

# PASTORALIST MOBILITY ALONG THE SUDANESE ETHIOPIAN BORDERLAND: TOWARDS COOPERATIVE LAND MANAGEMENT

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## Abstract

This study followed an interdisciplinary mixed approach that consisted of social research methods and geospatial technology to investigate the live-stock mobility of four pastoralist groups from Sudan and two Ethiopian pastoralist groups who fled to Sudan due to the conflict in the Tigray region. The study area is a shared borderland located between the two countries and is part of Gadarif State in Sudan and the Tigray and Amhara regions in Ethiopia. The findings of the study showed that there are diverse types of pastoral mobility in the borderland, ranging from short and circular movement to wide and directional type of mobility in response to seasonal variations, the spread of mechanised farming and the eruption of insecurity events. Despite facing numerous challenges including the governments' restrictions on cross-border movement and the prevalence of looting and rustling, trans-boundary mobility is practised by most pastoralist groups in the borderland. Pastoralist leaders are playing an important role in facilitating cross-border mobility. The recent conflict in the Tigray region forced many Ethiopian pastoralists to flee to Sudan with their animals, and they have had to cope with this situation by reducing the number of head they own and limiting their mobility to a more confined area. Despite competing claims by both governments, there is a pressing need for a cooperative land management policy applying soft border arrangements that incorporate customary land use rights for pastoralists from both sides, instead of the hardline border policies currently in place.

KEYWORDS: Borderland, Cross-border pastoralism, Land management, Livestock mobility, Sudan, Ethiopia

## Introduction

### *General*

In the Horn of Africa, borderlands are subjected to social and political marginalisation, poverty, recurring conflict and forced displacement and environmental degradation. Formal governmental institutions are often weak or

absent and therefore the voices of border people are unheard and neglected (World Bank, 2020). Moreover, there are increasing rates of hazards related to extreme climate shocks and climate change effects across Horn of Africa (Hammond, 2017). Despite all these challenges and limitations, borderlands support livelihood systems and provide opportunities for more than 100 million people in the Horn of Africa, which reflects the potentiality and sources of resilience of these areas (World Bank, 2020). However, there is an imperative need for durable solutions that include sustainable development of the livelihood of border communities through increasing access to resources in the borderlands (Manger, 2015). Despite many differences and competing claims among governments in region, border communities in the region share numerous commonalities, including longstanding social networks. Such connections are very critical to resolving conflicts and supporting livelihood resilience (DRC, 2019).

The backbone of the resilience of people straddling the borderland is ease of access and exploitation of resources across national borders (African Union, 2020; World Bank, 2020). For example, activities such as pastoralism and farming require flexible access and ease of movement of people and goods within and across national borders. Regional actions required to overcome the current prevailing challenges across borderlands in the Horn of Africa are regional collaborations at national policy and institutional levels and active participation and empowerment of people living in borderlands to take a lead in decision making through building the capacity of formal and informal local institutions and, more importantly, investment in basic services and infrastructure (Manger, 2015; World Bank, 2020).

### *Pastoralist mobility and political borders*

The continuation of policies that restrict pastoralist mobility across national borders has affected millions of pastoralists across the globe (Davies et al., 2018). In Africa, this restriction is a legacy of the colonial creation of national political borders that divided pastoralist societies between countries and restricted their mobility even though these pastoralists existed in the borderlands prior to the imposed international border. These restrictions continue to influence the livelihoods of pastoralists across the continent. Therefore, there is a pressing need for policies that enable pastoralist mobility between states (African Union, 2010). With the increasing pressure on pastoral resources, securing cross-border pastoralist mobility would facilitate economic and political integration between countries (FAO, 2021). In addition to the social and cultural connections, there are many other reasons that lead pastoralists to cross borders. These include optimal use of variable and ephemeral resources,

trade and marketing, seeking shelter from risks and climate shocks, among others (Sulieman and Ahmed, 2016; Davies et al., 2018). Therefore, in response to such factors, pastoralists try to widen their mobility territories, including seeking alternative resources across borders.

Besides being a livelihood system, pastoralism is a land use and land management system that is known to be highly adaptive. In response to the challenges facing them, pastoralists living in borderlands have changed the patterns and territories of their presence and mobility across international political borders. However, in many cases cross-border movements are an integral part of the annual cycle of pastoralist mobility they follow. For example, the southward movement of Southern Rizeigat pastoralists in Sudan was seriously disrupted because of the new international border after the secession of South Sudan in 2011. As a result, pastoralists have had to adapt to the new set of rules and regulations of the newly emerged international border and make their own initiatives. Therefore, they made a deal and agreement with their counterpart Dinka Malual group in South Sudan in order to take their animals across the border (Young et al., 2016).

Under the global concern about human mobility, as reflected in increased restrictions on crossing international borders, the challenge facing pastoralists in borderlands is to maintain their cross-border mobility to access resources and avoid risks. In response to such situations and other emerging conditions, the Intergovernmental Authority on Development (IGAD) countries have developed a protocol with the purpose of ‘Allowing free, safe and orderly cross-border mobility of transhumant livestock and herders in search of pasture and water as an adaptation mechanism to climate change and weather variability within the IGAD region’ (IGAD, 2020).

