conducted by local experts from the region and involve field research. Helpful sources of conflict analysis are included in the following table:

Name	Brief description	Geographic coverage	Resolution	Provided by
Water Peace Security (WPS)	Early warning tool providing conflict forecasts	Global	Subnational	IHE Delft (+ Partners)
(UCDP)	Dashboard with data on different types of past conflicts	Global	Other	Uppsala Conflict Data Program
ACLED Dashboard	Disaggregated conflict analysis and crisis mapping	Global	Grid	Armed Conflict Location and Event Data Project (ACLED)
Violence & Impacts Early-Warning System	Dashboard providing monthly predictions of fatalities in impending state-based conflict	Global	Grid	Uppsala University & Peace Research Institute Oslo (PRIO)
V-Dem Graphing Tools	Several tools to visualize data related to democracy indices	Global	National	V-Dem Varieties of Democracy
Conflict forecast	Dashboard providing forecasts outbreaks of political violence & escalations into internal armed conflict	Regional	National	Mueller, Rauh
Fragile State Index	Index based on different pressures that impact state levels of fragility	Global	National	Fund for Peace
The ECC Factbook	Provides case studies on environmental conflicts and cooperation worldwide	Global	Other	adelphi

Table 2: Overview of selected tools for conflict analysis. See Annex II for more comprehensive table.

[9] Story telling approaches use simple dialogue or question and answer format to gather personal experiences from community members or stakeholders. There can be a designated interviewer or facilitator helping the storyteller to share their perspective in a narrative form. With consent, detailed notes should be taken in order to integrate stories into overall learning.

[10] For more information see https://www.unep.org/gef/resources/publication/addressing-climate-fragility-risks-guidance-note.

In addition, there are many think tanks, civil society organisations and research institutes that provide their own qualitative local or country level analysis that can serve as good data sources and starting points including:

- The International Crisis Group provides very thorough and detailed peace and conflict assessments of many countries
- Reliefweb collects humanitarian assessments of many countries
- IOM provides multi layered information on the mobility, vulnerabilities, and needs of displaced and mobile populations via its displacement tracking matrix

There are plenty of guidance materials and tools from the field of conflict analysis that can help you to guide your research:

- The UNEP-adelphi document "Addressing Climate-related Security Risks: Conflict Sensitivity for Climate Change Adaptation and Sustainable Livelihoods - Guidance Note" provides a climate-sensitive conflict assessment methodology (see in particular Step 1A)
- Mercy Corps' Building Conflict Sensitive Interventions Toolkit 'Mercy Corps Toolkit'
- Search for Common Ground's Conflict Scan Methodology 'Conflict Scans'

Key takeaways:

- For best results, conduct field research that puts a special emphasis on capturing the voices of marginalised groups.
- When using secondary data look for those analysis that have been conducted by local experts from the region and involved field research.
- Ensure that your research is conducted in a conflict sensitive way.

Key questions:

- What are the main causes and drivers of instability and insecurity?
- What are current and past dynamics of insecurity including crime, violence against women, violent conflict and political instability?
- Who are the main actors of instability and conflict?
- How are different groups (including gender, age, ethnicity, and religion) affected by insecurity and conflict?

4.3 Climate-security risk pathways

At the heart of the climate-security risk assessment is the analysis and mapping of the interactions between climate change, security and peace. As mentioned above, this approach uses so called climate-security risk pathways to unpack how specific climate impacts and security risks are interacting. The pathways will vary by context but based on the existing research, we identified the following five indicative pathways as a starting point:[11]

[11] These pathways are based on the best available knowledge and science in the field, see 10 insights on climate and peace. See also Shoring up stability and the Weathering Risk Climate, Peace and Security Assessment: Mali for how these pathways play out in two different African contexts

1. **Climate change impacts affect competition and conflict over natural resources**: Climate change can change the access and availability of natural resources. This often leads to increased competition which can escalate into conflict and violence especially in areas where conflict management mechanisms are weak and where certain groups face political exclusion.
2. **Climate change impacts undermine livelihoods, affect human mobility, and push people into illegal coping mechanisms**. Where livelihoods are lost due to climate change, people feel more pressure to turn to illegal coping strategies and non-state armed groups. Partly in response to climate change impacts, internal migration is likely to grow in the future. While this can be an important economic driver and coping strategy, it can also create tensions with underserved host communities and stretch capacities in rapidly growing urban areas.
3. **Climate change impacts contribute to extreme food price spikes and food insecurity**. Climate science shows that production-related risks to agriculture and food prices are likely to rise significantly. Quickly rising food prices and price shocks in turn often act as catalysts for protests and political instability.
4. **Extreme weather events challenge government effectiveness and legitimacy**. Projected climate change will increase the likelihood and intensity of extreme weather events in many regions. If governments are not able or unwilling to respond and provide adequate protection or relief in times of emergency, grievances against governments can increase. At the same time, disasters can reduce the opportunity costs of joining non-state armed groups, create budgetary pressures and large public debts, and divert resources from development policies, spurring tensions and grievances.
5. **The unintended consequences of poorly designed climate and security policies carry their own risks**. Mitigation and adaptation policies can have unintended side effects that increase social tensions and the risk of conflict and military responses to conflict can add further pressure on climate-sensitive livelihoods if planning disregards climate vulnerability.

For more information on these and other pathways see:

- 10 insights on climate and peace gives a comprehensive overview of the five main pathways that can be observed globally.
- The Lake Chad climate-security assessment Shoring up stability and the Weathering Risk Climate, Peace and Security Assessment: Mali are examples of how these pathways play out in two different African contexts.
- The Pacific Climate Security Assessment Guide sets out five specific pathways that are relevant to the Pacific region:
    - Implications of and for mobility;
    - Challenges to the blue economy and livelihoods;
    - Exposure to natural disasters and implications for governments and communities;
    - Land, food, water and health security; and
    - Threats to territorial integrity and regional stability.
- The African Continental Climate Security Risks Assessment (forthcoming) is a comparative analysis of regional assessments for North Africa, West Africa, Central

Africa, East Africa and Southern Africa that includes the key climate security risk pathways for each region.

Visual approaches can be a useful tool when identifying and analysing climate security risk pathways. They can help to map the interactions between different drivers of instability and conflict and climate change. One way to this is to map the links between climate change and insecurity along certain pathways. See below the example of mapping the blue economy and livelihoods pathway in the Pacific (Figure 2).

