

Effects of International Boundary Making on Pastoralists Transboundary Environmental Resource Use in the Ethiopia-Kenya borderland

by

1. Girma Defere, Zeit-stiftung Ebelin und Gerd Bucerius PhD fellow/"beyond borders"
Jimma University, Jimma, Ethiopia
2. Messay Mulugeta, Addis Ababa University, Addis Ababa, Ethiopia
3. Teferi Tolera, Jimma University, Jimma, Ethiopia

Corresponding author: Girma Defere, email: girmadejimma@yahoo.com.au

Abstract

The international boundary in the Ethiopia-Kenyan border does not consider the livelihood and customary practices of local people. Ethiopia and Kenya have ethnic groups living in similar ecosystems, sharing similar livelihood systems, trans-clan and transboundary trade networks, and trans-boundary migratory patterns. Unlike pre-colonial times when communities freely moved with their herds, the creation of the colonial boundary has divided local people and restricted their mobility. This study has examined the effects of international boundary making on cross-border environmental resource use in the Ethiopia-Kenya border. The study employed a qualitative approach to study the issue in focus. Key informant interviews, in-depth interviews and focus group discussions were employed to collect data. The findings suggest that the boundaries between Ethiopia-Kenya constrain pastoral mobility beyond borders, access to cross-border environmental resource use and livelihoods. Interestingly, the ethnic kinship relationship and indigenous institutions have facilitated the Moyale pastoralists' mobility to get access to environmental resource use, resource use related conflict management and supporting pastoral livelihoods. As a way forward, this study states cooperative relations among the neighbouring states, territorial communities and all concerned stakeholders must be promoted and strengthened, as well as investment made in pastoral livelihoods that allows mobility of pastoral communities across the borders of member states. In the case of Ethiopia and Kenya, this implies putting into action the Niamey Convention (2014) on African Union cross-border cooperation and the IGAD transhumance protocol (2021) to enhance free and safe pastoral mobility with livestock across the border, and all stakeholders in transboundary situations should strive to engage in joint rangeland management and cooperate to deter rangeland degradation are some among the stated ones.

Keywords: *pastoralism, border administration, pastoral mobility, border resource use, pastoral livelihoods, barriers of mobility, informal ethnic networks, environmental threats.*

1. Introduction

In international cross-border areas pastoral populations cross national boundaries for many reasons. Pastoral population mobility is associated with dryland ecological challenges and opportunities that borders offer meaning that challenges associated with dryland ecology are shortage of water and pasture. The opportunities are ecological variations in spatial and time that make pastoralists move across the border to search for water and pasture. As a result, international boundaries are crossed by pastoral populations without limits to get these ecological benefits for their livelihoods (Scoones 1995).

In the context of this study, pastoralism is considered to be the livelihood of people who earn more than 50% of their income from spatially large livestock movement of stock and/or livestock management over large areas. Pastoralists practice mobility to avoid risk, respond to variable climate conditions and ensure healthy rangelands. Agro-pastoralists in contrast obtain less than 50% of their income from livestock and livestock products, with most of the remainder from cultivation. They practice mobility but to a limited extent compared to pastoralists (Nassef and Mulugeta 2012). The

livelihoods of pastoralists are transnational and operate across national boundaries to obtain access to seasonal pastures and water as well as to trade routes, markets and opportunities to participate in social events (Cormack and Young 2012).

Pastoralist movement with their herds survived for many years before establishment of the international boundaries, and there was no restriction on pastoral mobility (FAO 2018). However, the demarcation of international boundaries in the colonial era restricted pastoral mobility.

Border establishment in Eastern Africa ensured the interests of colonial powers. Moreover, poor border administration affected the traditional African relationship to land involving rights of access and use based on customary rules of reciprocity and commonality (Okumu 2010). Besides, the failure to recognize a colonial boundary was widely seen at the local level where the border area communities' exploited the blurred international boundaries.

Khadiagala (2010) also observed that the colonial way of making boundaries in Eastern Africa showed the superimposition of physical and political limits that did not take into account socioeconomic, cultural, and linguistic aspects of the people there. Fanso (1986) presented the importance of the traditional boundary and the impediments of the colonial boundary that, Africans were aware of their territorial limits and knew when they crossed ethnic boundaries.

Traditional African states and polities possessed no definite divisions, albeit each ethnic group and each state was divided from its neighbours. However, Europeans failed to consider how ethnic people understood and accepted their territorial frontiers within their traditions and cultures, nor how boundaries functioned in terms of inter group relationships. However, in July 1964 AHG/Res. 16(1) a resolution at the Cairo summits of African states agreed to accept colonial boundaries at their political independence (see African Union Commission 2013), notwithstanding the inherent problems.