### *Sudan-Ethiopia border tensions and their impact on local communities and pastoralists*

The tension between Sudan and Ethiopia on the poorly demarcated border between the two countries is typical of what is taking place between many other neighbouring countries elsewhere in Africa. These borders are considered to be the main source of political instability and conflicts in many parts of the continent (ISS, 2012). The colonial demarcation of borders between the two countries is one of the main reasons for the recent confrontation, causing recurring tensions and competing claims over resources (AUBP, 2014; Eyilet and Senishaw, 2020). However, national governments after independence didn’t take the responsibility for correcting the inherited demarcation errors, which is a common feature of transnational borders in East Africa (Okumu, 2010).

The most adverse consequences of border tensions fall on the shoulders

of the local communities in the borderland. In the first instance, local communities flee from their home areas in search for secure shelter. Whether the host area is in their own country or a neighbouring state, their arrival causes pressure on public services and increasing competition over resources, which in turn increases tensions between refugee communities and the host communities (MMC, 2021). Under such circumstances, the regular pattern of the pastoralist livelihood system will be totally disturbed. Davies et al. (2018) mentioned that cross-border conflict in the Horn of Africa has profound consequences for borderland pastoralism through restricting mobility and limiting access to resources due to the risk of conflict, which in turns greatly limits the capacity of pastoralists to cope with vulnerability and fragility risks.

### *Objectives*

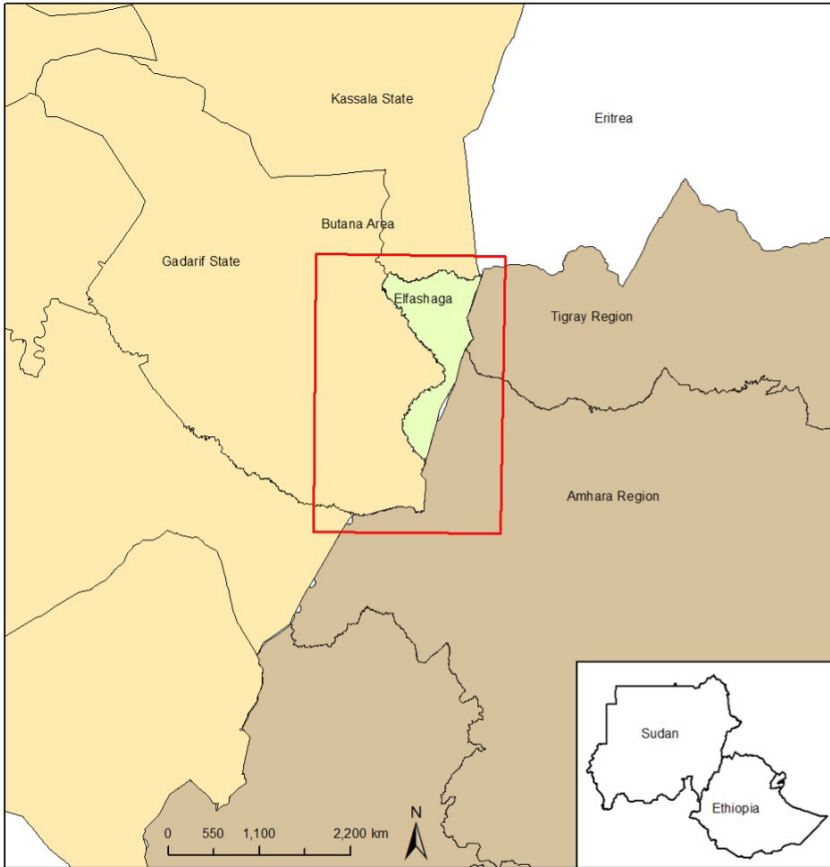
The objective of this research is to offer empirical evidence by analysing the initiatives and transformations undertaken by pastoralists in the Sudan-Ethiopia borderland to secure their livestock mobility. This research will do so by (1) identifying the mobility patterns of different pastoralist groups in the borderland including cross-border movement; (2) mapping the geographical extent of the mobility of different pastoralist groups; and (3) identifying the emerging challenges and opportunities due to tensions in the borderland.

## **Materials and methods**

### *Description of the study area*

Figure 1 shows the border area between Gadarif State in Sudan and the Amhara and Tigray regions in Ethiopia. Gadarif State in Sudan shares a border of about 265 kilometres with the Amhara and Tigray regions of Ethiopia. Currently many sections of this border are prone to insecurity and are dominated by armies from both countries, including rebel groups and bandits (locally known as Shifta). This situation is negatively affecting the livelihood of pastoral groups living in both sides of the border.

The climate in the borderlands of western Ethiopia and eastern Sudan is characterised by a single rainfall season from mid-May to end of October with a clear south-to-north gradient. The rainy season starts from the foothills of the Ethiopian plateau in the south where rainfall is heavier and the season is longer compared to the northern areas. The main livelihood activities are farming and pastoralism. Farming activities are practised in the form of smallholding cultivation by local communities and large-scale mechanised agricultural schemes owned mainly by farmers from urban centres. The main types of livestock



**Figure 1.**

Map showing the location of the study area in Sudan and Ethiopia. Created by the authors.

reared by local people are sheep, goats, cattle and camels. Pastoralists along the Sudanese-Ethiopian border in Gadarif State move from one side to another seasonally in search of water and pasture and occasionally to escape from emergent insecurity events. Moreover, regulations in both countries regarding rights to use and access pastoral resources are challenging livestock mobility along the border.