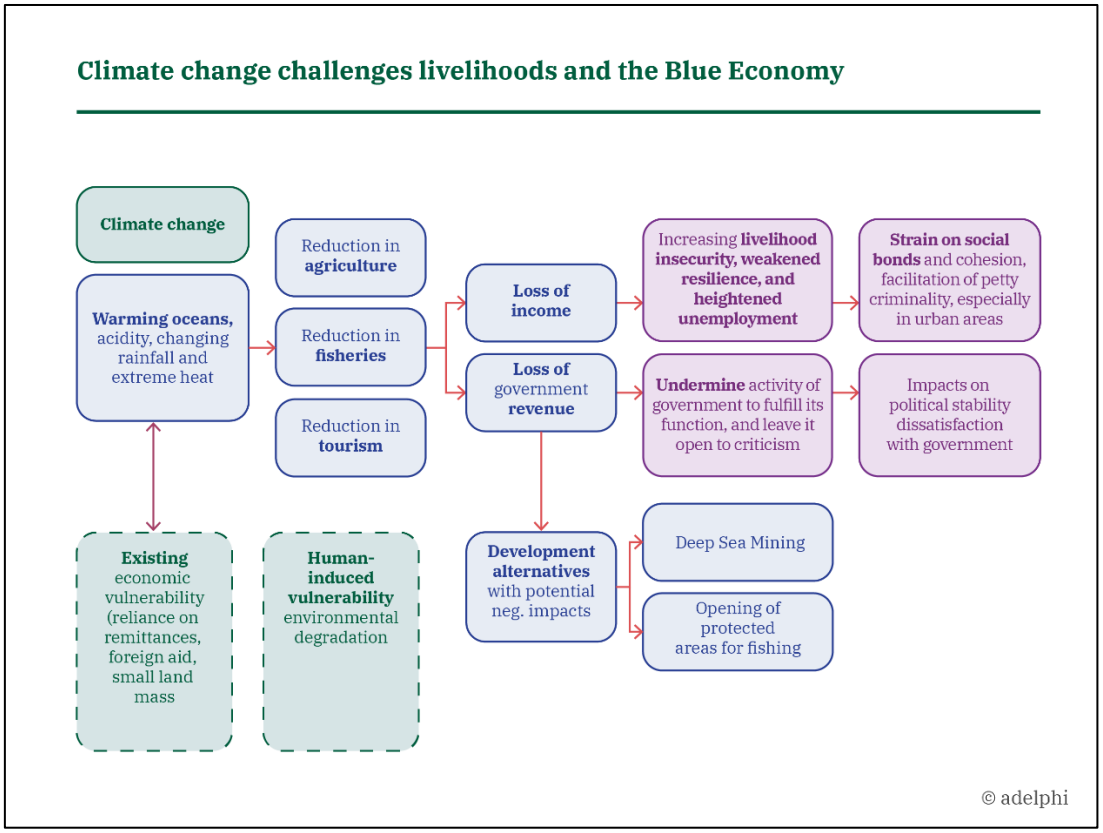

Figure 2: Mapping interactions: Climate Change Challenges Livelihoods and the Blue Economy (from mapping the blue economy and livelihoods pathway in the Pacific).

Key takeaways:

- Climate security risk pathways can be used to map the different ways climate impacts are linked to insecurity and conflict.
- There are a number of prototypical climate security risk pathways that can serve as entry points and hypothesis for your own assessment, but they need to be tested, adapted and include specifics for your context.

Key questions:

- How do climate change impacts, stability, peace and security interact?
- How does climate change affect stability and peace?
- How does climate change impact drivers and dynamics of conflict?
- How do climate impacts affect actors and power dynamics in conflicts?

4.4 Context Factors, Vulnerability and Resilience

Research into the links between climate change and conflict has identified a number of important factors that shape how climate-security risks play out. They are often factors that both increase **vulnerability** and the risk of climate impacts contributing to instability and conflict (when they are deficient or weak) and increase the **resilience** of communities, societies and states to withstand compounding climate-security risks.

These factors[12] include:

1. **Economic factors**, including economic assets and access to opportunities, climate-sensitivity of economic activities and access to markets and trade relationships
2. **Social factors**, including gender equality and social Inclusion, and strength of social relationships and cohesion
3. **Political and legal factors**, including governance, political freedoms and opportunities for political participation, state-citizen relationships and trust in public institutions, (formal, information and traditional) mechanisms to manage disputes and access to public services and international treaties that govern natural resources
4. **Demographic factors**, including demographic makeup and trends like population size, density and growth, urbanisation and age and composition of the population

These factors are at the centre of the analysis and a special focus should be put on understanding them across the different elements outlined above. For example, it is important to understand the role of marginalisation and exclusion and access to public services to assess the vulnerability of specific population groups against climate change. Social cohesion and relationships between groups are key to understanding the root causes and dynamics of conflict, and weak governance and lacking trust in governments are often a key element in translating climate impacts into security risks. In particular when trying to understand marginalisation and exclusion, it is important to understand how gender, age, sexual orientation, disability, ethnicity, socio-economic status, and other identity factors intersect, combine and shape risks on an individual level. For example, a young, poor, single mother or an LGBTQ+ individual is differently affected by a weather-induced disaster than an affluent young mother or heterosexual individual.

As these factors can shape climate-related security risks, they are also key for the identification of responses discussed below. They represent important entry points and levers for preventative action and to link climate change adaptation and peacebuilding as they often both shape the vulnerability to climate change and conflict.

[12] For more information see: Context matters: A review of the evidence of how social, economic, and other variables influence the relationship between climate and security

Helpful sources for assessing these contextual factors include:

Name	Brief description	Geographic coverage	Resolution	Provided by
Integrated Food Security Phase Classification (IPC)	Dashboard that classifies severity and magnitude of food insecurity & malnutrition	Global	Subnational	IPC
Famine Early Warning Systems Network (FEWS NET)	Dashboard, providing early warning on acute food insecurity	Regional	Subnational	United States Agency for International Development
Hunger Map	Maps food insecurity index with conflict, climate, natural hazards, population indicators	Global	Subnational	World Food Programme
Sustainable Development Report	Map that shows progress towards achieving the Sustainable Development Goals	Global	National	United Nations
Subnational SDG Dashboard	Dashboard showing subnational indicators for each SDG	Global	Subnational	GlobalDataLab
Subnational Human Development Index (SGDI)	Dashboard showing subnational values of three dimensions: education, health and standard of living	Global	Subnational	GlobalDataLab
Subnational Gender Development Index (SGDI)	Index of gender-specific subnational health, education and standard of living indicators	Global	Subnational	GlobalDataLab
Gender Inequality Index	Index measuring gender inequality using 3 dimensions: reproductive health, empowerment & labour market	Global	Subnational	United Nations Development Programme
Environmental Performance Index (EPI)	Index on climate change performance, environmental health, & ecosystem vitality	Global	National	Environmental Performance Index (EPI)
IMF Climate Change Dashboard	Dashboard linking climate considerations & global economic indicators	Global	National	International Monetary Fund
Womanstats Project	Compilation of data, statistics, and maps on the status of women worldwide	Global	National	Womanstats
UNICEF Children Climate Risk Index (CCRI)	Index for children's exposure and vulnerability to the impacts of climate change	Global	National	United Nations Children's Fund
Women Peace and Security Index	Index for women's inclusion, justice, and security in 170 countries	Global	National	Georgetown Institute for Women, Peace and Security & Peace Research Institute Oslo

Table 3: Overview of selected tools to identify contextual vulnerabilities. See Annex II for a more comprehensive overview.

