

WEATHERING RISK

Climate, Peace
and Security
Study: Somali
Region, Ethiopia

Lucas Destrijcker
Milen Yishak
Michael Thomson
Aminata Traore
Yishuang Antonio Xu
Hannah Kurnoth

July 2023

Table of Contents

EXECUTIVE SUMMARY	3
INTRODUCTION	10
METHODOLOGY	11
REGIONAL CONTEXT AND TRENDS	12
GOVERNANCE AND SOCIOECONOMIC PROFILE	12
FOOD AND AGRICULTURE	13
PEACE AND SECURITY	15
HUMAN MOBILITY	17
INTERSECTIONAL VULNERABILITIES	18
ENVIRONMENT AND CLIMATE CHANGE	20
CURRENT CLIMATE AND HISTORIC TRENDS	20
CLIMATE PROJECTIONS	22
NATURAL HAZARDS AND EXTREME WEATHER	24
DESERT LOCUSTS	24
CLIMATE CHANGE IMPACTS ON KEY SECTORS	25
CLIMATE INSECURITY PATHWAYS: HOW CLIMATE CHANGE COMPOUNDS EXISTING RISKS.....	27
EXISTING RESPONSES THAT ADDRESS CLIMATE-RELATED RISKS	36
ENTRY POINTS AND PRIORITIES	39
REFERENCES	43
ANNEX	53

Executive Summary

As part of the Weathering Risk initiative, adelphi and the World Food Programme (WFP) set up a learning facility to explore entry points for strengthening climate adaptation and resilience programming in Eastern Africa. Climate change and environmental pressures have severe cascading effects on peace and human security in the region, ranging from climate migration and displacement to food insecurity and conflict over dwindling natural resources. In response, this learning facility aims to inform ways to build more climate-resilient food systems in Eastern Africa as a way to prevent, mitigate and resolve climate-induced conflicts and insecurity. This climate, peace and security study focuses on the Somali Region of Ethiopia as one of the case studies undertaken during the adelphi-WFP learning collaboration. The Somali Region, located in south-eastern Ethiopia and bordering Somalia, was selected because of its particular vulnerability to climate impacts and related risks to peace and human security.

This report, which is based on climate data from the Potsdam Institute for Climate Impact Research (PIK) combined with an extensive literature review, first outlines the relevant contextual factors that shape the Somali Region's vulnerability to climate change and environmental degradation, and then outlines historic, current and projected climate trends and impacts in the region. Based on the combined analysis of both contextual and climate-related factors, the report presents key climate insecurity pathways, as well as entry points and priorities as guidance for future programming in the region.

Climate and environment

The Somali Region's climate has already become drier, hotter and more unpredictable over the past years, and is expected to worsen in the future. Some climate change projections in the Somali Region include:

- A further increase in the average annual temperature and the number of 'very hot days' (over 35°C).
- More rainfall variability, heightening the risk of extended periods of drought.
- More heavy precipitation events, leading to more water run-off and increasing the risk of flash floods and river floods.
- Changing weather patterns, increasing the risk of disease outbreaks and pests such as the desert locust.

Some of the key climate impacts in the Somali Region are summarised as follows:

Sector	Projected impact	Mechanism
Agriculture and pastoralism	Water scarcity	Higher temperatures and more variation in precipitation patterns will increase water stress, contributing to losses in agricultural production and livestock.
	Pests and diseases	Rising temperatures will likely create an enabling environment for pest infestations and crop diseases. Flooding increases the risk of desert locust epidemics.

	Flooding	Varied and more intense rainfall combined with drier soil will increase the risk of flooding, affecting agricultural production and livestock.
Health	Malnutrition and famine	Extreme weather events will exacerbate food and water insecurity, contributing to malnutrition and famine.
	Vector-borne and water-borne diseases	Increased temperatures will likely expand the reach of malaria to highland areas. Increased flooding will contribute to the spread of water-borne diseases.
Infrastructure	Transportation	Erratic rainfall patterns and flooding will likely damage transportation infrastructure, limit possibilities for new development, and make repairs and maintenance more challenging.
	Human settlements	Extreme weather events will increase the vulnerability of human dwellings, especially refugee and IDP settlements and infrastructure in rural areas.

Table 1: Overview of impacts of climate change on various sectors in the Somali Region (source: The World Bank; UN Habitat)

These climate impacts bring about a series of related security risks in the Somali Region. There is ample evidence that climate and environmental pressures have contributed to food insecurity and violent conflict across the world, and this is expected to increase as the impacts of climate change worsen. People with considerable development constraints, including Ethiopians and Somalis, have high vulnerability to climatic hazards (IPCC, 2023). Research suggests that climate-related conflict is more likely to emerge in regions highly vulnerable to climate variability combined with low socioeconomic development, poor infrastructure and governance capacity, and high levels of food insecurity, poverty, and socio-political inequality. Livelihood dependency on natural resources, rain-fed agriculture and pastoralism also increase this risk (Delgado, 2021; Liebig et al., 2022).

The Somali Region is already feeling adverse effects of climate-induced droughts, displacement and water stress at an alarming level. Consecutive and multi-year climate variability and extremes have left the region with drought and displacement in addition to receiving refugees from other areas. The duration and severity of the current drought in Ethiopia has already exceeded the droughts of 2010–2011 and 2016–2017. Some 3.9 million people are estimated to be in need of emergency food assistance in the region, which is 62 per cent of the population (WFP, 2023). The number of people facing critical water shortage and requiring emergency water response was estimated at 2.9 million as of March 2023 (OCHA, 2023a).

Climate insecurity pathways

The Somali Region has many of the above-mentioned characteristics, and, based on a review of existing literature and the current state of vulnerability, this report identifies five key overlapping insecurity pathways – or cascading effects – through which climate change and environmental pressures can compound risks to peace and security. These centre around:

Pathway 1: Livelihoods and natural resource competition

Climate hazards and environmental pressures contribute to severe livestock and yield losses that threaten people's livelihoods and food security. This in turn drives competition over scarce, variable and ephemeral natural resources, which risks to escalate into violent conflict.

Pathway 2: Human mobility and displacement

Shifting transhumance movements, as well as climate-induced migration and displacement, can lead to an uptick in violence. Migration and mobility are amongst the most important livelihood strategies of pastoral societies. Transhumance is not only a vital aspect of the livestock production system and an inherent part of pastoral life, it also helps pastoral communities to strengthen their resilience and adaptive capacity to various stressors. However, if mobility patterns change, they can also become a source of intense demographic pressures that lead to tensions between and within communities. This is especially visible when shifting migration takes place in a poorly planned, unmanaged, abrupt, or forced manner.

Pathway 3: Regional spill-over effects

The Somali Region's geographic location, nested within the Horn of Africa, together with its porous land borders, makes it vulnerable to security developments in neighbouring regions. Conflicts in neighbouring Somalia, as well as in other Ethiopian regions, could spill over and jeopardise stability in the Somali Region, especially in borderlands. Somalia has experienced over three decades of civil war, including violent conflict over natural resources that come increasingly under pressure, making it an area of instability that could spur new conflagrations and regional spill-over effects at any point. Furthermore, the ethnic homogeneity in the Somali Region has led to close ties with clans in neighbouring Somalia, Somaliland and Djibouti. In addition to international ties, Somali clans in the Somali Region inhabit areas within the borders of its Ethiopian neighbouring regions of Oromia and Afar, which have already experienced ethnic tension and resource competition in borderlands.

Pathway 4: Intersectional vulnerabilities

Climate change and environmental issues affect people differently depending on gender, age, occupational group, socioeconomic situation, disability, etc. Inequality can be a key cause but also a consequence of climate insecurity. Certain groups, especially displaced persons, women, youth, elderly or disabled people, are the most vulnerable because they have limited resources and options at their disposal to respond to challenges or take advantage of opportunities. As a result, the combined impacts of climate change and existing vulnerabilities widen already existing inequalities, with layers of exclusion often overlapping. Climate insecurity can also increase levels of gender-based violence.

Pathway 5: Governance

The presence, legitimacy and capacity of governmental actors can either mitigate or exacerbate climate-related security risks. Disregard for customary regulations and practices, as well as government interventions that could be perceived as discriminatory, therefore risk flaring up historical grievances which can drive new

tensions and conflicts. These conflicts could play out intra-regionally, within and between Somali pastoralist clans, or between Somalis and the Ethiopian central state or neighbouring regions, such as Oromia or Afar. Some key risk areas include access to and distribution of fertile land, water resources and humanitarian aid.

Entry points and priorities for building climate resilient and peaceful livelihood systems

To build resilience among Somali Region's to climate impacts and environmental degradation, as well as to strengthen conflict management and promote peaceful societies, existing evidence derived from our literature review has brought forward numerous good practices, which are included in the following thematically organised entry points and priorities for humanitarian and development actors to consider:

- 1. Conflict-sensitive and peace-oriented programming:** As a general principle and cross-cutting recommendation, it is critical to ensure that interventions leave no one behind and do not cause harm, and also aim to enhance conflict management and contribute to peaceful societies. A conflict-sensitive approach takes different conceptual and contextual principles into account, allowing humanitarian and development actors to gain a deeper and broader understanding of risks and avoid unintended or harmful consequences of their intervention. In addition, projects should actively seek to prevent and resolve conflict by linking climate resilience with sustainable peace objectives. Therefore, key focus areas include:
 - **Identify synergies** between climate adaptation and activities that help **bridge communities and strengthen social relations**.
 - Focus on opportunities to work towards **shared interests, common goods and mutual benefits** between and within communities, especially between displaced persons and host communities.
 - Adopt a **conflict-sensitive and peace-oriented approach** to inform the design, implementation, monitoring and evaluation of programmes and projects.
 - Develop specific climate, peace and security **indicators and objectives** that enhance social cohesion, build synergies and improve relations between and within communities.
 - **Appoint designated staff and focal points** that are responsible for mainstreaming a climate, peace and security lens.
 - **Promote (existing) platforms and mechanisms** for local participation among different communities, resource-sharing and inclusiveness.
 - **Build capacity and raise awareness** across different levels and amongst all key stakeholders.
 - **Mitigating and preventing harmful, unintended effects** of interventions, including environmental, social, cultural or societal impacts.
- 2. Livelihood diversification:** Communities vulnerable to climate stressors, in particular (agro)pastoralists and farmers, need to develop and maintain a range of potential economic options that allow for a back-up plan in case of failed agriculture or livestock production, or when new needs arise. Livelihood diversification is already inherent to farming and pastoralism. Most pastoralists have long practiced supplementary forms of food production, resource exploitation and trade. Therefore, opportunities to support the diversification of

livelihoods should be integrated in existing practices. However, with extended periods of drought and back-to-back dry seasons in the past years, livelihood diversification should also include options outside of the traditional ways of coping with drought. Some focus areas to consider include:

- **Portfolio diversification**, allowing households to undertake multiple productive activities to spread risk across a range of occupations with different sensitivities to climate or other stressors.
- **Temporal diversification**, in which households move between different activities and income sources at different times, e.g. following more closely weather or seasonal patterns.
- **Enhancing added values from by-products of livestock**, such as dairy products and animal hides, and **additional aspects of the value chain**.
- **Investing in non-pastoral activities**, such as small business development, dryland and irrigated agriculture, agroforestry, adoption of agricultural innovation such as new cash crops, education and vocational training, labour migration, and trade.
- **Enhancing access to markets**, especially for vulnerable groups like farmers, (agro)pastoralists, women, youth, and displaced persons.
- **Uptake of non-traditional coping mechanisms**, such as learning new vocational skills and trades, and fostering sharing of knowledge and practices from external pastoral and non-pastoral communities.

3. **Climate-smart agriculture and practices**: Enhanced management of water and fertile soil, together with more sustainable agricultural practices and technologies, can build more climate-resilient livelihood and food systems. This in turn reduces the risk of competition and conflict over fertile land and natural resources. Some climate-smart agricultural innovations and practices include:

- Enhanced **absorptive capacity and water harvesting systems** such as irrigation schemes, water supply technologies, water capture systems, flood-based farming (floodplain agriculture, spate irrigation, inundation canals, depression agriculture, etc.) and sustainable water management in wastelands. The selection of relevant water systems should be based on equitable arrangements, the production capacities and socioeconomic situation of farmers and pastoralists.
- **Agro-weather management information systems**, including early warning and risk management.
- **Promoting resilient, bio-fortified crop production**, including intercropping, and **nutrient-dense foods**, as well as the use of **improved, high-yielding seed varieties**, especially fast growing, drought resistant plants.
- Exploring **alternative farming approaches** like **agroforestry, urban farming**, and supporting **enhanced food storage** and **post-harvest handling**.

4. **Animal health and production**: Several measures allow (agro)pastoralists to maintain the size and health of their herds and minimise losses, which in turn prevent livestock raiding and the risk of conflict. These include:

- **Animal health and veterinary services**, including effective disease management, vaccination and treatments.
- Streamlining and scaling up range of **insurance provision and cash-based products**.

- **Drought-mitigating livestock supplementary feeds and fodder banks.** For example, hay products are relatively easy to produce and conserve, and have high scalability potential.
- **Improved breed reproduction centres to promote livestock breeds** that are more resilient to drought and provide higher production. This would include cross-breeding with traditional and indigenous livestock, and providing certified semen and artificial insemination services.
- **Fostering animal health provision and vaccination campaigns** as an entry point to bring conflicting parties together, support dialogue processes and facilitate the creation of local natural resource management agreements.

5. **Rangeland and transhumance management:** Rangeland fragmentation and degradation reduce the options for pastoral movements. To recover spatial optionality of nomadic pastoralists, and to prevent and resolve transhumance-related conflicts, interventions could focus on the following priority areas:

- **Facilitating dialogue and holistic solutions about rangeland management,** well adapted to the new realities of climate change and local needs.
- **Investing in rangeland extensification** to enhance herd movement and avoid fragmentation.
- **Promoting rangeland recovery,** including through **reseeding, reforestation,** and **conservation** projects, as well as by **up-scaling nutritional feeding** and **restricting range grazing.**
- Facilitating **livestock transport, access to markets, cross-border movement and livestock trade** so pastoralists can more easily traverse rangeland ecosystems.
- **Monitoring and mitigating the risk of borderland insecurity and conflict,** as these are major risks in cross-boundary transhumance.

6. **Natural resource management and governance:** Government interference has long been a sensitive issue in the Somali Region, but connecting the different levels of natural resource management is key for sustainable development and building climate resilience, as well as to increase social cohesion and manage conflicts. Therefore, key focus areas include:

- **Active engagement of pastoral communities** by involving them in developing and implementing policies, ensuring representation at relevant national and international fora, and building agency as actors of adaptive governance.
- **Supporting existing indigenous knowledge strategies** for resilience, such as social systems support, early warning systems based on long-term observation of astral bodies, flora and fauna and experience.
- **Promoting flexible and communal systems of governance** for grazing and water sources, as these have the highest potential for local acceptance and ownership.
- **Linking customary pastoralist institutions and practices with formal government actors** to promote bottom-up approaches and build sustainable and effective partnerships.
- Helping to **broker formal and informal natural resource sharing agreements** between farmers and (agro)pastoralists, among (agro)pastoralists, and between refugees, IDPs and host communities.

7. **Capacity-building and awareness raising:** The following entry points can help to improve the delivery of climate, environmental and security/conflict information across different sectors of the food system:
- Collaborate with partners and stakeholders to **develop programmes that can build capacity** in climate security and resilience, climate adaptation and climate-smart food programmes.
 - Develop **information products targeting climate fragile communities**, e.g. related to weather forecasts, seasonal forecasts, and agricultural information.
 - Incorporate **climate security information** for the different components of food systems **in early warning systems** and emergency response mechanisms.
8. **Partnerships and coordination:** The following entry points aim to strengthen climate adaptation and resilience-building:
- Establish new **partnerships** and strengthen existing ones to bring in more experience and expertise around climate- and conflict-sensitive programming. Especially partnerships with **local, community-based and peacebuilding actors** should be fostered.
 - Develop a **climate security and adaptation platform** to periodically bring together different actors and stakeholders active in and from the region, during which relevant issues could be discussed. This would also lead to fruitful exchanges and improved planning and coordination of activities.
 - **Minimise and avoid maladaptation** through multi-sectorial partnerships and coordination, as well as inclusivity of local knowledge in addition to focusing on long-term goals starting from the planning stage of adaptation programming.

Introduction

Climate change and its impacts create severe risks for food systems and human security more broadly, making peaceful coexistence between people and communities harder to maintain or achieve. Both slow onset changes such as temperature rise and increased variability in precipitation patterns, as well as fast onset events such as extreme weather events can severely affect people's livelihoods and food security, especially in contexts that are already fragile. These cascading effects can then contribute to socioeconomic and political instability, increasing the risk of violent conflict.

As part of the Weathering Risk initiative, adelphi and WFP set up a learning facility to explore entry points for strengthening climate adaptation and resilience programming in Eastern Africa. Climate change and environmental pressures have severe cascading effects on peace and human security in the region, ranging from climate migration and displacement to food insecurity and conflict over dwindling natural resources. In response, this learning facility aims to inform ways to build more climate-resilient food systems in Eastern Africa as a way to prevent, mitigate and resolve climate-induced conflicts and insecurity.