Pastoralists who live along the Ethiopia-Kenya border share similar livelihoods, culture and histories (Amsale 2010; Fekadu 2010), and Ethiopian or Kenyan identity cards allow borderland communities of the Gabra, Borana and Garri people to utilize both sides of the border (Galaty 2016). Subsequent to Africa independence, the international boundary allows the Ethiopia-Kenya border communities to exercise various citizenship rights including schooling, medical services, voting, residence and land access, including access to grazing and water services. Yet it has also exacerbated friction that arises between the two groups sharing and competing for grazing and creates a market for stolen livestock, a safe haven for thieves and deterrence to security forces from another area (Galaty 2016; Galaty 2020). The current cross-border arrangements for pastoral communities in the East Africa borderlands are ineffective, unlike the Western African border states who have a harmonized cross border policy that promotes pastoral mobility across the borders (see for instance, Dye 2008; Africa Union 2010).

Against this background, this study aimed at examining the effects of international boundaries on pastoralists' cross-border environmental resource use in the Ethiopia-Kenya border specific to the Moyale corridor. Given that environmental resources can cover physical, chemical, and biotic factors, in this paper, environmental resources refer to rangeland, water and grazing land.

The basic research questions were:

1. What are the effects of international boundary making on pastoral mobility?
2. What are the issues and challenges pertaining to international boundary making, and border administration on the cross-border pastoral environmental resource use?

2. Theoretical framework

This study used mobility and migration as a key theoretical framework to explain cross-border limitations and frictions through assessment of micro-individual, macro-structural and network elements driving cross-border pastoral migrations. According to De Haas (2021), human mobility is part and parcel of the social change process and migration is important for functional aspirations and capabilities to migrate within a given sets of supposed geographical opportunity structures. Cross-border pastoralists use mobility or migration as a coping strategy to overcome manmade and natural catastrophes, and as an environmental conservation strategy to improve their livelihood. Regarding the causes and origin of migration Piché (2013) observed that there are different views and approaches on

the origins and causes of migration. These are: (i) micro-individual approaches of international migration: an individual's decision to migrate, which implies that individuals before deciding to leave their place of residence, assess the merits and disadvantages of migrating; (ii) macro-structural approach: migration can be realized in a more global context in that it is explained through a system of multiple flows between place of origin and place of destination (a place to which migrants want to reside); and (iii) migration networks: in this view migration is seen as a mutual interdependence between migrants and their families and places to address risk handling and risk pooling. According to this theory, migration is analyzed at the household level and is seen as a form of social insurance hence migration is taken as a coping strategy. In this respect, Palloni et al. (2001) suggested that a migrant network connects people based on kinship, friendship, and shared community origin. This network system increases the likelihood of migration as it reduces risks and increases returns. Thus, social capital is an asset in this regard. This study is thus established on the migration networks theory to analyze the issue in focus.

3. Materials and methods

This study employed qualitative methods to answer the main research question to examine the effects of international boundary making on cross-border environmental resource use. The study utilized primary and secondary data through a variety of methods and approaches. Primary data were generated through key informant interviews, in-depth interviews and focus group discussions. Key informants were purposively selected based on the specialized knowledge they have and the positions they hold in the field of study from state and non-state actors who have been directly involved with cross-border pastoral issues. Accordingly, fifteen key informants were selected because of their rich and lived experience in pastoral affairs.

Data were generated in 2021 and 2022 over more than eight months. Sampled study areas were selected on the basis of the study objective and in consultation with the concerned border area local government for data collection. Accordingly, six study areas – three from Ethiopia Moyale and three from Kenya Moyale border areas – were selected.

Two types of sampling techniques were employed to select respondents for each types of data collection method. A purposive sampling technique was used to select respondents for key informant interviews. Respondents in this category were: the Ethiopian Ministry of Peace, Kenyan Pastoralist Community Initiative Development and Assistance (PACIDA), Oromia Pastoral Association, World Vision Kenya, Care International Borana field office, UNDP-Nairobi office, Oromia Pastoralist Development Commission, Kenyan Community Initiative Facilitation Assistance (CFIA Kenya), Community Initiatives Facilitations and Assistance (CIFA), Borana University located in Pastoral area in Ethiopia, Kenya Government body on pastoral affairs, Borana Zone rangeland expert, Moyale district of natural resource management department, Oromia Pastoral Development Commission, Kenyan Pastoral Initiative Development, Community Initiative Facilitation, indigenous institutions, community representatives, researchers and cross-border pastoralists. Conversely, a random sampling technique was employed to select pastoralists who live in cross-border areas for in-depth interviews until data saturation. Moreover, thirteen randomly selected pastoralists were involved in the study making a total of twenty-eight research participants.