Key takeaways:

- There are a number of key context factors that shape how climate-security risks play out.
- These factors should be at the centre of the assessment and looked at in each of the elements of the assessment.
- Understand how gender, age, sexual orientation, disability, ethnicity, socio-economic status and other identity factors intersect, combine and shape risks on an individual level

Key questions:

- Which groups are marginalised and excluded (economically, socially and politically) and why?
- How are different genders, differently abled people and different ages affected by conflict and climate impacts and why? How do individual risk factors intersect?
- What is the state of social cohesion and relationships between different groups, communities and actors?
- How is the legitimacy of the government perceived by different actors and groups? What is the state of trust in the government?
- How much are citizens involved in decision making and what means or motives does the government have to address grievances or suppress dissent?
- They provide starting points for identifying responses that decrease vulnerability and increase resilience to climate-related security risks.

4.5 Identification of responses

The final aspect of the methodology focuses on identifying context-specific response measures and actions to address climate-related security risks. The focus should be on inclusive and integrated responses that build resilience against both climate and security risks and include a special focus on 'no regret options' in the face of uncertainty and shifting probabilities of climate-related hazards and future socio-political developments.

Evidence from existing projects and programs shows considerable co-benefits when integrating climate action with approaches from gender and social inclusion, and peacebuilding, particularly on conflict management, social cohesion, and trust building or integrating peacebuilding with climate action. There is no universal set of activities that simultaneously provides climate change adaptation, peacebuilding, and development benefits. Interventions and strategies that are most appropriate to tackle the climate-related security risks are context specific. However, evidence from existing programming and research indicates some general entry points for integrated peacebuilding and climate resilience measures (for more on this topic see Linking Adaptation and Peacebuilding – Lessons Learned and the Way Forward):

- Improving natural resource access and management

- Promoting climate-resilient and sustainable livelihoods
- Peace-positive climate change adaptation

In addition to these elements, there are also some cross-cutting elements that are important when designing and implementing integrated programming to address climate-related security risks:

- Strengthening relationships and social cohesion
- Addressing exclusion and marginalisation and
- Working across all governance levels

Some examples of such integrated climate-security programming are:

- UNEP-adelphi's climate security project which used natural resource management, livelihood interventions and Disaster Risk Reduction activities to rebuild relationships between different population groups and between citizens and the government. Detailed description of activities in Nepal and Sudan and lessons learned can be found here and here.
- WFP is implementing projects in Uganda's West Nile region, which aim to improve relationships between host communities and refugees through land sharing and agroforestry. This helps refugees to have access to new livelihood options while allowing local farmers to boost production and revenue. These benefits help to prevent inter-communal conflict over natural resources and build resilience against climate and environmental shocks.
- The Weathering Risk Peace Pillar program Environmental Pathways for Reconciliation , implemented by the European Institute of Peace supports Yemeni civil society to address risks related to climate, environment, and conflict. The initiative provides a platform for local communities to express their concerns around the challenges and opportunities of environmental conditions and climate change to help integrate them into the peace process. The project runs along four components: strengthening the platform by building the capacity of local staff and coordinators, conducting structured consultations with Yemeni people across the country, facilitating engagement on environmental issues through the platform, and building an evidence base for the climate-conflict nexus in Yemen to be shared with local and international stakeholders.
- Mercy Corps is implementing integrated multi-sectoral programming in North Kivu in the Democratic Republic of Kongo that links resilience building and conflict transformation by advocating for more equitable land access, strengthening inter-group collaboration across economic lines, and fostering climate-smart agriculture.

Prioritising actions

One key challenge when identifying responses is how to prioritise actions. The following guiding questions can help to prioritise actions and investments:

- What are they key economic, governance or social dynamics that need to be addressed to avoid/mitigate the identified climate-security risk pathways?
- What sector(s) of intervention have the greatest likelihood for impact? Which interventions can contribute to greater resilience?
- Who are the target groups that need to be included? Consider those with both positive and negative influence over outcomes.
- What are the potential negative outcomes of a given intervention, and how can these be mitigated?
- Which climate/environment responses will be critical to address now, before further deterioration?
- Which responses will have the greatest catalytic effect?

Key takeaways:

- Focus on inclusive and integrated responses that build resilience against both climate and security risks.
- Focus on 'no regret options' in the face of uncertainty.
- There is no universal set of activities that simultaneously provides climate change adaptation, peacebuilding, and development benefits, but evidence and lessons learned from past climate-security programming can help inform your responses.

Key questions:

- How can climate change adaptation and resilience building contribute to peacebuilding and conflict prevention? Can environmental issues and climate risks be an opportunity to prevent conflict and build peace?
- How can peacebuilding efforts support climate change adaptation and resilience building?
- What are key livelihood, governance, social dynamics that need to be addressed and that could simultaneously increase resilience against environmental, climate and conflict risks?
- What are the potential negative outcomes of a given intervention, and how can these be mitigated?

4.6 Scenarios – looking forward

Climate-security risk assessments are often future oriented as climate impacts and pressures are set to change significantly in the future. Thus, it is important to include forward-looking elements in any climate-security assessment, especially since the analysis is grounded in present day dynamics of insecurity, violence and conflict. One

key approach to deal with this uncertainty and think about future risks is scenario development or planning.

The challenge when trying to chart possible future developments of climate-security risks is complexity. While some climate models might give you reliable data on specific climate impacts in the future, models on how economies or societies will develop are either not available or their data is highly uncertain. Scenario planning can help to deal with this complexity. The goal of scenario planning is not to predict the future. It is a methodology to deal with the uncertainty of long-term forecasts and to help avoid perceptive limitations when looking into the future (for an example see the Weathering Risk scenario based analysis for the Levant).

The basis of any scenario development is to identify key trends and critical factors that – judging from the status quo – will have a decisive influence in the future. These trends and factors are also called drivers. The greater their influence on the subject being investigated and the higher the degree of uncertainty in how they will develop, the more important they are in scenario development. Based on the different pathways and interactions between these key drivers, a number of coherent and plausible narrative scenarios are developed.

Scenarios describe different states of the future and the developments which lead to them. All scenarios developed are treated equally and no probability is assigned. Based on the different scenarios, strategies and responses can be developed and tested, as well as more preferable scenarios, "best case scenarios", identified and concrete political actions formulated to develop a pathway to an improved situation.

Key questions for the scenario development exercise include assessing the key socio-political, technological, demographic, diplomatic, military and economic drivers that will shape the climate security risk landscape in a given country/region, based on the expected physical climate change effects over the specific timeframe. An important aspect of the scenario planning process is to document both plausible narratives of how a future might happen *and* the internal logic that describes how it was derived.

Key takeaways:

- Future looking elements, such as scenario development, are a key component of climate-security risk assessments.
- Narrative scenarios describe different plausible states of the future, but are treated equally and no probability is assigned.
- Narrative scenarios can be used to develop and test responses.

Key questions:

- What socio-political, technological, demographic, diplomatic, military and economic drivers have a key influence on the future trajectory of climate-related security risks?
- Which drivers are the most uncertain?
- What are plausible future scenarios of climate-related security risks?

5. Monitoring and Evaluation

The last part of this guidance gives a short introduction into how to monitor and evaluate climate-security interventions. As with any other intervention, a clear theory of change is not only key for implementation, but also for effective monitoring and evaluation (M&E).