### *Study methods and tools*

The study follows an interdisciplinary mixed approach to understand ‘why’ and ‘how’ pastoralists from both Sudan and Ethiopia are moving with their herds in the borderlands. This approach is expected to facilitate the representation of the views of local border pastoralists and provide better understanding of their perceptions. Hence, the study relies on semi-structured key informant interviews, focus group discussion (FGD), geo-coded field trips using hand-held Global Positioning System (GPS), field observations, high-resolution satellite imagery and Geographical Information System (GIS) layers. Hard copy maps were used for participatory mapping sessions with the key informants.

Topics discussed with informants during the semi-structured interview included personal background, livestock ownership, seasonal mobility, livelihood activities other than pastoralism, risks and opportunities of pastoralist mobility in the borderland and livestock rustling and looting. A total of 38 interviews, five FGDs and six group mapping sessions were conducted with the key informants. The Ethiopian informants are refugees and were interviewed in the Refugee Reception Centres in Basanga, Village 8 (Elhashaba) and Hamdayet in Sudan (Figure 2). The Ethiopian pastoralists involved in this study were from two ethnic groups: Tigray and Qement (also written Kimant). The Sudanese pastoralist informants are from four ethnic groups, namely Fulbe (also known as Fallata and Fulani), Lahaween, Beni Amir and Hadendowa. Livestock owners from settled communities were also interviewed. Table 1 gives a general description of pastoralist informants interviewed. The field surveys for this study were conducted in September 2021.

Sentinel-2 imageries (Link: <https://scihub.copernicus.eu/dhus/#/home>) were used with the GIS layers and GPS data to generate detailed maps for the important features related to livestock mobility along the borderland between Sudan and Ethiopia. The generated maps were used for participatory mapping sessions with groups of Sudanese and Ethiopian pastoralists. The main purpose of the participatory mapping sessions is to demarcate the livestock mobility territories used by different pastoralist groups across the borderland. The exercises were done on hard paper copies and later converted into soft copies so as to be inserted and integrated into the GIS layers. Figure 2 depicts the output of the participatory mapping sessions.

## Results

### *Livestock composition*

Table 1 shows that the livestock species types owned by the interviewed pastoralists in the borderland between Sudan and Ethiopia are sheep, cattle, camels and goats. Fulbe and Lahaween own more than one species, with Fulbe owning cattle and sheep and Lahaween owning camels and sheep. They also raise goats, but in small numbers and managed and mixed with the sheep flock. The general trend among both groups is the increased preference for owning sheep, and the main reason given is because of the quick economic return and ease of selling in the market. This trend has appeared since the early 1990s. Beni Amir and Hadendowa rear cattle only.

The Ethiopia refugee pastoralists own cattle and sheep. Ownership ranges from a few head to about 500. They mentioned that most of them had lost a significant number of animals while fleeing from their homes to Sudan. Most of the lost animals were sheep, due to the fact that sheep move more slowly than cattle. They acknowledge that cattle are smart animals, and they effectively run behind their herder and follow him to get away from danger. Moreover, on their escape to Sudan they had to cross many flooded rivers and watercourses, and cattle can swim effectively, while sheep cannot.

**Table 1:**

General characteristics of the interviewed Sudanese and Ethiopian pastoralists

No.	Code	Age	Ethnic or producer group	Nationality	Livestock ownership			Other livelihood activities
					Sheep	Cattle	Camel	
1	SF1	50	Fulbe	Sudanese	√	√		Farming Livestock trading
2	SF2	53	Fulbe	Sudanese	√	√		Farming Livestock trading
3	SF3	40	Fulbe	Sudanese	√	√		Farming
4	SF4	34	Fulbe	Sudanese	√	√		Farming
5	SF5	45	Fulbe	Sudanese	√	√		Farming
6	SF6	41	Fulbe	Sudanese	√	√		Livestock trading
7	SF7	42	Fulbe	Sudanese	√	√		Farming Livestock trading
8	SB1	25	Beni Amir	Sudanese		√		
9	SB2	63	Beni Amir	Sudanese		√		
10	SB3	42	Beni Amir	Sudanese		√		
11	SB4	45	Beni Amir	Sudanese		√		
12	SB5	31	Beni Amir	Sudanese		√		
13	SH1	21	Hadendowa	Sudanese		√		

