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# **Bridging the gap: environmental change, mobility and policy in Ethiopia's Somali Region and Somaliland**

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Cover image taken by author Abdirahman Ahmed during fieldwork in Somali regional state.

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# List of acronyms

CRGE	Climate Resilient Green Economy
DTM	Displacement Tracking Matrix
EPACC	Ethiopia's Programme of Adaptation to Climate Change
EPRLAP	Environment Protection and Rural Land Administration Sector Transformation Policy
FAO	Food and Agriculture Organization
FDRE	Federal Democratic Republic of Ethiopia
FGD	Focus group discussion
FSL	Food Security and Livelihoods
GHGs	Greenhouse gases
GTP	Growth and Transformation Plan
HoA	Horn of Africa
IDPs	Internally Displaced People
INDC	Intended Nationally Determined Contribution
IOM	International Organization for Migration
KII	Key informant interview
MOERD	Ministry of Environment and Rural Development
MOECC	Ministry of Environment and Climate Change
MONPD	Ministry of National Planning and Development
NADFOR	National Agency for Disaster Preparedness and Food Reserves
NAPA	National Adaptation Programme of Action
NAP-ETH	National Adaptation Plan of Ethiopia
NDCs	Nationally Determined Contributions
NDP	National Development Plan
OCHA	UN Office for the Coordination of Humanitarian Affairs
PASDEP	Plan for Accelerated and Sustained Development to End Poverty
PDS	Pastoral Development and Strategy
PSNP	Productive Safety Net Project
REF	Research and Evidence Facility
RDSP	Rural Development Policies and Strategies
SDPRP	Sustainable Development and Poverty Reduction Program
SDGs	UN Sustainable Development Goals
UNFCCC	United Nations Framework Convention on Climate Change

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# 1 Introduction

Environment and mobility are closely linked in a myriad of complex and contextualised ways. Environmental change, in conjunction with a range of overlapping economic, political, social and demographic factors, influences migration patterns and preferences in the Horn of Africa (HoA). These phenomena – and the associated pressures on livelihoods, such as decreased availability of water and pasture for animals, deteriorating soil quality and delayed or failed harvests – are pushing some people to undertake extraordinary movements. As well as encouraging new movements, environmental changes also cause shifts in existing migration patterns. For example, they may push pastoralists to move further in search of resources, to adopt alternative livelihoods to meet household needs, or even to drop out of pastoralism altogether.

When environmental factors overlap with socioeconomic realities, they may lead to some people moving in new ways, while others may be unable to move. Some may be so destitute that they are unable to leave. The relationship can also be seen in reverse – with migration impacting on the environment, something that is visible in the rapid urbanisation in the HoA, and in the establishment of camps and settlements associated with the large-scale movement of people (in instances of internal displacement, rural-to-urban migration and forced displacement). These movements, in turn, put pressure on available resources in hosting areas.

The HoA is experiencing extreme climate variability and uncertainty, typically manifested in erratic rainfall, high temperatures, prolonged droughts, increasing flood events and intensifying land degradation (IGAD, 2018). Political conflict, economic insecurity and weak governance have further compounded the negative impacts of environmental change (IOM, 2020). In the dryland areas of the HoA, home to pastoralist and agro-pastoralist communities, mobility has always been a key strategy for innovatively exploiting the disequilibrium of the environment, and accessing the pasture and water critical for animals. Over time, however, the 'voluntariness' of mobility is changing and many pastoralists are being pushed to move longer distances and in contexts of insecurity in order to sustain their livelihoods. As a result, there has been a marked increase in the number of cross-border migrants and internally displaced people (IDPs) (Nelson & Khan, 2021). In Ethiopia, for instance, the Internal Displacement Monitoring Center reports that 2.8 million people were internally displaced from 'disasters', particularly drought and flood, in the period between 2008 and 2021.<sup>1</sup> Displacement in the context of drought has also noticeably increased in Somaliland, with many households moving closer to urban areas of the country.<sup>2</sup>

Despite the multiple threads connecting migration and the environment, major climate policy and programmes tend to overlook migration's connections to ecological and environmental phenomena. Within climate studies, the role of migration has been relatively neglected or even

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<sup>1</sup> See <https://www.internal-displacement.org/countries/ethiopia>.

<sup>2</sup> While reports often cite 'disasters' or 'drought' as causes for movement or displacement, it is important to note that it is not solely environmental factors that 'cause' certain mobility outcomes. The environment is not experienced in isolation but is inherently connected to social, political and economic factors.

ignored altogether. When mobility is considered, it is usually framed in negative terms as a problem to be solved. For example, the focus of climate modelling tends to centre on predicting numbers of 'climate change refugees' based on future climate scenarios.

This study critically considers the extent to which – and ways that – migration represents a strategy for adapting to environmental change among communities in Ethiopia's Somali Regional State and Somaliland's Togdheer and Maroodijex administrative regions (*gobol*). It investigates how people use migration as a strategy for adapting to environmental change and the factors that influence migration decisions – whether as positive adaptation or distress-related mobility. Concurrently, the study examines select climate and environmental change-related policies and plans in each country to understand how mobility is framed therein. On the basis of the findings, the study provides recommendations on how the environment–migration relationship can be integrated into climate policy and programming.

## 2 Pastoralism in Somali territories

Pastoral production systems in the Somali Region of Ethiopia and in Togdheer and Maroodijeex in Somaliland have relied profoundly on mobility – including seasonal transhumance and trading mobility, where livestock are trekked to different markets. The research areas are part of the wider ‘Somali export zone’, where commercialised livestock keeping is a major – if not the most important – contributor to the economy. Communities in the region have moved from a livestock subsistence economy to a livestock export-oriented one where informal and formal cross-border livestock trade is sustained through complex social networks that link the rangelands with the ports of Berbera and Bossaso through a series of clan-based corridors (Eid, 2014; Flintan et al, 2011; Lind et al, 2020). Livestock from Ethiopia, Somalia and Somaliland are sold in terminal markets in Togwajale, Hargeisa and Burao, and the contributions from these large-scale livestock sales are estimated at over US\$400 million annually (Eid, 2014).<sup>3</sup>

This livestock commercialisation has occurred in a context of shrinking grazing areas, conversion of rangeland into agricultural land, and privatisation of large areas for individual households (Birch, 2008). This has had critical implications for livestock mobility and human settlements, which have in turn also contributed to environmental change. The proliferation of *berkads* (water cisterns) in the Hawd zone in Somaliland,<sup>4</sup> for instance, has meant that, whereas the rangeland has traditionally been used in the rainy seasons to feed herds, the area has become increasingly grazed all year round as a result of stored water availability, thereby not allowing regenerative processes to occur (Birch, 2008). In Ethiopia's Somali Region, land fragmentation has not only resulted in drastically reduced livestock mobility, it has also driven a breakdown of collective and cooperative pastoral systems (Flintan et al, 2011). Changes in land use have also led to an increase in sedentarisation among pastoralists – for instance, in many parts of the Hawd zone, the distance between villages is said to be less than 20 km thanks to the mushrooming of settlements around water points (APD, 2006).

Whereas livestock commercialisation is undoubtedly a significant contributor to the national economies of several countries in the HoA, including those in this study, it also has a stratifying effect on pastoralists. Poor pastoralists face increasing difficulties in building and maintaining herds – especially during severe droughts – while better-off or richer pastoralists benefit from market access and increased incomes (Aklilu & Catley, 2010). Wealthier households also

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<sup>3</sup> Livestock exports suffered losses during the Covid-19 pandemic, when the Kingdom of Saudi Arabia restricted the Hajj to just 10,000 resident pilgrims and 1,000 foreigners. Whereas livestock prices remained stable, brokers, traders and exporters in Somalia, particularly those operating smaller businesses, reported having lost three-quarters of their seasonal income as a result of these restrictions. See [https://www.sparc-knowledge.org/sites/default/files/documents/resources/rapid-assessment-of-covid-impact-somalia-hajj\\_2.pdf](https://www.sparc-knowledge.org/sites/default/files/documents/resources/rapid-assessment-of-covid-impact-somalia-hajj_2.pdf).

<sup>4</sup> The Hawd is an agro-ecological area of rangeland that spreads from Ethiopia's Somali Region in the west to Somaliland and parts of Puntland in the east. Pastoralists from across the Somali territories graze their livestock in this zone.



have a greater capacity to control land and water resources, which has a direct and indirect adverse impact on poorer households. As a result, divergent livelihood pathways are emerging, where those who can 'move up' the chain buy animals for sale from poorer households, while others too vulnerable to maintain herds, 'move out' of pastoralism into low-return economic activities (Aklilu & Catley, 2010).

Today, dryland areas of the HoA are witnessing various kinds of human mobilities, against the backdrop of changing patterns of livestock mobility. Extended and severe droughts, in combination with limited governance preparedness and response, have driven internal displacement, as in Ethiopia, where IOM reports that one-third of displaced people in the country's drought-affected regions have been displaced by drought.<sup>5</sup> Others are moving towards urban centres as a strategy to diversify their livelihoods and increase their income. In the case of distress migration this often occurs as a last resort. Simultaneously, other pastoralists continue to exploit their environments innovatively by moving herds and families over the landscape and across borders. Mobility endures as a positive adaptation strategy for some in disequilibrium environments, although it is increasingly constrained by the complex set of factors described previously.

## 2.1 Policy gaps in migration and climate change

At the global level, climate policy debates tend to focus on reducing carbon emissions as a means of slowing global warming. At the local level, emphasis is often placed on efforts to reduce the physical impacts of climate change – reforestation, agricultural support, flood protection, and steps to mitigate the impact of rising sea levels and dramatic weather events. Much less attention is given to the adaptive behaviours that affected populations engage in, including mobility. What explains the minimal attention paid to migration in many climate policies and programmes? Part of the problem is that climate policy and academic debates have been informed much more by research from the physical sciences than from the social sciences. Moreover, even outside climate change debates, in development policy more broadly, migration is often seen as being a problem to be solved rather than a potentially positive form of adaptation. As a result, migration continues to be framed in terms of displacement and disasters. This negative framing narrows opportunities for including migration as a potential adaptation strategy in climate policy and programmes, and it hides the already existing mobilities that are a key part of life for many communities in the HoA and which help people to have viable livelihoods in challenging environments. This is a gap that needs addressing. Climate change responses require a holistic approach that incorporates a myriad of responses – one of which is mobility.

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<sup>5</sup> As of September 2022. See <https://ethiopia.iom.int/sites/g/files/tmzbdl996/files/documents/Humanitarian%20Response%20Overview%20-%20September%202022.pdf>.

## 3 Study objectives

The specific questions that guided this study are as follows:

1. How, why and with what expected outcomes does climate-related movement/mobility occur in the Horn of Africa? Or, how are people living with environmental stress making decisions about movement?
2. How is mobility and displacement framed in climate policy, programmes and research, and whose interests are reflected in these?
3. What implications do the findings have for future environmental policy and programming?

We use the term 'environmental change' in this report to cover the multiple phenomena associated with climate change, variability, natural resource-use change (such as land-use change, or water infrastructure) and ecological degradation. In its strictest sense, 'climate change' refers to long-term shifts in temperatures and weather cycles observed over many decades.<sup>6</sup> However, the high levels of variability characteristic of drylands in the HoA, changes to natural resource availability and use, and other associated factors such as ecological degradation, are also important for understanding how people experience the environment over their lifetime. Ecological degradation refers to the loss of the productive capacity of soils, characterised by loss of soil fertility, biodiversity and overall deterioration of natural resources.<sup>7</sup> Loss of soil organic carbon is one the main signs of land degradation; it reduces carbon sinks and is thus a contributor to climate change. The interaction of land degradation and climate change are important considerations for pastoral and agro-pastoral areas of the HoA where a vast majority of the population relies on naturally occurring resources. Therefore, when speaking of the impact on communities in the countries of research, we use the broader term 'environmental change'. For the discussion on country-specific policies and plans, we retain the term 'climate change', as this is the language that appears in official documents.

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<sup>6</sup> <https://www.un.org/en/climatechange/what-is-climate-change>.

<sup>7</sup> [https://agnes-africa.org/wp-content/uploads/2020/07/Policy-brief-2\\_Land-Degradation\\_Final\\_09032020.pdf](https://agnes-africa.org/wp-content/uploads/2020/07/Policy-brief-2_Land-Degradation_Final_09032020.pdf).

## 4 Overview of study locations

The field research for this study was conducted in Somaliland and Ethiopia.<sup>8</sup>

In Somaliland, data were collected in three study sites located in the Hawd zone of the Togdheer and Maroodijeex regions (see Figure 1). The Hawd zone is the largest livelihood zone in Somaliland. It is topographically characterised as semi-arid, with bimodal rainfall, and is located 800 meters above sea level.<sup>9</sup> The study locations within Somaliland were: Duruqsi, a border sub-district which is a major pastoralist site; Xaaxi, an agro-pastoralist site in the Odweine district; and Balli Mataan, a sub-district in the Maroodijeex capital region.

Somaliland is a topographically and meteorologically diverse region.<sup>10</sup> There are four main seasonal patterns of critical importance to the pastoralist communities who comprise the majority of the population. The Gu' season falls within the months of April to June; this is the major rainy season. During these months, pastoralists breed their livestock, primarily camels and goats. The Xagaa season occurs during the months of July to September – it is the shorter dry season of the year, but some rains do occur in the Gollis mountain range during this time. The second rainy season is the Deyr, which is the shorter rainy season. It falls between the months of October and November. The final season is the Jiilaal, which is the dry season; it exhibits extreme temperatures and occurs from December to March. During this season pastoralists are most vulnerable to loss of livestock and scarcity of resources.