Theories of change (ToC) are hypotheses about why a certain action will produce a desired change. This means for an integrated response to climate-related security risks, the theory of change clearly describes how the intervention reduces the vulnerability to climate change, prevents conflict and/or builds peace.

A ToC includes a statement "IF", which explains the actions or activities to be carried out by the project, and a "THEN" statement, which states the expected changes or outcomes. Furthermore, explaining the assumption (BECAUSE) under which this ToC is expected to function is desirable. In other words, mentioning what is a precondition for a particular action to have an expected change in the system. A good ToC should clarify how and why the project will address climate security dynamics.

Here is an example of such theory of change for a climate-security project that is working with communities that live and around a protected area and that are facing increasing livelihood insecurity, conflicts around access and availability of natural resources in and around the protected area, and increasing degradation of forest and land resources. Climate change is aggravating all of these issues. The project has three components that focus on improving and strengthening natural resource management institutions and relationships between conflicting user groups, improving and making livelihoods more sustainable and climate-resilient, and addressing conservation issues around land and forest.

The **theory of change** of the project is:

IF relationships between conflicting user groups are improved, and natural resource management institutions are strengthened and more inclusive, and

IF livelihoods are more sustainable, climate-resilient and diverse, and

IF conservation activities to improve forest cover and address land degradation are undertaken

THEN access and availability of natural resources will improve, conflicts over natural resources will be managed more peacefully, and livelihoods will be more sustainable and climate-resilient.

BECAUSE strong relationships, inclusive natural resource management, and improved livelihoods for marginalized communities are key conditions for addressing environmental degradation and preventing conflict.

It is important to note that evaluating an intervention based solely on its internal processes and outputs is insufficient. It is essential to develop open theories of change that consider interactions with the surrounding system (e.g. political instability, security

conditions), unintended consequences of project activities, and external factors that may impact the implementation.

In addition to a clear theory of change, indicators are the second building block for effective M&E. Responses to climate-security risks and the resilience they build are multidimensional, and therefore require adequate indicators to track progress across different dimensions within an interactive system. These indicators normally fall into the following categories:

1. **Environment and climate**: Indicators that measure improvements in terms of the environment, natural resources and/or climate change adaptation capacities. For example, improvements in natural resource sustainability, biodiversity and conservation (species and habitats quality) or improved disaster response capacities.
2. **Peace and security**: Indicators that measure improvements in terms of conflict management or prevention and peacebuilding. For example, improved conflict mediation capacities, social cohesion and relationships, levels of intra/inter community trust, willingness to cooperate, or socio-political inclusion.
3. **Development and livelihoods**: Indicators that measure improvements in terms of livelihoods and economic development. For example, improvements access to more climate resilient livelihood options, improved access to credit or finance, or increased income.

Applied to the example project above that tries to prevent conflicts and increase the resilience against climate change through better and more inclusive natural resource management, livelihood support and conservations activities, indicators should cover the following dimensions:

1. Has it led to sustainable improvements in access and availability of natural resources?
2. Has it led to more inclusive natural resources management institutions or frameworks? And has this led to better conflict management capacities or the prevention of conflicts?
3. Has it led to improving natural-resource based livelihoods for example is there access to alternative, more sustainable livelihoods or; are incomes increasing?

Example indicators for these dimensions include:

Examples of climate-security risk indicators

Category	Example indicator
Environment and climate	• Forest coverage • Soil and water quality • Access and availability of natural resources
Peace and security	• Social cohesion, institutional membership and relationships • Number of dialogue spaces • Number of conflicts managed peacefully • Perceived trust and cooperation • Confidence in peace processes and governmental institutions • Participation of women
Development and livelihoods	• Access to more than one livelihood • Income level • Access to sustainable markets

Figure 3: Examples of climate-security risk indicators

1. **Environment and climate** Increased forest cover and improved soil or water quality; population reports better access and availability of natural resources
2. **Peace and security** Membership of natural resource management institutions (that includes all social groups); number of dialogue spaces to negotiate disputes and conflicts; number of conflicts that have been managed peacefully; population reports a decrease in natural-resource based conflicts; increased levels of perceived trust and cooperation between community members; improved confidence in peace processes and governmental institutions; increased participation of women in decision making roles
3. **Development and livelihoods** Number of people that report an improvement in income; number of people that report having access to more than one livelihood; number of people that report access to sustainable markets

In reality, the complexity of climate-related security risks and the nature of conflict and climate change impacts often mean that there are limitations in terms of what can be measured. In an ecosystem, it's possible to measure environmental outcomes physically. However, when it comes to peacebuilding and conflict transformation, quantifying progress can be challenging due to the complexity of the processes involved and the unpredictable nature of human behaviour.

To address these limitations, it is key to work in a conflict-sensitive manner, iterate and improve M&E methods and use different data collection methods and kinds of information (See article of ToC and indicators of environmental peacebuilding in Colombia). Good practices from climate-security projects show that it is often best to

use a combination of qualitative and quantitative methods collecting as much information from different sources as possible. This includes using quantitative methods for example by using remote sensing and mapping data to assess the state of certain natural resources or (perception) surveys can be used to assess how people perceive change for example have their attitudes towards the government or another group changed. And combining this data with regular key informant interviews and group discussions to collect impact stories and collect additional information that helps to understand why certain changes happened or did not happen. These kind of information sources can then be triangulated and results can be presented in terms of statistics and case studies. For a good example see UNEP-adelphi's climate security project's fact sheets for Sudan and Nepal. Additional helpful resources and examples for climate-security/environmental peacebuilding indicators are included in Table 4:

Name	Brief description	Provided by
EIRENE PEACEBUILDING DATABASE	Eirene is a comprehensive collection of 3,381 indicators from 2,008 publicly available peacebuilding resources.	Alliance for Peacebuilding
Integrating climate mitigation and environmental peacebuilding objectives through sustainable land use systems: Theory of change and indicators	Peer reviewed article piloting a ToC and indicators to assess agroforestry systems contribution to peacebuilding in Colombia	International Center for Tropical Agriculture (CIAT)
Integrating the concept of peacebuilding in sustainability impact assessment	This paper integrates peacebuilding components into sustainability impact assessment (SIA) for application in geographies vulnerable to, recovering from, or experiencing conflict.	Leibniz-Zentrum für Agrarlandschaftsforschung (ZALF)
Monitoring and Evaluation for Environmental Peacebuilding Project	This project takes stock of existing literature and good practices in order to produce a review article on the current state of knowledge on the subject, a toolkit for practitioners, and a policy brief aimed at decision-makers.	Environmental Law Institute (ELI), United Nations Environment Programme (UNEP), United States Institute of Peace (USIP)
Monitoring and Evaluation Framework OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas	Framework to assess the minerals due diligence of companies active in mineral supply chains in conflict affected context, to avoid contributing to serious human rights abuses, conflict financing and other forms of financial crimes through their extractive and sourcing practices.	Organization for Economic Cooperation and Development (OECD)
Environmental indicators, modelling and outlooks	Continuously developed and refined since the 1990s, OECD environmental indicators and modelling work serve as a basis for sound and informed green growth policies.	Organization for Economic Cooperation and Development (OECD)
Guidance Note on Evaluation and Do No Harm	A guidance note to conduct conflict-sensitive evaluations	CDA Collaborative Learning Projects (CDA)

Table 4: Climate security and environmental peacebuilding indicators

Key takeaways:

- Integrated responses need a clear theory of change that describes how the intervention reduces the vulnerability to climate change, prevents conflict and builds peace.
- Indicators should cover the different dimensions of resilience including climate and environment, peace and security, and development and livelihoods.
- Use a mix of data collection methods and kinds of information

Key questions:

- How are the activities of the project intended to impact climate and conflict risks?
- How does the project try to improve resilience against climate change, build peace and prevent conflict?
- How can the project be affected by external shocks?
- What indicators can you use to measure the different dimensions of resilience building of the project (climate/environment, peace and security, development and livelihoods)?
- What baseline, mid-term and end of intervention data can be collected to measure the results of the intervention within the timeline and confines of the project?