This climate, peace and security study focuses on the Somali Region of Ethiopia as one of the case studies undertaken during the adelphi-WFP learning collaboration. The Somali Region, located in south-eastern Ethiopia and bordering Somalia, was selected because of its particular vulnerability to climate impacts and related risks to peace and human security.

The first chapter of this study outlines the relevant contextual factors that shape the Somali Region's vulnerability to climate change and environmental degradation. These include governance and the socioeconomic situation, food and agriculture, intersectional factors, migration and displacement, and conflict history. The second chapter focuses on historic, current and projected climate trends and impacts. Based on the combined analysis of both contextual and climate-related factors, the third chapter presents key climate insecurity pathways relevant to the Somali Region. Finally, this profile provides entry points and priorities as guidance for future climate- and conflict-sensitive, peace-oriented programming in the region.

Methodology

Policy and decision-makers in multiple sectors have sought ways to predict and respond to climate impacts on peace and security. However, to do so effectively and sustainably, the complexity of different factors and interactions has to be unpacked into a granular understanding of the relationship between climate change, environmental pressures and insecurity in a given context. For awareness of the risks to be converted into action that improves lives, concrete entry points need to be identified.

This is where Weathering Risk comes in. The Weathering Risk programme, led by an interdisciplinary team from adelphi and the Potsdam Institute for Climate Impact Research (PIK), unites state-of-the-art climate impact data and expert conflict analysis to promote peace and resilience in a changing climate. It uses an innovative methodology that unpacks the complex relationship between climate change and insecurity and identifies entry points for action (see figure 1). Through its methodology framework, Weathering Risk aims to facilitate risk-informed planning, enhance capacity for action and improve operational responses that promote climate resilience and peace.



Figure 1: Weathering Risk methodology framework (Weathering Risk, 2021)

This study focusing on climate change, peace and security in the Somali Region in Ethiopia and is primarily based on climate impact data provided by PIK, combined with an extensive literature review on the contextual factors shaping vulnerability and resilience, as well as peace and security in the region. An important limitation of this study is that there was no possibility to conduct field work or undertake rigorous interviews with experts and stakeholders.

Regional context and trends

Governance and socioeconomic profile

The Somali Region, also known as Soomaali Galbeed and officially as the Somali Region State (SRS), is the easternmost of the nine ethnic divisions (kililoch) of Ethiopia. It is the second largest region in the country and divided into nine administrative zones and 53 Kebeles, which are Ethiopia’s smallest administrative units. The region shares a border with Djibouti to the north; Somaliland to the northeast; the Ethiopian Oromia, Afar, and Dire Dawa regions to the west; Somalia from east to south; and Kenya to the southwest (Constitution of Ethiopia, 1995).

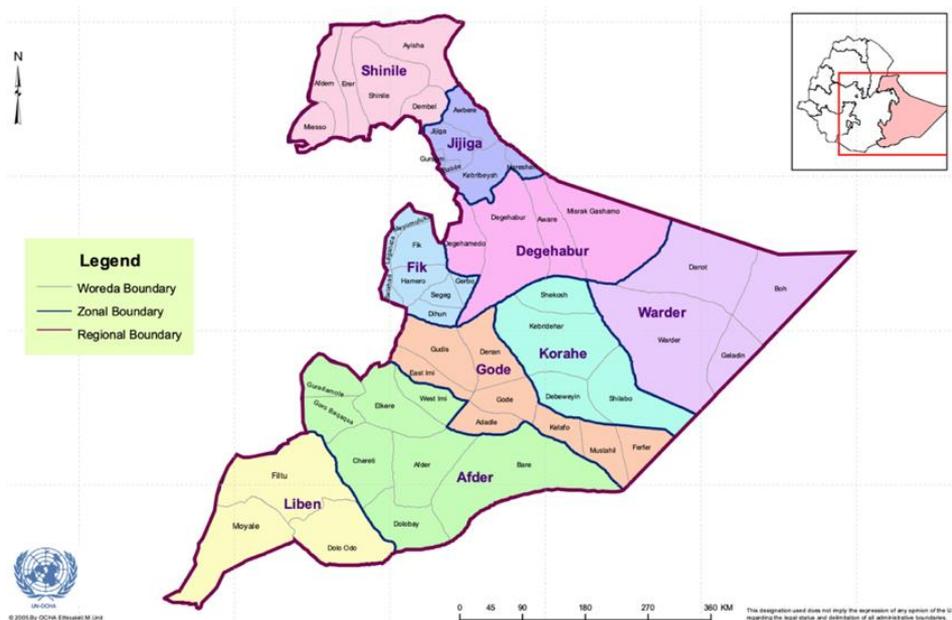


Figure 2: Map of the Somali Region (OCHA, 2005)

The Somali Region has an estimated population of 6.2 million people and is considered one of the most ethnically homogenous regions in Ethiopia, with between 95 and 97 per cent of the populace identifying as Somali and over 98 per cent identifying as Muslim (SRHB, 2012). While the region is not densely populated, it has experienced rapid population growth in the past decades. In 2004, there were about 14 Somalis per km², while in 2022, this number was estimated at 22. The most densely inhabited sub-region is Jijiga (CIESIN, 2022).

Broadly speaking, Ethiopia’s total population is expected to increase from around 123 million in 2022 to nearly 200 million in 2050, with a projected urban growth of 18 per cent (World Bank, 2023; UN Habitat, 2020). Population growth is particularly high in the country’s secondary and intermediate towns, such as the towns in the Somali Region.¹ Thus, many of the Somali towns are experiencing rapid growth in terms of population size and economic activities, and function as the economic hubs of their respective regions (UN Habitat 2020).

The Somali Region’s key livelihood source is (agro)pastoralism, but nomadic pastoralists have long been marginalised from Ethiopian politics and governance. In the

¹ Secondary and intermediate towns host between 100,000 to 500,000 inhabitants.

mid-1990s, the Ethiopian central government implemented the federal system, which created regional states – such as the SRS – which allowed for a better representation of pastoralist populations. However, the central government’s development agenda continued to privilege agricultural investments over pastoralism, which caused grievances among Somali pastoralists. In 2020, the Ethiopian government approved the Pastoral Development Policy, signalling an attempt to pursue development policies that are more appropriate in dryland contexts and suited to pastoralists’ needs (IOM and ICPALD, 2022).

Food and agriculture

The Somali Region is characterised by an arid and semi-arid climate, with most of the area covered by pastoral livelihood zones. The vast majority of the population is involved in (agro)pastoralism, farming and trade. Key livestock in the region include camels, cattle, goats, sheep and donkeys (Devereux, 2006). Cropland remains limited to the areas located towards the Somali Region’s interior borders (see figures 3 and 4). The economic value of rainfed crop production² in the Somali Region is overall extremely low, with most productive areas concentrated in the Jijiga sub-region.

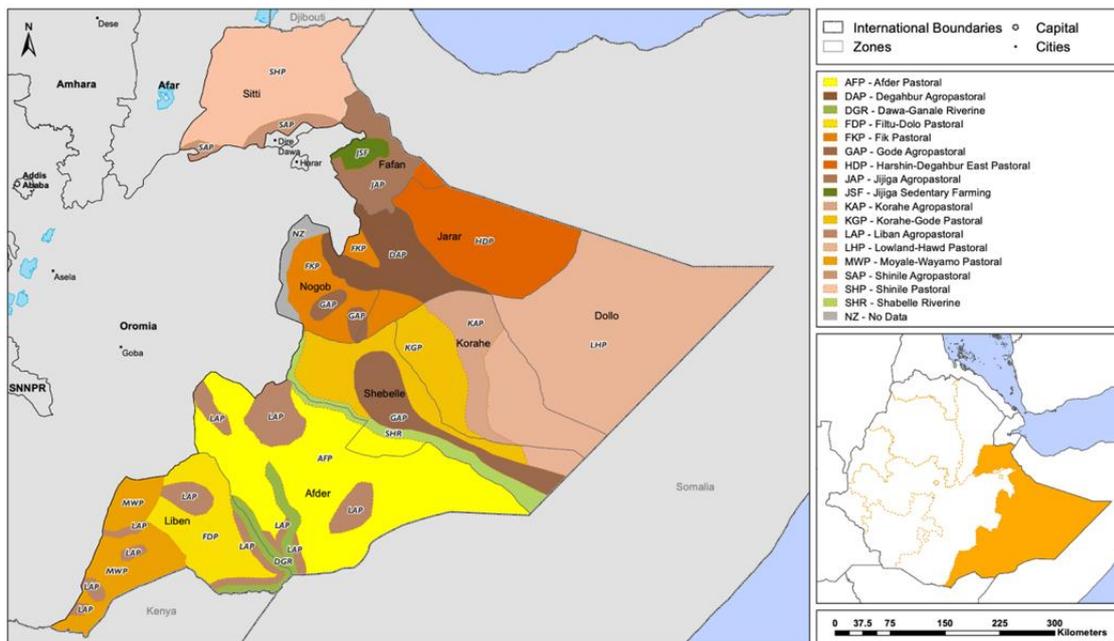


Figure 3: Livelihood zones in the Somali Region (FEWS-NET)

² This is based on areas harvested with yield and the average international crop price indicated by FAO.

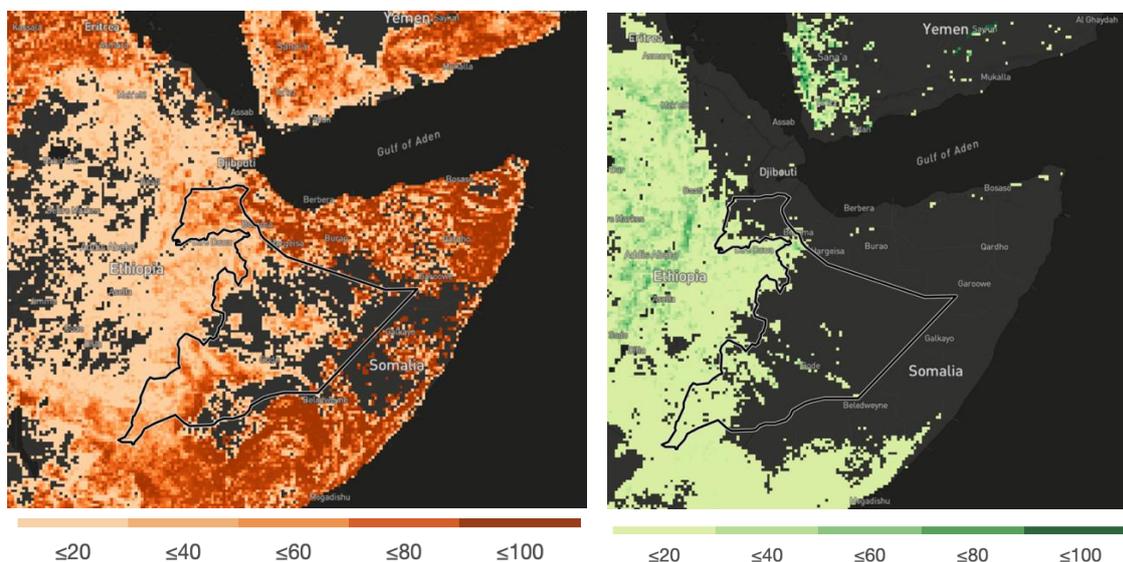


Figure 4: Pasture land (left) and cropland (right) in 2000 (per cent of grid cell). The percentage of land in every 5-arc minute grid cell that is devoted to pasture or cropland. (Source: USGS/EarthStat; WPS Global Tool)

The Somali population's high dependence on pastoralism and rain-fed agriculture makes them highly vulnerable to various climate shocks, especially drought. Ethiopia is home to about 35 million livestock units, and on average, one livestock unit requires about 25 litres of water per day. Most of these livestock units are also based in the Somali Region. The total daily water requirement for livestock is estimated at 875 million litres, which amounts to about 320 billion litres annually. In contrast to this significant need, however, water is a very scarce commodity for many of the smallholder farmers and (agro)pastoralists, and the situation is aggravated by seasonal variations in availability of water (Sileshi, 2020).

Primarily because of water scarcity, Somalis have in the past decades suffered extensively from food insecurity and malnutrition. While this has been a trend in many parts of Ethiopia and the wider region, Somali households are often among the worst affected by cycles of nutritional crises. Traditionally, the key underlying causes of food insecurity in the Horn of Africa include population growth, conflict and insecurity, and natural hazards. Even though the Somali Region remains sparsely populated, demographic pressures in areas rich in natural resources, in particular farmland and pasture, play a key role in the Somali people's food and livelihood security (Mercy Corps, 2019).

Fast-onset causes of food insecurity include production losses from drought, flash floods, and pests and diseases, as well as conflict over natural resources such as land and water. Especially droughts, which have intensified over the years due to climate change, have resulted in high incidences of livestock mortality, greatly reduced access to food, and driven large-scale displacement (ACAPS, 2017). An important indicator to grasp the consequences of drought is the vegetation health index, which indicates seasonal shifts in vegetation health. Since the onset of the 2020 record-breaking multi-year drought, which at the time of writing continues to affect the entire Horn of Africa, vegetation health in the Somali Region has deteriorated rapidly, without sufficient recovery due to absent or insufficient seasonal rains (see figure 5, left). This has led to five consecutive failed farming seasons and the death of millions of livestock, with devastating effects on households' assets, food security and income (IGAD, 2022; WFP, 2022a). This consecutive failure of rainy seasons has exacerbated the impacts of the

current drought that started in late 2020, affecting over 24 million people across Eastern Africa (OHCA, 2023c; ACAPS, 2023). In early 2023, the Somali Region’s Disaster and Risk Management Bureau shared that over 3 million people had been impacted by the current drought (especially in the Afder, Liben, and Dawa zones) and more than 4.5 million livestock had died since late 2021, leaving 30 million at risk (Addis Standard, 2023). In addition, the outbreak of the Russia-Ukraine war in 2022 led to a spike in global food prices, particularly in the Horn of Africa, which is highly dependent on Ukrainian and Russian grain and fertilizer imports. The spike in food prices further pushed millions of people in Ethiopia, Somalia and Kenya to the brink of starvation (IFPRI, 2022; WFP, 2022a).

While recent food security assessments in Ethiopia have been challenging to undertake, mostly due to lack of access, a 2019 in-depth study carried out by the Integrated Food Security Phase Classification (IPC) found that the entire Somali Region experienced crisis levels of acute food insecurity (see figure 5, right).³ In 2020, approximately 1.25 million Somalis experienced a high degree of food insecurity (IPC, 2020). At the national level, an estimated 40-60 per cent of the Ethiopian population experienced moderate or severe food insecurity between 2019 and 2021. In the same period, an estimated 10-25 per cent were undernourished (FAO et al., 2022).

In late 2022, as the impacts of five consecutive failed rainy seasons intensified, WFP estimated that nearly 12 million Ethiopians in drought-affected regions were in need of food assistance. The Somali, Oromia, Sidama and Southern Nations, Nationalities and Peoples’ regions in the south and southeast were hit the hardest. Across Ethiopia, 2.7 million children were acutely malnourished in 2022 due to the drought’s impact—over 705,000 of these children were severely malnourished (WFP, 2022b).

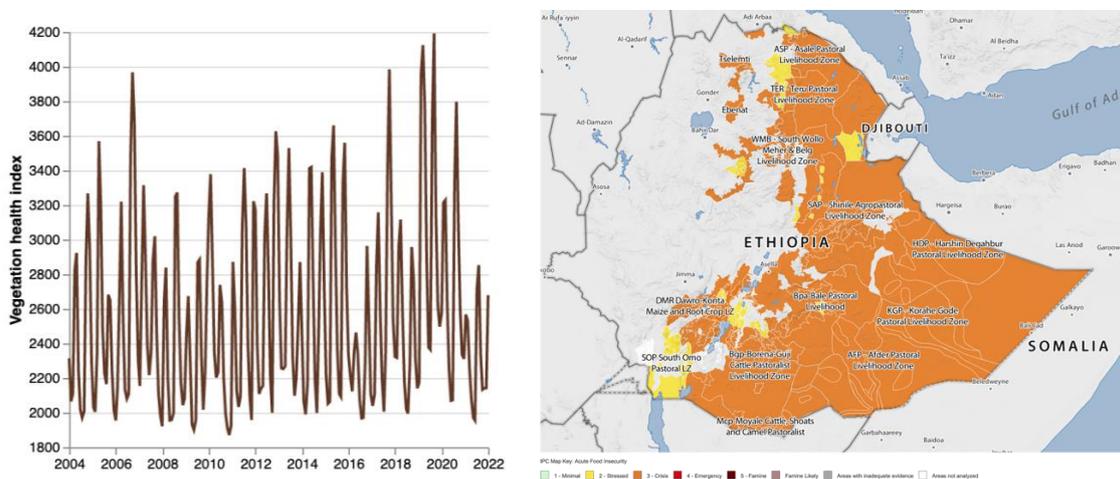


Figure 5: Left: Vegetation health index for the Somali region (Source: NOAA STAR; WPS Global Tool). Right: Acute Food Insecurity covering the period Jul 2019 - Sep 2019 (IPC, 2020).

Peace and security

The Somali Region has been relatively peaceful in recent years. In 2022, the region saw limited numbers of violent conflict and protest events compared to neighbouring Somalia or other Ethiopian regions (see figure 6). However, in the past decades, the

³ The assessment covered six Ethiopian regions. The western and northwestern regions were not covered in this study.

Somali population suffered from repeated and intense cycles of violent conflict, often state-driven, which included mass atrocities and large-scale human rights abuses (Zewde, 2001; Hagmann, 2014; Hagmann, 2020).