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<sup>8</sup> Originally, the study also included Kenya and the focus of the fieldwork there was Tana River County. Because of the geographical and sociocultural proximity of the research locations in Somaliland and Ethiopia, this report includes these two case studies. The Kenya case study will be published separately.

<sup>9</sup> 'Hawd Pastoral Livelihood Baseline Analysis Somalia'. Food Security and Nutrition Analysis Unit, 19 August 2011.

<sup>10</sup> In relevant areas of this report we discuss Somaliland as separate from Somalia, given that its governance infrastructures are separate from those of the latter. This is in keeping with general practice by the EU and the international community and is not intended to indicate a particular political position with respect to Somaliland's claims to independence. Further, the maps included in this report do not reflect a particular political position with regard to borders.

Figure 1: Map of study areas in Somaliland



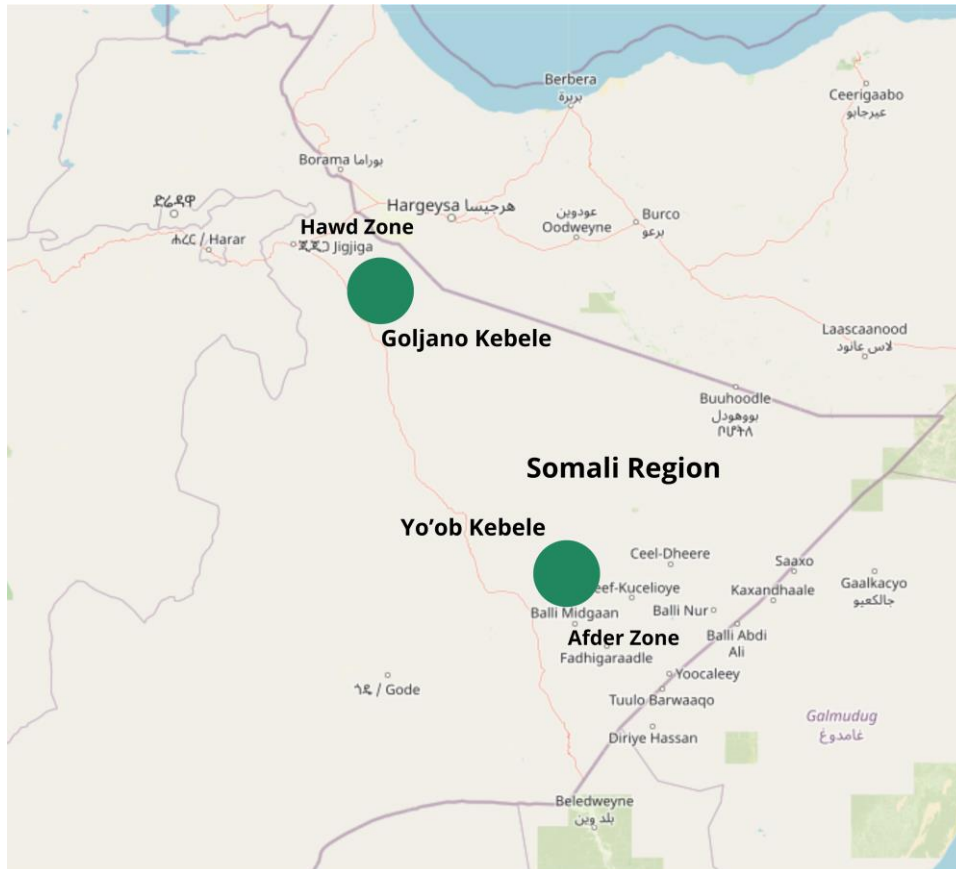
Source: OpenStreet Map.

In Ethiopia, the study sites were located in the Fafan and Doollo Zones of the Somali Regional State (see Figure 3), which borders the regional states of Oromia and Afar. The Somali Regional State is characterised as an arid zone that has experienced multiple cycles of failed rains, flash floods and droughts.<sup>11</sup> The annual rainfall ranges from 150 mm in the lower altitudes to 660 mm in the high altitudes. In the Fafan and Afder zones, the temperatures are cooler, because these zones are located at a higher altitude. There are two major climatic zones in the region: the Deyr and Karan rain-receiving zones. The Deyr zone has two rain periods – the first is the abovementioned Gu’ rain period;<sup>12</sup> the second is the Deyr rain period, which here occurs from October to December. The Karan zone receives the Gu’ rains between March and May, while the Karan rains occur from July to September.

<sup>11</sup> See the 2021 Somali Regional State Durable Solutions Strategy 2022–2025.

<sup>12</sup> Gu’ rains are the seasonal rain patterns that provide the most annual rain across Somalia and Somali Regional State. These rains are critical for crop-dependent and livestock-dependent livelihoods across Somalia.

Figure 2: Map of study areas in Ethiopia



Source: OpenStreetMap.

The study locations were Goljano *kebele* (administrative ward) in Kebribayah district administration (Fafan Zone) and Yo'ob *kebele* of the Lehel-Yo'ob district administration (Afder Zone). Goljano *kebele* is an agro-pastoralist area, while Yo'ob *kebele* is a pastoralist area. Goljano has cooler temperatures thanks to its high altitude and is located near the regional capital of Jigjiga. The agro-pastoralists of this district are known to compete over resources such as land, water and grazing space for their livestock;<sup>13</sup> their mobility patterns are limited by their need to remain close to their farms. Yo'ob *kebele* is a pastoral area located in the Doollo Zone, which is primarily characterised by its aridity. The communities in this area are dependent on their livestock and their products. As a result of the ongoing drought, which has reduced the availability of pasture, the community is reliant primarily on browse-dependent goats and camels.

<sup>13</sup> Somali Regional State Durable Solutions Strategy 2022–2025.

## 5 Methodology

The study combined a review of the available relevant literature with primary field research. For the literature review, the researchers compiled the main policy and planning documents for the respective territories (at both the national and regional levels), drawing on both published and unpublished sources. These included official government policy documents, reports and references from the UN and international and national nongovernmental organisations, and academic and grey literature. The review of these documents focused on exploring the framing of the relationship between climate or environmental change and mobility and migration. The policies, plans, programmes and frameworks analysed for the study are discussed in further detail in Section 6.

The researchers also collected primary data in the study locations identified in Section 4. The methodology was primarily qualitative – key informant interviews (KIIs) and focus group discussions (FGDs) were conducted with a total of 108 participants in both areas. Participants were sampled through convenience and purposive sampling. In addition to community members, representatives of ministries (such as environment, livestock, disaster risk management, etc) were also selected for KIIs. Table 1 shows the breakdown of participants by location and gender. Interviews were conducted in the vernacular of the study sites – the Somali language.

**Table 1: Participants by study location**

Country	Men	Women	Total participants
Somaliland	24	24	48
Ethiopia	40	20	60
<b>Total</b>	<b>64</b>	<b>44</b>	<b>108</b>

Finally, participatory mapping was used to understand and map migration patterns and changes. The purpose of participatory mapping for this study was to explore changes in grazing areas over time, the movements of people out of rural areas, and the development of interventions such as boreholes or *berkads* that have led to temporary or permanent settlements. The mapping exercise was also used to spur discussions around aspects of changes to land use, movement, livelihoods, conflict trends and availability of services, in reference to key locations identified during mapping.

**Figure 3: Participatory mapping with local men, Xaaxi, Somaliland**



Source: Author's own (Mohamed Fadal)

### 5.1 Limitations

The researchers faced a few common challenges and limitations in their respective locations. First, the ongoing drought in Ethiopia and Somaliland meant communities were experiencing acute stress and in some locations there was a feeling of 'assessment fatigue'. Second, regarding the perennial issue of the short amount of time and resources allotted to the fieldwork, a non-representative sample is another limitation of the study. Nonetheless, the researchers were successful in understanding the perspectives and experiences of the communities, given their long-standing relationships in the area and their expertise as researchers who are themselves from the region. Third, the report offers limited insights into the gender-differentiated experiences of pastoralist and agro-pastoralist communities – in the Ethiopia case study, in particular, only 20 women participated compared with 40 men. Lastly, a comprehensive analysis of *all* plans, policies, programmes and frameworks dealing with climate change/environment was beyond the scope of this research study. As such, the researchers selected the most salient documents for their analysis, assumed to represent the prominent discourses, policies and approaches to climate change.

# 6 Environmental change policies in Ethiopia and Somaliland

This section describes the main policies, plans and strategies related to the environment and climate in the countries of research. Considering the growing importance of environmental issues in the region, the review is not comprehensive; enumerating all such strategies, plans, policies and frameworks is beyond the scope of this paper. Therefore the review focuses on the most important of these plans and policies, and on a discussion of how they frame mobility and migration issues.

## 6.1 Climate change policies and plans in Ethiopia

Ethiopia has a number of policies and programmes that aim to address climate change, many of which find their roots in the 2011 Climate Resilient Green Economy Strategy (CRGE). The CRGE “follows a sectoral approach and has so far identified and prioritised more than 60 initiatives, which could help the country achieve its development goals while limiting 2030 GHG [greenhouse gas] emissions to around today’s 150 Mt CO<sub>2</sub>e [carbon dioxide emissions] – around 250 Mt CO<sub>2</sub>e less than estimated under a conventional development path”.<sup>14</sup> The Strategy focuses on four pillars:

1. improving crop and livestock production practices for higher food security and farmer income while reducing emissions;
2. protecting and re-establishing forests for their economic and ecosystem services, including as carbon stocks;
3. expanding electricity generation from renewable sources of energy for domestic and regional markets;
4. leapfrogging to modern and energy-efficient technologies in transport, industrial sectors and buildings.

Ethiopia’s Programme of Adaptation to Climate Change (EPACC), adopted in 2010 as part of the CRGE, aims to build a climate-resilient economy through adaptation at sectoral, regional and local community levels. The EPACC updates and replaces Ethiopia’s National Adaptation Programme of Action (NAPA), which was formulated in 2007 and submitted to the United Nations Framework Convention on Climate Change (UNFCCC) Secretariat.<sup>15</sup> The EPACC calls for the mainstreaming of climate change into decision making at a national level and emphasises planning and implementation monitoring. It identifies 20 climate change risks, mainly in the following areas: health (human and animal); the decline of agricultural production;

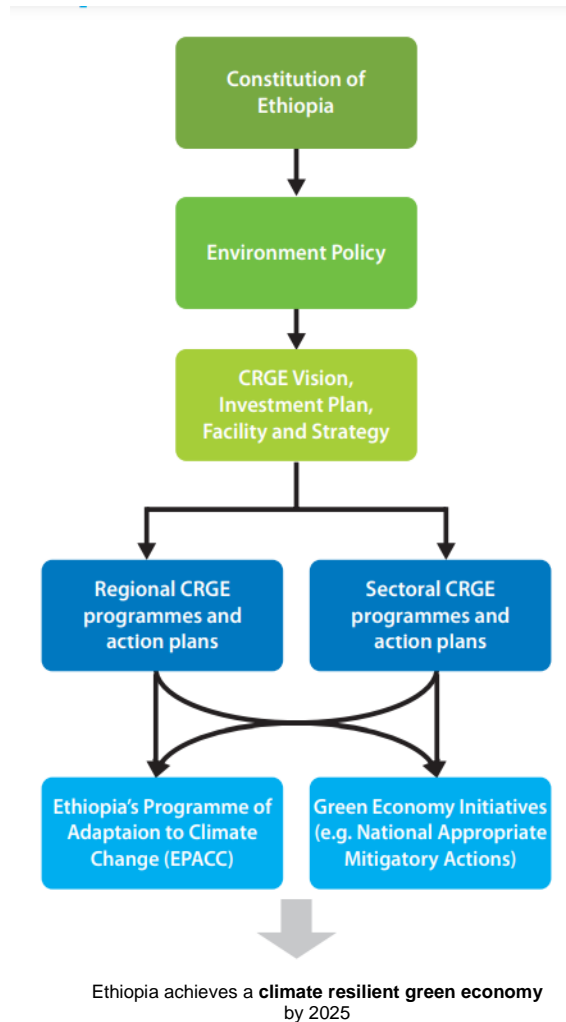
<sup>14</sup> Ministry of Finance, Ethiopia, at [https://www.mofed.gov.et/media/filer\\_public/9e/23/9e23b2bc-0f3f-4035-ac8a-f0009b5b704a/crge\\_strategy.pdf](https://www.mofed.gov.et/media/filer_public/9e/23/9e23b2bc-0f3f-4035-ac8a-f0009b5b704a/crge_strategy.pdf).

<sup>15</sup> [https://www.preventionweb.net/files/24317\\_24317crgegevision40pagesforprinting.pdf](https://www.preventionweb.net/files/24317_24317crgegevision40pagesforprinting.pdf).



land degradation; water shortages; biodiversity; waste; displacement; and distributive justice. Reference to displacement is limited to responding to the arrival of refugees displaced by climatic factors. The EPACC also identifies institutions responsible for mitigating these risks.<sup>16</sup>

**Figure 4: Ethiopia's CRGE and relation to other Initiatives**



Source: CRGE Vision, [https://www.preventionweb.net/files/24317\\_24317crgegevision40pagesforprinting.pdf](https://www.preventionweb.net/files/24317_24317crgegevision40pagesforprinting.pdf).