The Focus Group Discussion (FGD) data were collected from the local authorities, development workers, community elders and pastoralists of the three *gandas* (*gandas* refers to "the lowest administrative unit") in the Ethiopia–Moyale namely: *Maddo*, *Bakkola* and *Argane* plus one additional FGD at the Moyale district natural resource management department. Additionally, three locations from the Kenyan-Moyale area such as *Oda*, *Somare* and *Butiye* were included in the FGD. The participants of the FGD included from six to eight members in each study area and one FGD per study area was conducted including one additional FDG with the Moyale natural resource management department. Thus, a total of seven FGDs were conducted.

Most of the interviews and FGDs were conducted in the Afan Oromo language (Afan refers to “language”). However, some interviews were conducted in English with organizations working on pastoral affairs from Kenya while secondary data were generated mainly through a review of literature and reports relevant to cross-border pastoral population mobility and environmental resource governance and sustainability along the Ethiopia-Kenya border. Figure 1, provides map of the study sites.

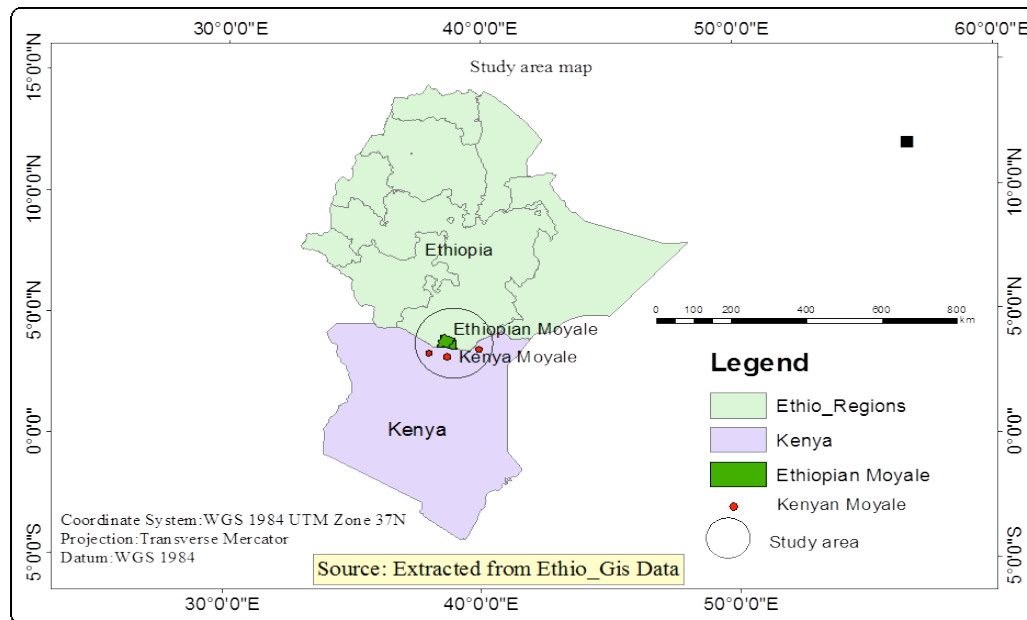


Figure 1. Map showing the Study Area Source: Extracted from Ethio_Gis Data (2021)

Remark: The three points on the Kenyan side of the map indicate the relative geographical locations namely, *Oda*, *Somare* and *Butiye*. And large point on the Ethiopia side indicates the absolute location of three study areas namely, *Maddo*, *Bakkola* and *Argane*.

3.1 Data analysis

The qualitative data obtained through key informant interviews and focus groups were analyzed using a thematic analysis approach. This initially involved organizing and preparing the data for analysis. Secondly, coded data were organised into different categories, and sentences were then segmented into categories, with labelling of categories to identify the main theme of the responses obtained from participants. Finally, the meaning of the themes or descriptions were described and interpreted to state the results. When different informants gave contradictory versions of information, the study was interpreted in such way that most informants reflected by triangulating the results of focus group discussions and field visits compared with what was observed on the ground.