Similar to the most recent conflict between the federal and Tigray governments that broke out in the northern region in late 2020, the Somali Region has had its own share of ethno-nationalist separatist movements. Grievances around marginalisation from Ethiopian governance and politics, federal land distribution, regional borders and sovereignty, as well as access to natural resources, have long existed and continue to cause resentment among Somali communities. Many pastoral lands in the Somali Region also experience disproportionately low investments in infrastructure and social services development. Nomadic pastoralists have also long lacked secure legal claims to their communal lands, leaving them vulnerable to dispossession in the face of agricultural and industrial development efforts from the central government (Fratkin, 2014). Throughout recent history, state interventions have therefore repeatedly been received by Somalis with suspicion or open, often violent resistance (Warfa, 2021; Hagmann, 2014; Hagmann, 2020).

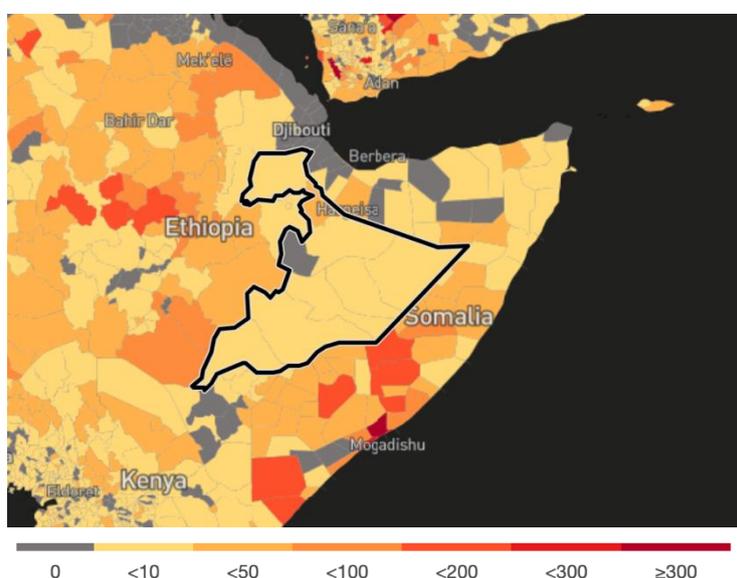


Figure 6: December 12, 2021 - December 12, 2022 ACLED conflict and protest events (Source: ACLED, WPS Global Tool)

Apart from state-based violence, security in the Somali Region has also been affected by small-scale, localised communal and ethnic conflicts, typically driven by food or livelihood insecurity, access to land and natural resources. Pastoral areas in the Somali Region, and the Horn of Africa more broadly, have also traditionally been prone to conflict at the community level. Cattle-raiding, land disputes between farmers and pastoralists, and conflicts between clans over territory and resources have long been an innate part of pastoral life (IFAD, 2020a,b). For instance, inter-ethnic conflicts repeatedly occurred in border areas with Afar and Oromiya regions. From 2016 to 2018, a new outbreak of clashes between the Somali and Oromia regions displaced millions (Majid et al., 2022).

In addition to access to land, water and pasture, other sources of pastoral conflict in the Somali Region include fear of residential expansion, inter-clan mistrust, unfair power

sharing, unequal distribution of resources, lack of fair employment, the availability of weapons, and the revenge of past harm in the community (Hussein, 2022). Governance in the Somali Region functions primarily through a patriarchal clan system based on principles of communal and uninhibited access to natural resources. Most conflicts in the Somali Region are thus addressed through customary norms embedded in clan law rather than through state authority, which enjoys less legitimacy in rural areas and among pastoralists (Muluken, 2020).

Indigenous pastoral rules and regulations are often kept in the memory of clan elders and religious figures, and passed down over generations. Clan elders are also central to mediating and managing conflicts, and applying social sanctions in the community (Bouh and Mammo, 2008; Muluken, 2020). However, due to increased pressures on natural resources, governance interference and poor natural resources management, customary practices over land ownership and rights have eroded, causing intense competition between pastoral groups over water and pasture (Abbink, 2007; Muluken, 2020; Hussein, 2022).

Human mobility

Closely related to the fragile conflict and food security situation, the Somali Region has long faced significant demographic pressures due to internal displacement. By the end of 2022, Ethiopia had around 3.9 million internally displaced persons (IDPs) and over 1 million based in the Somali Region (IDMC, 2023). While high instances (51 per cent) of displacement in the Somali Region are seen at the regional border with Oromia due to political violence that flared up in 2017 and continues to persist, other key drivers of displacement in the Somali Region are disaster-induced, especially through drought and flooding. Compared to other Ethiopian regions, the Somali Region is particularly prone to disaster-induced displacement, having endured repeated underperforming rainy seasons since 2020 which caused a shortage of pastureland, water and food for pastoralists and their livestock (IOM, 2022). By late 2022, there were close to 590.000 drought induced IDPs in Ethiopia with Somali Region accounting for over 300.000 of those (OCHA, 2022). Additionally, as of June 2023, thousands have been impacted by the floods caused by the Belg/Gu/Genna rains in Ethiopia, with the Somali Region accounting for more than 460.000 of the victims (OCHA, 2023b). At the time of writing, the Somali Region also hosts over 250.000 refugees, primarily from Somalia and South Sudan, which constitute over one third of Ethiopia's total refugee population (UNHCR, 2022).

Models indicate that by 2050, the Somali Region will become a hotspot for disaster-induced migration, with changes in population in excess of 100 people per km². Highland areas in particular have already experienced a significant population increase due to climate in-migration, driven by the relatively favourable climate conditions. However, the highlands might not be able to provide enough opportunities for economic activities, which means that migrants will likely be pushed to urban zones within the region (UN Habitat, 2020).

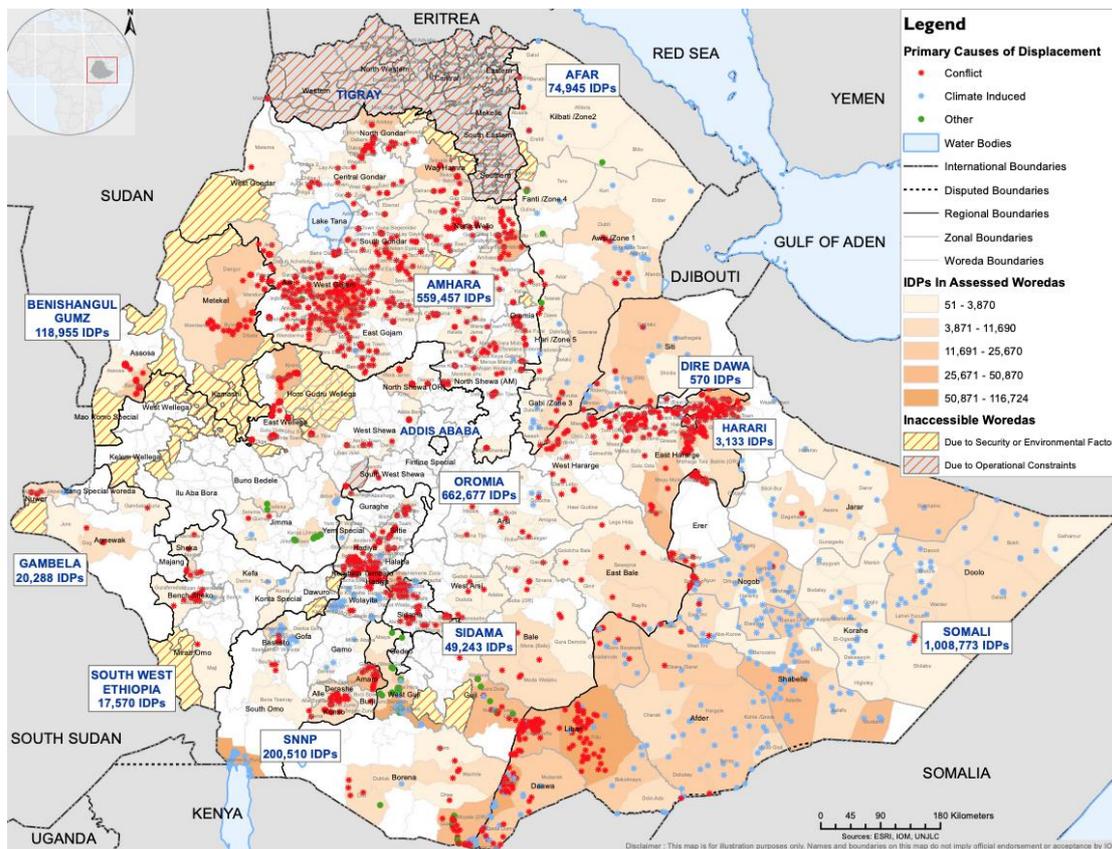


Figure 7: Displacement caseload in Ethiopia based on data collected between June and July 2022 through the IOM site assessment (IOM, 2022)

With regard to human mobility, the Somali Region has a long tradition of transhumance, with pastoralists migrating seasonally along established routes.

Concerning mobility and livestock trade, most Somali cattle and goats are channelled through a series of clearly defined routes in the general direction of the Somali ports (Berbera, Bosaso and Mogadishu) and the Kenyan market. There is relatively little movement towards Ethiopia’s domestic markets, partly because of differences in taste. Ethiopian highlanders are said to prefer highland breeds, while Somali meat is more popular in the Gulf States (Economic Focus, 2020).

Intersectional vulnerabilities

Food and livelihood insecurity have different effects on people depending on gender, age, occupational group, socioeconomic situation, ethnicity, etc. Women’s unique socioeconomic status merits consideration because it increases their vulnerability to climate security risks. Oftentimes, and especially in rural areas, women bear disproportionate burdens due to gender-based differences in treatment by formal institutions, access to assets and credit, restricted access to policy discussions, and the limited availability of gender-disaggregated data for policymaking (World Bank, 2021). Gendered structural inequalities limit women’s influence over climate adaptation strategies and restrict their access to resources and assets required to cope with environmental disasters. At the same time, climatic shocks can deepen gendered vulnerabilities. This highlights the need to include gender-sensitive considerations in climate adaptation efforts.

Ethiopia has made some progress towards gender equality in the last 20 years. The country developed a national policy on women and revised its penal law to align with international standards. Ethiopia has also made encouraging strides in improving the representation of women in the House of Representatives, ministerial cabinet positions, and governmental institutions. Furthermore, national poverty reduction strategies now include targets to advance gender equality and women's empowerment. Finally, the Ethiopian government adopted many international conventions on gender equality and women's empowerment (Abebe, 2020; Oxfam, 2017).

Despite these gains, serious gaps in terms of gender equality persist, and the Somali Region lags behind most other Ethiopian regions. With a Gender Parity Index (GPI) of 0.7 at the primary education level and 0.4 at the secondary level, the gender gap in education in the region is one of the highest in the country (Oxfam, 2017). Another key challenge in bridging the gender gap is women's access to land, which has been a core agenda item of the Ethiopian government in recent years. Although there are adequate policy and legal frameworks to promote gender equality and assure women's rights to access, control and administer land, there have been serious institutional, cultural and technical constraints in enforcing laws and achieving progress on women's rights and empowerment. Customary norms, religious beliefs and deeply traditional social practices hamper the full realisation of women's rights. For instance, at the local level, patrilineal systems exclude women and girls from their legal right to inherit land. Divorce rules often do not support women in customary practices (Abebe, 2020).

Intersectional vulnerabilities in the Somali region primarily play out across occupational groups, migration status, ethnicity, household income, education, gender, age and disability. Pastoralists, and in particular women and children, are the most vulnerable among the rural poor. In pastoralist communities, mobility plays a key role to track the best grazing and water sources, or to avoid drought, disease or conflict. Women, youth and elderly people are often the least capable of moving as an adaptation strategy, making them particularly vulnerable (IFAD, 2020a,b). This is further described in detail in pathway 4, as part of the section on climate insecurity pathways of this report.

Environment and climate change

The Somali Region has a semi-arid to arid climate with perennial rivers that provide opportunities for pastoralism and irrigated and localised rain-fed farming activities. The region is part of the Somali *Acacia-Commiphora* bushlands and thickets ecoregion. Altitudes in the Somali Region range from 1.500m above sea level in the northwest to about 300m along the southern border and the Wabi Shebelle Valley. However, while over half of Ethiopia rises over 1.500m, most of the Somali Region lies below 1.000m and is comprised of semi-arid pastoral land (see figure 8). The landscape consists of dense shrubland, bush grassland and bare hills (Somali Government, 2022).

Current climate and historic trends

Temperature and precipitation

Sitting slightly below the Sahel but above the tropics and adjacent to Somalia's arid desert, much of Ethiopia experiences moderate temperatures, reflected in its mean annual temperature of 22.6°C (World Bank, 2021). However, as seen in the map below, the Somali Region experiences some of the warmest temperatures in Ethiopia, with a mean temperature close to 28°C (Time and Date, 2022). At the same time, while the whole of Ethiopia has a mean annual precipitation of 815.8mm according to the latest climatology, the Somali Region experiences the lowest mean annual precipitation of the country, lower than 400mm for most of the region and in many of the eastern parts below 200mm (see figure 9) (World Bank, 2021).

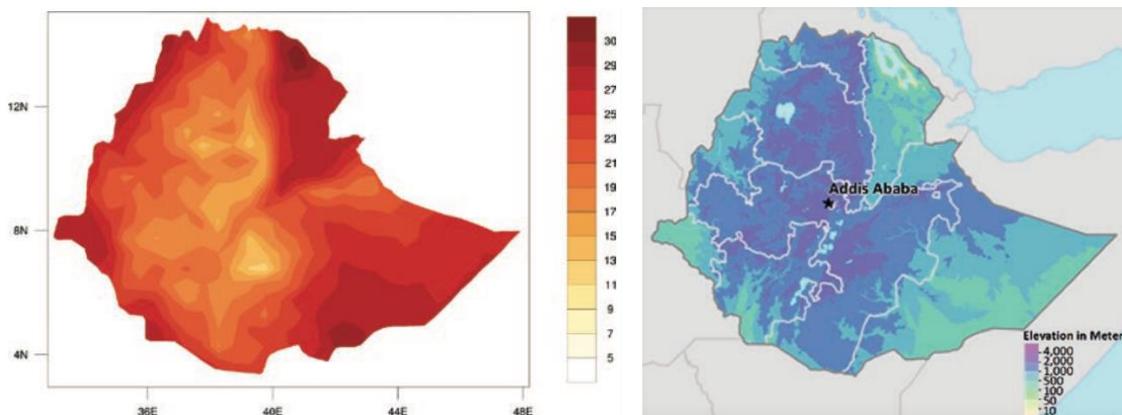


Figure 8: Average annual temperature (left) and elevation in meters (right) (Source: World Bank, 2021)

Throughout Ethiopia, seasonal rainfall is driven by the migration of the Intertropical Convergence Zone (ITCZ), a narrow zone around the equator where air masses from the south and north converge, producing low atmospheric pressure and rainfall (World Bank, 2021). However, the impact of the ITCZ's migration fluctuates across Ethiopia given the country's varied topography, aridity, and proximity to water sources such as Lake Tana, the Gulf of Aden, and the Arabian Sea (Abera et al., 2016).

The Somali Region's arid climate and geography near Somalia's border gives it a different seasonal precipitation cycle than the rest of Ethiopia. Indeed, it does not experience the *Kiremt* (long rainy season) at all. Rather, the Somali Region's precipitation cycle includes a long rain, the *Gu*, from February to May, and a short rain, the *Deyr*, from October to November (New Humanitarian, 2007).

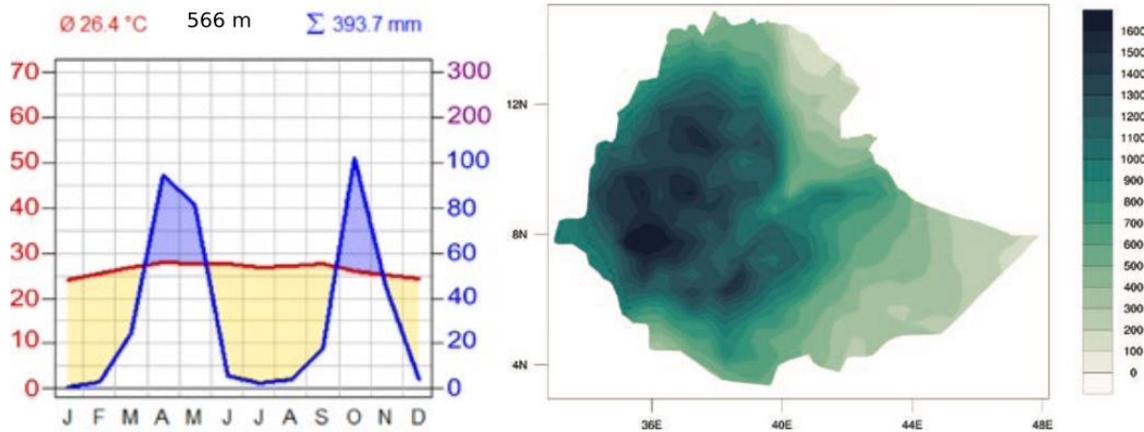


Figure 9: Left: Mean temperature and precipitation in the Somali Region (Source: Agrica, 2021); and, right: annual precipitation, 1901-2020 (Source: World Bank, 2021)

The impacts of climate change on precipitation in Ethiopia must be understood through the climate and seasonal heterogeneity that characterises the country. In some regions of the country, particularly in the Upper Blue Nile River Basin of the northwest, precipitation has increased through sporadic bursts, causing flooding that destroys crops, homes, and infrastructure, including critical roadways (Aich et al., 2014). However, in eastern Ethiopia, including the Somali Region, the arid climate allows for very little rainfall, and climate change has led to an increase in the frequency and intensity of droughts (World Bank, 2021; Amede et al., 2015).