The 2019 **National Adaptation Plan (NAP-ETH)** is another critical effort to address climate change that draws on the Climate Resilient Green Economy (CRGE) strategy (and the second Growth and Transformation Plan – see below). The NAP-ETH's goal is “to reduce vulnerability to the impacts of climate change by building adaptive capacity and resilience”.<sup>17</sup> To this end, it aims strengthen the integration of adaptation into the country's long-term development pathway, with the support of effective institutions, governance structures, finance for implementation, capacity development, strengthened systems for disaster risk management (DRM), and integration among different sectors.<sup>18</sup> The NAP-ETH prioritises and focuses on

<sup>16</sup> <https://climate-laws.org/geographies/ethiopia/policies/ethiopian-programme-of-adaptation-to-climate-change-epacc>.

<sup>17</sup> FDRE, CRGE, <https://www4.unfccc.int/sites/NAPC/Documents/Parties/NAP-ETH%20FINAL%20VERSION%20%20Mar%202019.pdf>.

<sup>18</sup> <https://sdg.iisd.org/news/ethiopias-nap-seeks-to-integrate-adaptation-into-long-term-development/>.

those sectors considered to be the most vulnerable to the impacts of climate change, namely, agriculture, forestry, health, transport, power, industry, water and the urban sector.<sup>19</sup> To effectively integrate the NAP into national, regional and local development plans, Ethiopia has prioritised five key strategic areas: 1) mainstreaming climate change adaptation into development policies and programmes; 2) long-term institutional capacity building; 3) effective and sustainable funding; 4) research and development; and 5) an improved knowledge management system for NAP.

Ethiopia's new **10-year development plan** 2020 to 2030 (known as 'Ethiopia: An African Beacon of Prosperity') builds on its predecessor – the five-year Growth and Transformation Plan II 2015 to 2020 – and is in line with the country's Homegrown Economic Reform Agenda. The plan focuses on agriculture, mining, tourism, urban development, innovation and technology as crucial development sectors.<sup>20</sup> The environment and climate change part of the 10-year development plan aims to ensure sustainable development by "developing, enriching, maintaining and protecting the country's natural environment, forests, wildlife and other biodiversity resources, and also through ensuring sustainable utilization as well as maintenance of healthy ecosystem interactions".<sup>21</sup> It also aims to increase GHG emission reduction capacity, increase the coverage of protection against illicit activities in wildlife habitats, and increase national forest coverage and biodiversity.

Ethiopia submitted its **Nationally Determined Contributions (NDCs)** to the UNFCCC in 2016 and submitted an update to the NDC in 2021. Ethiopia's initial NDC (2015) drew on the CRGE Strategy. The 2021 NDC, which covers the period between 2020 and 2030, builds on previous goals and achievements, particularly with respect to GHG emissions and aligning the GHG emissions pathways with the national development priorities and sectoral targets in Ethiopia's ten-year development plan.<sup>22</sup> The NDCs also account for the country's social and economic development targets, as set out in the government's Growth and Transformation Plans I and II. Ethiopia submitted its Second National Communication to the UNFCCC and outlined its commitment to climate change adaptation in its Intended Nationally Determined Contribution (INDC) in 2015. The INDC establishes the short- and long-term programmatic efforts to reduce the susceptibility of livelihoods and landscapes to the impacts of climate change. It focuses on three key areas: droughts, floods and cross-cutting interventions (World Bank Group, 2021).

At the Somali Region level, two key policy documents related to the environment and climate change deserve mention. These are: 1) The Somali Region 2030 Perspective Development Plan (2020/21–2029/30); and 2) the Somali Region Environment and Rural Land Administration Sector Transformation Plan.<sup>23</sup> Both documents focus on forestry, conservation, and protection of the natural environment, as well as on combating pollution through integrated natural resource management practices, reduced deforestation and afforestation. A third, related policy with a specific focus on pastoralism is the 2020 Pastoral Development Policy

<sup>19</sup> Ethiopia's Climate Resilient Green Economy National Adaptation Plan, May 2019.

<sup>20</sup> <https://issuu.com/ethiopian.messenger/docs/magazine17/s/11667727>.

<sup>21</sup> FDRE Planning and Development Commission. *Ten Years Development Plan: A Pathway to Prosperity 2021–2030*. Addis Ababa: FDRE.

<sup>22</sup> World Resources Institute, <https://www.wri.org/insights/ethiopia-updated-ndc-climate-action>.

<sup>23</sup> EPRLAP 2020/21–2029/30.

and Strategy (PDS).<sup>24</sup> The aim of the PDS is to improve the livelihoods of pastoral communities, and promote their sustainability. This is expected to be achieved through mechanisms of maximising commercial pastoralism, local knowledge, animal productivity and, finally, expanding and improving the available resources and services for pastoral communities in Ethiopia. Although this policy remains in draft form, awaiting the final approval of the Ethiopian Parliament, it was endorsed by the Federal Democratic Republic of Ethiopia's (FDRE) Council of Ministers in 2020. This demonstrates how pastoralist political initiatives remain a peripheral priority of political institutions. Although some of the strategies have been implemented, such as alternative basic education, health extension services and other outreach activities aimed at delivering services to the pastoral communities in the region, the policy has not been fully realised thanks to a lack of political prioritisation.

Regional level documents (mainly relating to the Somali and Afar regions with large pastoral populations) have guided the interventions related to pastoralist communities in Ethiopia. Conversely, most of the attention of the national (rural) policies has focused on crop cultivation and promoting practices that lead to further sedentarisation among pastoralists (Beyene, 2016). Notable examples include the Rural Development Policies and Strategies (RDSP 2001), the Sustainable Development and Poverty Reduction Program (SDPRP, 2003), and the Plan for Accelerated and Sustained Development to End Poverty (PASDEP, 2005). These policies consider pastoralism as a 'problem to be solved' (Gebeye, 2016) and promote sedentarising pastoralists and providing them with the infrastructure and services that such sedentarisation requires. Nonetheless, the government's national PDS described above does focus on improving the livelihoods of mobile pastoralists through maximised animal production and productivity (commercial pastoralism). The general aim of this policy is to realise improved livelihoods for pastoral communities through an integrated approach to development that "takes pastoralist livelihood system as a basis".<sup>25</sup> The Council of Ministers of the FDRE approved the PDS in October 2020 and it awaits the approval of the parliament.

### *Mobility and migration and Ethiopia's climate policies*

Environmental change (in conjunction with a range of overlapping economic, political, social and demographic factors) has shaped various forms of mobility in Ethiopia.<sup>26</sup> Transhumance

<sup>24</sup> <https://www.penhannetwork.org/news/pastoral-development-policy-and-strategy-in-ethiopia/#:~:text=In%20October%202020%2C%20a%20new,level%20of%20Ethiopia%27s%20Regional%20States.>

<sup>25</sup> [https://www.celep.info/fdre-policies/.](https://www.celep.info/fdre-policies/)

<sup>26</sup> Despite the number of people moving as a result of environment-related events interacting with social, economic and political dynamics, conflict remains the key driver of displacement in the Somali Region and more broadly in Ethiopia. The recent spike in conflict-induced displacement is mainly associated with a politicised inter-ethnic boundary conflict between the Somalis and Oromos (and adjoining regional states). Historically, there has been resource competition between Somali pastoralists and Oromo farmers, which has sometimes led to conflict. To resolve the boundary conflict, a referendum was held in 2004 by the federal government for 422 *kebeles* (administrative wards) to vote for their preferred region. Thereafter 323 *kebeles* were assigned to the Oromiya region and 93 *kebeles* to the Somali region. However, this did not prove to be a long-term solution as the conflict resumed in 2017 between the two regional states, with the involvement of the special forces from the two regions (Hagmann & Abdi, 2020). The conflict has eroded trust between the two communities, which has led to targeted attacks against both groups. More than two million people have been displaced as a result of the conflict and the Somali Regional State now hosts some one million internally displaced people (IDPs)

and drought-related movements are examples of these forms of mobility, where pastoralists move long distances in search of pasture, water and other resources. Displacement in the context of flash floods is another in parts of the country such as the Somali Region. According to IDMC (2022), in the past two decades, 2.8 million people in Ethiopia have been displaced, mainly as a result of droughts and flood-related disasters. However, given the complex links between environmental change – including disasters – and economies and local markets, studies argue that other mobilities (such as those often labelled ‘economic migration’) are also related to the environment. The loss of livestock by Somali pastoralists as a result of drought and other disasters, for instance, has a direct link with loss of livelihoods, food insecurity and increasing market prices. These all shape economic and labour migration both internally in the region as well as externally (Nelson & Khan, 2021). This unsettles the distinct, simplistic categories of migration and displacement that often underpin policy, planning and programming frameworks about the environment and migration, and suggests instead that the environment should be thought of as inseparable from, and overlapping with, economic, political, social and demographic dynamics at play in the HoA.

According to the IOM’s Displacement Tracking Matrix (DTM), the number of IDPs in Ethiopia as a result of climate and conflict has been on the rise since 2016 (IOM, 2018). In 2019, Ethiopia had three million IDPs, making it the country hosting the largest number of IDPs within its borders since World War II (IOM, 2018; according to the most recent figure from the IOM’s DTM, the figure has risen to roughly 4.5 million.<sup>27</sup> The rise in figures has been caused by old and new conflicts (inter-regional and intra-regional, and the conflict in the north) coupled with droughts and other natural disasters taking place in 2021. In Ethiopia’s drought-affected regions, 1.9 million people were displaced as of September 2022 (with IOM estimating that one in three of these displacements is related to the drought).<sup>28</sup>

Although conflict remains the main driver of displacement in Ethiopia, environmental change has also shaped various forms of mobilities. In the context of diminishing agricultural productivity and rising food insecurity (WFP, 2014) there has been a rise in rural unemployment and many people (particularly youth) are moving from rural parts of Ethiopia to other rural areas, as well as to urban centres (REF, 2021, B; Bundervoet, 2018). Young people move seasonally to other rural locations to work in agricultural jobs (such as in sugar plantations, as loaders or in construction). The massive influx of youth migrants to urban centres in Ethiopia has outpaced the available opportunities for work or education; consequently, many young migrants have been forced into street vending, a precarious livelihood with little to no protection (REF, 2021). In rural destinations, a lack of employment opportunities and social protection or government safety nets may result in the ‘trapping’ of migrants in locations where temporary labour is no longer available; not only does this

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<https://displacement.iom.int/system/tdf/reports/R12%20Somali%20Regional%20Report.pdf?file=1&type=node&id=4459> ).

<sup>27</sup> <https://displacement.iom.int/ethiopia>.

<sup>28</sup> According to IOM, “drought-affected Regions comprise three quarters of the total land area of Ethiopia, with Somali, Oromia, and Afar Regions the most severely impacted. One of every three migrants along the eastern route are from drought-affected Regions of Ethiopia, and one of every three returning migrants are going back to drought-affected Regions”. See

<https://ethiopia.iom.int/sites/g/files/tmzbdl996/files/documents/Humanitarian%20Response%20Overview%20-%20September%202022.pdf>.

decrease young people's resilience, in a situation of economic precarity they may also become potential recruits for non-state armed actors such as ethnic-based militias (Yishak, 2019).

Despite the mounting evidence painting a complex picture linking environmental change and migration in Ethiopia, the country's policy and planning documents do not explicitly recognise this link. In fact, mobility is primarily conceived of as driven by conflict, socioeconomic and political factors, rather than being a result of all of these factors *in conjunction with* a changing environment.<sup>29</sup> In the recent past, where mobility has been included in national rural development policies in Ethiopia, the latter have always emphasised curtailing pastoralist mobility by encouraging and promoting changes to pastoralist livelihoods through various programmes. These programmes have focused on the sedentarisation or villagisation of pastoralists and have thus viewed mobility as a problem (Gebeye, 2016).

At the regional level, policies and programming interventions are ambivalent. For instance, some policies and plans emphasise elements of crop agriculture, despite the region hosting communities that are primarily pastoralist. Neither the current 10-year plan nor the regional EPRLAP discusses mobility in the context of climate change, despite it being a significant aspect of pastoralist adaptation and resilience. The focus of both plans is primarily natural resource conservation, forestry development and the protection of the natural environment. On the other hand, despite the fact that the Somali regional government is playing a significant role in advocating the approval of the National Pastoral Development Policy, the focus of the current administration (both at the regional and national levels) is on agriculture as a means to build resilience in the face of climate change.

Nevertheless, regional policies and plans also integrate other elements of pastoral mobility. Policies related to health extension, agricultural extension and pastoral education are integral parts of the regional development policies that ensure mobile pastoralists have access to basic services.<sup>30</sup> These services are delivered to the pastoralists using mobile teams who ensure the former have access to education and animal and human health services in areas where infrastructure and access to such services are scarce.

The 1995 Constitution of Ethiopia was the first to draw attention to issues faced by pastoralist communities in the country. It established a committee within the parliament to oversee pastoralist development activities, such as improved access to services and infrastructure. Since then, national development policies have incorporated some pastoralist-related aspects into their plans (Gebeye, 2016). Key national policies of the past 20 years include the Sustainable Development and Poverty Reduction Plan (SDPRP), the Plan for Accelerated and Sustainable Development to End Poverty (PASDEP), and the Growth and Transformation Plan (GTP I and II). Despite the integration of pastoralism, these policies and programmes have failed to pay adequate attention to or incorporate mobility, which is possibly the principal concern of pastoral communities.<sup>31</sup> Policies, plans and the actions therein tend to focus on and serve agricultural and settled communities rather than mobile pastoralists. The GTP II, for example, states: "agriculture will remain the main driver of the rapid and inclusive economic growth and development. It is also expected to be the main source of growth for the modern

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<sup>29</sup> Ibid.