No.	Code	Age	Ethnic or producer group	Nationality	Livestock ownership			Other livelihood activities
					Sheep	Cattle	Camel	
14	AH2	25	Hadendowa	Sudanese		√		
15	SH3	45	Hadendowa	Sudanese		√		
16	SL1	55	Lahaween	Sudanese	√		√	Farming
17	SL2	60	Lahaween	Sudanese	√		√	
18	SL3	55	Lahaween	Sudanese	√		√	
19	SS1		Settled community	Sudanese	√	√		Farming
20	SS2		Settled community	Sudanese	√	√		Farming
21	SS3		Settled community	Sudanese	√	√	√	Farming
22	SS4	78	Settled community	Sudanese	√			Farming
25	ET1	46	Tigray	Ethiopian	√	√		Farming
26	ET2	57	Tigray	Ethiopian	√	√		Farming
27	ET3	40	Tigray	Ethiopian	√	15		Farming
28	ET4	42	Tigray	Ethiopian	√	√		Farming
29	ET5	65	Tigray	Ethiopian	√	√		Farming
30	ET6	29	Tigray	Ethiopian	5	3		Farming
31	ET7	60	Tigray	Ethiopian	√	√		Farming
32	ET8	30	Tigray	Ethiopian	√	√		Farming
33	ET9	22	Tigray	Ethiopian	√			Farming
34	ET10	33	Tigray	Ethiopian	√	√		Farming
35	ET11	40	Tigray	Ethiopian	√	√		Farming Agricultural labourer
36	EQ1	49	Qement	Ethiopian	√	√		Farming
37	EQ2	53	Qement	Ethiopian	√	√		Farming Livestock trading
38	EQ3	34	Qement	Ethiopian	√	√		Farming

### *Mobility territories and patterns of pastoralist groups in the borderland*

The general direction of pastoralist mobility is north-south between the rainy season, open communal grazing lands in the north, named Butana, and the dry season grazing area in the south (Figure 1) which is a distance of about 350 kilometres. While access is free to natural forests, they have to pay to access crop residues. The northern and the southern grazing areas are connected through officially demarcated routes. However, these routes make their way through swathes of large-scale mechanised farming. The length of the routes ranges from 66 to 290 kilometres and their width is from 150 to 300 metres. The wide expansion of mechanised farming in the borderland is the main factor constraining livestock mobility.



The south-north gradient of the seasonal rainfall is the main factor behind vegetation dynamics and water availability in the region. Rainfall amount and the length of the rainy season also decrease in the same direction. The rain showers start by mid-May and the actual season by June and end towards the end of September and early October. Agriculture is the most important livelihood activity practised by the population in the borderland and, therefore, it is a major factor in regulating livestock mobility. Another major factor that radically disrupts the mobility pattern adopted and the territories visited is the outbreak of insecurity events, which are not uncommon in the borderland between Sudan and Ethiopia.

Figure 2 depicts the mobility patterns and territories visited by the different pastoralist groups from Gadarif State in Sudan and from the Amhara and Tigray regions in Ethiopia as they fled with their livestock to Sudan. The mobility territories of pastoralist groups in the Sudan-Ethiopia borderland range from short and simple types of movement confined around human settlements to long-distance, complicated movement that includes crossing the international border between the two countries. With some transnational ethnic groups such as the Beni Amir, their mobility may extend even to a third country (in this case, Eritrea).

The Sudanese pastoralist groups spend from fifty to seventy per cent of their annual cycle of movement in the borderland. Compared to inner land, the borderland is less populated and less invaded by large-scale mechanised farming due to security reasons. Many farmers have abandoned their farms for years, especially in areas close to the borderline where bandits are more active. Besides the natural vegetation cover, the natural regrowth on the fallow farms offers good grazing resources. Moreover, crop residues on cultivated land are an additional fodder source.

### **The livestock mobility of the Fulbe**

Historically, the majority of Fulbe are known as cattle herders. However, in the last three decades they have also started to raise sheep. During the same period, the majority of them have changed their mobility from fully to semi-nomadic and they have started to engage in farming. Their main area of partial settlement and cultivation is along the Rahad River (Figure 2). As a consequence of becoming semi-nomadic, they have radically reduced the range of their cattle's mobility from long mobility that extended to the Butana area (Figure 1), about 350 kilometres to the north, during the rainy season, to less of one third of this distance. Some Fulbe have even changed their mobility to take a west-east direction along the Rahada River (Figure 2).

They mentioned that the reasons that have forced them to change from long- to short-distance mobility are the expansion of mechanised farming into the Butana area and the narrow and inhospitable conditions of the livestock

routes they have to use. Crossing the border to Ethiopia during the rainy and dry seasons is a common practice among the Fulbe. For example, SF2 mentioned that he stopped sending his cattle herd to Butana about twenty years ago. Instead, during the early rainy season he sends his herd to Ethiopia where he spends part of the early rainy season before he returns and spends the rest of the rainy season in Saref Saed Forest. By the end of the rainy season, he returns and stays not far from the Rahad River, where he relies on natural fodder from forests and water from the river. After the river dries up, he purchases crop residue on agricultural scheme where they spend the time from April to the end of June.

Fulbe pastoralists follow three main strategies to cross the border to Ethiopia, namely making agreement with local leaders across the border, directly crossing the border without any arrangements and crossing the border through the Dinder National Park. Those who cross the border with agreement from the other side do this through their leaders. They are mainly the semi-nomadic Fulbe who are now living in the border area and therefore make connections across the border. For example, a group of Fulbe settled near Taya (Figure 2) signed an agreement of non-infringement in September 2019 with a group of Gumuz ethnicity across the border in Ethiopia. This agreement halted a series of bloody conflict cases between the two groups. Such agreements are also important in solving many cases of kidnapping. For example, in 2019 pastoralist leaders from Fulbe facilitated the release of three kidnapped young herders through negotiation with their counterpart leaders in Ethiopia without paying ransom.