Given the seasonal fluctuation and the variation of seasons within Ethiopia, it is more useful to measure trends in the anomalies in precipitation for the *Gu/Deyr* seasons than to measure total precipitation variance in Ethiopia or the Somali Region across the year (CHC, 2022). When looking at seasonal and interannual variability of available water supply, it is clear that large parts of the Somali Region face medium to extremely high variability, especially when assessing trends from year to year (see figure 10).

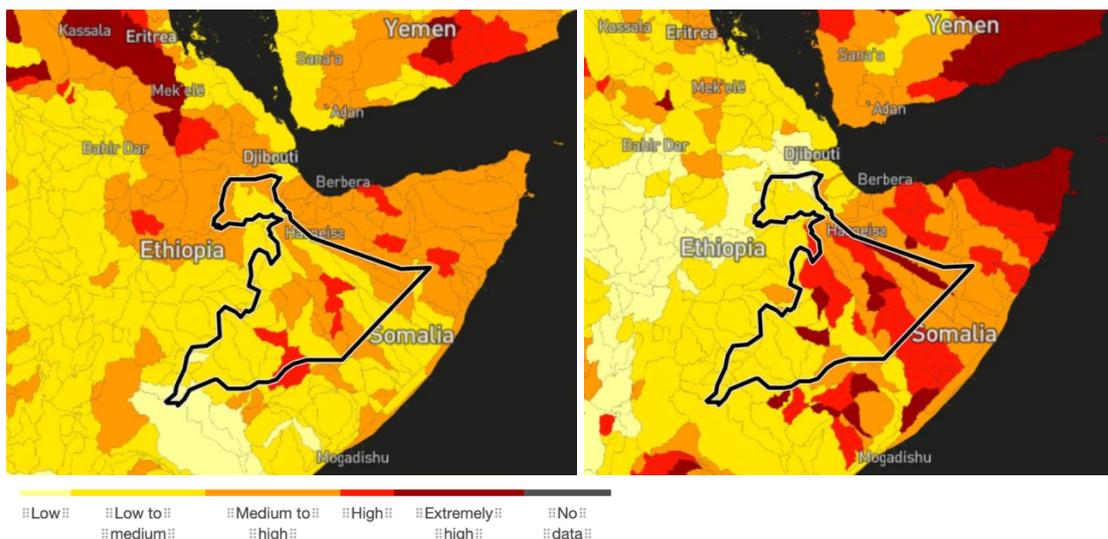


Figure 10: 1960-2014 seasonal variability (left) and interannual variability (right) of available water supply in the Somali Region. This measure the average within-year variability (left) and between-year variability (right) of available water supply, including both renewable surface and groundwater supplies. Higher values indicate wider variations of available supply within a year (left) or from year to year (right). Values are calculated based on data from years 1960 to 2014. (Source: WRI Aqueduct; WPS Global Tool)

Additionally, these trends must be paired to specific seasons, given rainfall variability across different seasons. Trend analysis shows that, although the end of the Gu has seen higher precipitation compared to recent years, the entire Deyr and the start of the Gu have recently witnessed significantly lower precipitation (CHC, 2022). In the Somali Region, climate change has increased the likelihood of severe and persistent drought. Indeed, the periodic El Niño-Southern Oscillation (ENSO) has contributed to lower-than-average Deyr and Gu rainfall in the Somali Region for several consecutive seasons, which started in 2020 (see figure 11, left) (GEOGLAM, 2022).

Finally, seasonal and interannual rainfall variability are important factors affecting baseline water stress, which is measured by comparing the ratio of total water withdrawals to available renewable water supplies.⁴ Higher values of baseline water stress indicate more competition among users. As seen in figure 11 (right), despite some significant areas where no reliable data could be collected, several sub-regions of the Somali Region experienced medium to high, and high levels of water stress at the time of the latest available data in 2014 (WRI Aqueduct, 2014). With decreased precipitation in recent years (see figure 11, left), the levels of baseline water stress across the Somali Region could be expected to be significantly higher at the time of reporting compared to the levels in 2014.

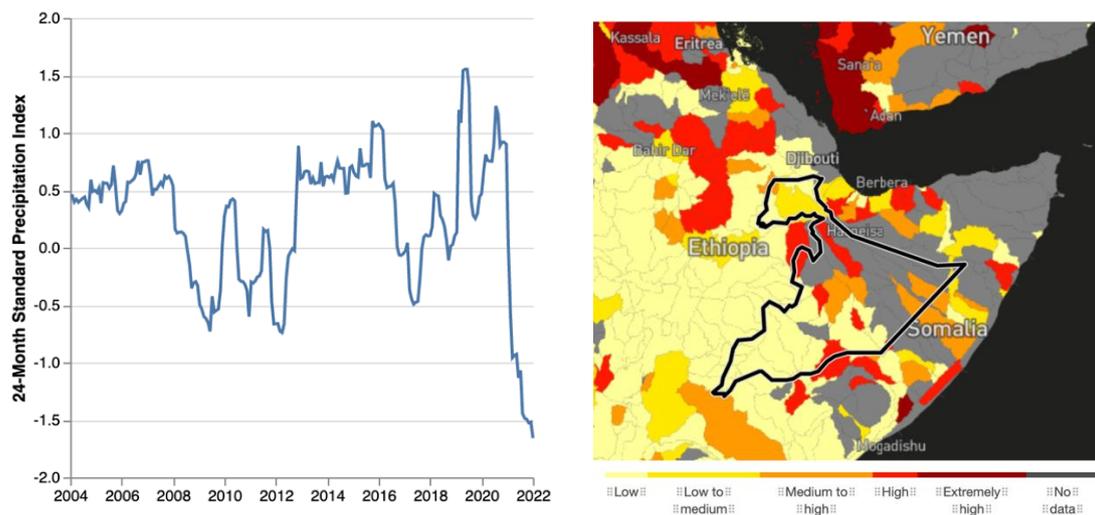


Figure 11: Precipitation anomalies in the Somali Region for 24 months⁵ (left) (Source: ECMWF/Deltares; WPS Global Tool), and; Baseline water stress from 1960-2014 (right) (Source: WRI Aqueduct; WPS Global Tool)

Climate projections

Temperature and precipitation

The steady warming trend that the Somali Region is currently experiencing is expected to continue, leading to a higher frequency of ‘very hot days’ (over 35°C), especially in the second half of the century (IPCC Interactive Atlas, 2022). Both pessimistic (RCP6.0) and more optimistic (RCP2.6) emissions scenarios show that the Somali Region will witness the highest increase in very hot days over the next decades compared to other Ethiopian regions (see figure 12).

⁴ Water withdrawals include domestic, industrial, irrigation, and livestock consumptive and non-consumptive uses. Available renewable water supplies include surface and groundwater supplies and considers the impact of upstream users and large dams on downstream water availability.

⁵ These were created using precipitation data from the ECMWF SEAS5 seasonal weather forecasts. Specifically, the Standard Precipitation Index approach was used to create the anomalies.

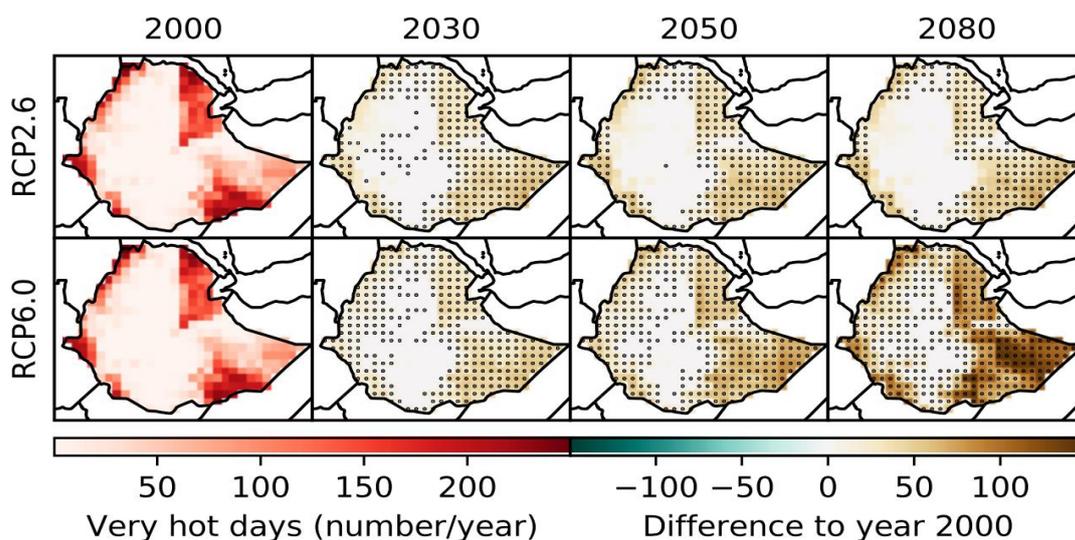


Figure 12: Projections of the annual number of very hot days (daily maximum temperature above 35 °C) in Ethiopia under different GHG emissions (Source: Agrica 2021)

Future projections of precipitation are less certain than projections of temperature change due to high natural year-to-year variability and modelling uncertainty (see figure 13). Projections of precipitation and drought over the remainder of the 21st century are not linear. As the below maps show, while mean annual near-term precipitation is expected to decline in the Somali Region, long-term precipitation might actually increase (Agrica, 2022).

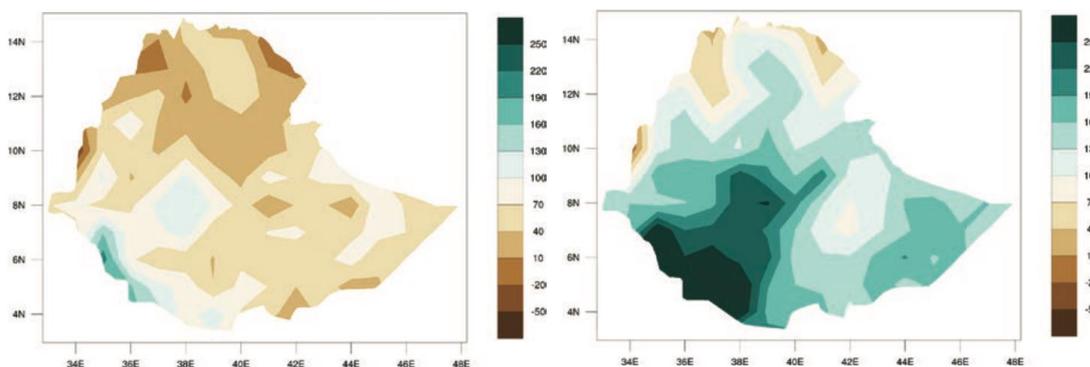


Figure 13: CMIP5 ensemble projected change (32 GCMs) in precipitation (bottom) by 2040-2059 (left) and by 2080 (right), relative to 1986-2005 baseline under RCP8.5

Closely linked to temperature and precipitation, hydrology projections for Ethiopia indicate a strong and continuous rise of potential evapotranspiration. Under a medium to high emissions scenario (RCP6.0), potential evapotranspiration is projected to increase by 2.0 per cent in 2030, 2.7 per cent in 2050 and 4.4 per cent in 2080 compared to year 2000 levels (Agrica, 2022). Extreme precipitation events are also expected to become more frequent and more intense due to the increased water vapour holding capacity of a warmer atmosphere. As a result, although mean annual precipitation may remain stable or even increase over the long-term, the incidence of droughts and flooding are expected to increase throughout the century due to these erratic patterns (Agrica, 2022; World Bank, 2021; IPCC, 2022).

Natural hazards and extreme weather

With more heatwaves, higher rainfall variability and an increase in heavy precipitation events, the Somali Region is and will remain in the future highly exposed to extreme weather events. Most high-risk weather-related events are drought and flooding, including flash floods and river floods. Dry soil increases the levels of run-off such that much water does not permeate the soil, resulting in increased risk of floods. When looking at the percentage of the Somali population expected to be affected by riverine flooding, almost the entire region is at medium to high, or extremely high risk (see figure 14) (WRI Aqueduct, 2010).

Drier weather conditions in the Somali Region also increase the severity and frequency of wildfire hazards. According to ThinkHazard!, the risk for the entire region is classified as high. Other natural hazards, including landslides, earthquakes, and cyclones are marked as low to medium. The impact risk of volcanic eruption is only high in the northwest of the Somali Region (ThinkHazard!, 2022).

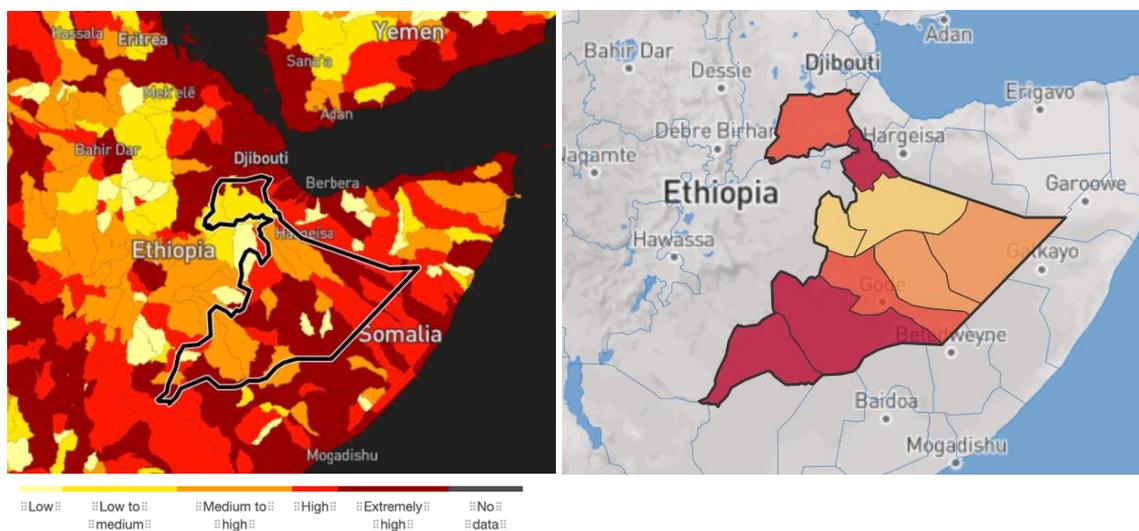


Figure 14: Riverine flood risk (left) (Source: WRI Aqueduct; WPS Global Tool, 2010) and urban flood risk (ThinkHazard!, 2022)

Desert locusts

Desert locusts (*Schistocera gregaria*) are considered the world's most widespread and destructive pest. In Ethiopia, desert locust swarms emerge in two stages. The first stage, known as the solitary stage, exhibits a low density of locusts, but once the swarms are formed in the second stage, called the gregarious stage, the threat of locusts increases in terms of geographic area and scale of harm in any given area (Guan et al., 2021).

Weather patterns determine a locust's life cycle and therefore climate change impacts desert locusts. First, egg hatching relies on moist soil, and therefore higher precipitation is associated with higher rates of locust reproduction. For example, the 2003–2005 desert locust invasion can be largely attributed to abnormally high rainfall. Similarly, the two strong tropical cyclones in the Arabian Sea in May 2018 and December 2019 created ideal conditions for locust crises in Ethiopia from 2019–2021. FAO's

documentation of locust swarms during this period illustrates the unique vulnerability of the Somali Region to locust swarms (Guan et al., 2021; FAO, 2022).

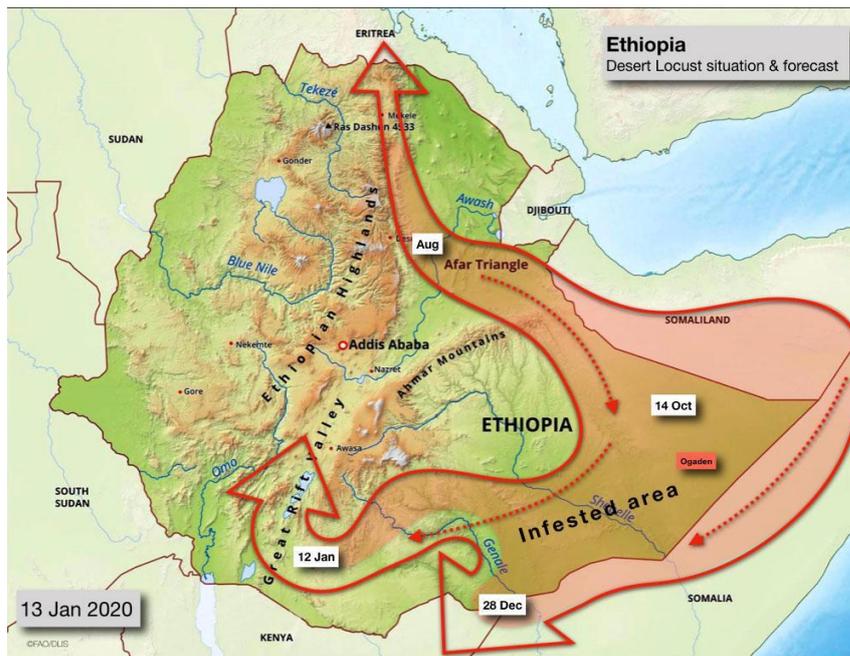


Figure 15: The spread of locust swarms in Ethiopia from August 2019 to January 2020 (FAO, 2020)

The risk of desert locust swarms in the Somali Region will continue into the foreseeable future. Advances in modelling can be used to predict the distribution of desert locusts along climate pathways associated with warming targets. This modelling forecasts that temperature rise will lead to a contraction in the locusts’ reproduction cycle, and therefore warmer temperatures are generally associated with reduced areas of reproduction potential. However, for those areas within this contracted zone where locust reproduction will take place, which includes the Somali Region, the compounding factors of i) maintained breeding area, ii) frequent extreme weather events, and iii) population growth may actually contribute to an increased intensity and duration of locust swarms (Guan et al., 2021).