<sup>30</sup> Somali Region 2030: Ten Years Perspective Development Plan.

<sup>31</sup> Ibid.

productive sectors. Therefore, besides promoting the productivity and quality of staple food crops production, special attention will also be given to high value crops, industrial inputs and export commodities”.<sup>32</sup>

In addition to focusing on agriculture, plans and policies not only do not engage substantially with issues around mobility, they also actively promote the sedentarisation of pastoralists. Ethiopia's SDPRP, for instance, stipulates the following strategies for pastoral development: “a) Sedentarisation of mobile pastoralists on voluntary basis. b) Consolidate and stabilise those who are already settled or semi-settled through improved water supply, pasture, and social services. c) Carefully select viable and reliable river courses for future sedentarisation based on irrigation and link these places through roads and other communication lines.”<sup>33</sup>

Similarly, policies and programmes that address climate change have also prioritised the needs and concerns of settled agrarian communities in Ethiopia. Perhaps the greatest proof of this is the absence of a national policy to address issues affecting mobile pastoralists and the continued focus on ‘alternative livelihoods’ for pastoral populations (Gebeye, 2016). Ultimately, the focus on sedentarisation appears to be at the forefront of strategies addressing pastoralist concerns. Policies at the regional level are typically designed along national policy lines; as such, they also fail to contextualise and consider mobile pastoralism (Beyene, 2016).

## 6.2 Climate change policies and plans in Somaliland

Documents addressing environmental change in Somaliland are typically predicated on the **Somaliland National Vision 2030**, which was produced in 2011 by the Ministry of National Planning and Development (MONPD). Further policy formulations from the National Vision 2030 became the five-year national development plans, also produced by the MONPD. The first of this series of national plans was the five-year **National Development Plan (2012–2016)**,<sup>34</sup> this was followed by the **second National Development Plan (II) – (2017–2021)**.<sup>35</sup> The preparation of national plans is a collective effort by all government branches. The plans are followed by sectoral policy documents led by ministries and specialised agencies. These are: the Ministry of Environment and Rural Development's (MOERD) **Strategic Plan (2017–2021)**,<sup>36</sup> the National Agency for Disaster Preparedness and Food Reserves (NADFOR)'s **Disaster Management Policy**; and the Ministry of Water Resources Development's **Water Sector Strategic Strategy**.

**The Somaliland National Vision 2030** has a chapter on Environmental Protection (4.5 Pillar 5) with the stated vision of “A Healthy and Well Managed Environment that is Productive and Sustainable.” The Environmental Protection pillar acknowledges challenges to the environment, including elements of ecological degradation such as soil erosion, deforestation, recurrent droughts, overgrazing, overfishing and the spread of invasive plant species. Other

<sup>32</sup> Ethiopia: Growth and Transformation Plan II (2015/16–2020/21).

<sup>33</sup> Ethiopia: Sustainable Development and Poverty Reduction Program (SDPRP) (2002).

<sup>34</sup> There have been other National Development Plans since 1998, but these were not as comprehensive or regularised as the ongoing series.

<sup>35</sup> The next plan in the sequence (third) has not been released yet.

<sup>36</sup> This ministry's name has changed over the years. In the past five years, it has been known as the Ministry of Environment and Rural Development, Ministry of Environment, and now the Ministry of Environment and Climate Change. Documents produced by the ministry reflect these changes.

environmental stressors noted by the Vision are urbanisation, population growth, pollution and farming of marginal land. Although the Vision document contains these elements, it also lists 'climate change' as a sub-element. The Vision further articulates the natural resource endowments to be protected, such as water, land and mineral resources, coastal and marine resources, forest, woodlands, biodiversity and wildlife.

Water, land and marine resources, forests and biodiversity are the major elements of the Environmental Protection Pillar. For instance, the Vision lays out an aim to conduct a hydrological survey to map available and potential water sources as the basis for a master plan for a national water conservation and development programme. In terms of land, the government commits to "taking action in order to stabilize and reverse the process of desertification by introducing and enforcing appropriate land use and environmental protection laws and investing adequately in land management programs" (p 13). The biodiversity and wildlife component documents how abundant wildlife was in Somaliland 70 years ago and the impact of climate change that has led to severe losses of that resource. The Somaliland government will enact and enforce anti-poaching laws; it will also mobilise local communities by engaging them as the primary force for executing conservation measures.

The Vision also highlights the immense challenges Somaliland faces as a result of a lack of state recognition and no access to international financial institutions or bilateral relations. It takes an optimistic approach by emphasising the internal opportunities and potential wealth from untapped mineral resources, the region's strategic geopolitical location, allowing it to serve as an international and regional trade partner, and the prospects of becoming a popular regional tourist destination as a peaceful and stable country, although these measures have yet to be fully realised.

Building on the National Vision 2030, the **Somaliland National Development Plan (2012–2016)** also includes an Environmental Pillar (Chapter 5.5), which identifies the MOERD as the designated public body responsible for environmental protection, natural resource conservation and sustainable rural development (p 298). The key aim, to be achieved during the first four years, was the development of a National Environmental Policy. Other objectives of the plan were: building and institutional strengthening; reforming sector policies, legal and institutional frameworks; forging and sustaining strategic partnerships; enforcing compliance with existing policies; and mobilisation of domestic and foreign resources for environmental protection. The implementation of this new plan was started under a new president (Ahmed Mohamed Mohamoud 'Silanyo', who was elected in 2010), with wider local consultative stakeholder input. However, it encountered challenges such as lack of buy-in from other public institutions, thanks to the Ministry of Planning's weak capacity and lack of influence over other ministries.<sup>37</sup>

The subsequent **Somaliland National Development Plan (2017–2021; NDP-II)** proposed interventions aligned with the International Agenda for 2030 in regard to the UN Sustainable Development Goals (SDGs), especially those concerning the environment. These include: SDG12 (Ensure sustainable consumption and production patterns); SDG13 (Take urgent action to combat climate change and its impacts); and SDG15 (Protect, restore and promote

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<sup>37</sup> An External Review of the Plan had this to say: "A key challenge in the implementation of the current NDP has been the limited political leverage of the MoNPD vis-à-vis line ministries".

sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss). The Priority Interventions include, among others: (1) developing a national drought management strategy and a long-term programme to mitigate climate change effects; and (2) developing national strategies and policies for disaster preparedness and emergency risk management (eg drought and flood resilience).

Somaliland has a number of environmental laws and policies and other legal frameworks that address environmental issues. These include the Law on the Prevention of Deforestation and Desertification; Coastal and Marine Resource Policy; Disaster Risk Management Strategies; National Livestock Policy; and Environment Management Bill. Particularly relevant to the primary questions of this study is the **Somaliland Disaster Management Strategy and Standard Operating Procedure**,<sup>38</sup> prepared by the National Disaster Preparedness and Food Reserve Authority (NADFOR). The policy has three (1) understanding disaster risk; (2) strengthening disaster risk governance; and (3) investing in disaster risk reduction for resilience. Since its establishment in 2018, NADFOR has become the lead official agency for drought preparedness; its activities include conducting surveys and producing a Drought Early Warning Monthly Report.

In addition to these plans and policies, a programme that deserves mention is the **Water Infrastructure Development for Resilience in Somaliland**, a collaboration between the Ministry of Water Resources Development and the African Development Bank Group. The programme aims at sustainably “strengthen[ing] the resilience of the water and sanitation sector, and at developing water and sanitation infrastructure in the high priority areas of the country”.<sup>39</sup> Primary activities under water and sanitation infrastructure and rehabilitation include the construction of new earth dams, rehabilitation of existing earth dams and rehabilitation of strategic boreholes in largely arid and semi-arid areas of Somaliland. The programme also provides capacity building for the Ministry of Water Resources.

In addition, the programme aims to mitigate seasonal conflicts between farmers and pastoralists. An expected ‘positive’ impact of the programme is “Reduced Conflicts”, stated as follows:

Increased availability of water thus reducing conflicts between pastoralists and farmers especially along and in vicinities of the migratory routes. Availability of water from sustainable water sources will reduce mobility of pastoralists thus reducing potential inter-state conflicts, encourage community stability and voluntary settlement of pastoralists.<sup>40</sup>

It is critical to note that the programme thus appears to view mobility as a negative phenomenon and encourages ‘voluntary settlement’ through the provision of water infrastructure.

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<sup>38</sup> Government of Somaliland, at <https://nadfor.govsomaliland.org/site/downloadfile/file/MjAyMS8xMi8yMDIxLTEyLTMwLTwLTAwLTM5LTEwOTQtMTY0MDg1ODQzOS5wZGY%3D/view/1>.

<sup>39</sup> AFDB Data Portal, at <https://projectsportal.afdb.org/dataportal/VProject/show/P-SO-E00-001>.

<sup>40</sup> <https://reliefweb.int/report/somalia/somaliland-water-infrastructure-development-resilience-somaliland-program-esmf>.



### *Mobility and migration in Somaliland's climate policies and plans*

The framing of issues concerning mobility and migration in Somaliland's main policies and plans reveals some general overarching trends. For one, the main focus tends to be 'rural-to-urban' migration. For instance, the Somaliland National Livestock Policy (2006–16), while failing to discuss various pastoralist mobilities and trends, does speak to the issue of rural–urban migration. However, the Livestock Policy does tangentially address migration under the issue of changing gender roles among pastoralist families. As a result of changing migration trends among men who are moving to seek work in urban areas, women are increasingly bearing primary responsibility for various aspects of livestock management – especially the herding of camels (a traditionally male role).

Unlike the Livestock Policy, the Water Sector Strategic Plan (2020–24) views rural–urban migration from the perspective of the pastoralist sector. It highlights the outmigration of the pastoralist productive workforce, which may not only be detrimental to the national economy but may also exacerbate socioeconomic problems and tensions in the cities. Similarly, the Water Infrastructure Development programme of the Ministry of Water Resources Development and the African Development Bank approaches pastoral mobility as a programmatic issue by addressing the interaction of the project with livestock and wildlife mobility. The programme has clear guidelines to ensure that the construction of water infrastructure does not create any obstructions to livestock and wildlife migration routes. The programme also has guidelines in preparation for the potential threat of dust being blown onto project sites by moving livestock. Concurrently, as noted above, the programme views reducing the mobility of pastoralists as positive insofar as conflicts are concerned.

Similarly, the MOERD Strategic Plan (2017–21) shows concern over the impact of the ongoing drought and the rainfall variability that is changing the traditionally established mobility patterns of the pastoralists. Traditional coping mechanisms practised by pastoralists, such as rotational grazing and dry season reserves, will now be largely disrupted by ecological changes. Now animals are crowding at water points, creating more soil erosion and pasture depletion in their vicinity (MOERD, July 2017).<sup>41</sup>

The NDP II discusses changing migration patterns among pastoralist communities (as a result of drought), rural-to-urban migration, economic migration, youth migration and immigration of refugees into Somaliland. However, the Plan's Results-based Matrix mainly prioritises immigration and human trafficking through the following outcome: "By 2021, Government of Somaliland will ensure orderly, safe, regular and responsible migration and mobility of people for both inflows and outflows".<sup>42</sup> Priority interventions include: developing, implementing and strengthening immigration policy and legal frameworks; developing and adapting anti-human trafficking and smuggling policy and acting on it; reducing all forms of human trafficking and

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[https://rise.esmap.org/data/files/library/somalia/Clean%20Cooking/Supporting%20Documentation/Somalia\\_Final-Strategic-Plan-for-MOERD.pdf](https://rise.esmap.org/data/files/library/somalia/Clean%20Cooking/Supporting%20Documentation/Somalia_Final-Strategic-Plan-for-MOERD.pdf)

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[https://rise.esmap.org/data/files/library/somalia/Energy%20Access/Supporting%20Documentation/Somaliland\\_NDPII\\_Final.pdf](https://rise.esmap.org/data/files/library/somalia/Energy%20Access/Supporting%20Documentation/Somaliland_NDPII_Final.pdf) (p 133).

smuggling; strengthening the mixed migration task force; and building the capacity of the immigration institutions.

# 7 Environmental change, livelihoods and security in Ethiopia and Somaliland

## 7.1 Livelihoods and livelihood shifts in the context of environmental change

As in much of the HoA,<sup>43</sup> there have been profound shifts to the livelihoods base in the three research areas as a result of environmental change. Pastoralism and agro-pastoralism are the main livelihood systems in all three research areas; both these systems depend profoundly on the ecology and environment. According to the 2017 NDP, in Somaliland pastoralism is the backbone of the national economy and the livelihood of an estimated 34 per cent of the total population of about 3.8 million.<sup>44</sup> Pastoralists and agro-pastoralists combined use over 92 per cent of the Somaliland territory (SWALIM, 2016).<sup>45</sup> Pastoralist production is the single largest contributor to GDP, at 30 per cent (World Bank, 2015). Communities in the research area are primarily dependent on small stock (sheep and goats) because of the increased labour involved in caring for camel herds. Camels require longer migrations to access pasture and water and, alongside the sedentarisation of communities and experimentation with rain-fed agriculture in the research area, camel pastoralism appears to have become a costly affair. As an indication of this, research participants mentioned that people in the area had sold off even their pack camels, which they had previously used for transport.