4. Results and discussion

4.1 International boundary making and cross-border environmental resource use

How has an international boundary influenced pastoral transboundary environmental resource use? Some interview participants stated the international boundary along Ethiopia-Kenya has affected pastoral transboundary environmental resource use by restricting pastoralists' mobility. This does not suggest pastoralists do not cross the border, rather that there has not been harmonized cross-border policy between the two states that facilitates cross-border mobility, very recently in 2021 transhumance protocol was signed which lacks implementation. As Widdis (2021) argued, regarding the US-Mexico border, borderlands have not recognized the places of indigenous peoples; borders are superimposed geopolitical restrictions that have economic, social, cultural, and psychological consequences.

Pastoralists who participated in the interview expressed that border restrictions have accounted for rangeland threats. This view was also shared by the IGAD representative in Ethiopia, who stated that, due to weak coordination between the two states, rangelands were exposed for bush encroachment and

degradation. Most informants believe bush encroachment to be caused by climate change as it was not seen before. The invasive species as one expert described is *Prosopis juliflora*, which has occupied large rangeland areas in the border region. And degradation is mainly the result of livestock concentration in smaller areas associated with lack of mobility. According to the IIED and SOS Sahel report (2010), deterring cross-border livestock mobility - makes the pastoral system less productive, since livestock remaining in one location puts pressure on natural resources and can cause problems of environmental degradation.

Similarly, the African Union report (2010) showed that the colonial legacy has changed the role and influence of pastoral customary institutions, and has established national borders that divide well-established pastoral socio-economic and ecological units that affect rangeland resources. This study argues that the social networks or informal pastoral networks have played pivotal roles in promoting cross-border environmental resource use, conflict management and supporting pastoral livelihoods more than state institutions. Empirical evidences indicate that the people, through their customary institutions, share resources (rangeland and water wells) and regulate inter-personal and societal relations (Tache and Oba 2009; Bassi 2010; Africa Union 2010; IIED and SOS Sahel 2010) within their ethnic networks.

Mobility is a key survival strategy for cross-border pastoral communities to secure their livelihood and respond to crises (World Bank 2020). However, mobility is not without its challenges. In this regard, one of the research informants noted that:

the pastoral communities who occupy and settle along the common international boundary of Ethiopia and Kenya have faced combined challenge from unreliable rainfall and insecure environment, compelling them to adopt highly mobile lifestyles often trespassing ethnic and international boundaries. In order to maximize the use of the limited primary resources in these dry areas livestock mobility is essential even though it sometimes leads to conflict. The scales of these conflicts are at times escalated by the presence of the international boundaries where different government policies and border dynamics create a lawless atmosphere that fuels disharmony.

This aligns with Scheffran et al. (2011), who indicated that human migration, even if chosen as coping strategy in regions vulnerable to climate change, also has accounted for resource scarcity induced conflict. Mobility for pastoralists is a survival strategy, not an option. As Little et al. (2001) stated, pastoralists who migrate with their herds during drought time face lower livestock losses than those who do not migrate. Nevertheless, this mobility results in conflicts among pastoralists and competition for scarce pasture and water. A research participant from the Federal Democratic Republic of Ethiopia, Ministry of Peace indicated that the cross-border pastoralists' mobility has accounted for persistent competition and conflicts over livestock and access to natural resources that have culminated in the loss of human life.

However, research informants from the Oromia region stated that resource competition inducing conflicts while uncommon among the Borana Oromos in both Ethiopia and Kenya occur between the Borana and the Gabra people in both states. According to the research informants, conflicts are more politically motivated. However, there is evidence demonstrating that an increased occurrence of droughts, floods and other climate-related catastrophes have eroded pastoral community livelihoods, and have led to resource competition induced conflicts, with fatal results (IGAD 2021, 8-10th September; Ginnetti and Franck 2014).

Pastoralism as a livelihood of cross-border people has social, environmental and economic effects in dryland ecology. Pastoralism contributes value and converts scarce natural resources into meat, milk, income and livelihoods (FAO 2018). According to the IGAD report (2020), pastoral livestock supports about 70% of the pastoral livelihoods in the IGAD region, which, in turn, accounts for approximately 6-10% of the countries' GDP (IGAD 2020 November 12-13). In this regard, concerning the question of how the international boundary has challenged pastoral livelihoods, research informants from Kenya and Ethiopia stated that cross-border officials are insensitive to the pastoral way of life, and this has negatively affected pastoral livelihoods by curbing free movement of goods and people to effectively engage in socio-economic activities. It has also led to a lack of effective management of similar eco-systems with an overarching strategy.