6. Annex I

6.1 Research framework: questions for research

The following research framework is based on and informed by the Shoring up Stability methodology, UN Climate Security Mechanism's Toolbox, the assessments carried out by the Climate Security Expert Network, UNEP's climate and security project and their Joint Program on Women, Natural Resources and Peace. It has been applied and tested as part of Weathering Risk in over twelve Weathering Risk assessments on the ground from the Pacific to Africa and the Levant. This framework is meant to be a guide to be honed and adapted to suit your context and key actor focus. There are three sets of questions that follow:

1. A general research framework that covers all parts of the analytical framework: these questions are applicable across contexts and can be used as a starting point to inform your own context-specific research framework and questions and give an indication of the topics and kind of information you need to collect. (See section 2.)
   The questions in orange are the overarching questions the research team are trying to address through analysis of survey data, climate data and secondary information. Those in black are the basis of field-based surveys and/or expert interviews.

   Questions highlighted in grey are illustrative of questions where the research data sets can also support measuring impact and evaluating the project. The exact questions and required data sets will of course depend on the specific theory of change of the project in review.
2. An applied research framework that has been developed specifically for the Pacific containing more specific questions to explore climate-security pathways in this region.
3. An example of a set of field research interview questions for Mali to show how a specific application of the research framework can look like. This research interview guide or questionnaire was used to collect qualitative data for the Weathering Risk Mali assessment.

Please note that the questions within the research framework overlap and not all questions are relevant for every context. The overlaps indicate links and interactions between the different parts of the framework and are not meant to duplicate certain parts of the analysis, but are parts of the analysis that are particularly important. The order of the questions does not imply an order for the analysis. This is particularly the case for the cross-cutting questions that play a role across all elements. The general approach preferred is one of storytelling, allowing respondents to share their truths and experiences without constraints.

The following questions are meant as a repository to develop your own research and interview questions. Below we set out a general research framework plus two illustrative real-world examples of how these questions were tailored to specific contexts, for the Pacific and Mali respectively.

6.1.1 General research framework

Climate and Environmental Stressors: What are the most important climate change impacts and environmental pressures (on human security)?

- What sudden changes such as, storms and floods, are affecting the population/region?
- What are the slower, longer-term effects of climate changes in the region (e.g. temperature increase, more hot days, ocean acidification, land degradation, glacial retreat or sea-level rise)?
- What are predicted future climate change impacts?
- What are other important environmental issues that are affecting livelihoods and communities? For example:
  - Biodiversity loss
  - Land degradation and deforestation
  - Water or air pollution
- Are there specific regions, groups, communities, economic or cultural assets that are particularly exposed to environmental risks and climatic pressures and shocks? For example:
  - Highlands vs. plains/coastal areas
  - Rural communities vs. urban areas
  - Areas/installations with large numbers of employment opportunities (including agriculture)
  - Indigenous peoples and local communities reliant on biodiversity and ecosystem services
  - Different genders or groups
  - Energy plants, highways, other infrastructure
  - Cultural heritage or religious sites

Peace and Security Context: What are the most important security risks?

- What are the current drivers of instability and insecurity?
- What are the historical root causes of instability and insecurity?
- What are current and past dynamics of insecurity including crime, violence against women, violent conflict and political instability?
- Who are the main actors involved in perpetrating instability and conflict?
- How are different groups (including gender, age, ethnicity, and religion) affected by insecurity and conflict?
- What are possible future trajectories of instability and conflict?

Climate-related security risks/pathways: How do climate stressors and security risks interact to undermine human security?

Increasing natural resource competition/conflict

- Have there been changes in the availability and access to natural resources (incl. land, water and forests) and how does this vary between different societal groups?
- What kinds of environmental change affect natural resource availability and access, and who is driving these changes?
- How do different societal groups (including gender, age, ethnicity, and religion) use resources and for what purpose?

- How are natural resources managed or controlled? Who, if anyone, is excluded from management processes?
- How do climate impacts affect access to, availability, and quality of resources in general, and for different groups?
- How do conflict and insecurity affect access to, availability, quality and management of natural resources in general, and for different groups?
- Have disputes over natural resource access, use, or control contributed to triggering or perpetuating conflict and violence? If so, how?
- When disputes arise, who is responsible for resolving them? Who (if anyone) is not included in conflict resolution?

Livelihood insecurity

- What kinds of livelihoods do different groups (women, men, young, old, ethnic identity, etc.) rely on?
- Are alternative sources of livelihoods and economic opportunities accessible?
- How do climate impacts and environmental degradation affect the livelihoods of different groups?
- How do climate impacts and environmental degradation affect key economic sectors?
- How do conflict and insecurity affect the livelihoods of different groups?
- What role does livelihood insecurity play in existing conflict dynamics?
- How are different livelihood practices contributing to environmental degradation and/ or conflict (for example mining or woodcutting)?
- What role does livelihood insecurity play in affecting governance and legitimacy of political actors?
- What role does livelihood insecurity play in fostering illegal/negative livelihood strategies such as sex work, recruitment into non-state armed and organized crime groups?
- How are climate impacts and environmental changes affecting the movement of people? Including
  - Displacement
  - Seasonal migration and transhumance
  - Long-term migration
- How are migrants impacting livelihood security and access to public services in destination areas?
- How is the loss of workers who chose to migrate affecting livelihoods at the origin?
- How are migrants impacted by insecurity and climatic events (in destination area)?
- What is the situation of migrants in destination areas (especially regarding livelihood security and public service access)?

Food price spikes and food insecurity

- How do climate impacts and other environmental pressures affect regional and domestic food production and prices?
- How are conflict and insecurity impacting food production and prices?
- How dependent is the country on food imports?
- Is the government subsidizing certain food items, for example bread?
- What are the economic, social and political consequences of sudden food price spikes or food shortages?
- Are there certain staples of food supply that are particularly vulnerable to climate impacts and/or price shocks?