In the Yo'ob area in Ethiopia, pastoralism is the primary source of subsistence, which is supplemented with petty trade in and around Yo'ob town. As people lose livestock to drought, there has been a gradual increase in people moving from the countryside to urban centres, especially in the past 20 years. Women from the Yo'ob community, in addition to being responsible for various tasks within the pastoral production system that were typically the remit of men, also run small businesses. The Goljano agro-pastoral community engage in livestock rearing as well as rain-fed crop farming. Similarly to many agro-pastoral areas in the region, maize and sorghum are the main crops cultivated by the community; however, some cash-crops such as onion are also grown. Farming is mainly for subsistence and not for commercial purposes, and any surplus is stored for use in the dry season in underground storage areas locally known as *bohol*.

<sup>43</sup>

<https://fews.net/sites/default/files/Joint%20Statement%20Horn%20of%20Africa%2009%20June%202022.pdf>

<sup>44</sup> No official Somaliland census has been conducted to date.

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[http://www.faoswalim.org/resources/site\\_files/Drought%20Situation%20Update%20in%20Somalia%20Feb%202016.pdf](http://www.faoswalim.org/resources/site_files/Drought%20Situation%20Update%20in%20Somalia%20Feb%202016.pdf)

Environmental change – especially drought – has led to a significant decrease in livestock holdings among all the communities covered by this study. Droughts of different intensities have been a consistent factor in the lives of pastoralist Somalilanders. Epic droughts have found their way into Somaliland folklore through such names as *Xaaramacune* (eating the forbidden); *Siigacase* (the red dust) and *Daba-dheer* (the long-tailed) (Hartmann et al, 2010). These droughts have ranged from mild to devastating. For instance, the droughts of 2015–17 led to the depletion of some 70 per cent of livestock, and communities experienced acute food shortages and malnutrition (JPLG Report 2022; MOE, NCCP-2022-draft; Oxfam, 2018). In the Balli Mataan research location, where the last severe drought of 2016 had already resulted in decreased livestock assets, participants estimated their livestock holdings via an *ad hoc* census as shown in Table 2.

**Table 2: Livestock estimates in Balli Mataan**

Category	2022	2016
Group A	60–100 sheep/goat herds	200–300 sheep/goat herds
Group B	20–40 sheep/goat herds	100–150 sheep/goat herds
Group C	0–10 sheep/goat herds	30–60 sheep/goat herds

Source: FGDs in Balli Mataan.

The sharp decline in livestock health and numbers has a critical bearing on both household nutrition (from livestock products) and income from sales. In the last *Arafo* (Hajj season sales) – the peak of Somaliland livestock exports – families in the research area were not able to take advantage of the market in Burco because of a lack of viable animals. One pastoralist who used to send truck-loads of sheep and goats (70 to more than 100 head) to Burco in the *Arafo* shared that most recently he could only find two animals from his herd that were of market quality, as the rest were weak and unproductive. Furthermore, since the livestock is weak, it is susceptible to diseases, making it more expensive to maintain their health.

Not only has the changing environment adversely affected household income and survival, it has also had a grave impact on the larger economy of Somaliland. The town of Burco, for instance, serves a great number of pastoralists who come there to sell livestock and buy various articles of need such as food, building materials, clothes, medicine, etc. The Mayor of Burco estimated that roughly 60 per cent of the wholesale and retail businesses in Burco serve pastoralists in the Togdheer region. The impact of environmental change on rural pastoralist livelihoods may therefore also have a crucial bearing on the urban area's economic health. Furthermore, the mayor also reported a loss of revenue to the City Council as a result of the disastrous impact of the recurring drought on livestock sales.

As previously mentioned, in many areas of the HoA, livestock-poor pastoralists are forced to 'drop out' of pastoralism – or rely on livelihoods not dependent on having herds – in the face of sweeping changes to dryland areas (Catley & Aklilu, 2013). In the Somaliland research locations, those 'exiting' pastoralism are typically the internally displaced and rural migrants to

urban areas.<sup>46</sup> They are destitute pastoralists who choose to go to urban areas and not to IDP camps, possibly because of support from relatives and others. A small number of pastoralists who still have livestock surviving from the drought are deciding to split their families and send women, children and the sick members of the family to IDP camps, with the rest continuing their pastoral way of life. Research informants in Somaliland mentioned that easy and cheap telephone access facilitated such strategies, as up-to-date information can be procured easily.

The agro-pastoralists in Xaaxi are in no better condition, both of their livelihoods being rain-dependent. Their traditional livestock, cattle, have become more vulnerable to droughts than the hardier goats and camels typically kept by the pastoral groups. The Xaaxi community reported not being able to cultivate crops in the past few years – any meagre harvest, if it even occurs, is used to feed livestock herds.

However, droughts are not the only manifestation of environmental change in Somaliland. In 2018, a tropical cyclone – Sagar – caused floods in the Awdal coastal area as well as inland, bringing a year's equivalent of rainfall in one go coupled with destructive winds. According to the Somaliland Ministry of Environment and Rural Development, 50 people are reported to have died and vast tracts of land were destroyed.

In the agro-pastoral area of Goljano in Ethiopia, environmental change is thought to have caused a drastic loss in vegetation and the acceleration of land degradation in an area historically known for grass and vegetation thanks to the relatively greater rainfall it used to receive. Today, the frequency and intensity of droughts have brought myriad changes to people's livelihoods. Land degradation is thought to have been induced by the over-utilisation of grass because of the large flows of migrating people and their livestock from different directions. At the time of the research, there was no pasture in the area, crop reserves having been utilised long ago. The few cattle and small ruminants were fed at home with the remaining roots of grass (Figure 5) and with animal feed for those who could afford to buy it from Kebribayah town.

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<sup>46</sup> Those who leave the pastoralist livelihood as a primary strategy continue to retain other aspects of the pastoralist identity (Rodgers, 2020).

**Figure 5: Roots of grass being dug for use as animal feed, Goljano, Ethiopia**



Source: Author's own (Abdirahman Ahmed).

In the pastoralist area of Yo'ob, livestock were in poor condition for want of pasture and feed; as such, they were also not marketable. In some cases, communities were buying animal feed from the market, but the price tends to be steep. According to one key informant, one quintal (or 100 kilos) of feed costs around 1500 Ethiopian Birr (\$28.50) or more, an exorbitant rate for rural communities. Many households in the area had lost scores of livestock to the recent drought. The World Food Programme reported the loss over one million livestock in the Somali Region, which is not only a significant setback for rural families' livelihoods but has also resulted in the forced migration of families (WFP, 2022).

Participants in both Somaliland and Ethiopia named the drought *sima* or 'equaliser' because of its widespread impact, with no area spared. In the words of an informant from Duruqsi, "droughts are happening back-to-back; the drought from 2016 is still battering us six years later". For a female participant from Duruqsi, the impact of climate change was more severe than "any other tragedy I've experienced, even conflicts and the war".

### *Perceptions of climate change*

The increasing uncertainty and variability of weather patterns is an accepted reality in the study areas. Communities we interviewed commented on the vast changes to rainfall frequency, on drought conditions and on other climate change-related shifts over the years; their observations are consistent with the findings of several studies on climate change (Devereux, 2006; Abraham & Muluken, 2021; Kemal et al, 2022). In Goljano, Ethiopia, a participant described changes to grazing areas as follows: "The grasses were as tall as us when we were young. We used to hide and play in the tall grasses just in front of our houses. Now, look at every corner, it [is] just dust, no grass."

Communities interviewed in Ethiopia also noted that the traditional weather prediction systems, which used the positions of the moon, stars and the sun as well as the direction of the winds, are now unreliable. Under normal circumstances, the communities expect to

receive the main rains of the Gu' season from April to May. However, as observed during data collection (June–July 2022), the Gu' rains failed this season as well. "In Ginbot [May] month, there used to be available rain and pasture this time and we used to call this season *Seer iyo Doog ma waydo* (not short of rains and grass/pasture)" said a key informant. The failed rains and the consequent absence of pasture had made participants sceptical about traditional prediction mechanisms that no longer coincide with actual weather patterns.

In Somaliland as well communities are keenly aware of the changing climate, not least because of the devastating impact on livelihoods and lives. An FGD in Xaaxi revealed other layered understandings of climate change among participants. One drew a picture of a spider's web to demonstrate the interconnectedness of the world and how actions in one place might affect another: "if anyone cuts a tree in Xaaxi, a tree in USA connected to it will feel it and die", they said. Deforestation is a major concern for communities in Somaliland, as will be discussed later.

Although the pastoral and agro-pastoral communities interviewed are aware of the relationship between human actions such as deforestation and environmental change in their areas, most associated environmental change with supernatural events that are perceived to be the result of sins committed by people. As one participant in Ethiopia put it, "it is Allah who brought this drought on us and we do not ask why Allah brought this drought upon us". The predominant belief is that climate change impacts such as drought are God's punishment for the transgressions and sins committed by humans.

## 7.2 Changing mobility and settlement patterns in the context of water availability and ecological change

Water availability and infrastructure play a central role not only in the livelihoods of communities in the research locations, but also in their migration decisions (as will be described later). In both Somali Region and the Hawd zone, *birkas* or *berkads* are one of the common sources of water. These water storage facilities typically consist of an excavated area lined with concrete that is filled by natural run-off of ground surface water after rainfall. The average *berkad* volume ranges from 1,000 cubic meters to 1,200 cubic metres (Mercy Corps, 2017). *Birkas/berkads* are typically privately owned by families or small lineage groups; besides providing water for livestock, they also help generate income for the owner through the sale of water to other pastoralists during the dry season. The multiplication of *berkads* is said to have facilitated the trend of (livestock) 'fattening', where smaller herds of livestock are kept in less space (Korf et al, 2015).

Although typically privately owned, a number of communal *berkads* have been constructed for public use in the Somali Region by the government, the UN and NGOs. These have, however, been used by poorer pastoralists, while the wealthier clan members have private *berkads* (Flintan et al, 2011); as such, the communal management of water sources has weakened.

In the Goljano agro-pastoral site, *berkads* are individually or household owned and managed. While in the past rainwater filled these cisterns, the prolonged drought has forced many households to resort to water trucking. At the time of data collection, the price of water trucking was up to 8,500 Ethiopian Birr (\$163) for 10,000 litres in Goljano, a significant expense because of the distance of the area from urban centres. Besides individually owned *berkads*,

water wells have been dug by the Lutheran World Federation (LWF) as part of their climate resilient livelihoods project in Kebribayah.

Water points in Goljano (eg Figure 6) are also used by migrants from various zones, including Jarar, Korahe, Shabelle and Nogob zones. In the past three years, as a result of consecutive droughts, there has been an influx of pastoral migrants to the Goljano area. The local community reported sharing water and dry-season grazing reserves with the migrants – part of the culture of sharing among Somali communities. Furthermore, local elders and the *kebele* administration facilitated the movement of pastoralists and their livestock into the area. Although representative of cooperation and negotiated resource access, the sharing of pasture has resulted in overgrazing and a lack of reserves for the local community.

**Figure 6: Water cistern in Goljano, Ethiopia**



Source: Author's own (Abdirahman Ahmed).

In contrast, boreholes and water wells are the main source of water in the Yo'ob area. The pastoralist communities in Doollo and Korahe, as well as other zones in the Somali region, depend on these water wells as water is trucked from Yo'ob to these zones. As the availability of water in these wells has not been affected by the drought, pastoralists and their livestock from various areas have moved to Yo'ob. This has reportedly resulted in overgrazing and ecological degradation from the congregation of people and animals. The influx of people and animals into Yo'ob aligns with the reported trend for the Somali Region overall, where 40,000

households and over 1.4 million livestock are said to be undertaking 'unusual migration' in search of water and pasture (WFP, 2022). Areas with better pasture and water infrastructures have become the target destinations for these migrants. When the meagre resources available for the local communities are shared with the in-migrating livestock and pastoralists, this affects the capacities of the local community to respond to the impacts of environmental change.

The water infrastructure in the southern Togdheer and eastern Maroodijeex regions of Somaliland is traditionally determined by the variable depths of underground water. Shallow wells are common in the northern sections of the area, which is 40–50 km north of the border with Ethiopia. The more reliable dry season wells used to be situated in the present locations of Burco and Odweyne in Togdheer, and Cadadley and Hargeisa in Maroodijeex. Today, these are too far away for households to reach. In the exceptionally dry seasons or during drought, water is trucked from these traditional wells. Less fully water-resourced wells are still used in southern Maroodijeex region and supplemented with *berkads*. The borderlands are essentially devoid of any underground water sources; this is where the British Colonial Administration built large surface dams in the 1950s to supply water to pastoralists during the dry seasons of Xagaa and Jiilaal (see Figure 7).

**Figure 7: Dam built in the 1950s in Duruqsi, Somaliland**



Source: Author's own (Mohamed Fadal).

Subsequent Somalia/Somaliland governments and agencies expanded the construction of the



surface dams further north from the border and improved their engineering by building water troughs outside water structures to prevent animals entering the water body and contaminating it, as used to be the case with the original dams. Dams are also provided with plastic matting to minimise water losses through seepage and to help the water supply last longer. These additional designs have improved the quality of water for human consumption as well. Less populated villages, which may not enjoy access to these government dams, have constructed their own smaller dams.

Despite the proliferation of such surface dams, private *berkad* construction has also gained popularity in the area. While there might be only one surface dam in each village, *berkad* numbers may surpass hundreds, depending on the size and age of the village. The original villages that started with the first surface dams along the border have now grown into small towns. Many of them have two big dams and several hundred *berkads*.