Additionally, climate models predict an increase in extremely severe cyclonic storms (ESCS) in the Arabian Peninsula due to climate change (Murakami et al., 2017). As recent swarms have shown, an ESCS can catalyse substantially larger breeding densities on the Arabian Peninsula, which can then cross over into the Horn of Africa and continue to breed and expand (Guan et al., 2021). In addition to a higher frequency of ESCS, there is a general higher than average rainfall due to changes in the Indian Ocean dipole, which has also increased the frequency of locust swarms in the Arabian Peninsula and Horn of Africa (Stone, 2020).

Climate change impacts on key sectors

Sector	Projected impact	Mechanism
Agriculture and pastoralism	Water scarcity	Higher temperatures and more variation in precipitation patterns will increase water stress, contributing to losses in agricultural production and livestock.

	Pests and diseases	Rising temperatures will likely create an enabling environment for pest infestations and crop diseases. Flooding increases the risk of desert locust epidemics.
	Flooding	Varied and more intense rainfall combined with drier soil will increase the risk of flooding, affecting agricultural production and livestock.
Health	Malnutrition and famine	Extreme weather events will exacerbate food and water insecurity, contributing to malnutrition and famine.
	Vector-borne and water-borne diseases	Increased temperatures will likely expand the reach of malaria to highland areas. Increased flooding will contribute to the spread of water-borne diseases.
Infrastructure	Transportation	Erratic rainfall patterns and flooding will likely damage transportation infrastructure, limit possibilities for new development, and make repairs and maintenance more challenging.
	Human settlements	Extreme weather events will increase the vulnerability of human dwellings, especially refugee and IDP settlements and infrastructure in rural areas.

Table 2: Overview of impacts of climate change on various sectors in the Somali Region (source: The World Bank; UN Habitat)

Climate insecurity pathways: How climate change compounds existing risks

There is ample evidence that climate and environmental pressures have contributed to food insecurity and violent conflict across the world, and this is expected to increase as the impacts of climate change worsen (Delgado, 2021). Evidence also suggests that climate-related conflict is more likely to emerge in regions that are highly vulnerable to climate variability and experiencing low socioeconomic development, poor infrastructure and governance capacity, alongside high levels of food insecurity, poverty, and socio-political inequality. Livelihood dependency on natural resources, rain-fed agriculture and pastoralism also increase this risk (Belay et al., 2005; Beyene, 2017). Most of the regions that experience protracted crisis or high risk of famine are often simultaneously affected by violent conflict and natural resource scarcity, which reflects the interconnection between climate, food systems, environment, climate, and insecurity (Liebig et al., 2022).

It is important to note that the cascading effects of climate on peace and security are highly complex, and usually first play out at the local and communal level. Multiple moving parts influence each other: there can be linear, causal linkages between climate and insecurity, but these are also shaped by indirect, intermediate factors and context-specific dynamics. Although there are some general trends and patterns to discern through climate insecurity pathways, the change processes always remain difficult to comprehend or predict (Liebig et al., 2022; Rüttinger et al., 2015).

This means climate change is seldom the direct source or driver, but it has a multiplier effect and is an aggravating factor for crisis, instability, and conflict (Pacillo et al., 2022). Other variables, especially history of conflict, political instability, oppression or marginalisation, might have stronger explanatory or predictive value for violence than climate stressors. Simplistic climate-conflict narratives should therefore not overwrite longstanding historical factors that drive conflict in a certain context (Verhoeven, 2011; Salehyan, 2014).

Based on a review of existing literature, the following section identifies five key overlapping insecurity pathways – or cascading effects – through which climate change and environmental pressures can compound risks to peace and security in the Somali Region. These centre around:

1. livelihoods and natural resource competition;
2. human mobility and displacement;
3. regional spill-over effects;
4. intersectional vulnerabilities, and;
5. governance.

Pathway 1: Climate hazards and environmental pressures cause severe losses in livestock and crop yields that threaten people’s livelihood and food security. This in turn drives competition over scarce, variable and ephemeral natural resources, which risk to escalate into violent conflict.

The Somali Region has always had limited natural resources available, and recent droughts, flooding and pests have further reduced this, causing repeated devastation on communities’ livelihood and food security. Even though livelihoods are relatively diversified, (agro)pastoralists and farmers remain heavily reliant on natural resources (Beyene, 2017). Most of the region’s population is dependent on livestock as a both source of food and income, but when seasons fail, these households experience a rapid

deterioration in food security and increased risk of malnutrition. Rains are becoming more unpredictable and intense, oftentimes followed by flash floods and high levels of run-off which means much water is lost as it cannot permeate the soil. Cycles of drought and flooding have caused critical feed and water shortages, resulting in widespread livestock and yield losses (FAO, 2016). The Somali Region local office has shared with media outlet that more than 4.5 million livestock have died since late 2021 and 30 million are at risk (Addis Standard, 2023). In addition, a warming Arabian Sea increases rainfall in and around the Arabian Peninsula, leading to higher rates of locust swarms. Between 2019 and 2021, vast swarms of desert locusts wreaked havoc all over Eastern Africa, causing severe damage to vital vegetation, agriculture land, rangelands and fodder (The Week, 2021; Murakami et al., 2017).

Coping with climate hazards and environmental pressures has long been an integral part of (agro)pastoralist life, especially in settings that experience a lot of climate variability such as the Somali Region. More recently, pastoralists have increasingly adapted by engaging in more diverse and non-pastoralist livelihoods like wage labour, petty trade or selling assets (Belay et al., 2005; Beyene, 2017). Of course, Somali pastoralists pursue heterogeneous adaptation pathways according to differences and disparities in material, social and cultural capital (IOM and ICPALD, 2022). Communities living in areas with access to markets, social infrastructure, and roads have a greater range of adaptation options (UN Habitat, 2014).

Most pastoralists follow seasonal livestock mobility patterns to utilise the wet and dry season grazing lands, and breed livestock that feed selectively on available pastures in the dry lands. Adjusting these mobility strategies for the sustainable management of drylands vegetation and water is also a well-known adaptive behavioural response (IGAD, 2019). Similarly, cattle raiding and natural resource competition, including land and water disputes – either between farming communities and pastoralists or between pastoral clans – have been part of Somali pastoral ecosystems for a long time. Such competition and cattle raiding often have deeply rooted belief systems and long-standing traditional practices (Hegazi et al., 2022; Mussa et al., 2017).

Oftentimes, this cattle raiding and competition turns violent, and pastoral societies have developed numerous traditional and customary ways to prevent and resolve conflict. Somali clan elders play a key role in customary law by mediating in disputes between clans and negotiating agreements on compensation, and also by leading traditional practices of forgiveness (Muluken, 2020). The Ethiopian government also recognised this as a conflict resolution mechanism, which was integrated in the Somali government (Hegazi et al., 2022; Mussa et al., 2017). However, when natural resources dwindle and competition becomes fiercer, the risk of violence also heightens. Evidence from different contexts suggests that food and livelihood insecurity increase grievances and can have negative implications for peace and stability (Delgado et al., 2021).

The incidence of violence related to livestock raiding has been found to increase during atypically wet and atypically dry years. Some evidence suggests that pastoral groups in the Somali Region engage in more livestock raiding during dry years, suggestive of greater scarcity (Raleigh and Kniveton, 2012). However, other research in the broader region indicates that livestock violence becomes higher in wet times suggestive of more violence in times of plenty (Ember et al., 2014). Oftentimes, to cope with the effects of drought, livestock is raided within the same clan, or between different clans. This does not necessarily lead to conflict, as it is part of traditional resource sharing mechanisms

managed through indigenous conflict resolution. However, inter-ethnic or inter-clan raiding – as compared to intra-clan – often causes conflict between communities because there are no or few mechanisms for conflict resolution or compensation between such groups (Belay et al., 2005). In periods of drought, intra-clan raiding might reduce, and inter-clan or inter-ethnic raiding increase, leading to more violent conflict between communities (Hegazi et al., 2022).

The supply and availability of small arms to farmers and herders also play a key role in escalating competition into conflict, and conflict into violence. Communal conflict management mechanisms can erode, leading to further deterioration of the security situation (Abbink, 2007). External shocks, such as weather hazards and locust swarms, that threaten natural resources have a high likelihood of simultaneously exacerbating these conflicts. This insecurity pathway has spiralled repeatedly during several episodes in recent Somali history, and is expected to become more intense and frequent when the impacts of climate change worsen (Hegazi et al., 2022; IOM and ICPALD, 2022).

Finally, it is important to note that environmental degradation can contribute to insecurity, but insecurity also affects the environment. Rather than one linear pathway, these feedback loops can be seen to mutually reinforce each other. Conflicts between farmers and herders, or between pastoral clans cause general insecurity that limit pastoralists' options to secure their livelihoods, often requiring them to stay in secure areas close to urban centres. Intensified grazing and overexploitation of these areas then again result in environmental degradation. Access to fertile areas may also be highly unequal, varying according to each household's social networks, herd size and wealth level (IOM and ICPALD, 2022).

Pathway 2: Shifting transhumance movements, as well as climate-induced migration and displacement, can lead to an uptick in violence.

Migration and mobility are amongst the most important livelihood strategies of pastoral societies. Transhumance is not only a vital aspect of the livestock production system and an inherent part of pastoral life, it also helps pastoral communities to strengthen their resilience and adaptive capacity to various stressors. However, if mobility patterns change, they can also become a source of intense demographic pressures that lead to tensions between and within communities. This is especially visible when shifting migration takes place in a poorly planned, unmanaged, abrupt, or forced manner (Ahmed and Bihi, 2019; IOM and ICPALD, 2022).

Even though migration as an adaptation and risk management strategy has often been successful for nomadic pastoralists, it also comes with heightened risks. Migration puts additional stress on already weakened animals, especially when routes become longer or more arduous. Higher concentrations of livestock in restricted areas, e.g. in diminished plots of fertile rangeland, have also been conducive to the rapid spread of contagious diseases. In the worst-affected areas of the Somali Region, households dependent on their animals – mainly sheep, goats, cattle and camels – have seen most, or all, of their herd perish as a result of insufficient feed and water (FAO, 2016). Ex-pastoralists and pastoral drop-outs who lost their assets and property often subsequently migrate to urban centres in search for a better and more secure life. Mostly young (ex-)pastoralists then end up in extreme poverty in villages and towns,

without social protection and economic income, and marginalised from host communities (Ahmed and Bihi, 2019).

It is worth considering the impact that consecutive and multi-year climate variability and extremes have had on traditional ways of coping mechanisms such as transhumance and migration patterns. For example, a study that focused on understanding climate variability and indigenous adaptation strategies by Somali pastoralists in the Kebribeyah district (northwest of the Somali Region) revealed that unusual adaptation strategies are replacing the traditional pastoralist livelihood system. Survey responses suggested that most households resorted to various non-farm and off-farm methods, including petty trade, charcoal production, daily labor, remittance, milk sells and meat sell (Ayal et al., 2022). Furthermore, focus group discussion with young pastoralists disclosed the extent of out-migration of the young population in search of employment to the nearby towns like Jigjiga and Degehabour and as far as Saudi Arabia and Libya (Ayal et al., 2022).

A major element in transhumance movements is access to and availability of rangelands. When rangelands get fragmented, nomadic pastoralists need to shift their routes, heightening insecurity and conflict risks. Rangeland fragmentation can occur as a consequence of environmental degradation, but also due to physical obstructions such as infrastructural developments, commercial projects, private property lines and fences, exclusionary conservation zones, and international borders. In other cases, rangeland fragmentation is caused by pastoralists themselves, either as part of pastoral competition over land or when wealthy pastoralists decide to invest in land for other purposes like agriculture or business (IOM and ICPALD, 2022).

Access can also be restricted due to legal or governance issues. For example, the Land Administration to Nurture Development (LAND) project was established as a legal and regulatory framework related to land tenure and property rights, including for communal lands used by pastoralists. However, the project caused tensions because pastoralists identified the *dheeda* (a traditional grazing unit) as the unit of landholding, while regional officials were reluctant to formally recognise such large land-holdings, which often traverse administrative boundaries. From the administration's point of view, customary structures were only deemed acceptable for local governance of small territories. To safeguard transhumance movements, new legislation had to be passed to allow pastoral community institutions to register as Community Land Governance Entities (CLGEs) and hold title to communal land (Woldegiorgis, 2018; IOM and ICPALD, 2022).

These impediments to movement are often the result of governmental fragmentation, due to different institutional bodies and unclarities in legal frameworks. Oftentimes, both public and private interventions cause unintended harm to rangelands, but in other cases – e.g. land grabbing or elite exploitation – pastoralist rights and practices are purposefully ignored or hampered. Either way, nomadic pastoralists, especially smallholders and rural poor have not been considered thoroughly in the search for comprehensive solutions, forcing them to adapt in ways that secure their livelihoods in the short-term, but jeopardise sustainable solutions and consequently also peace and security (IOM and ICPALD, 2022).

Somali herders also face forced migration and displacement. In recent years, extreme weather events in the Somali Region forced thousands of families out of their homes

and into displacement camps. A recent assessment found that 85 per cent of displaced people in the Somali Region reported the main reason for their displacement as ‘loss of livelihood due to drought’ (ACTED, 2021). The Somali Region has seen a continuous influx of refugees and IDPs for years, including in and around urban centres and highland areas, causing stress on host communities (FAO, 2016; UN Habitat, 2020). The recent drought has also forced Ogaadeen (of Somali Region) pastoralists to cross over to Somaliland and, in mid-2022, some 3.000 families and their livestock had arrived in different parts of Somaliland (Rift Valley Institute, 2022).

Transhumance-related violence often takes place in regions that are rich in natural resources, rather than in environmentally degraded zones. As nomadic pastoralists leave drylands or unsuitable lands for pastoralism and travel to fertile rangeland and agrarian areas in search for non-drought conditions, the latter regions consequently experience demographic pressures, followed by a spike in competition and conflict over natural resources. Drought-affected pastoral areas thus remain relatively calm, while less arid lands with grazing opportunities risk becoming more unstable (Mcguirk and Nunn, 2020). Often, (agro)pastoral areas where agriculture and pastoralism have coexisted for a long time have greater resilience to such spill-over effects because conflict management systems and resource-sharing mechanisms have already been implemented. Fertile regions that did not experience increases in population (climate in-migration) earlier might be less equipped to find suitable arrangements (IOM and ICPALD, 2022). While transhumance-related violence and herder-farmer conflicts remained relatively low in the Somali Region in recent history, the situation might quickly deteriorate if climate stressors and associated disputes are poorly managed. In such a scenario, the Somali Region could face an increase in transhumance conflicts as seen in other parts of the broader region, such as in Somalia, Nigeria and Liptako Gourma.

Pathway 3: Climate-induced conflicts in neighbouring Somalia, as well as in other Ethiopian regions, could spill over and jeopardise stability in the Somali Region. Borderlands are considered the most high-risk.

The Somali Region’s geographic location, nested within the Horn of Africa, together with its porous land borders, makes it vulnerable to security developments in neighbouring regions. Somalia has experienced over three decades of civil war, including violent conflict over natural resources that come increasingly under pressure, making it an area of instability that could spur new conflagrations and regional spill-over effects at any point. Furthermore, the ethnic homogeneity in the Somali Region has led to close ties with clans in Southern Somalia (Ogaden), Somaliland (Issaq), and Djibouti (Issa) (Ficquet and Feyissa, 2015).

In addition to international ties, Somali clans in the Somali Region inhabit areas within the borders of its Ethiopian neighbouring regions of Oromia and Afar, which have already experienced ethnic tension and resource competition in borderlands (Kefale, 2013). Ethno-nationalist conflicts, as flared up between the federal and Tigray governments in late 2020, might also spur separatist sentiment and grievance in the Somali Region towards central governance and politics, federal land distribution, regional borders and sovereignty (Hagmann, 2014; Hagmann, 2020). The disputed borders area between Afar and Somali Regions, which has significant resources such as

the Awash River⁶, has seen a rise in conflict over these resources since 2018, with major clashes happening at the time of heightened political tensions during the run-up toward the national elections in 2021 (Ethiopia Peace Observatory, 2023). Although a major clash has not made the news since 2021, the Awash River continues to be an important resource for both Afar and Somali herders and is critical for trade between Addis Ababa and Djibouti (Ethiopia Peace Observatory, 2023).