Extreme weather events challenge governments

- How are different economic sectors affected by extreme weather events?
- How is (critical) infrastructure (such as roads, ports, train lines, bridges) impacted by extreme weather events?
- How are different societal groups (including gender, age, ethnicity, religion) affected differently by extreme weather events?
- How effective (swift, impactful and equitable) is the government in responding to extreme weather events?
- How effective is the government *perceived* to be in responding to extreme weather events? And how does this perception vary by different societal groups?
- Do certain population groups or regions feel excluded from disaster response or preparation?
- How are extreme weather events affecting national/local government budgets and priorities?

Unintended, negative impacts of climate and security policies

- How will climate mitigation/adaptation policies affect the political economy in the area/region? For example:
  - Are there any national economies particularly impacted by global policy changes for example the switch from fossil fuels to renewable energies?
  - How is economic growth and political stability impacted by deep and comprehensive transition policies?
  - Are adaptation or mitigation measures having transboundary impacts (for example the construction of dams or irrigation infrastructure or weather manipulation?
- How are military and security actions and strategies impacting livelihoods and the resilience of different population groups?
- Do climate change mitigation/adaptation/livelihood projects take dynamics of insecurity and conflict into account? Are they implemented in a conflict-sensitive way and do they take human rights risks into account? Do they have environmental and social safeguards?
- Do stabilisation and peacebuilding projects and strategies take current and long-term environmental and climate risks and resilience into account? How are they impacting livelihood security?

International tensions

- How do climate impacts and environmental pressures affect the political economy in the region? For example
  - How are migratory patterns of fish stock affected and what impacts does this have for livelihoods and national economies?
  - How does migration impact human capital and productivity?
  - Do climate change impacts affect trade routes and access to before inaccessible resources (for example through the melting of sea ice or dried up river beds)?
- Are climate impacts and environmental degradation changing natural features that also serve as borders between countries, for example rivers changing course or sea levels rising?

- Are there transboundary water bodies such as rivers, lakes, and aquifers that different countries rely on for economic activities such as hydropower production or irrigation agriculture? How are they affected by climate impacts and environmental degradation?
- Are there any large-scale infrastructure projects that might impact natural resource access or availability of another country?
- Is there (the potential for) large-scale cross-border movements of people driven by climate impacts and/or insecurity?

Context factors shaping vulnerability and resilience: What are other important factors and trends that are affecting vulnerability and resilience to climate and security risks?

- Which groups are marginalised and excluded (economically, socially and politically) and why?
- How to gender, age, sexual orientation, disability, ethnicity, socio-economic status and other identity factors intersect, combine and shape risks on an individual level?
- What factors affect the resilience of different individuals and groups to conflict and environmental and climate risks and why?
- What access do different individuals/groups have to
  - productive assets (financial, technological, etc.)?
  - economic opportunities and alternative livelihoods?
  - education?
  - health services?
  - political processes/decision making?
  - justice and the legal system?
- What is the state of relationships between different groups, communities and actors?
- What is the state of social capital and cohesion?
- What attempts, if any, have been made to prevent or resolve conflicts? What mechanisms have been used and who has been involved? Who has been excluded?
- Which role do different actors, age groups and genders play in conflict prevention, peacebuilding and climate change adaptation?
- What are points of cooperation between different conflicting actors?
- How is the government able to fulfil its main functions in:
  - providing public safety and security?
  - providing basic services?
  - taking legitimate political decisions?
- How is the legitimacy of the government perceived by different actors and groups? What is the state of trust in the national/local government?
- How is the government responding to challenges and crisis? What is the impact of their response?
- Is there sufficient capacity at the local, national or regional levels to cope with the impacts of climate change and insecurity? For example:
  - Do local or national governments possess the capacity and legitimacy to act decisively?
  - Do national climate change adaptation policies and plans include climate-related security risks?
  - Are decision-making mechanisms inclusive?
  - How strong is civil society?
- What are possible future social, political or economic developments that might increase climate-related security risks?

- What kind of changes to the number of people living in a community and characteristics of the community are occurring? For example:
  - Are there more people needing access to the same amount or less resources?
  - Do more people live in urban or rural areas? Has this changed over time?
  - Has the proximity in how close or far individuals live from one another changed?
  - What age group is the largest? What age group is the smallest?
  - Are young people staying in communities they grew up in?

Responses to climate-related security risks

- How can climate change adaptation and resilience building contribute to peacebuilding and conflict prevention?
- Can any environmental issues and climate risks be an opportunity to prevent conflict and build peace?
- How can peacebuilding efforts support climate change adaptation and resilience building?
- Are there activities around natural resource access and management that could simultaneously increase resilience against environmental, climate and conflict risks?
- Are climate-resilient and sustainable livelihoods activities that could simultaneously increase resilience against environmental, climate and conflict risks?
- What are key livelihood, governance, social dynamics that need to be addressed and that could simultaneously increase resilience against environmental, climate and conflict risks?
  - How can relationships and social cohesion be improved?
  - How can exclusion and marginalisation be addressed?
  - What kind of conflict management, prevention and transformation capacities can be strengthened?
  - What are key governance issues that need to be solved to address climate-related security risks?
- What are the potential negative outcomes of a given intervention, and how can these be mitigated?

6.1.2 Applied research framework for the climate-security pathways in the Pacific

Challenges to land, food and water

- How do climate impacts affect the availability of, and access to, natural resources (incl. arable land, fresh water and ocean resources)?
- How does the availability of and access to natural resources vary between different societal groups (based on geography, gender, age, ethnicity, and religion)?
- Are there already tensions and conflicts over access and availability of natural resources? And if yes, what are the main dynamics and actors involved?
- How have disputes over access, use, or control of natural resources (incl. arable land, fresh water and ocean resources) contributed to triggering or perpetuating social tensions, conflicts or violence?
- If disputes around natural resources arise, how are they managed? Are they often resolved? If so, how? Who participates in these processes? Is dispute resolution inclusive?
- What are the main challenges in land/water management? How do customary and modern systems overlap? What are the opportunities and challenges around this overlap?
- How do climate impacts affect food production and water supply, and how does that affect social relations?
- How important are food imports? What are the economic, social and political consequences of reliance food imports, including health, price spikes or shortages?
- What health consequences stem from climate impacts (e.g. waterborne diseases, heat related mortality, disease related to changing eating habits)? Who is affected most and why?

Challenges to the blue economy and livelihoods

- How do climate impacts and environmental degradation affect key economic sectors, especially sectors related to the 'blue economy'? In particular:
  - Fisheries
  - Agriculture
  - Tourism
  - Industry
  - Mining
  - Forestry
- Which groups (including geography, gender, age, ethnicity, and religion) are experiencing livelihood insecurity and how?
- How are different livelihood practices contributing to environmental degradation and/ or conflict (for example harvesting coral reefs or blast fishing)?
- What are vulnerable groups doing to adapt to livelihood insecurity? What opportunities and challenges are linked to these alternative livelihood strategies?
- How do livelihood pressures affect social relations within and between families and communities?
  - Are social norms of cooperation and social cohesion affected?
  - Is crime increasing?
- What alternative sources of income are being considered by the government to compensate for economic losses? What kind of opportunities and environmental and social risks are linked to these alternative sources of income?