The research area is entirely lacking in functioning all-season drilled wells and the major reason for this is that the underground aquifer in the Hawd zone is over 600 metres deep. Further, since the increase in community investments in *berkads*, people have been reluctant to allow drill wells in their location for fear of rangeland degradation from a possible concentration of livestock during the dry season. However, since the variability of rainfall and drought has intensified, people are now more than willing to get all-season drilled wells. The rise in climate variability has, in fact, exhausted the gains made from the innovations in rainwater harvesting started in the mid-20th century.

**Figure 8: A *berkad* in Somaliland**



Source: Author's own (Mohamed Fadal).

The *berkad* is one type of infrastructure that has had the greatest impact on the communities living in the research area (an example is shown in Figure 8). Typically owned by families, *berkads* are also shared with relatives who are unable to construct one for themselves. If the option of sharing *berkads* with relatives or friends is not possible, non-*berkad* owning families buy a reserved number of barrels of water for their livestock and for their own consumption to pass the dry season. In the first two months of the Gu' season (April–May), while it is still raining, the use of *berkad* water is minimised. But, by June, the livestock is ready to be watered and it has to be close to its water source, ie the *berkad*. This will continue until October when the Deyr rains start and the *berkad* can be refilled and the water conserved. Watering animals will then resume in December, when the dreaded dry Jiilaal season begins, until the Gu' rains start.

Before beginning to tap into precious *berkad* water, families typically use public dams or buy in water. Large surface dams for public use are nowadays found in all villages; for instance, Duruqsi has two dams and Xaaxi and Balli Mataan have one each. The dams are maintained by the community and when these become disproportionately silted, supported for the de-silting process is provided by the government and aid agencies. The village committee is responsible for overseeing the use of water in these dams, which are always free for all – even migrants, ie those not from the area – as long as there is water available. After the water is exhausted or when the dam dries up, some villages such as Xaaxi and Balli Mataan dig shallow wells in the surroundings of the dam, which continue to be used until the rainy season. In drought times, these wells also dry up. For pastoralists who engage in mainly short-distance migration (as will be explained further), this has become the typical pattern for securing access to water.

Despite the serious changes to water availability brought on by drought (among other factors), *berkads* and dams remain the lifeline for the communities' water needs. In recent years, water trucking has gained popularity in order to fill *berkads*; however, it is an expensive undertaking and can only be a temporary measure. Water trucking started with barrel loads of water to supply pastoralists in the Hawd zone, which is poor in underground water, during severe drought. The pastoralists there have abandoned the practice of travelling over 100 kilometres to the dry season wells in the Ogo zone after surface dams were constructed by governments in the Hawd zone. They have also built their own private *berkads*. Now, water tankers are used instead of barrels and the system for dumping water in the empty *berkads* is becoming more efficient. Moreover, growing government fleets and private tankers rented for relief supplies or family-owned have resulted in an improved supply of water to the wider community.

### *Weather, ecology and pressures on production*

The paradox of pastoralist production today is that, although the livelihood depends heavily on rainfall, rains, when they do occur, cause floods, runoff and various forms of losses. Destruction of property, and the washing away of food stores and commercial goods, occurs in the wake of heavy rainfall in Somaliland (Gure, 2017; Sugulle et al, 2010). There are two main reasons for this extreme outcome from the rains: first, the land has lost the vegetation cover that used to slow down water runoff in the rangelands; second, vehicle tracks crisscross rangeland areas, packing the road sand and destroying the vegetation in the tracks. These vehicle tracks have multiplied because of the proliferation of village settlements in the rangelands. Vehicles supplying provisions and taking rural produce to market not only pass through villages but also visit households along the vehicle tracks in the grazing areas.

Furthermore, vehicles are becoming pastoralists' preferred mode of transport in the research area during their seasonal migrations. Excess water also destroys roads, turning them into *togs* (dry river gorges) and forcing vehicles to open other track areas and perpetuate the runoff water patterns. In addition, these rural floods not only cause damage but also drain away valuable water, which used to seep into the earth and nourish the vegetation.

Rangeland degradation caused by a combination of extreme rainfall patterns and loss of vegetation further exacerbates the situation, given the intricate link to livestock-based livelihoods. In Somaliland, the strong Xagaa-season southeasterly winds blow away the fertile top soil, leaving the land hard and parched. Much of the grassland has become so degraded that nothing grows without rain. As described by one pastoralist: "I did not see or hear [of] any household whose livestock got enough grazing for one week during this Gu' season [main rainy season]. Even with some rainfall no grass is growing because the seedlings died prematurely." On the other hand, any productive pasture attracts a large number of pastoralists and their livestock, causing further degradation of the area. Called *rays-derder* in the vernacular, this phenomenon of several people arriving in the same area to crowd it and deplete the limited pasture is said to be causing further ecological degradation when regeneration processes are not allowed to occur following human and livestock use.

Furthermore, invasive plant species such as *Prosopis juliflora*, which is indigenous to Mexico, continue to pose a major threat to research locations. *Prosopis juliflora* threatens the livelihoods of pastoral and agro-pastoral communities by affecting the water table and availability of water (Tilahun et al, 2017). While the rest of Doollo zone in Ethiopia is relatively uninfested, the plant has particularly dominated the arable and pasture land of Korahey zone, which is only 7 km away from Yo'ob (IDMC, 2020). Studies have shown that *Prosopis* has spread and covered large portions of the grazing land and bushland of Korahe zone (Abdullahi et al, 2020). From 1989 to 2019, it was covering 11,382.56 ha per year, affecting grazing and cultivated land. In this 30-year period, the land covered by *Prosopis* in Ethiopia has increased from 8,523.18 ha to 341476.82 ha (Adullahi et al, 2020).

### 7.3 Mobility and immobility in the context of environmental change

Mobility continues to be an important strategy for pastoralist communities living in arid and semi-arid environments characterised by high levels of uncertainty and variability. Importantly, the types, durations and distances of movements are not solely determined by environmental factors. Instead, mobility patterns reflect the complex and context-specific ways that the environment interacts with social, political and economic dynamics. Further, this study illustrates that immobility, or staying put, is an integral part of understanding pastoralists' experiences when living in contexts of environmental change. This section of the report presents these findings by examining changing short- and long-distance migrations; rural–urban mobility and the emergence of camps; and decision-making processes among participants at Ethiopian and Somaliland research sites. Information on migratory routes, preferences and decision making was derived from FGDs as well as from participatory mapping (see Figures 12 and 13).

**Figure 9: Donkeys used for short-distance migration in Somaliland**



Source: Author's own (Mohamed Fadal).

### *Short- and long-distance mobilities*

A key finding of this study, as reported by participants, is that shorter movements are becoming increasingly common across the research sites, with longer distance migrations less frequent. For example, participants interviewed in Ethiopia reported that short seasonal movements within Fafan zone were more commonly practised than long seasonal movements, since the zone receives relatively better rains than the rest of the region. In Goljano, the agro-pastoral community usually migrates within Kebribayah and the surrounding *kebeles* of Awbare and Jigjiga, but mostly within Fafan zone. These areas tend to receive higher rainfall than other zones in the region (up to 600 mm per year) and have lower temperatures; as such the pasture in parts of Fafan zone is often better than elsewhere in the Somali region (Tekalign, 2017; Zaremba, 2018). However, the recent repeated droughts have affected these places equally badly and agro-pastoral communities reported that they had to remain or return to their places of residence. In the words of one key informant:

The whole area of the Somali region is hit by this drought and we had been migrating with nowhere to go. In previous times, the Jigjiga woreda and the Kebribayah woreda used to be areas that the people migrated (to) during the drought in search of pasture and water.

This was also the case for pastoralists in the Yo'ob area, who moved short distances within their district. These shorter movements could be associated with the available water infrastructure and relative vegetation cover in the area, as illustrated by the following excerpt from a key informant interview.

On our side, during this drought, we haven't migrated to other places and we were a circle and moving back and forth in this Lehel–Yocob woreda between Yocob and Lehelo areas.

However, if the drought situation persists, participants reported that they would move to urban areas and seek assistance from relatives in areas such as Warder, Lehelow and Shilabo.

Similarly, shorter movements are now the norm according to participants in southern Togdheer and eastern Maroodijeex regions in Somaliland. Many, if not all, pastoral communities now have a base where they have established their own water sources and rural markets. For communities in the Togdheer area, these water resources tend to be *berkads* and dams, while those in southern Maroodijeex access shallow wells dug on the banks of village dams. Transhumant pastoralists from other areas are often unwelcome in the community (APD, 2007). In an FGD in Xaaxi, participants reported migration decreasing to a range of 10 to 30 kilometres because of enclosures and water points. Changing mobility patterns are also connected to livestock varieties, with pastoralists with higher numbers of livestock, and camels in particular, usually moving more frequently than those with smaller herds, who tend to stay put and supplement livestock feed with grains in between the rains. Livestock composition is changing, with historically popular camels now uncommon because of the costs involved and changes to transport.<sup>47</sup>

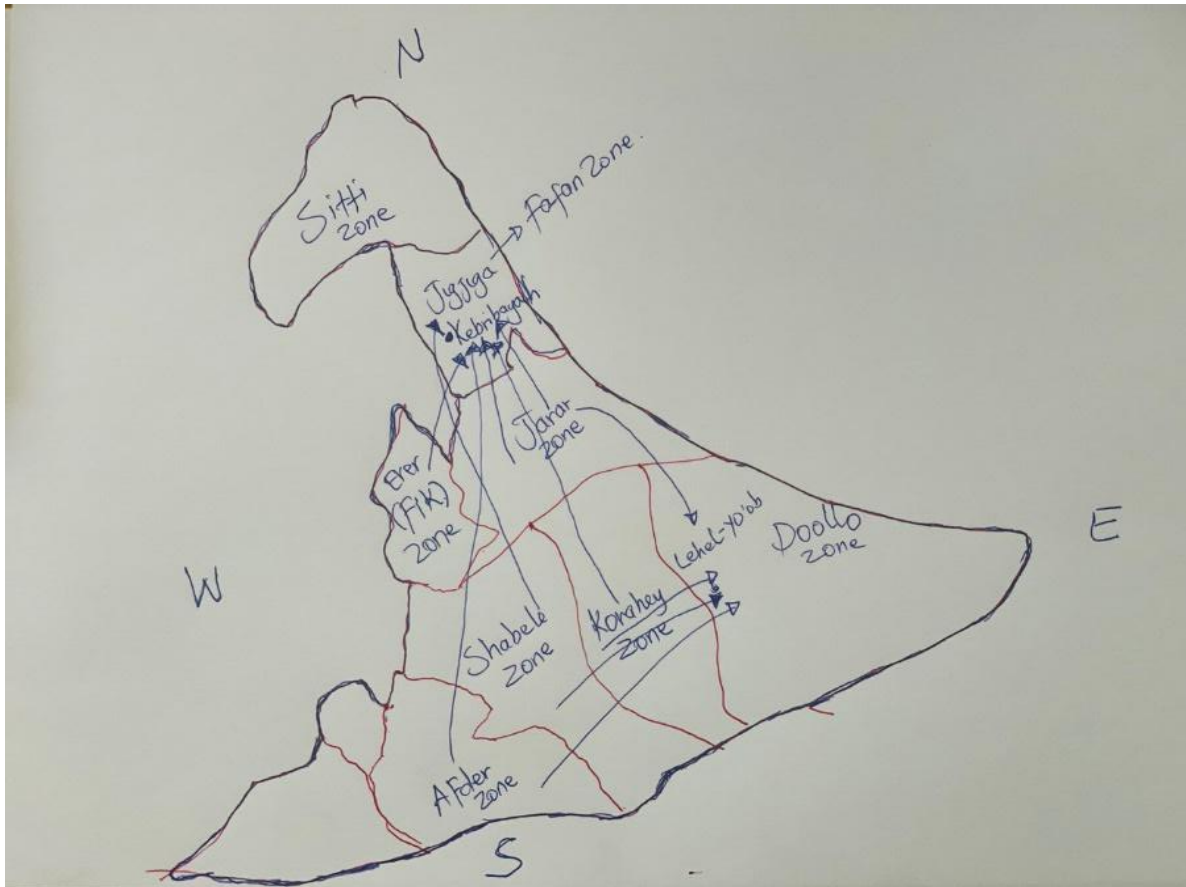
Although a key finding of this study is that short-distance movements are becoming more common across all research sites, longer-distance migrations do still take place. In Somali Region in Ethiopia, long-distance movements from other zones into Goljano and Yo'ob were common, thanks to the comparably better pasture availability and water infrastructure there. In particular, pastoralists had come from Korahey, Jarar, Shabelle, Afder and Fiiq, with some movements of more than 800 kilometres. Participants observed:

We were good before different migrants, those from Fiiq, Godey, dhanan [woredas] came here with their livestock to find pasture for their livestock, and our area is overgrazed.

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<sup>47</sup> For example, the Balli Mataan community sold their pack camels in the drought, because they now use vehicles for longer migrations, which are in any case now less frequent.

Figure 12: Participatory map of Somali Regional State migration patterns



Note: Somali region map: directions of long migration in the region.

Source: Author's own (Abdirahman Ahmed). Computed from FGDs with local communities in Goljano and Yo'ob districts.