### **The livestock mobility of the Beni Amir and the Hadendowa**

The Beni Amir and the Hadendowa in the Sudan-Ethiopia borderland are specialised in cattle rearing for the purpose of milk production to sell in urban centres. They normally divide their cattle herd into two parts: lactating and dry. They keep the lactating heads in relatively close proximity to major human settlements, which allows them to bring their fresh milk to urban markets. The preferred place for this part of the herd to stay is forest areas such as Erawashda and Saref Saed (Figure 2). The dry head enjoy some free movement, as shown in Figure 2. This part of the herd could move to areas around Taya adjacent to the border between the two countries during the dry season and further north to Butana in the rainy season (Figure 2). However, the pastoralists keep exchanging animals between the two parts according to the onset and end of the lactation period. SH1 mentioned that he keeps the lactating part of his cattle herd in Erawashda Forest throughout the year. The distance from the forest to the city of Gadarif where he sells his milk is about thirty minutes' drive on an asphalt road (Figure 2).

The home area for both groups is in Kassala State, which shares a border

with Eritrea. Moreover, the Beni Amir is a transnational ethnic group whose presence extended to Eritrea, and some of them cross the border to Kassala State and continue their movement to Gadarif State to spend the dry season there (Figure 2).

The Beni Amir and Hadendowa pastoralist groups in the Sudan-Ethiopia borderland avoid crossing the border with Ethiopia. This is mainly due to a tense relationship with some ethnic groups in the border area between Ethiopia and Eritrea. Therefore, crossing the border is the least favoured option due to losses of livestock and lives. They are aware that better pastures are located farther inside Ethiopia, especially in the early rainy season, but access to these carries the likelihood of attack by bandits. At the same time it is not possible for them to secure the release of kidnapped herders and the rustled animals.

#### The livestock mobility of the Lahaween

The majority of the Lahaween are still fully nomadic pastoralists. They are historically known as camel raisers. Sheep rearing is something new to them. They normally follow long distance mobility from the southern part of the borderland in Sudan or Ethiopia to Butana in the north. Therefore, the Lahaween are the most mobile group (in terms of overall distance travelled) compared to the rest of the pastoralist groups in the borderland. The south-north axis distance they cover is about 400 kilometres. However, in recent years, some of them have abbreviated their northerly travel to end at Erawashda Forest (Figure 2), where they form small residential settlements. This group said their reasons for shortening their journey include encroachment of large-scale agriculture into Butana's communal rangeland, which leads to significant reduction in pastureland. Within the nomadic style of mobility, some of them have started to engage in subsistence cultivation within the territory of their movement. For example, SL2 mentioned that in December 2020 he took his camel herd to the area between Taya and Galabat (Figure 2) close to the border, to graze on large-scale schemes cultivated with sorghum and not harvested because the Ethiopian farmers fled the area due to the conflict that erupted in Tigray region. He said last time he visited this area was more than twenty years ago when the Ethiopian farmers had not yet started to cultivate that part of Sudan.

The Lahaween spend about seventy per cent of their annual movement in the borderland along Atbara River (Figure 2). Compared with other groups, the Lahaween have the strongest and oldest relations with the communities across the border in Ethiopia. Lahaween informants mention that this relationship was started three generations ago. However, the situation was affected badly by the appearance of some bandit groups who are not from the border area and therefore did not understand and respect the local cross-border relationships. Another practice that has somewhat spoiled the relationship of Lahaween with the groups living across the border in Ethiopia is that some young Lahaween

pastoralists cross the border in small groups without making arrangements with their tribal leaders.

#### **The livestock mobility of settled rural and urban communities**

Settled communities in villages and urban centres that own large numbers of livestock also need to send their animals away in order to access the required fodder and water resources. They mentioned that there is not enough rangeland to keep their animals throughout the year near the places where they live. Therefore, they have to adopt some types of mobility that allow them to maintain the health and nutritious status of their animals. In their mobility, they adopt pastoralist practices and even rely on them to look after their herd.

The examples elaborated here are from two settled communities, namely Kunena Village and the city of Gadarif. A key informant from Kunena mentioned that they are a group of five owners who decided to combine their sheep herds to comprise one flock of about 135 heads. They hired a pastoralist to take care of the herd. The annual territories of the movement of their herd are between Kunena in the north and the Rahad River in the south (Figure 2), which is about forty kilometres in total distance. In some seasons when there are not sufficient fodder resources due to rainfall shortages, they send their flock to Butana. The owners share between them the cost of the hired herder and also the cost of purchasing crop residue on agricultural fields for their flock to graze on.

There is a common practice among large-scale farmers of investing their surplus income from farming in livestock raising. They rely on hired pastoralists to manage their herds. They typically follow pastoralist practices with respect to their animal herds. It is known that pastoralism needs specialisation and cannot easily be practised by normal wage labourers. Large-scale farmers mainly prefer to raise sheep, and when they accumulate more wealth they also invest in camel rearing. Some of them also raise cattle for milk production. For example, SS2 from the city of Gadarif owns three types of livestock: sheep, camel and cattle. A group of hired herders from the Fulbe and the Lahaween manages the herds. During the dry season the three herds stay in his agricultural scheme to graze and also get their water from the Hafir, which is an artificial pond of water dug inside the large-scale agricultural scheme to harvest surface runoff water during the rainy season.