Finally, the Somali Region's neighbours are also highly exposed and vulnerable to climate shocks and disasters caused by natural hazards (ND-GAIN, 2022; Weathering Risk, 2022). Even though climate impacts can play out differently across the wider region, and while the Somali Region might remain spared from severe climate hazards, it is by no means isolated from its neighbours. The Somali population could therefore bear the consequences of the wider region's high fragility to climate and environmental stress. Taken together, the socio-political, economic and climate volatility of neighbours inside and outside of Ethiopia, as well as the complex ties and interdependence between neighbours, make the Somali Region equally vulnerable to external climate-related security risks. These have the potential to exacerbate conflict among Somalis or between Somalis and their neighbours, especially in borderlands (Kefale, 2013; IOM and ICPALD, 2022).

The Somali Region is also dealing with refugees fleeing conflict. In 2023, at least 100.000 refugees from Somalia fled to remote areas of the Somali Region because of conflict between Somalian security forces and opposition groups, particularly after fighting started in Las Anod, in the disputed Sool region (UNHCR, 2023b). In the past, cross-border security between the Somali Region and Somalia has been relatively peaceful owing to strong Ethiopian Security forces presence, except for a rare attack of two villages by Al-Shabab forces in July 2022 (Reuters, 2022). However, as climate and demographic pressures increase, and if strong security is not maintained, the Somali-Somalia border area could see higher displacement and instability.

Pathway 4: Climate hazards and environmental stressors can exacerbate existing intersectional vulnerabilities.

Climate change and environmental issues affect people differently depending on gender, age, occupational group, socioeconomic situation, disability, etc. Displaced persons, women, youth, elderly or disabled people are the most vulnerable because they have limited resources and options at their disposal to respond to challenges or take advantage of opportunities. The basis for adaptive capacity is often captured under the term 'optionality' (IOM and ICPALD, 2022).

Concerning socioeconomic class, wealthier herders can more easily diversify their income by focusing on agriculture or by investing in less climate-sensitive economic activities – something herders with less means at their disposal are oftentimes unable to do (IOM and ICPALD, 2022). For example, some Somali herders have opposed irrigation-based schemes that reduce available pasturelands, while other, often wealthier pastoralists from the same community decided to purchase private land and

⁶ The Awash river basin is one of the most important river basins in Ethiopia covering significant populated areas. Climate vulnerability has resulted in increased dependency on the river and its tributaries (CSE, 2022).

invest in irrigated cultivation as a way to diversify their income. Such coping mechanisms applied by wealthy pastoralists might also reduce options for poor, smallholder herders (Eriksen and Marin, 2011).

As for gender, in the Somali Region men tend to respond to drought by migrating to look for work, selling assets or livestock, and purchasing food on credit. Each of these adaptation strategies is used in higher proportion by men compared to women, which could be due to women's limited opportunities for mobility, and their limited access and control over resources and assets (Oxfam, 2017). In response to food insecurity, women tend to adopt negative coping strategies, such as reduction in food consumption. Furthermore, women may have more control over decision-making about food assistance than decision-making about cash assistance, compared to men. When men leave the herd behind and migrate in search for other income generating activities, women become *de facto* heads of households and in charge of livestock keeping. In such cases, women usually take over some of the decision-making authority, but this is often faced with resistance, either within households or from the community. In addition, when taking on additional responsibilities in response to climate stressors, women and children often have to leave safe environments and expose themselves to security risks, e.g. when fetching water over longer distances or when taking care of the herd (Oxfam, 2017; IFAD, 2020a).

Although Somali women and men are both involved in livestock rearing, women tend to face more constraints in market access and control over resources. Thus, women are generally more often engaged in labour-intensive activities such as milking and feeding livestock, while men are in charge of decision-making of livestock sales (WFP, 2019). With the implementation of statutory, formal systems of land use and ownership, some communal pasture tenure systems have been breaking down. This has led to adverse impacts on women, who often fall 'between two stools', i.e. that of the customary practices and that of the more formal governance tenure. This can materialise in women missing out on formal recognition of their roles and titles in pastoral societies (Adoko and Levine, 2008; Flintan, 2011).

To cope with increasingly harsh living conditions, over the years, pastoralists have attempted to diversify their livestock, because depending on one particular livestock type makes them more vulnerable to drought, rangeland fragmentation or market accessibility and fluctuation. Higher diversification of livestock requires additional tasks and responsibilities, and consequently women and children have started to play a greater role in herd management. Women will usually have responsibility for small livestock such as sheep or goats, and/or the larger livestock that is kept around the household. Typical tasks include milking and caring for sick or young animals, especially when men are migrating with the herd (IFAD, 2020a).

Both Somali men and women also try to diversify their income by engaging in non-pastoralist related work. This may involve farming or trade in non-pastoral goods, leading to increased resilience to climate-related or other stressors. However, livelihood diversification can also push women into higher workloads that are time-consuming, and thus negatively affect other aspects of their lives, such as domestic work, education, leisure and social activities, etc. This eventually hampers their socioeconomic empowerment. In sum, economic diversification into non-livestock alternatives can lead to both empowerment or disempowerment of women (IFAD, 2020a).

The introduction of modern technology and livestock information services offers a range of opportunities for pastoralists to strengthen their resilience. However, such innovations typically have a higher uptake amongst men as compared to women. Furthermore, livestock extension provision and veterinary services are generally designed by and provided for men, with limited focus on women's involvement in livestock health and production (IFAD, 2020a).

Not only women, but also children, youth, disabled and elderly persons have limited access to coping mechanisms and are more vulnerable to harmful adaptation practices, which reinforce the cycle of poverty and insecurity. The cascading effects of climate change on these vulnerable groups can also have a direct impact on their personal security. Examples include reduced access to education, increased child marriage and Female Genital Mutilation, or increased mortality among the elderly due to climate-induced livelihood stress and insecurity (UNICEF, 2022; Nusrat, 2019). Marginalisation and poverty amongst youth, whether exacerbated by climate insecurity or not, have also been well-evidenced drivers of armed group recruitment and mobilisation (Haer, 2019; Achvarina and Reich, 2006). When pastoral livelihoods dwindle, older community members can compel youth to engage in cattle raiding, often against their will, exposing them to violence. Finally, youth are often more likely than their older counterparts to aspire to livelihood diversification, and, for example, migrate to urban areas in search for opportunities. While this can strengthen their resilience, it can also expose them to urban poverty, criminality and violence (Humphrey et al., 2023).

Finally, women and youth are not solely victims of climate insecurity. They are often wrongly perceived as passive actors in transhumance-related conflicts. While it is mostly men engaging in violence, women play a role in cultivating a culture of conflict, or indeed, peace (IFAD, 2020a). Women sometimes encourage young family members to fight to protect their clan and livelihoods, while on the other hand, they can also play a role in mediating conflicts or preventing them from escalating. For example, in some instances, women can intervene where men cannot, for fear among the latter that they could be killed before negotiations begin or if a resolution is not found (Bouh and Mammo, 2008).

Pathway 5: The presence, legitimacy and capacity of governmental actors can either mitigate or exacerbate climate-related security risks.

The Somali Region, which in the 1880s was one of the last regions to be incorporated into the Ethiopian state, did not integrate into state institutions in the same way as other regions because of its rural demographics and predominantly pastoralist populace. Historically, there has been inequity in power and resource allocation between Ethiopia's highland and central regions in comparison with its lowland and peripheral regions (Kefale, 2013). Because of this history, today most governmental actors still have limited activities and influence in the Somali Region, especially related to climate adaptation and resilience building. This is due, in part, to the lack of formal partnerships between authorities and other relevant stakeholders, such as (agro)pastoral communities, civil society organisations, and the private sector. The history of state-based violence in the Somali Region, as well as opposition to state interference, has consistently hampered the presence, legitimacy and capacity of governmental actors in the region. As a result, basic safety measures, such as disaster and emergency management are considerably limited or non-existent (UN Habitat, 2014).

Politics and governance in the region remain inseparable from inter-clan and intra-clan dynamics and norms among the Somali population, as well as the longstanding ties between these Somali clans and their counterparts in Somalia (Kefale, 2013). In this context, initiatives from the central government to respond to climate and environmental pressures can create new problems or conflicts across jurisdictions. For example, if climate, peace and security strategies enacted by Ethiopian authorities in the Somali Region do not have local buy-in or ownership, they could be perceived by Somalis as undesirable or even harmful, leading to push back that could potentially turn into violent conflict – as it has on numerous occasions in the past (Warfa, 2021). Disregard for customary regulations and practices, as well as government interventions that could be perceived as discriminatory, therefore risk flaring up historical grievances which can drive new tensions and conflicts. These conflicts could play out intra-regionally, within and between Somali pastoralist clans, or between Somalis and the Ethiopian central state or neighbouring states, such as Oromia or Afar. Some key risk areas include access to and distribution of fertile land, water resources and humanitarian aid.

Existing responses that address climate-related risks

At the national level, Ethiopia's climate change adaptation policies identify and prioritize the need for safeguarding livelihood security and strengthening of climate vulnerability and shock coping mechanisms. For instance, three out of the 18 adaptation options that have been identified for implementation in the National Adaptation Plan (NAP) are (1) enhancing food security by improving agricultural productivity in a climate-smart manner, (2) building social protection and livelihood options of vulnerable people, and (3) strengthening drought, livestock and crop mechanisms (FDRE, 2019). It is worth noting that Ethiopia's Nationally Determined Contribution (NDC), which was updated in 2021, after initial submission to the UNFCCC in 2016, focuses its adaptation commitments in the areas of agriculture and land use with priorities in livestock diversification, drought resistant animal breeding, rangeland management and livestock insurance (UNFCCC, 2022). Furthermore, key intervention points relating to climate resilient food systems that were recognized by the NDC are: agriculture resilience and diversification, risk reduction, transfer, and insurance, water management and irrigation, and, climate information services (UNFCCC, 2022).

At the implementation level, several programmes aim to address climate-related security risks in the Somali Region, especially in the areas of livelihood security and climate-induced migration. The following were identified through desk research:

Anticipatory Actions (AAs) for Food Security: WFP partners with local institutions, the Somali Region Disaster Risk Management Bureau (DRMB), National Meteorological Authority (NMA) and Somali Micro Finance Institution and Mercy Corps to implement anticipatory action programmes (UNFCCC 2022; WFP 2023). The anticipatory action programming has a two-fold approach to preventing or reducing climate hazards on vulnerable populations: (1) strengthening national and local capacities for early warning and reach the increasing number of vulnerable populations, and (2) direct delivery of anticipatory action (UNFCCC, 2022; WFP, 2023). In 2022, two AAs were activated in July and August with the goal of protecting lives and livelihoods from deteriorating drought conditions through dissemination of early warning messages and advisories to vulnerable local communities, rangeland enclosure and fodder production and provision of anticipatory cash (see table 2) (WFP, 2023). In 2023, WFP aims to continue support drought-affected (agro)pastoralists in the region through anticipatory action programming, which will include providing microinsurance and assisting to boost livelihoods (WFP, 2023).

Somali Regional State Durable Solutions Strategy 2022-2025: The SRS Durable Solutions Strategy 2022-2025 is part of the Durable Solutions Initiative (DSI) that was established by the Government of Ethiopia, in collaboration with the UN, NGOs and donors by focusing on communities affected by recent internal displacement (UN Ethiopia, 2019). The action plan of this strategy is to provide a pathway for displacement affected communities to transition from dependency on humanitarian, urgent life-saving assistance to a condition of self-sufficiency and, ultimately, resilience (DSI and SDC, 2022). In 2020, the Durable Solution Steering Committee headed the development of solution options for IDPs which included returning to areas of origin, relocation to both urban and rural areas; and local integration; with a costed plan of action to outline multi- sectoral needs and technical support (DSI and SDC, 2022).

UNHCR Response to Drought Impacted Communities: UNHCR’s current drought impact response may not necessarily be considered long-term risk reduction programming but helps mitigate the impact of the climate vulnerability and extremes that communities are dealing with from the ongoing drought and flooding. From April-July of 2023, 1.4 million people were prioritised for assistance in drought affected areas of the Somali Region (UNHCR, 2023a). UNHCR partnered with the local government office to distribute emergency food (rice, wheat flour, sugar and dates) to communities experiencing drought displacement and floods (UNCHR, 2023). Additionally, UNHCR distributed principal relief items (plastic sheets, solar lanterns, jerrycans and sleeping mats) to drought displaced households and profiling of IDPs and identified needs for effective planning of response, including arrangement for multi-purpose cash assistance (UNHCR, 2023a).

WFP programming in the Somali Region

In response to the severe drought, WFP launched a drought response programme aimed at supporting families with a combination of emergency relief, nutrition support and resilience building actions to save lives in the short-term and build resilience in the long-term. In late 2022, WFP provided around 2.8 million Somali people with food, cash and nutrition assistance on a monthly basis. However, due to funding shortfalls, WFP was not able to target the 4.7 million people estimated to be in need.

In addition to these lifesaving initiatives, WFP supported (agro)pastoralists in the region with trainings on small-scale, drought-resistant agricultural techniques and entrepreneurial skills to help them build businesses and diversify their livelihoods in the face of climate change. More specifically, WFP’s climate adaptation and resilience programme in the Somali Region includes:

- **Microinsurance against climate shocks:** WFP’s Satellite Index Insurance for Pastoralists (SIIPE) programme provides Somali (agro)pastoralists with livestock insurance against extreme climate shocks. In addition, WFP’s forecast-based financing programme provides early warning to support (agro)pastoralists to prepare for climate shocks before they turn into humanitarian disasters.
- **Boosting (agro)pastoralists’ livelihoods and restoring degraded land:** WFP provides livelihood support both on and off the farm to (agro)pastoralists in the Somali Region by helping them construct irrigation canals, conducting trainings on smart agricultural practices and providing agricultural inputs. Over 500 hectares of rangeland have been rehabilitated through these activities. WFP has also supported farmers and pastoralists in the Gode woreda to rehabilitate drought-affected land by digging half-moon formations to capture water and help re-grow pasture in the arid areas.
- **Fostering savings and lending schemes:** WFP also supports (agro)pastoralists and refugees in the Somali Region to save, lend and invest money in their livestock and crop production through the establishment of Village Saving and Loan Associations (VSLAs).

Table 3: WFP programming in the Somali Region (WFP, 2022b)

A critical element to consider when designing and implementing climate security programmes includes taking into account the risk of maladaptation. According to the IPCC, maladaptive responses to climate change can create lock-ins of vulnerability, heightened exposure to risks that are harmful and costly to manage and worsen existing inequalities. However, it is possible to avoid maladaptation through flexible, multi-sectoral, inclusive and long-term planning and implementation of adaptation programmes that benefit to multiple sectors and systems (IPCC, 2022). In a nutshell, cross-sectorial partnerships and coordination with the inclusion of contextual and local knowledge will be important to minimising the risk of maladaptation. Overall, it is difficult to forecast which strategies will translate adaptation programs into maladaptation but growing experience of adaptation on the ground has clarified that poorly designed adaptation strategies are often the drivers of maladaptation (Schipper, 2020). The overarching strategy to avoid maladaptation should also take into account how coping mechanisms outside of climate change adaptation programming are impacting sustainable development and peace and security goals. For instance, considering that the Somali Region is already noticing maladaptive coping mechanisms such as charcoal trading and Khat farming that threaten bushland and compete with food production, an effective adaptation strategy would put in place a way to assess those impacts (Ayal et al, 2022).

Entry points and priorities

This report highlights some of the climate-related security risks in the Somali Region and describes how these are interlinked with existing vulnerabilities. The intensifying severity of climate change impacts and environmental degradation, combined with the lack of alternative coping strategies in many communities in the Somali Region, are decreasing the ability of people to adapt, including through migration and livelihood diversification. When people flee conflict and weather-related hazards, they face deteriorated living conditions and increased vulnerability. Rural-urban migration, as well as refugee sites and settlements for IDPs, also cause additional pressures on already scarce, variable and ephemeral natural resources, putting stress on host communities. Strong feedback loops between climate change impacts and drivers of conflict exist, in particular with poor governance and livelihood and food insecurity.

Severe shortages of water and pasture in the Somali Region are devastating livelihoods and forcing families from their homes. This consequently increases the risk for unordered migration, competition over natural resources, and violent conflict. With the effects of climate change, these impacts will worsen in the future, especially for (agro)pastoralists and farmers, as well as women, youth and rural poor, who are amongst the most vulnerable communities to environmental stressors.

To build resilience among Somalis to climate impacts and environmental degradation, as well as to strengthen conflict management and promote peaceful societies, existing evidence derived from our literature review has brought forward numerous good practices, which are included in the following thematically organised entry points and priorities for humanitarian and development actors to consider:

1. **Conflict-sensitive and peace-oriented programming:** As a general principle and cross-cutting recommendation, it is critical to ensure that interventions leave no one behind and do not cause harm, and also aim to enhance conflict management and contribute to peaceful societies. A conflict-sensitive approach takes different conceptual and contextual principles into account, allowing humanitarian and development actors to gain a deeper and broader understanding of risks and avoid unintended or harmful consequences of their intervention. In addition, projects should actively seek to prevent and resolve conflict by linking climate resilience with sustainable peace objectives. Therefore, key focus areas include:
 - **Identify synergies** between climate adaptation and activities that help **bridge communities and strengthen social relations**.
 - Focus on opportunities to work towards **shared interests, common goods and mutual benefits** between and within communities, especially between refugees and host communities.
 - Adopt a **conflict-sensitive and peace-oriented approach** to inform the design, implementation, monitoring and evaluation of programmes and projects.
 - Develop specific climate, peace and security **indicators and objectives** that enhance social cohesion, build synergies and improve relations between and within communities.
 - **Appoint designated staff and focal points** that are responsible for mainstreaming a climate, peace and security lens.