In the Somaliland research sites, Duruqsi and Balli Mataan participants reported that longer migrations for better nutritive pastures do still take place; these are usually rainy season movements south across the border from Togdheer and Maroodijeex (about 40 to 50 kilometres). These movements are usually to locations where people's own clan members live. Longer migrations also take place towards the northern Ogo plains, which are preferred areas of grazing in the Gu' season. Another attraction of the northward move is when the now reserved Aroori plain near Burco is opened for public grazing in the dry season: according to the Mayor of Burco, 800,000 sheep and goats and 3,000 camels weathered the long dry season of 2021 there. Long migrations have also taken place to the south in Somali Regional State or to the east all the way to the Sool and Sanaag regions of Somaliland or, as a last resort, to the west of Somaliland or into Ethiopia, where common pastureland is very rare. In such cases, migrating pastoralists to the west may be compelled to buy hay or rent private enclosures or farms to feed their livestock.

Recent long-distance mobility practices are less related to conflict. Rather, participants cited intensified rain variability and droughts as key factors shaping decisions to undertake longer

migrations.<sup>48</sup> Participants stated that this was often more of a survival strategy than a choice. Where long-distance migration does take place, it is changing, as people increasingly use vehicles, enabling them to cover hundreds of kilometres per day. It remains to be seen how this increasingly motorised mobility will affect an already fragile environment, or how these long-distance movements will intersect with the regulation of land (Fadal & Moe, 2021).

Agro-pastoral crossing of borders is less frequent, and people tend to stay away from their base for shorter periods (around three months) in the Gu' season. According to the Xaaxi participants, only about three per cent, those with large herds of over 200 sheep and goats and some camels, undertake longer distance migrations. These people are referred to as *daaqsato* (those who wander in search of pasture). Some of the pastoralists return to Xaaxi when they lose all their livestock, and others are too poor to move at all. They do not have livestock to travel with and may not be able to reach IDP camps in the cities. Others with young children sometimes fear the risky sanitation levels and possible disease outbreaks in these camps and therefore stay in their village. These different dynamics are important, as they illustrate that mobility is not necessarily feasible, or desirable for all members of the community and that a range of factors informs decision making, including access to public grazing, the presence of clan members at destination sites, children's needs and risks to health, alongside environmental factors.

### *Rural–urban mobilities and IDP camps*

In addition to changes to the distance and types of movements reported above, some pastoralists in Somaliland have 'exited' from pastoral livelihoods, living in camps on the fringes of cities (with an indicative population of 1,004,400 reported by the DTM in November 2017) or, more recently, forming camps along major roads in rural areas.<sup>49</sup> Examples of such groups are found at the edges of Hargeisa city, in the Saraar plain along the Burao–Erigabo road, and in Caynaba along the major Burao–Garowe Highway (Fadal & Moe, 2021).

According to the Mayor of Burao, his district has 11 IDP camps. It is not easy to determine the populations of pastoral IDP camps, as these were not established by government agencies and therefore lack access to individual and land registration. According to participants, examples of unregistered camps include Duruqsi IDP camp with roughly 300 households and Balli Mataan with roughly 800 households. Assistance in the camps is limited, but some local residents also reportedly access the relief services eventually provided by international and local agencies. According to Togdheer informants:

The IDP camps are often under-served and unorganised. The drought-displaced people who reside in these camps lack essential life facilities; they

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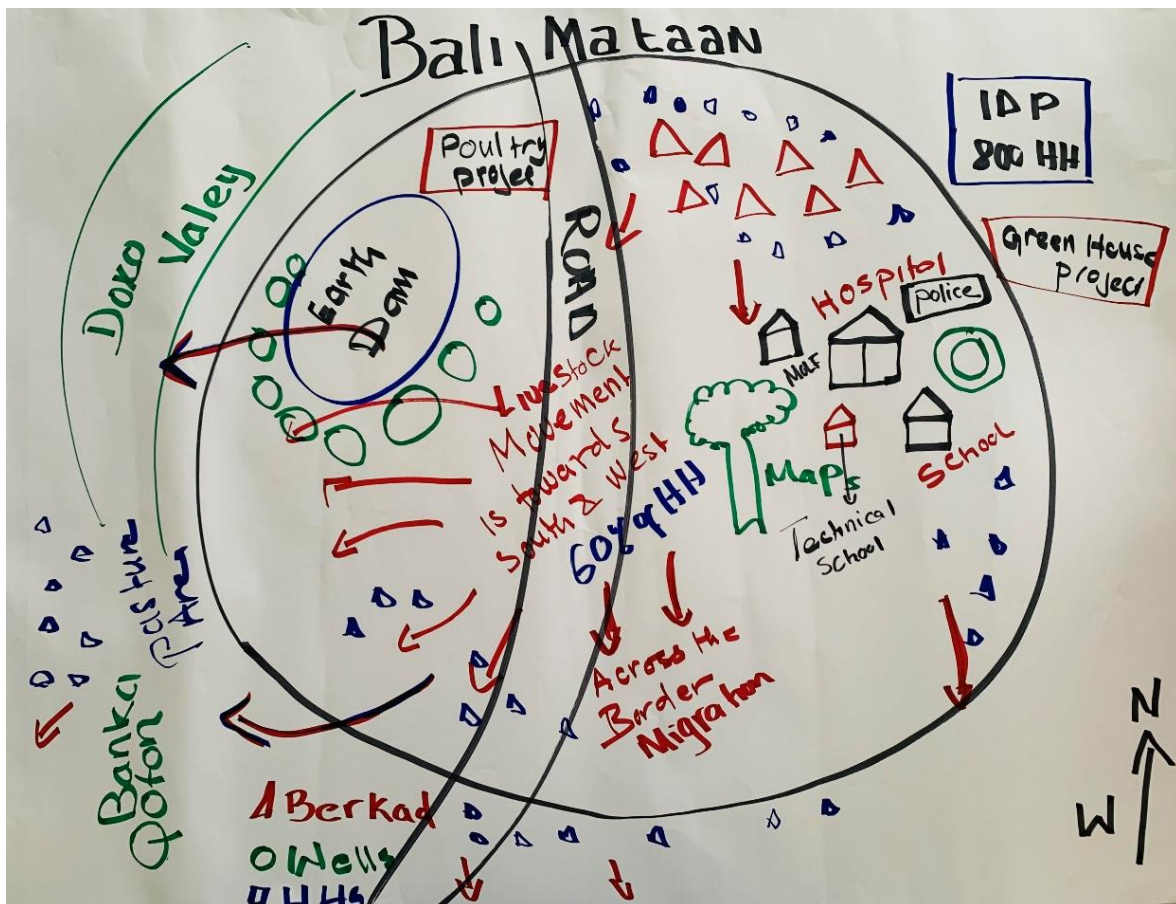
<sup>48</sup> In Sool and Sanaag between 2015 and 2020, there was communal conflict which caused displacement and security-related migration. In the research area, there hasn't been any communal conflict for decades, not accounting for the larger civil war in Somalia and autonomous regions.

<sup>49</sup> DTM rolled out the Emergency Tracking Tool (ETT) in Hargeisa, Zeylac and Borama districts in May 2017, scaled up to the rest of Somaliland's 19 districts by October 2017. Between 18 August and 18 September 2017, 1,004,400 people were recorded in 595 IDP sites. Most (77%) of these sites were host communities. See the *Somaliland – Displacement Situation Report*, November 2017. <https://dtm.iom.int/reports/somalia-%E2%80%94-displacement-situation-report-somaliland-november-2017>

also lack official registration to differentiate those who are really a drought IDP from the fake ones who cover themselves with *Buul hunguri* ['greed hut' – a hut for an IDP who does not actually live there, but who occupies it only during food distribution times].

Alongside the movement to camp-like settings, whether this be long-term or a temporary move to access occasional emergency relief services, as outlined in the quote above, others diversify their livelihoods by moving to cities, or practising small-scale rain-fed agriculture while still maintaining a small herd. While rural–urban mobility is not solely 'caused' by environmental change, Xaaxi informants noted that up to 30 per cent of the village population had moved to urban centres, to Odweyne, Burco and Hargeisa since the drought of 2016. In the context of the more challenging climate variability experienced during this drought period, pastoralist safety net systems have come under increasing pressure. However, while rural–urban mobility can be a positive coping and resilience strategy for some,<sup>50</sup> official policy and programme documents reviewed for this study continue to portray it as a negative result of environmental change and ecological degradation.

Figure 13: Example of participatory mapping, Bali Mataan, Somaliland



Source: Author's own (Mohamed Fadal). From FGDs with local communities in Bali Mataan.

<sup>50</sup> For example, see recent REF research on rural-urban livelihoods in Laikipia (Sturridge, 2020) and on pastoralists' resilience in Turkana, Kenya (Semplici, 2020).



### Migration decision-making dynamics

These different mobility and immobility experiences illustrate that decision making about migration in the context of environmental change is not static or straightforward, but changes over time and in relation to a range of intertwined environmental and socioeconomic factors. In the research locations in Ethiopia, decisions about pastoralist mobility are usually made by male heads of households, but journeys tend to be made collectively. For agro-pastoral communities, men undertake shorter journeys with livestock, while women, the elderly, children and weaker animals and dairy animals remain:

When drought happen[s], young and capable male members of the community migrate with the strong livestock to areas supposed to have enough feed and water. In this migration only strong male[s] participate and weak [elderly] male[s], women and children are left behind in home with weak animals and dairy animals so that children can rely on their milk and take care them. (KII, male participant, Goljano)

In the Somaliland research sites, migration decisions are normally taken by individual and extended families and often by both parents. Male heads of households usually make the final decision, in consultation with the female members of the family, who do the bulk of the work preparing to move. Pastoralists in Duruqsi and the agro-pastoral community in Xaaxi were both clear about the joint decision making of parents when it comes to both short and long migrations. Decisions have historically also been informed by community and individual family scouts (*sahan*) sent to assess the quality of resources elsewhere. However, communication technologies have reduced the role of scouts, and mobile phones are now widely used to access and share information regarding rainfall, pasture quality, density of settlements, prevalence of diseases or pests, and the security situation (Chonka, 2020; Hartman et al 2010). Changes to transport have also shaped decision making, with some members of the community using commercial transport to check pasture and water situations and identify settlement spots.

In some cases, the community coordinates its movements to share transport costs and support each other in new grazing areas. In the Xaaxi agro-pastoral village, the community drives its livestock together to seasonal pastures about 20 km away, immediately after the farms are flooded and are muddy with recent rainfall or from the dry-river flow. They stay for up to two months until the farms are dry and growing shoots are stronger. Only a small number of family members take the livestock out, while the rest stay. As one research participant said:

If the family is seven persons, only three will take out the livestock. Usually, the father and his elder sons take out the livestock, while the mother remains with the school children and the sick in the family. The staying family members also take care of the farm and the milk animals left behind.

## 7.4 Coping, innovation and resources

Communities in the research area and in the wider region have historically used a range of strategies to manage risks in their environment. These strategies – often characterised as ‘coping’ but which may also be viewed as ‘innovation’ – include migrating, the sale of livestock

products, herd diversification, mobile use for scouting, and collective fund raising for livelihood resources. Whereas several pastoralist and agro-pastoralist community strategies are adapted to the environment of the drylands, not all strategies are positive adaptations. Some recent coping mechanisms, as previously mentioned, contribute to furthering the degradation of the environment. As seen in Goljano, the agro-pastoralists were digging and removing roots as a substitute for livestock feed. This adaptive strategy can delay the growth of grass, even after rainfall, and cause grassland degradation. The community noted that there are areas where this strategy was carried out, and the grass has not grown since.

Traditional forecast mechanisms were being used to predict climate patterns by communities in Somaliland and Ethiopia. The use of lunar systems by pastoralists and agro-pastoralists was a tool to understand rain variations which, in turn, would influence breeding patterns, migration decisions, or crop production timelines. For instance, the livestock production calendar is dependent on the Gu' and Deyr rains within Somaliland, and predictions about rain variation during a particular season would result in the decision to either halt or begin the breeding process. The following quote from a male FGD in Duruqsi, Somaliland illustrates how the traditional forecasting practice using the lunar calendar has become less reliable as a result of environmental shifts:

I forecast the starting of Gu' rains from the winds, to adjust my sheep breeding to Gu' rainfall. I only take the breeding decision if and once I observe red-dust wind from west called 'Duf Idood' – sheep dust – which blows within the last month of the year – December. If I see that wind, then I start the breeding process [let mating happen] so that my sheep will lamb after five months, in mid-May, and I expect that it will rain. If I do not see that red dust blowing from west, then I will not start the breeding process.

However, climate change predictions based on traditional mechanisms no longer conform to the actual weather conditions. As explained by male local elders interviewed in an FGD in the Yo'ob *kebele*, Ethiopia: “we used to read stars and forecast the upcoming year's weather. None of these predictions no longer hold the water... But those forecasting things are sin and now we have discarded it as we shall not interfere with Allah's will.” Environmental unpredictability and variability are pushing communities away from traditional forecasting practices.

Furthermore, early warning systems that can predict climatic shifts are not functional at a grassroots level. Rather these early warning systems are implemented and managed by organisations that do not have the capacity to inform local communities in rural areas because such systems are not operational within the district level. These systems are processed by and functional among agencies such as the UN Office for the Coordination of Humanitarian Affairs (OCHA), the World Food Programme (WFP), the Food and Agriculture Organization (FAO), and others working in that sector. District-level heads of office interviewed for this study in Ethiopia's Somali Regional State pointed out that no climate-related early warning information was regularly communicated to them that would enable them, in turn, to inform the community and take the necessary preventive measures. At the same time, the communities' perceptions and understanding related to early warning is an important factor to consider. Pastoralists and agro-pastoralists say that climate predictions and early warning information go against their beliefs (Hartman et al, 2010). The quote by the *kebele* district elders

demonstrates that predicting weather patterns – which intrinsically define the state of their livelihood production – is a sin because it is against their beliefs to predict the will of Allah.