Crossing the border to Ethiopia is very limited for herds owned by settled rural and urban communities. The general strategy is to avoid sending the herds near the borderline so as to protect the animals and the working labourers from the risks of bandits.

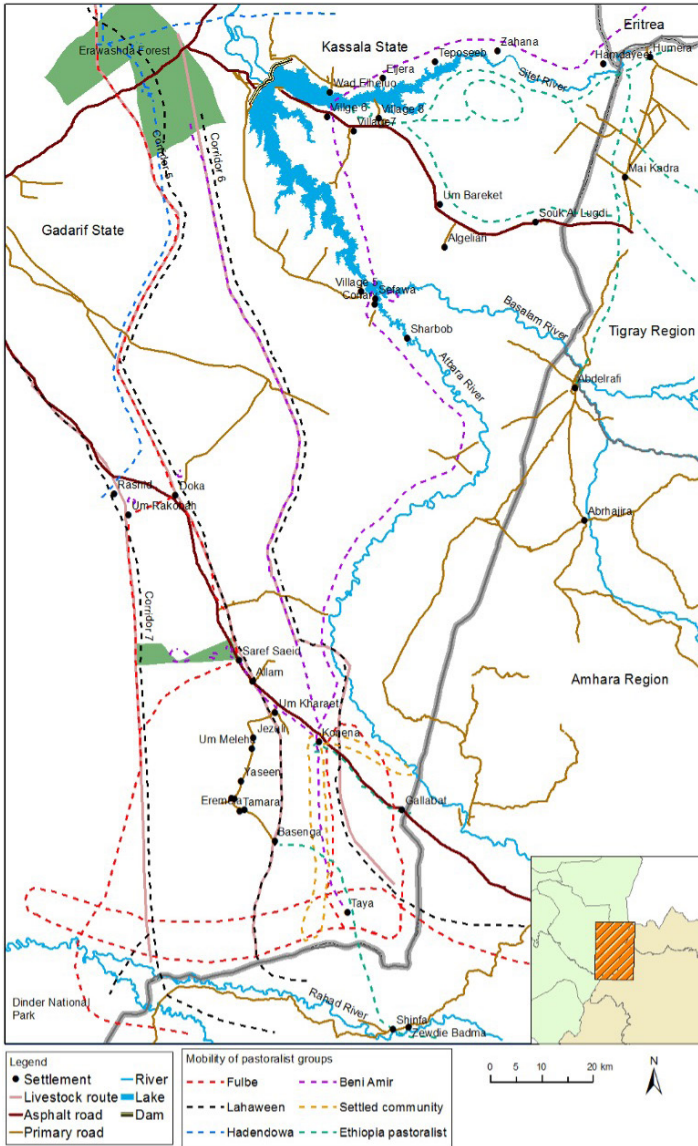
### The livestock mobility of refugee Ethiopian pastoralists in Sudan

The Ethiopian pastoralists involved in this study are from two groups of refugees, namely Qement and Tigray, and they started to flee to Sudan in early November 2020 after the eruption of the conflict in the Tigray Region and later in other regions in Ethiopia. The Qement fled to Sudan via the Taya area (Figure 2) and the group interviewed is from the cities of Shinfa and Zewdie Badma. They fled to Sudan in July 2021 due to conflict breaking out in their area, which is connected to the situation in Tigray. The main species raised by both groups is cattle. They also raise sheep and goats. They mentioned that they brought the cattle with them to Sudan, while they left the sheep behind.

The Tigray refugee pastoralists involved in this study are from the group of refugees in the Hamdayet and Village 8 reception centres. They arrived during November 2020, directly after conflict broke out in Tigray. In addition to raising livestock, they are also heavily involved in farming. They fled from the main urban centres in the Ethiopian part of the borderland, such as Humara, Abdelrafi and Mai Khadra (Figure 2). Some of them fled from the settlements newly founded by Ethiopians in the Elfashaga area of Sudan, such as Barakhat (Figure 2). The species they raise are cattle, sheep and goats. Some refugees in the Hamdayet reception centre combine the cattle they own to form one herd in order to facilitate the herding process. Some of them also sell milk from their cattle in the local market of the reception centre.

This is not the first time that Qement pastoralists have fled to Sudan. Groups of them came to Sudan during December 2018 and stayed around Kunena. The second time was in February and March 2019, and they were temporarily settled near Gabalat town (Figure 2). Both times were because of tribal conflicts. In both cases, they stayed for short periods and then returned to their home area in Ethiopia. Some used their connections back home to send them their cattle to Sudan. EQ2 from Shinfa arrived with his wife and two of his sons at the Basenga reception centre on 15 August 2021. He brought five head of cattle with him. It took him four days to reach the border with Sudan, and from there he was transported by the United Nation High Commissioner for Refugees (UNHCR) to the reception centre in Basenga. He left the five head of cattle with a member of his Sudanese network in Taya, and they were later sold there.