- **Promote (existing) platforms and mechanisms** for local participation among different communities, resource-sharing and inclusiveness.
 - **Build capacity and raise awareness** across different levels and amongst all key stakeholders.
 - **Mitigating and preventing harmful, unintended effects** of interventions, including environmental, social, cultural or societal impacts.
2. **Livelihood diversification:** Communities vulnerable to climate stressors, in particular (agro)pastoralists and farmers, need to develop and maintain a range of potential economic options that allow for a back-up plan in case of failed agriculture or livestock production, or when new needs arise. Livelihood diversification is already inherent to farming and pastoralism. Most pastoralists have long practiced supplementary forms of food production, resource exploitation and trade. Therefore, opportunities to support the diversification of livelihoods should be integrated in existing practices. However, with extended periods of drought and back-to-back dry seasons in the past years, livelihood diversification should also include options outside of the traditional ways of coping with drought. Some focus areas to consider include:
- **Portfolio diversification**, allowing households to undertake multiple productive activities to spread risk across a range of occupations with different sensitivities to climate or other stressors.
 - **Temporal diversification**, in which households move between different activities and income sources at different times, e.g. following more closely weather or seasonal patterns.
 - **Enhancing added values from by-products of livestock**, such as dairy products and animal hides, and **additional aspects of the value chain**.
 - **Investing in non-pastoral activities**, such as small business development, dryland and irrigated agriculture, agroforestry, adoption of agricultural innovation such as new cash crops, education and vocational training, labour migration, and trade.
 - **Enhancing access to markets**, especially for vulnerable groups like farmers, (agro)pastoralists, women, youth, and displaced persons.
 - **Uptake of non-traditional coping mechanisms**, such as learning new vocational skills and trades, and fostering sharing of knowledge and practices from external pastoral and non-pastoral communities.
3. **Climate-smart agriculture and practices:** Enhanced management of water and fertile soil, together with more sustainable agricultural practices and technologies, can build more climate-resilient livelihood and food systems. This in turn reduces the risk of competition and conflict over fertile land and natural resources. Some climate-smart agricultural innovations and practices include:
- Enhanced **absorptive capacity and water harvesting systems** such as irrigation schemes, water supply technologies, water capture systems, flood-based farming (floodplain agriculture, spate irrigation, inundation canals, depression agriculture, etc.) and sustainable water management in wastelands. The selection of relevant water systems should be based on equitable arrangements, the production capacities and socioeconomic situation of farmers and pastoralists.
 - **Agro-weather management information systems**, including early warning and risk management.

- **Promoting resilient, bio-fortified crop production**, including intercropping, and **nutrient-dense foods**, as well as the use of **improved, high-yielding seed varieties**, especially fast growing, drought resistant plants.
 - Exploring **alternative farming approaches** like **agroforestry, urban farming**, and supporting **enhanced food storage** and **post-harvest handling**.
4. **Animal health and production**: Several measures allow (agro)pastoralists to maintain the size and health of their herds and minimise losses, which in turn prevent livestock raiding and the risk of conflict. These include:
- **Animal health and veterinary services**, including effective disease management, vaccination and treatments.
 - Streamlining and scaling up range of **insurance provision and cash-based products**.
 - **Drought-mitigating livestock supplementary feeds and fodder banks**. For example, hay products are relatively easy to produce and conserve, and have high scalability potential.
 - **Improved breed reproduction centres to promote livestock breeds** that are more resilient to drought and provide higher production. This would include cross-breeding with traditional and indigenous livestock, and providing certified semen and artificial insemination services.
 - **Fostering animal health provision and vaccination campaigns** as an entry point to bring conflicting parties together, support dialogue processes and facilitate the creation of local natural resource management agreements.
5. **Rangeland and transhumance management**: Rangeland fragmentation and degradation reduce the options for pastoral movements. To recover spatial optionality of nomadic pastoralists, and to prevent and resolve transhumance-related conflicts, interventions could focus on the following priority areas:
- **Facilitating dialogue and holistic solutions about rangeland management**, well adapted to the new realities of climate change and local needs.
 - **Investing in rangeland extensification** to enhance herd movement and avoid fragmentation.
 - **Promoting rangeland recovery**, including through **reseeding, reforestation**, and **conservation** projects, as well as by **up-scaling nutritional feeding** and **restricting range grazing**.
 - Facilitating **livestock transport, access to markets, cross-border movement and livestock trade** so pastoralists can more easily traverse rangeland ecosystems.
 - **Monitoring and mitigating the risk of borderland insecurity and conflict**, as these are major risks in cross-boundary transhumance.
6. **Natural resource management and governance**: Government interference has long been a sensitive issue in the Somali Region, but connecting the different levels of natural resource management is key for sustainable development and building climate resilience, as well as to increase social cohesion and manage conflicts. Therefore, key focus areas include:
- **Active engagement of pastoral communities** by involving them in developing and implementing policies, ensuring representation at relevant national and international fora, and building agency as actors of adaptive governance.

- **Supporting existing indigenous knowledge strategies** for resilience, such as social systems support, early warning systems based on long-term observation of astral bodies, flora and fauna and experience.
- **Promoting flexible and communal systems of governance** for grazing and water sources, as these have the highest potential for local acceptance and ownership.
- **Linking customary pastoralist institutions and practices with formal government actors** to promote bottom-up approaches and build sustainable and effective partnerships.
- Helping to **broker formal and informal natural resource sharing agreements** between farmers and (agro)pastoralists, among (agro)pastoralists, and between refugees, IDPs and host communities.

7. **Capacity-building and awareness raising:** The following entry points can help to improve the delivery of climate, environmental and security/conflict information across different sectors of the food system:

- Collaborate with partners and stakeholders to **develop programmes that can build capacity** in climate security and resilience, climate adaptation and climate-smart food programmes.
- Develop **information products targeting climate fragile communities**, e.g. related to weather forecasts, seasonal forecasts, and agricultural information.
- Incorporate **climate security information** for the different components of food systems **in early warning systems** and emergency response mechanisms.

8. **Partnerships and coordination:** The following entry points aim to strengthen climate adaptation and resilience-building:

- Establish new **partnerships** and strengthen existing ones to bring in more experience and expertise around climate- and conflict-sensitive programming. Especially partnerships with **local, community-based and peacebuilding actors** should be fostered.
- Develop a **climate security and adaptation platform** to periodically bring together different actors and stakeholders active in and from the region, during which relevant issues could be discussed. This would also lead to fruitful exchanges and improved planning and coordination of activities.
- **Minimise and avoid maladaptation** through multi-sectorial partnerships and coordination, as well as inclusivity of local knowledge in addition to focusing on long-term goals starting from the planning stage of adaptation programming.

References

Achvarina, V.; and Reich, S. (2006) No Place to Hide: Refugees, Displaced Persons, and the Recruitment of Child Soldiers. *International Security* 31, pp. 127–164. Retrieved from: <https://direct.mit.edu/isec/article-abstract/31/1/127/11860/No-Place-to-Hide-Refugees-Displaced-Persons-and?redirectedFrom=fulltext>

Abbink, J., (2007) Ethnicity and conflict generation in Ethiopia: Some problems and prospects of ethno-regional federalism. *Journal of Contemporary African Studies*, vol. 24, no. 3. Retrieved from: <https://www.tandfonline.com/doi/abs/10.1080/02589000600976729>

Abdi, M. M., (2020) Regularly Irregular: Varieties of Informal Trading in the Ethiopia-Somaliland Borderlands. Rift Valley Institute. Retrieved from: <https://riftvalley.net/news/drought-ethiopias-somali-region-and-cross-border-strategies-survival>

Abdirahman, A., Alexion E., Burns, D. (2021) Livelihood Components of Durable Solutions for IDPs: Assessments of three cases in Somali Region, Ethiopia. Retrieved from: <https://fic.tufts.edu/wp-content/uploads/Durable-Solutions-11.19.21.pdf>

Abebe, B. (2020) National Gender Assessment of the Land Sector: Ethiopia. Inter-Governmental Authority on Development (IGAD). Retrieved from: <https://igad.int/download/national-gender-assessment-of-the-land-sector-in-ethiopia/>

Abera, W., Brocca, L., and Rigon, R. (2016) Comparative Evaluation of Different Satellite Rainfall Estimation Products and Bias Correction in the Upper Blue Nile (UBN) Basin. In: *Atmospheric Research*, pp. 178–179. Retrieved from: <https://doi.org/10.1016/j.atmosres.2016.04.017>

ACAPS (2017) Ethiopia: Food Insecurity and Malnutrition in Somali Region. Online. Retrieved from: <https://www.acaps.org/special-report/ethiopia-food-insecurity-and-malnutrition-somali-region>

ACAPS (2023) Ethiopia Impact of drought: Oromia and Somali Regions. Online. Retrieved from: https://www.acaps.org/fileadmin/Data_Product/Main_media/20230207_acaps_thematic_report_horn_of_africa_analysis_ethiopia_impact_of_drought_omoria_and_somali_regions.pdf

ACTED (2021) ACTED Drought Needs Assessment Somali Region, Ethiopia, Post Short Rains. Retrieved from: <https://reliefweb.int/report/ethiopia/acted-drought-needs-assessment-somali-region-ethiopia-post-short-rains-2021>

Addis Standard (2023) News Analysis: Drought hit pastoralists of Afder zone in Somali region linger between life and death, urge immediate food aid. Retrieved from:

<https://addisstandard.com/news-analysis-drought-hit-pastoralists-of-afder-zone-in-somali-region-linger-between-life-and-death-urge-immediate-food-aid/#:~:text=The%20UN%20said%20this%20is,more%20than%203.3%20million%20livestock>

Ahmed, M.E.; Bihi, M.A. (2019) Indigenous Knowledge for Resilience and Adaptation in Pastoral Production System of Somali Regional State in Ethiopia. Institute of Disaster Risk Management and Food Security Studies, Bahir Dar University. Retrieved from: <https://hrcak.srce.hr/file/336784>

Aich, V.; S. Liersch, T. Vetter, S. Huang, J. Tecklenburg, P. Hoffmann, H. Koch, S. Fournet, V. Krysanova, E.N. Müller, and F.F. Hattermann (2014) Comparing impacts of climate change on streamflow in four large African river basins. In: *Hydrology and Earth System Sciences* 18:4, pp. 1305–1321. Retrieved from: <https://www.semanticscholar.org/paper/Comparing-impacts-of-climate-change-on-streamflow-Aich-Liersch/7522634db88f6a7686f6113793d8b14705092a1e>

Amaha, N. (2020) Ethiopian progress towards achieving the global nutrition targets of 2025: analysis of sub-national trends and progress inequalities. Online. Retrieved from: <https://pubmed.ncbi.nlm.nih.gov/33298157/>

Ayal, D. Y., Kebede, H. Y., Belay, A., Emiru, N. C. and Mekuyie, M. (2022). Climate variability and indigenous adaptation strategies by Somali pastoralists in Ethiopia. Retrieved from: <https://www.researchsquare.com/article/rs-1990099/v1>

Belay, K., Beyene, F. and Manig, W. (2005) Coping with drought among pastoral and agro-pastoral communities in eastern Ethiopia. *Journal of Rural Development*, vol. 28. Retrieved from: <https://ageconsearch.umn.edu/record/288376>

Beyene, F. (2017) Natural Resource Conflict Analysis among Pastoralists in Southern Ethiopia. In: *Journal of Peacebuilding and Development* 12:1, pp. 19–33. Retrieved from: <https://doi.org/10.1080/15423166.2017.1284605>

Bogale, A., and Korf, B. (2007) To Share or Not to Share? (Non-)Violence, Scarcity and Resource Access in Somali Region, Ethiopia. In: *Journal of Development Studies* 43:4, pp. 743–65. Retrieved from: <https://doi.org/10.1080/00220380701260093>

Bouh, A.M., and Mammo, Y. (2008) Indigenous Conflict Management and Resolution Mechanisms on Rangelands in Somali Regional State, Ethiopia. In: *Nomadic Peoples* 12:1, pp. 109–21. Retrieved from: <https://www.jstor.org/stable/43123815>

CGIAR (2021) Assessing the Relationship Between Climate, Food Security, and Conflict in Ethiopia and in the Central American Dry Corridor. Retrieved from: <https://reliefweb.int/sites/reliefweb.int/files/resources/31%20October%20CGIAR%20Final%20Report.pdf>

Centre for Science and Environment (CSE) (2022) Towards a Water Management Programme for the Awash Basin. Retrieved from: <https://www.cseindia.org/the-awash-basin-11376>

Delgado, C., Murugani, V. and Tschunkert, K. (2021) Food Systems in Conflict and Peacebuilding Settings: Pathways and Interconnections. SIPRI: Stockholm. Retrieved from: <https://sipri.org/publications/2021/other-publications/food-systems-conflict-and-peacebuilding-settings-pathways-and-interconnections>

Devereux, S. (2006) Vulnerable Livelihoods in Somali Region, Ethiopia. Institute of Development Studies (IDS). Retrieved from: <https://www.ids.ac.uk/download.php?file=files/Rr57.pdf>

Devereux, S. (2010) Better Marginalised than Incorporated? Pastoralist Livelihoods in Somali Region, Ethiopia. In: European Journal of Development Research 22:5, pp. 678–95. Retrieved from: <https://link.springer.com/article/10.1057/ejdr.2010.29>

Ember C. R., Skoggard I., Teferi A.A., Faas A.J. (2014) Rain and raids revisited: Disaggregating ethnic group livestock raiding in the Ethiopian-Kenyan border region. Civil Wars, vol. 16, no. 3. Retrieved from: <https://doi.org/10.1080/13698249.2014.966430>

Constitution of Ethiopia (1995) Constitution of the Federal Democratic Republic of Ethiopia. Retrieved from: <https://www.refworld.org/docid/3ae6b5a84.html>

Eriksen, S., and Marin, A. (2011) Pastoral Pathways: Climate Change Adaptation Lessons from Ethiopia. Oslo: The Development Fund. Retrieved from: https://www.academia.edu/65923757/Pastoral_pathways_Climate_change_adaptation_lessons_from_Ethiopia

Ethiopia Durable Solutions Initiative (EDI) and Swiss Agency for Development and Cooperation (SDC) (2022). Somali Regional State Durable Solutions Strategy 2022–2025 Retrieved from: <https://ethiopia.iom.int/sites/g/files/tmzbd1996/files/documents/somali-region-durable-solutions-strategy.2022.2025.pdf>

Ethiopia Peace Observatory (2023) Afar-Somali Border Conflict. Retrieved from: <https://epo.acleddata.com/afar-somali-border-conflict/>

FAO (2016) Improving governance of pastoral lands: Implementing the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security. Retrieved from: <https://www.fao.org/3/i5771e/i5771e.pdf>

FAO, IFAD, UNICEF, WFP and WHO (2022) The State of Food Security and Nutrition in the World 2022. Repurposing food and agricultural policies to make healthy diets more affordable. Retrieved from: <https://www.fao.org/publications/sofi/2022/en/>

Federal Democratic Republic of Ethiopia (2019) Ethiopia’s National Adaptation Plan. Retrieved from: <https://www4.unfccc.int/sites/NAPC/Documents/Parties/NAP-ETH%20FINAL%20VERSION%20%20Mar%202019.pdf>

Flintan, F. (2011) Changing nature of gender roles in the drylands of the Horn and East Africa: implications for DRR programming. Regional Learning & Advocacy Programme

for Vulnerable Dryland Communities (REGLAP). Retrieved from: https://www.preventionweb.net/files/24271_24271genderanddrfinaldec20111.pdf

Fratkin, E. (2014) Ethiopia's Pastoralist Policies: Development, Displacement and Resettlement. *Nomadic Peoples* 18 (1): 94–114. <https://doi.org/10.3197/np.2014.180107>

Getu, Demeke A., Duncan, J., van Dijk, H. (2021) Development, Governmentality and the Sedentary State: The Productive Safety Net Programme in Ethiopia's Somali Pastoral Periphery. In: *Journal of Peasant Studies*, pp. 1–23. Retrieved from: <https://doi.org/10.1080/03066150.2021.1945044>

Guan J., Moyan L., Xifeng J., Jun L., Jianguo W., and Jianghua Z. (2021) The Potential Habitat of Desert Locusts Is Contracting: Predictions under Climate Change Scenarios. In: *PeerJ* 9, pp. 1–26. Retrieved from: <https://pubmed.ncbi.nlm.nih.gov/34754618/>

Haer, R. (2019) Children and armed conflict: looking at the future and learning from the past, *Third World Quarterly*, 40:1, pp. 74-91, Retrieved from: [10.1080/01436597.2018.1552131](https://doi.org/10.1080/01436597.2018.1552131)

Hagmann, T. (2014) Punishing the periphery: legacies of state repression in the Ethiopian Ogaden. *Journal of Eastern African Studies*, 8:4, 725-739. Retrieved from: [10.1080/17531055.2014.946238](https://doi.org/10.1080/17531055.2014.946238)