- How are declining public revenues affecting the government's ability to deliver essential services?
  - Are disaster risk management capacities affected?
  - Is equitable development affected?
  - Are state and society relations affected?
- How do climate impacts affect a country's energy supply and what a related consequence for society?

Implication of and for mobility

- How are the climate impacts affecting the movement of people? What sorts of opportunities exist? Challenges? Specifically, what are the impacts on:
  - Internal migration in particular form rural communities to urbanised areas (circular, seasonal and permanent)
  - International migration
  - Displacement
  - Planned relocations
  - Those who cannot or chose not to move
- Are climate impacts intensifying internal migration, in particular to urban areas?
  - If so, how does related increasing mobility affect living conditions in urban and rural areas??
  - How is migration affecting competition over land, services and livelihood opportunities?
  - How are the relationships between migrants and their own families or other groups? Are there tensions or social problems?
- Do people have opportunities for international migration? Who? What opportunities and challenges are migrant communities facing in host countries, including on:
  - Livelihoods?
  - Public service access?
  - Social inclusion?
  - Personal and cultural identity?
- Are remittances sent back from migrants?
  - What role do they play for home families and communities?
  - For those families that don't receive remittances directly, do they benefit at the community level?
  - How do remittances influence social relations in home communities?
- How does migration impact human capital and productivity and resilience in areas of origin? In receiving communities?
- What are the costs and social impacts of displacement?
- Is planned relocation considered?
  - How effective is the process?
  - Have there been positive or negative experiences?
- Are any groups unable or chose to not migrate? If not, why?
  - What are the consequences?
  - Have strategies been put in place to capture otherwise trapped populations and if so, which ones? Are they effective?
- How is migration perceived among communities? What are perceived negatives and positives connotations associated with migration?
- What are the impacts of migration on identify, cultural norms and mental health?

Exposure to natural disasters and implications for governments and communities

- How are different economic sectors and infrastructure affected by extreme weather events?
  - For governments, how does that affect government revenue? How does that affect government response capacity?
  - For individuals, what are implications to livelihoods? Does it overlap with other challenges, such as food and water insecurity? What, if any, social pressures and challenges are born out of it.
- How are different societal groups (including geography, gender, age, ethnicity, religion) affected by extreme weather events? Are the needs of different groups considered in disaster risk responses of the government and international partners?
- How effective is the governments disaster response capacity?
  - What, if any, constraints exist around human capacity? Technical capacity? Financial capacity?
  - How well received is response and planning among the public? Is it considered fair? What sort of criticisms exist? What is praised?
- To what degree are marginalised groups involved in disaster risk management and planning Do certain population groups or regions feel excluded from disaster response or preparedness strategies?
- What are the main security challenges during and immediately after disasters?
  - Who is most insecure? Is it localised in any specific space?
  - Are crime, abuse and gender-based violence increasing during or after disasters?
  - What processes or policies has the government put in place to respond to increases in insecurity?
- Are there incidences of maladaptation or unintended effects from adaptation?
- Do climate change mitigation/adaptation/livelihood projects account insecurity and conflict dynamics? Are they implemented in a conflict-sensitive way and do they take human rights risks into account? Do they have environmental and social safeguards?
- If displacement occurs, where do people go? Why do they select those locations? What are the benefits and associated costs? Are there any particular security concerns associated with the process? Are any particular groups especially susceptible to displacement? If so, why? What sort of protections do displaced persons have formally and informally?
- Does government have any plans or processes in place to manage displacement before it occurs? After? What challenges do they face in supporting displaced persons, especially around land access?

Threats to territorial integrity and sovereignty challenging regional and international cooperation

- How will climate change impact the regions political economy? In particular:
  - Impacts on fish migration patterns?
  - Impacts on Exclusive Economic Zones (EEZ)?
  - Government efforts to find alternative income streams, such as through expanded mining?
  - Is regional cooperation affected? How?
- Does climate change threaten changing geophysical features that also serve as borders between countries, for example rising sea levels?
- How does the submergence or disappearance of land, islands or atolls impact a country's territorial integrity and EEZ?

- Might partial or total relocation to other countries be necessary? What would be the consequences?
- What role do external actors, like USA and China, play and how is climate change impacting geopolitical tensions in the region? Are countries or communities effected by increased geopolitical pressure? How so?
- What fault lines, if any, threaten to undermine regional cooperation or cohesion? How are regional actors bolstering cooperation and cohesion against joint risks?

6.1.3 Field research interview questions Mali

The interview questions are semi-structured. They are meant to be used as a guide. Not all will be asked.

Introduction

- Tell me about yourself. [Make sure to ascertain the following: name, age, gender, ethno-linguistic affiliation, religious affiliation, occupation]
- Tell me your story.
- What type of education did you receive?
- Tell me about [location]. What was it like here pre-crisis? What is it like now?
  - What has changed?
  - Access to services: health, education – Sufficient? Quality? Certain groups excluded? Enough now and in the future?
  - Access to infrastructure: transport, shelter, buildings, water supply and sanitation, clean and affordable energy, access to IT/ communications – Sufficient? Quality? Certain groups excluded? Enough now and in the future?

Climate change and impacts

- Did you notice changes in the climate or weather over time? How did that affect you?
  - Any change in rainfall (amount, timing of rainy season, floods, droughts)? Impact on your livelihood (agriculture/ fishing/ pastoralism)? Did this impact women's work/ crops or men's work/ crops more – or impact them the same?
  - Any changes in temperature? Impact on your livelihood? Did this impact women's work/ crops or men's work/ crops more – or impact them the same?
  - How was the river then? Impact on your livelihood (agriculture/ fishing/ pastoralism)?
  - Did these changes have any other impacts apart from on livelihoods?

Community identities and relations (if possible, find out before going to the community)

- What are the major groups here? How has this changed due to the conflict?

  [Probe for information about different ethnic, religious and occupational groups]
- How are groups organised amongst themselves? How has this changed due to conflict?

  [Probe: What brings them together? Are there any tensions among them? Why?]
- How do the different groups relate with each other?

  [Probe: What brings them together? What divides them? Do they live next to each other?]

- Have relationships between groups changed in the last few years? In what ways? When? Why?
- Are there people who are particularly marginalised? Who doesn't feel part of the community?

  [Probe: for people with disabilities, IDPs, minority religious and ethno-linguistic groups]

- Is the community hosting IDPs?

  [Probe: Where are IDPs from? How many? Incorporated into the community? How are relations? How do the children treat each other? Any difference depending on where they are from? Has this changed over time?]

- Have people who were displaced come back to the community?

  [Probe: What is the situation like for them? Have they been able to settle back easily? What are their main challenges? Has their return caused any issues?]

- Are there people who used to be part of armed groups?

  [Probe: How are they treated/ would they be treated? Any difference acc to gender and age?]

- How are relations between older and younger people at present? How have these changed?

  [Probe: Relationships between older men and younger men, older men and younger women, older women and younger men, older women, and younger women]

- How are relations between women and men at present? How have these changed?

  [Probe: Are there any differences in what women and men are doing now than before? What is positive and what is negative about this? Any increased violence associated with changes?]