This is not the first time Ethiopian pastoralists have fled to Sudan. Out of the eleven Tigrayans interviewed, seven were refugees in Sudan during the 1970s and 1980s due to drought and conflict. In early 1990s they returned to Ethiopia. When they arrived this time due to the conflict in Tigray region they relied on old contacts to find their way. For example, two Tigrayan pastoralists asked their Sudanese colleagues to look after their cattle herds until they settled down in a refugee camp. When they sell animals in the local markets they also ask their old Sudanese colleagues to help them.



**Figure 2.**

Mobility territories and patterns of the different pastoralist groups involved in the study along the borderland between Gadarif State in Sudan and the Amhara and Tigray regions in Ethiopia. Created by the authors.

### *Opportunities and risks of pastoralist mobility in the borderland*

Pastoralists in the Sudan-Ethiopia Borderland pursue their livelihoods in a dynamic and risky conflict-intensive environment. They rely on mobility as an effective strategy for maintaining their livelihoods and travel to search for better resources and secure conditions. Despite the risks and challenges, a wide range of opportunities exists for building resilience to cycles of conflict and insecurity events. For example, the early onset of the rainy season in the south-eastern part of the study area, which is located within the Ethiopian territories, offers good pastures after a long dry season. This is the time when many pastoralist groups from Sudan move to that part to enjoy the fresh grasses and then gradually proceed as the rainy season progresses to the Sudanese part of the borderland. Therefore, it could be said that the flexibility of pastoralist mobility facilitates the optimum benefit and utilisation of the available resources in the area. Also, pastoralists in the borderland create market and trade opportunities in many ways that have benefited the local economy. The key informants mentioned that livestock trading is one of the main activities pastoralists pursue in the borderlands. They frequently visited the weekly livestock markets that take place in the main settlements in the borderland. For example, the local market flourished when pastoralists arrived to sell animal products such as milk, butterfat and yoghurt in Otrub, Basunda and Galabat, as observed during the field surveys. EQ2 mentioned that he used to trade in animals between his home city of Shinfa in Ethiopia and Taya in Sudan. He added that, once he fled to Sudan as a refugee, he relied on his market connections and networking to help him to bring his animals to the Basenga reception centre. He also mentioned that they help him to sell him animals in the local market.

Seasonal agricultural labour movement across the Sudan-Ethiopia borderland is very common. A significant proportion of the weeding and harvesting labourers working on large-scale agricultural schemes in Gadarif State are Ethiopians. This activity is normally organised officially between the authorities from the two countries. This shows that there is good collaboration and exchange of benefits in the agricultural sector across the border, but there is no such official collaboration concerning pastoralist transnational movement. For example, ET2 mentioned that, before fleeing, he used to come to Sudan to work as a seasonal agricultural labourer in the large-scale agricultural schemes in the Elfashaga area.

The Sudan-Ethiopia borders are typical East African borders where cycles of conflicts occur and insecurity events are common. Under such conditions of recurring conflict, pastoralist livestock mobility becomes a high risk activity due to the fact that pastoralists could be targeted by different actors involved in the conflicts. In response to insecurity conditions, governments tighten or even

close the borders, which affects the flexibility needed for pastoralist mobility, such that pastoralists end up with restricted mobility or fleeing from unsecured areas. Nevertheless, pastoralist groups are continuing their cross-border mobility along the borderland and authorities in both countries have considered them to be violators. Conflicts also cause forced mobility. The case of the Tigray and Qument pastoralists given in this study is a typical example of forced mobility where pastoralists fled homes to be displaced to refugee camps in Sudan. This also shows how pastoralists flee from one part of the borderland to another side to secure their lives and their livestock properties.

Livestock rustling and looting are among the more serious risks facing pastoralists in the Sudan-Ethiopia borderland. Pastoralists mentioned that in the parts of the border where there is a weak presence or total absence of authorities, rebels and bandits act as the authorised bodies, and there are cases when pastoralists have to make payment or seek permission from them to stay and graze there. However, since the eruption of conflict in Tigray, there has been heavy mobilisation of armies from both countries in the borderland. This has improved the security situation in areas like Elfashaga (Figure 1), while other remote areas such as the southeastern part of the borderland are still unsecured and livestock looting still takes place. In some cases, rebel activities have extended to include kidnapping people. The kidnapping victims are mainly pastoralists. Some refugee pastoralists mentioned that their livestock were rustled after they came to Sudan. For example, ET11 lost fifty cattle in May 2021. He was given permission by the Sudan Commission for Refugees (COR) to report the case to the police authorities and also to fetch his animals, but his efforts were not successful.

In the absence of government and official institutions, local institutions led by traditional leaders from both sides of the border are playing critical roles. Key informants mentioned that traditional leaders are playing an important role in recovering lost animals from rustling and looting and recovering kidnapped persons. They acknowledge and report many success stories where leaders of local communities from both sides have played key roles.