Hagmann, T. (2020) Fast politics, slow justice: Ethiopia's Somali region two years after Abdi Iley. Conflict Research Programme. Briefing Paper. London School of Economics (LSE). Retrieved from: <https://www.lse.ac.uk/ideas/Assets/Documents/Conflict-Research-Programme/crp-memos/Hagmann-Two-years-after-Iley-final.pdf>

Hagmann, T. and Mulugeta, A. (2008) Pastoral Conflicts and State-Building in the Ethiopian Lowlands. In: *Africa Spectrum* 43:1, pp. 19–37. Retrieved from: <https://www.zora.uzh.ch/id/eprint/40006/>

Hegazi, F., Murugani, V., Pacillo, G., Läderach, P. (2022) The World Food Programme's Contribution to Improving the Prospects for Peace in Ethiopia. Stockholm International Peace Research Institute (SIPRI). Retrieved from: <https://www.sipri.org/publications/2022/other-publications/world-food-programmes-contribution-improving-prospects-peace-ethiopia>

Hussein, M. (2022) Inter-Clan Conflicts In the Somali Region of Ethiopia: A Case Study Of the Conflicts between the Dagodia and Baydisle Clans. Retrieved from: <http://ir.bdu.edu.et/handle/123456789/14304>

Humphrey, A.; James Gai, T.; Lony, N. (2023) Dynamism in the Drylands: Evidence from South Sudan for supporting pastoral livelihoods during protracted crises. SPARC Knowledge. Retrieved from: <https://www.sparc-knowledge.org/news-features/features/dynamism-drylands-how-pastoral-livelihoods-are-changing-south-sudan>

ICPALD (2020a) Fact sheet series. Business case of resilience-enhancing technologies and good practices on fodder and fodder seed production in Karamoja Cluster. 46

ICPALD/FS/02/2020. Retrieved from: <https://icpald.org/wp-content/uploads/2020/05/BUSINESS-CASE-OF-RESILIENCE-ENHANCING-TECHNOLOGIES.pdf>

ICPALD (2020b) Business case of resilience-enhancing technologies and practices along the livestock value chain in IGAD cluster 1 (Karamoja). ICPALD/FS/03/2020. Retrieved from: <https://icpald.org/wp-content/uploads/2020/05/BUSINESS-CASE-KARAMOJA-CLUSTER.pdf>

ICPALD (2020c) Business case on innovative resilience-enhancing technologies and practices in African-grown staple grains and horticultural products in cross-border markets of IGAD cluster 1 (Karamoja cluster). Retrieved from: <https://icpald.org/wp-content/uploads/2020/05/BUSINESS-CASE-KARAMOJA-CLUSTER-1.pdf>

IFAD (2020a) How to do: Gender and Pastoralism. Pastoral development. Retrieved from: <https://cgspace.cgiar.org/bitstream/handle/10568/108874/FINAL2-HTDN-gender%20pastoralism-2020-08-07.pdf?sequence=5&isAllowed=y>

IFAD (2020a) How to prevent land use conflicts in pastoral areas. Retrieved from: <https://www.ifad.org/documents/38714170/42028241/LandUseConflicts.pdf/4da68519-6c21-bc00-67df-d7e75aba9543?t=1627039407989>

IGAD (2019) Ethiopia: Consolidating the path to resilience and sustainability 2019 – 2024. Intergovernmental Authority on Development (IGAD). Retrieved from: <https://icpald.org/wp-content/uploads/2019/10/PPP-ETHIOPIA.pdf>

IGAD (2022) Impact of Drought on Livestock in the IGAD Member States. ICPALD. Retrieved from: <https://resilience.igad.int/wp-content/uploads/2022/07/IMPACT-OF-DROUGHT-ON-LIVESTOCK-ICPALD.pdf>

Internal Displacement Monitoring Centre (IDMC) (2023) Ethiopia Country Profile. Retrieved from: <https://www.internal-displacement.org/countries/ethiopia>

IOM (2022) Ethiopia National Displacement Report 13. Site Assessment Round 30 & Village Assessment Survey Round 13: June – July 2022. Retrieved from: <https://displacement.iom.int/sites/g/files/tmzbd1461/files/reports/DTM%20Ethiopia%20National%20Displacement%20Report%2013-online-3.pdf>

IOM (2022) Somali Region profile. International Organisation for Migration (IOM). Retrieved from: <https://ethiopia.iom.int/somali-region>

IOM and ICPALD (2022) Equipped to adapt? A review of climate hazards and pastoralists' responses in the IGAD region. Retrieved from: <https://icpald.org/wp-content/uploads/2022/09/ICPALD-IOM-Pastoralism-Report.pdf>

IPC (2020) Ethiopia IPC Acute Food Insecurity Analysis, October 2020–September 2021. Retrieved from: <https://reliefweb.int/report/ethiopia/ethiopia-ipc-acute-food-insecurity-analysis-october-2020-september-2021-issued>

IPCC (2022) Climate Change 2022: Impacts, Adaptation and Vulnerability (Summary for Policy Makers) Retrieved from: https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_SummaryForPolicymakers.pdf

IPCC (2023) Climate Change 2023 Synthesis Report: Summary for Policymakers. Retrieved from: https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_SPM.pdf

Kefale, A. (2013) Federalism and Ethnic Conflict in Ethiopia. A comparative regional study. New York: Routledge.

Kichner, S. (2021) The World Bank aids smallholder farmers in Ethiopia. Online. Retrieved from: <https://borgenproject.org/smallholder-farmers-in-ethiopia/>

Kniveton, D., and Raleigh, C. (2012) Come rain or shine: An analysis of conflict and climate variability in East Africa. *Journal of Peace Research*, vol. 49, no. 1. Retrieved from: <https://journals.sagepub.com/doi/10.1177/0022343311427754>

Mahamoud, A.A., and Ahmed M.E. (2019) The Social Consequences of Pastoralist Sedenterisation Schemes in Somali Regional State, Ethiopia. In: *Interdisciplinary Description of Complex Systems* 17:4, pp. 738–52. Retrieved from: <https://hrcak.srce.hr/file/336785>

Majid, N.; Abdirahman K.; Daar A. (2022). Ethiopia's Somali Region: between drought and unrest. Online. Retrieved from: <https://blogs.lse.ac.uk/crp/2022/03/11/ethiopia-somali-region-between-drought-and-unrest/>

Mcguirk, Eoin F, and Nunn, N. (2020) Nomadic Pastoralism, Climate Change, and Conflict in Africa. NBER Working Paper No. 28243. Retrieved from: https://www.nber.org/system/files/working_papers/w28243/revisions/w28243.rev0.pdf

Mekonnen, A. (2020) Climate change impacts on household food security and adaptation strategies in southern Ethiopia. Retrieved from: <https://onlinelibrary.wiley.com/doi/full/10.1002/fes3.266>

Mercy Corps (2019) The facts: How we're fighting hunger in Ethiopia. Online. Retrieved from: <https://www.mercycorps.org/blog/fighting-hunger-ethiopia>

Mohammed, A., and Beyene, F. (2016) Social Capital and Pastoral Institutions in Conflict Management: Evidence from Eastern Ethiopia. In: *Journal of International Development* 28, pp. 74-88. Retrieved from: <http://dx.doi.org/10.1002/jid.3069>

Mossa Endris, A., Ahmed Bihi, M. (2019) Indigenous Knowledge for Resilience and Adaptation in Pastoral Production System of Somali Regional State in Ethiopia. In: *Interdisciplinary Description of Complex Systems* 17:4, pp. 723–37. Retrieved from: <https://www.bdu.edu.et/idrmfss/node/213>

Murakami, H.; Vecchi, G.A., and Underwood S. (2017) Increasing Frequency of Extremely Severe Cyclonic Storms over the Arabian Sea. In: Nature Climate Change 7:12, pp. 885–889. Retrieved from: <https://www.nature.com/articles/s41558-017-0008-6>

Mussa, M., Teka, H. and Aliye, A. (2017) Indigenous conflict management and resolution mechanisms on rangelands in pastoral areas, Ethiopia. Journal of African Studies and Development, vol. 9, no. 9. Retrieved from: <https://www.semanticscholar.org/paper/Indigenous-conflict-management-and-resolution-on-in-Mussa-Teka/c3d2125c1bde1d6a8f3df1357abd1ae53c62f385>

Muluken, T.F. (2020) The Role of Indigenous Conflict Resolution Mechanisms in the Pastoral Community: An Implication for Social Solidarity in Somali Region, Shineli Woreda. Open Access Library Journal. Vol.7 No.2. Retrieved from: <https://doi.org/10.4236/oalib.1106122>

ND-GAIN (2022) Country Index. Retrieved from: <https://gain.nd.edu/our-work/country-index/>

Neville, C. (2021). Climate change wreaks havoc on livelihoods in Ethiopia's Somali Region. Retrieved from: <https://www.wfp.org/stories/climate-change-wreaks-havoc-livelihoods-ethiopias-somali-region>

New Humanitarian (2022) Water shortage in Somali Region. Retrieved from: <https://www.thenewhumanitarian.org/report/18991/ethiopia-water-shortage-somali-region>

Nusrat, N. (2019) Children Risk Early Marriage: Climate Change One of the Factors. Inter Press Service (IPS). Retrieved from: http://www.ipsnews.net/2019/12/children-risk-early-marriage-climate-change-one-factors/?utm_source=rss&utm_medium=rss&utm_campaign=children-risk-early-marriage-climate-change-one-factors

OCHA (1999) Drought situation in Ogaden Region (Somali National Regional State). Online. Retrieved from: <https://reliefweb.int/report/ethiopia/drought-situation-ogaden-region-somali-national-regional-state>

OCHA (2017) GIEWS Update - Ethiopia: Severe food insecurity in southern Somali Region due to prolonged drought. Online. Retrieved from: <https://reliefweb.int/report/ethiopia/giews-update-ethiopia-severe-food-insecurity-southern-somali-region-due-prolonged>

OCHA (2022) East and Horn of Africa, and the Great Lakes Region: UNHCR Drought Situation Response Update #4 – November 2022. Online. Retrieved from: <https://reliefweb.int/report/somalia/east-and-horn-africa-and-great-lakes-region-unhcr-drought-situation-response-update-4-november-2022>

OCHA (2023a) Ethiopia: Drought Situation Update #1 - As of 10 March 2023. Online. Retrieved from: <https://reliefweb.int/report/ethiopia/ethiopia-drought-situation>

Stone, M. (2020) A plague of locusts has descended on East Africa. Climate change may be to blame. National Geographic. Retrieved from: <https://www.nationalgeographic.com/science/article/locust-plague-climate-science-east-africa>

ThinkHazard! (2022) Somali Region risk overview. Retrieved from: <https://www.thinkhazard.org/en/report/47679-ethiopia-somali>

UNFCCC (2022) Ethiopia: A Case Study Conducted By The Climate Resilient Food Systems Alliance. Retrieved from: https://unfccc.int/sites/default/files/resource/crfs_casestudy_ethiopia.pdf

UN Habitat (2021) Qoloji Spatial Profile. Online. Retrieved from: https://unhabitat.org/sites/default/files/2021/06/210614_qoloji_spatial_profile_lr.pdf

UNHCR (2022) Operational Data Portal: Ethiopia overview. Retrieved from: <https://data.unhcr.org/en/country/eth>

UNHCR (2023a) East and Horn of Africa, and the Great Lakes Region Regional Update #9 : East and Horn of Africa, and the Great Lakes Region. Retrieved from: <https://data.unhcr.org/en/documents/details/100925>

UNHCR (2023b) 100,000 new Somali refugees arrive in Ethiopia in the past month, UN and partners are calling for urgent funding. Retrieved from: <https://www.unhcr.org/news/100-000-new-somali-refugees-arrive-ethiopia-past-month-un-and-partners-are-calling-urgent>

UNICEF (2022) Child marriage on the rise in Horn of Africa as drought crisis intensifies. Retrieved from: <https://www.unicef.org/press-releases/child-marriage-rise-horn-africa-drought-crisis-intensifies>

United Nations Ethiopia (2019) Durable Solutions Initiative launched in Ethiopia. Retrieved from <https://ethiopia.un.org/en/27655-durable-solutions-initiative-launched-ethiopia>

Verhoeven, H. (2011) Climate Change, Conflict and Development in Sudan: Global Neo-Malthusian Narratives and Local Power Struggles. *Development and Change* 42 (3): pp. 679–707. Retrieved from: <https://pubmed.ncbi.nlm.nih.gov/22069801/>

Warfa, A. (2021) What now for the Somali Region in Ethiopia? World Peace Foundation. Retrieved from: <https://sites.tufts.edu/reinventingpeace/2021/11/17/what-now-for-the-somali-region-in-ethiopia/>

Weathering Risk (2022) Climate Risk Profile: Somalia. adelphi and Potsdam Institute for Climate Impacts Research (PIK). Retrieved from: <https://weatheringrisk.org/en/publication/Climate-Risk-Profile-Somalia>

Woldegiorgis, S. B. (2018) Formally Recognizing Pastoral Community Land Rights in Ethiopia. USAID. Retrieved from: <https://www.land-links.org/2018/03/formally-recognizing-pastoralcommunity-land-rights-in-ethiopia/>

World Bank (2021) Climate Risk Country Profile: Ethiopia. Online. Retrieved from: https://climateknowledgeportal.worldbank.org/sites/default/files/2021-05/15463A-WB_Ethiopia%20Country%20Profile-WEB.pdf

World Bank (2021) The World Bank in Ethiopia. Online. Retrieved from: <https://www.worldbank.org/en/country/ethiopia/overview#1>

World Bank (2022) Prevalence of stunting, height for age (% of children under 5) - Ethiopia. Online. Retrieved from: <https://data.worldbank.org/indicator/SH.STA.STNT.ZS>

World Food Programme (2019) Decentralized Evaluation: Evaluation of the Satellite Index Insurance for Pastoralists in Ethiopia (SIIPE) Programme: Impact Evaluation of the SIIPE Pilot (2017-2019). Retrieved from: https://docs.wfp.org/api/documents/WFP-0000107946/download/?_ga=2.224946706.984414977.1648173370-1348609776.1647734893

World Food Programme (2022a) Horn of Africa 'Cannot wait': WFP scales up assistance as historic drought raises famine threat. Retrieved from: <https://www.wfp.org/news/horn-africa-cannot-wait-wfp-scales-assistance-historic-drought-raises-famine-threat>

World Food Programme (2022b) Ethiopia Drought Response: Situation Report #6. Retrieved from: <https://reliefweb.int/report/ethiopia/wfp-ethiopia-drought-response-situation-report-6-november-2022>

World Food Programme (2023a) Ethiopia Country Profile. Retrieved from: <https://www.wfp.org/countries/ethiopia>

World Food Programme (2023b) Scaling Up Anticipatory Actions for Food Security: Anticipatory Action- Year In Focus 2022. Retrieved from: https://docs.wfp.org/api/documents/WFP-0000148257/download/?_ga=2.222251800.1064841900.1688700145-1653990340.1687926309

Zewde, B. (2001). A History of Modern Ethiopia, 1855–1991. James Curry: Oxford. Updated and revised edition. Boydell & Brewer. Retrieved from: <https://www.cambridge.org/core/books/history-of-modern-ethiopia-18551991/C0852BA84C34071333C899ACC8F1C863>

Annex

Key actions for avoiding and managing conflict in pastoral lands (FAO, 2016)

The following actions can help interveners to identify project and programme-based priorities that can help prevent conflict in pastoral areas:

1. Understanding conflict triggers and multipliers – conflict analysis.
2. Restoring capability of traditional institutions.
3. Strengthening social cohesion and good social relations.
4. Strengthening environmental management and sustainability.
5. Repairing relationships.
6. Making governance and decision-making processes fairer.
7. Establishing tenure clarity.
8. Strengthening (institutional) capacity to buffer and respond to crisis.
9. Addressing factors underpinning structural inequity.

Tools for conflict analysis (IFAD, 2020b)

There are numerous tools and processes available for undertaking a conflict analysis for assessing climate-related security risks. These tools differ in depth of analysis and should be applied depending on the information required, project goals and objectives, and capacities. Some useful options to consider include:

1. ABC Triangle to map behaviours, attitudes and context.
2. Conflict tree as a graphic tool to map core problems, root causes and effects.
3. Conflict relationship mapping to identify power dynamics, key actors and stakeholders in a conflict situation.
4. Conflict hotspot mapping to highlight conflict hotspots across geographic zones and identify priority areas.

Table 3: Guidelines for managing conflict in pastoral lands (IFAD, 2020b)

Imprint

Published by

adelphi research gemeinnützige GmbH
Alt-Moabit 91, 10559 Berlin
+49 (030) 8900068-0
office@adelphi.de
<https://www.adelphi.de/en>

Header Image

© Inga Israel

License

For the texts in this publication, the publishers grant a license under the terms of Creative Commons Attribution-NoDerivatives 4.0 International. You may reproduce and share the licensed material if you name adelphi as follows: '© adelphi CC-BY ND 4.0'. Photographs and graphics are not covered by this license. In case of doubt please contact adelphi prior to reusing the material.

© adelphi, 2023

Authors

Lucas Destrijcker, Milen Yishak, Michael Thomson, Aminata Traore, Yishuang Antonio Xu, Hannah Kurnoth

Layout

Nina Schmelzer

Contact

Lucas Destrijcker
destrijcker@adelphi.de

Date

July 2023