- Is everyone able to be involved in decisions made in the community?

  [Probe: In what ways are they involved? Is anyone excluded e.g. women, young men, particular ethnic/ religious/ occupational groups, disabled? In what ways excluded?]

- Are people still getting married?

  [Probe: Is any group marrying more or less? Are short-lived marriages happening? How has bride price changed? Are there more divorces/ wives returning to parents? Why?]

Livelihoods

- What were the main forms of livelihood in the community before the crisis?

  [Probe: Did certain groups tend to be involved in certain livelihoods? Did groups work with each other– how? What did women do and what did men do? In the 10 years before the crisis, had livelihoods changed– improving or worsening? Did this impact women's or men's work/ crops/ animals more? Was there significant conflict between farmers and pastoralists?]

- What were you doing before the crisis?

  [Probe: according to their occupation/ knowledge:

- What crops did you farm? Did you add value or sell them just like that? Any difference between what women and men did re: crops, point of harvest cycle or anything else?
- Were lots of people keeping animals? Migratory or settled? If migratory, where did they come from? Were these routes and patterns changing? Why? If settled, what were relations with community like? What did women do? What did men do? Any differences?
- Is there clear demarcation of grazing routes? Who knows this and how do they know? Is there any planting along grazing routes? What has happened?
- What were the markets like then? Were there any noticeable changes over the years? Which locations did you trade with?
- Who was engaged in fish trade? What did women and men do? From where were they getting fish? Adding value? If so, how? Where getting inputs from e.g. salt/ wood?
- Any new crop/ livestock diseases? Did this impact women's work/ crops/ livestock or men's work/ crops/ livestock more – or impact them the same?
- What did you do when these things happened to plan for/ adapt to the changes?]

- How has the conflict and violence affected livelihoods? How are you coping with the changes?

  [Probe for: agriculture, fishing, pastoralism, trading:
  - Has there been any changes in what women do and what men do? Why?
  - Do IDPs earn livelihoods in different ways that people of ___? Do the people of ____ and IDPs interact economically – how?
  - In what way do changes we discussed before (lake, rainfall) affect your livelihood now given the conflict situation? [note: many may not be able to answer this]
  - Are there any new people involved in these livelihoods that were not before?
  - Who (group, individual) is benefitting from the conflict in your community?
  - Are any groups favoured in government distribution of resources? How?
  - Are any groups especially vulnerable? Re: economic productivity, access to land, access to water, access to credit?
  - Have prices changed since the conflict? Which changes have been most significant?]
- If you had the option, what forms of livelihoods would you like to do now?
- If you need to borrow money to invest in your livelihood, to whom do you go?

  [Probe for: financial services – microcredit, adashe, banks]
- How controls the money and other financial resources in your family?

  [Probe: Who brings it into the household? Who decides how it will be used? Do all members have a say in these decisions?]

Conflict dynamics

- Before the conflict, what kind of tensions would you see in this community

  [Note: we need to distinguish here tensions from violence and probe to make sure they don't just compare with current situation]

- What about now? What are the most common causes of community strike or tension?
  - Are there particular groups or people treated differently? Which groups? How are they treated? Why? What is their reaction to this?
  - When there is tension here, how does it start? Does it become violent? Who tends to be involved – directly in violence and in mobilising people?
  - Are there any particular issues re: availability or and access to land, water, anything else?
- How has the conflict impacted women and men differently?

  [Probe: Is there any difference when it comes to younger women or younger men? Has there been an increase in violence? If yes, in what ways? Who is causing this violence? What groups are being harmed? How? Is there conflict over women bringing home money?]

- What different roles do women and men play?
  - How are men and boys seen? Are they viewed with suspicion? Men and boys of particular ages, from particular groups or locations?
  - How about women and girls? What roles do they play – for conflict? For peace?
- Are there any ways conflict is resolved in the community?

  [Probe: If something happens, do people know what to do? Who is involved and what do they do? - role of families, community leaders, security agencies vigilante groups, community associations and government. How effective is this? How accessible is this to everyone in the community? Is it seen as fair or biased? How can it be improved? How has this changed over time?]

- What or who brings the community together and promotes peace?

  [Probe: What are they? Who is involved? What forms do they take e.g. community festivals, joint use of markets and roads, women coming together across ethnic and religious lines, different groups depending on each other for business, youth groups working for peace?]

Perceptions of key actors

- Who provides services and assistance here? (water, health, sanitation, education)

  [Probe: How are they? Is it enough? What more needs to be done?]

NOTE: For people who are not LGA officials, ask:

- How is government? Do you trust them?

  [Probe: Is the LGA back? What actions are they taking? Are officials fair, transparent and working to meet people's needs? What are they doing well? What more should they be doing? Do they reach everyone – groups they don't reach out to/ that can't go to them?]

NOTE: When talking to LGA officials, ask:

- What is the LGA doing for the community?

  [Probe: Is the LGA back? Is it easy to be fair, transparent and meet people's needs? What are the main challenges? What have been the main successes?]

NOTE: For people who are not traditional leaders, ask:

- How are the traditional leaders? Do you trust them?

  [Probe: What actions are they taking? What are they doing well? What more should they be doing? Do they reach everyone – groups they don't reach out to/ that can't go to them?]

NOTE: When talking to traditional leaders, ask:

- What are you doing for the community?

  [Probe: Is it easy to be fair, transparent and meet people's needs? What are the main challenges? What have been the main successes?)

- How are the security agencies here? Do you trust them?

  [Probe: What are relations like between them and the community? Any misbehaviour? Do they mistreat women and girls? Do women and men feel able to go to them for help?]

- How are vigilante/ CJTF/ hunters groups? Do you trust them? [disaggregate per group]

  [Probe: Any particular ethnic/ religious/ occupational group? Women and men? Older people or younger people or both? What are relations like between them and the community? Any misbehaviour? Do they mistreat women and girls? Do women and men feel able to go to them for help?]

- Are any particular groups favoured?

  [Probe for: in decision making/ conflict resolution? Access to natural resources? Access to infrastructure?]

- Do you feel involved in the decisions that are taken here? Why/ why not?

  [Probe: what ways do people reach out to those in the community? Is there anyone excluded? Women? Men? People with disabilities? Minority religious and ethno-linguistic groups?]

Future trajectories

- Do you know of any programmes working in or planned for your community?

  [Probe: By government? NGOs? Communities themselves? Are they working well? Is there anything these programmes need to be better?]

- Do you anticipate any tensions or conflict in the future?

  [Probe: What factors are likely to bring this about? How likely are they? Are there particular times tensions increase e.g. religious holidays, elections, harvest? Do you anticipate electoral violence? Have campaigns started? Has the LGA experienced significant electoral violence in the past? Is there anyone mobilizing for peace?]

- What needs to happen to bring about peace and security in this community?

Final questions

- Is there anything you want to tell me that we haven't covered so far?
- Do you have any questions for me?

7. Annex II:

Selected tools, dashboards, variables, and indices to inform climate-security assessments are available as a separate download on the publication page.

The Single Indicators Table can be downloaded here and Tools and Dashboards for Climate-Conflict Analyses here.

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