## Discussion

### *Securing pastoralist mobility in the borderland*

Each of the pastoralist groups has its own distinct periodicity and directional strategy of mobility to certain areas within the Sudan-Ethiopia borderland in order to make use of the considerable potential of the variable resources and to manage the uncertainties they face. To do so, pastoralists in the borderland



move within national territories or across borders. The distinguishing feature of seasonal mobility for most of the pastoralist groups in the borderland is between southern dry season grazing areas and north wet ephemeral vegetation, based on the characteristics of the climate (e.g., rainfall gradient) and vegetation patterns of the region, to exploit the opportunities presented by climate and landscape. In response, members of settled communities in cities and villages who own large number of livestock have also followed and adopted the movement practised by pastoral groups and even hired herders from among the pastoralists to do the herding work for them. However, the wide expansion of mechanised farming in the area has had a pronounced effect, and therefore many pastoralist groups have decided to change their patterns and direction of movement to circular patterns or west-east direction mobility. Some pastoralists also shortened their northerly travel during the wet rainy season and ended the journey in forest areas well before reaching Butana. Such types of modification in mobility, including changes in directions and shortening of the annual cycle of mobility, were observed elsewhere in Sudan in response to external factors such as insecurity (Sulieman and Young, 2019). Sulieman and Ahmed (2016) identified large-scale farming as the main factor shaping livestock mobility in Gadarif State and noted that it severely restricts pastoral movement in the area. An earlier study stated that the rapid appropriation of rangeland by large-scale mechanised agriculture is undermining traditional pastoralism in the area (Bascom, 1990). Moreover, the recurring insecurity situation in the borderland created an inhospitable environment for pastoralists, and the traditional trans-boundary movement patterns were among the first activities to be restricted in such situations (Nori et al., 2008).

Some of the Ethiopian pastoralists who fled to Sudan succeeded in bringing with them part of the livestock they owned back home and now are trying to keep rearing them in the area where they are hosted. The mobility territories they use are limited and are around the refugee camps. It is clear that the recent armed conflict in the Tigray region has separated them from their resources. This forced migration due to conflict contributes to economic collapse and the appropriation of the displaced people's property (IIED, 2010). Moreover, the limited access to resources in Sudan may push some of them to sell their animals. The case of the Eritrean cattle refugees fleeing to Sudan in the mid-1980s due to conflict and drought showed that their herds were depleted because of limited access to pastoral resources and the increased cost of animal rearing (Bascom, 1990).

### *Cross-border coordination of livestock movements*

The Sudan-Ethiopia borders, like many other national borders in Africa, were created during the colonial era and didn't take into account the existing populations and their needs. Since then, no corrective measures have taken place.

Under such conditions, national borders represent real obstacles to pastoralist mobility and are often a source of disputes.

The analytical perspectives on the mobility of different Sudanese and Ethiopian pastoralists given in the results section of this paper show that cross-border movement is, for most of the groups, an integral part of and an indispensable option in their normal annual cycle of mobility – or in their responses to cases of erupting insecurity events. It is clear that they operate across national boundaries in order to sustain their livelihoods. Nevertheless, continued instability and heightened tensions between the two countries and sometimes within the same country are hindering the ability of pastoralists in the borderland to optimally access the required pastoral resources to sustain their livelihoods. Therefore, allowing pastoralists to access resources across boundaries in a regular manner would enhance pastoral resilience to crises and conflict (Cormack and Young, 2012; Davies et al., 2018).

In the case of Ethiopian refugee pastoralists arriving in Sudan with livestock due to conflict in their homeland, their priorities are to secure a shelter for themselves and to secure place to keep their livestock. Therefore, the first thing they do is to rely on their connections and networks in Sudan.

The IGAD protocol on transhumance cross-border movement (IGAD, 2020) represents a cornerstone of the best approach toward free movement across borders in the member states, of which Sudan and Ethiopia are part. Actual implementation of this protocol on the ground is expected to totally change the situation on the borderland from a contestation to a flexible and hospitable condition. Moreover, the two countries can build on their previous experience of facilitating and coordinating utilisation of the resources in the border area of Elfashaga. In 2007, Sudan and Ethiopia agreed that citizens from both countries could cultivate and bring animals to graze in the Elfashaga area, as the demarcation process of the shared border is going on. The agreement also included other incentives, such as conducting trade and marketing of crops in the border area between the two countries. However, this situation collapsed in 2019 (ICG, 2021).

## Conclusion

The cases presented in this study show that there are diverse types of pastoral mobility, ranging from short and circular movement to wide and directional mobility in response to prevailing conditions in the Sudan-Ethiopia borderland. It is obvious that the rapid expansion of mechanised farming in the area has forced some pastoralists to shorten and confine their mobility. Despite facing numerous challenges including government regulations and the flourishing

of looting and rustling, most pastoralist groups practise transboundary mobility in the borderland. The recent conflict in the Tigray region forced many Ethiopian pastoralists to flee to Sudan with their animals. In addition, as a result of this conflict, many parts of the border area are militarised and therefore have become risky and dangerous for pastoralists. In the absence of government authorities from both countries, pastoralists are totally reliant on local institutions and leaders to overcome the challenges they are facing. There is an urgent need for the two countries to return to the peaceful soft border arrangement. This will allow local communities in the borderland, including pastoralists, to access the required resources for their livelihood.

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## Conflict of Interest Statement

The authors declare that they have no conflict of interest.

## Authors' contributions

H.M.S. led the conception and design of the study. H.M.S and A.B. conducted the fieldwork. H.M.S. prepared the figures. All authors contributed in writing the manuscript. All authors reviewed the manuscript.

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