Environmental shifts have not only had an impact on traditional forecasting practices, but they have also modified how communities adapt their livelihood strategies to these changing circumstances. In the Somali Region, herd-splitting, household splitting, rural–urban labour migration, and charcoal selling were found to be the common coping strategies used by pastoralists to manage the risk of drought (Lelamo et al, 2022). In Somaliland, agro-pastoralists are dependent on their livestock as a result of drought-induced crop failures. In an FGD conducted with men from Xaaxi, they agreed that, today, their livelihoods depend on livestock “because nobody is growing crops and if they produce anything from the farms, it is small amounts of animal feed”. This shift demonstrates how environmental change has limited the diversification of their resources because agro-pastoralists are unable to produce an abundance of crops. Their crops are now restricted to those that sustain their livestock, such as animal feed, and not to sustaining themselves, because of the failure of rains and lack of harvests. In other words, agro-pastoralist communities in Xaaxi have become more dependent on their livestock as a means of subsistence.

Another strategy employed by pastoralists in the region to ensure pasture for livestock, whether this be for regenerative or commercial purposes, was the usage of enclosures (Alison & Solomon, 2011). This is when an area of land ranging between five and ten hectares is fenced off from the communal rangeland and used for commercial purposes or as a space for pasture regeneration. This practice has recently become more popular and individualistic in Somaliland and the Somali region. In the Somali regional state these enclosures were cooperatively owned by community members but in Somaliland they were privatised by community members.

The practice of enclosing land has a mixed record in terms of impact within Somaliland because of the activities that occur within these privately owned spaces. In Xaaxi, enclosures were sites of deforestation for the purpose of charcoal production, which resulted in a reduction in fertile lands. On the other hand, in Bali Mataan, enclosures are said to have resulted in a positive outcome, a rare occurrence within the region. According to an FGD with a group of men, each individually owned area of land was under the responsibility of the owner, who was meant to protect it from ecologically damaging practices such as charcoal burning.

These different outcomes are the result of the context in which the land was first enclosed because, in Bali Mataan, these parcelled pieces of land were divided among community members who were obligated to protect it, while in Xaaxi this circumstance was not enforced. It is now becoming more popular to use enclosures within Somaliland, and the driving factor for this rise in enclosed spaces is the commercial benefit of charcoal burning (Birch, 2008). However, this practice of creating charcoal-producing enclosures is perceived by the community as vandalism, because it contributes to the ecological degradation of the area, which has a negative impact upon their livelihoods. Therefore, the popularisation of the practice has resulted in conflicts within the region over the negative impacts it has on the land, its growing prominence, and the emerging push-back from the community against this practice.

Cooperatively owned enclosures, on the other hand, have their own set of issues. In the Somali Region of Ethiopia, it is common practice among agro-pastoralist and pastoralist communities to unrestrictedly share resources with migrants who arrive in the region (Devereux, 2006). This practice, while reflective of cooperative and common-pool resource sharing, depletes the host communities' limited resources because of the cultural circumstances that oblige them to share their enclosure reserves with those in need. The following quote from a key informant in the Doollo zone illustrates how these cooperatively owned enclosures led to an influx of livestock and an overuse of the area.

They [Jarar, Korahey, and Shabelle zones] have closed the land in their areas and no one can get pasture from that land because they are owned by individuals. Then they sent their livestock to this area for Doollo zone which was open to everyone to access its pasture lands, in which, at the end, we are crowded here.

This is partly the reason why in Somaliland the practice of area enclosures has become more individualistic and commodity-oriented, because this form of social support can have a negative impact on local resource capacities. Nonetheless, social support networks are critical in the drylands environment, as they enable communities to pool together funds or redistribute resources from more wealthy community members to those with fewer herds and greater vulnerabilities to the changing environment.

In the Somali region this practice of pooling resources together is locally known as *kaalmo* ('support'). This was documented in the Lehelow-Yo'ob area, where better-off households formed cooperative committees to gather funds for water trucking, and have collectively purchased a reservoir for the community. Social support networks are a key coping mechanism, as illustrated by this practice, because the pooling of funds provide the more destitute community members with access to essential resources. This collective practice of sharing costs was mobilised by the local representatives of these committees and the funds (contributions) were mobilised from the better-off members of the clan diaspora, and from the politicians who represent them. This was made possible by the use of social media. The following quote from Lehel-Yo'ob was derived from a KII at the Disaster Risk Management Office.

They have a WhatsApp group where they add the sub-clan members both within the country and even the diaspora so that everyone can contribute to support provided to the community during the droughts. When the diaspora and others contribute money to the group, the committee leaders send evidence, such as a photo of how the money has been spent for the intended purpose.

Mobile technology has connected rural pastoral and agro-pastoral communities to support groups and has become a mechanism for crowd sourcing resources. The rapid nature of this connection can temporarily ameliorate the scarcity of resources that accompanies environmental change. This same practice is seen in Somaliland, where these mobile social networks are facilitated by a sub-clan committee that receives the funds in cash contributions and procures essential household items and water tankers to supply to those dealing with drought. Social media have had a significant impact upon the sustainability of these communities' livelihoods.

## 8 Discussion and recommendations

Mobility endures as a key risk-management and adaptive strategy in the drylands of the HoA, where climate variability, ecological degradation and a host of socioeconomic and political factors continue to gravely affect livelihoods. In the Somali Region of Ethiopia and the Hawd zone of Somaliland, communities employ mobility of various kinds to survive in the face of continuous drought. As livestock perishes, land becomes less productive and governance remains weak, communities in the research areas covered in the study move to find pasture and water near and far, to take jobs in urban areas and, as a final resort, to IDP camps. Although well established by research, mobility fails to find a prominent spot in policies and plans related to the climate and environment in these countries.

A central issue thwarting attempts to address environmental change in these countries is weak governance. In both countries, informal governance structures have weakened or been co-opted, while formal structures remain ineffective and uncoordinated. In Ethiopia, neither formal nor informal structures have registered much success in addressing recent environmental change-related issues. Instead, community-level, clan-based structures were found to be active in supporting those affected by drought. The community mobilised funds from clan members, including those from the diaspora, to address issues such as water access and re-stocking for the most affected groups. Apart from these informal social support mechanisms, the formal government structures deliver only meagre support through drought emergency response programmes that target food-insecure areas. Moreover, climate early warning systems are not functional in the research sites, with information failing to reach communities in a timely manner, and community perceptions and receptiveness to such information are often not considered. In Somaliland, for instance, climate change and drought issues fall under the Ministries of Environment and Climate Change (MOECC), Water, Agriculture, Livestock and Fisheries and NADFOR, spearheaded by the MOECC. Although these bodies are supposed to work together as a national ministerial committee, in practice, they often work in a much less coordinated manner.

International agencies that provide support for several kinds of climate-related efforts, while helpful, mainly provide assistance in the short term. These interventions include climate change mitigation, rangeland rehabilitation and cash for work, etc. Rehabilitation and construction of water infrastructure to ease access tends to be a major focus of NGOs. In the words of a key informant, “[these agencies] have limitations including access, coverage, mandate and availability of the funding”. The effectiveness of NGO programming received mixed reviews among the community members we interviewed. Within the three research sites, the only community that recognised the efforts of partner agencies *vis-à-vis* environmental adaptation programming was Balli Mataan, which benefits from its proximity to the capital city. Some 60 families in this community are being supported with a drip irrigation farm, while others have received cash and food supplies. Multipurpose cash support has been a common modality used in drought responses since 2016–17.

Conversely, some community-level committees have shown relative success. The Regional Drought Mitigation Committee, which is formed in drought-afflicted regions on a temporary basis (until the resumption of rainfall), is a voluntary committee comprising Islamic clerics, businesspeople, traditional leaders and professional members of the community. According to the Mayor of Burco, “It is the most effective structure in drought response and climate change disasters. The members are most knowledgeable on the locations, status of the drought and the level of vulnerability among communities.” The function of this committee is resource mobilisation and distribution, including of government contributions, especially dispatching water tankers according to need. However, an international agency informant identifies its weaknesses as being “informal, weak in administrative and management capacity, *ad hoc* by nature and of limited reach in the rural areas”. International agency assistance does not go through these committees but is delivered direct to communities and distributed through village committees.

Pastoral and agro-pastoral communities in the research areas continue to deal with a policy environment which, despite having made significant strides over time, does not adequately accommodate the needs and experiences of mobile subsistence economies. The extant policies and plans in Ethiopia and Somaliland do not adequately consider migration and mobility and, in the case of Ethiopia in particular, tend to favour the interests and needs of the agricultural areas at the centre. Any mention of migration appears to prioritise internal migration from rural areas to urban centres; even when policies and plans do recognise the everyday or seasonal mobilities frequently and innovatively employed by pastoralists, economic migration trumps other kinds. Programmes purporting to address climate change and ecological degradation issues in the two countries tend to be reactive rather than preventative, short-sighted and even harmful to the environment.

Some initiatives – such as those on water infrastructure – may also lead to conflict, environmental degradation and wealth disparity. Despite the considerable evidence linking the development of *berkads* and other water infrastructure to such negative phenomena, programmes on water infrastructure remain high on the development agenda, especially as the current drought persists. Privatisation of water and land also drives wealth disparities in pastoralist areas, especially among those with a livestock export-oriented economy. Speaking of the Harshin and Gashamo woredas of the Somali Regional State, Aklilu and Catley (2010, p 31) remark:

The sale of water from birkeds [sic], and the sale of pasture from individually owned land is evidence of a transformation of the traditional pastoral production system in these areas. The change is from free access to basic resources through mobility and communal management, to private control, payment, and permanent or semi-permanent settlements. But crucially, the commercialization of water and pasture has been made possible largely due to the vibrant livestock trade in the region. Birkeds, and to some extent, privately owned pasture, are a way to consolidate more wealth in cash and livestock for better-off households. In contrast, poorer households have no choice but to sell their livestock to pay for water and grazing resources, further depleting their asset base in the process.

Policies specifically in the service of pastoralist communities have come into force in the past few years. Yet these tend to prioritise sedentarisation or villagisation of pastoralist communities and pathways to alternative livelihoods. Mobility is thus framed in negative terms. Nevertheless, there is scope for reframing the potential role of mobility in the context of environmental change – in Ethiopia, for example, health extension, agricultural extension and pastoral education are now included within regional development policies, aiming to improve service access for pastoralist communities through the use of mobile teams.

In contrast to how it is framed in policy and programmes, mobility continues to be an integral adaptive strategy for many. However, mobilities are changing as people navigate increasing constraints and pressures in the context of environmental change, changing water and resource infrastructure and availability, and a weak governance environment. Impacts are stratified and mobility is not an option, or desirable, for all – for example, some poorer pastoralists face increasing difficulties maintaining their livelihoods during severe droughts, while those who are better off have benefited from greater control over land and water infrastructure, including the increasing privatisation of the latter. For women, children and older people, mobility is also not necessarily an available or desirable option. Others are diversifying mobile livelihoods, pursuing rural alongside urban jobs, while still others face more limited prospects and are relocating to IDP camps. As this study has shown through its exploration of these multiple mobilities and immobilities, environmental change and human movement are linked in complex, context-specific ways. Rather than framing mobility in purely negative terms as a problem to be solved through sedentarisation, or drawing causal links between environmental change and certain mobility/displacement outcomes, it has painted a more complex, mixed picture of migration patterns and preferences in the region.

Based on these reflections, the report concludes with the following recommendations:

1. Despite the multiple threads connecting migration and the environment, major climate policies and programmes tend to overlook the connections of migration with ecological and environmental phenomena. More attention and consideration needs to be devoted to the adaptive behaviours that populations affected by climate change engage in, including mobility.
2. Climate change responses require a holistic approach that incorporates a myriad of responses – one of which is mobility. While some mobility may be undertaken as a result of negative pressure on people's livelihoods, very often people rely on mobility as a regular strategy to manage their pastoral activities, and blocking or disrupting these forms of movement can have significant negative impacts on people's coping strategies, including forcing them into a more permanent exit from pastoralism and/or longer-term displacement. Efforts to facilitate movement should be strengthened between clan and government leaders, with international cross-border communication between Ethiopia and Somaliland.
3. Increased livestock commercialisation has occurred in a context of shrinking grazing areas, conversion of rangeland into agricultural land, and privatisation of large areas for individual households. These have had critical implications for livestock mobility and human settlements, which have in turn also contributed to environmental change.

Efforts to engage in environmental conservation work to reverse the impact of these trends are vital and should be promoted by donors, government agencies and nongovernmental organisations.

4. Policies related to health extension, agricultural extension and pastoral education are all integral parts of the regional development policies that ensure mobile pastoralists have access to basic services. These policies are preferable to sedentarisation strategies, which have a history of failure.
5. For people who are displaced or move into urban settings, either as a result of being unable to support themselves through pastoralism or because they seek to diversify their incomes through increased waged labour, it is important to provide support to help them avoid falling into an urban poverty trap. This may involve providing better services to urban settlements into which newcomers move, and providing registration of individuals and house plots. Assisting those who would like to return to a pastoral livelihood to do so at a level that is sustainable for them is also important.



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