Moreover, the border administration or bureaucracy has influenced communities incur additional costs and time to access resources across the border. This has exacerbated corruption and poor border governance. That has also contributed to inter-communal conflicts over administration of boundary and has reduced the positive impacts of customary rules. In support of this view, FGD participants from the local Kenyan government side of the border explained that when Kenyan pastoralists cross the border they may remain up to five months then return to their homeland. When they return, the Kenyan local government body interrogates them for “security reasons” as to why they have spent five months in Ethiopia despite the pastoral mode of life being based on mobility.

Similarly, FGD participants from the Ethiopian side of the border stated that even if the pastoralists did not have “borders”, during the time of mobility there is the problem of resource competition induced conflict and cattle rustling as related to a boundary issue. Most of the research informants in the interview stated that the conflict is more politically induced rather than resource driven as mentioned earlier. It was revealed in an interview from Oromia Pastoral Development Commission that Kenyan politicians want the support of Ethiopia in the time of elections, as most of these pastoralists possess dual identity cards and citizenship, and so participate in Kenyan elections.

4.2. Challenges of pastoral mobility along the border

What are the challenges pertaining to pastoral mobility along Ethiopia-Kenyan border? Oromia Pastoralist Development Commission members who participated in this study indicated that they are water shortage and land suitable for grazing, stating “The pastoralists do not have borders at all. When there is a prolonged drought, the pastoralists from Kenyan border travel a significant distance up to *Yabello* in Ethiopia: - this long distance mobility was recorded in 1997 during the prolonged drought time”. This supports Niamir-Fuller (1999), who argued that mobility has a benefit for herds to obtain access to varying grazing areas and accordingly help prevent depletion of grazing areas. Nori et al. (2008) discussed that mobility allows cross-border pastoralists to manage low net productivity, the unpredictable risks involved in arid and semi-arid lands. Moreover, periodic mobility is required for the pastoralists to overcome seasonal spatial and temporal variations in livestock grazing resources while enabling pasture restoration at a certain point of time. It is necessary from ecological and economic viewpoints, as it enables pastoralists to use quality rangeland resources, deter diseases vectors, access market opportunities, and join with kin for a seasonal festival, share information, and seek alternative income sources.

Pertaining to the efforts that have been made by inter-governmental authority bodies to facilitate pastoral population cross-border mobility, Pastoralist Community Initiative Development and Assistance (PACIDA) members revealed that:

the efforts are very insignificant and not known to the pastoral groups living along the borders. Pastoral groups were never sensitized on the existing policies and systems that guarantees smooth and planned cross-border mobility, and improve pastoral livelihoods. Pastoral groups do not know the existing policies either through respective governments or regional bodies like IGAD. This is so because discussions on cross-border are only held at the higher levels between governments and at local levels with administrators and security apparatus without involving the local pastoral groups. As a result, inter-governmental efforts are not actually facilitating/promoting smooth trans-boundary mobility, livelihoods production or environmental sustainability.

Moreover, research informants from Kenyan pastoral department expressed that since the border demarcation did not consider community interest, livestock trekking routes, natural resources and sacred sites where communities visit for pilgrimages, the creation of the international boundary significantly constrained pastoral livelihoods and production systems. This has hampered free movement of pastoralists with their livestock in search of pasture, water and markets. An elderly man and people from indigenous institutions from Moyale-Ethiopia area indicated that sometimes inter-communal conflict, cattle rustling, and animal disease are challenges pertaining to cross-border environmental resource use. Whereas a research informant from Oromia Pastoral Development Commission did not agree animal disease was a problem because of the presence of a quarantine service, most research participants from both Kenya and Ethiopia considered animal disease a challenge related to cross-border pastoral mobility.

4.3. Border governance

International boundary making has many problems. However, border administration can redress this through good border administration that emanates from border cooperation. Research participants emphasized that the Ethiopia-Kenya cross-border pastoralists used indigenous borders established along ethnic lines for their mobility to access water and pasture, as well as engaging in trade activities. Accordingly, a research question was posed “How far has international boundary management challenged pastoral livelihoods”? The respondents from Kenya stated that there is no clearly defined and structured border management on the interactions of pastoral communities moving with their animals. Cross-border arrangements on movements by pastoral communities mainly facilitated by non-governmental organizations are not well anchored in law; thus, lack of synergy between non-governmental organizations and government bodies poses a big challenge. There is also limited understanding or awareness by pastoral communities on international boundaries, regulations and laws. In addition, the porous international boundary encourages illegal entry by people who sometimes cause problems such as cattle theft, conflict over resources (water and pasture) and other security related problems. This finding confirms Dereje and Hoehne’s observations (2010) that international boundaries in Africa have set constraints to the livelihoods of borderland people.

Ethiopia-Kenya cross-border pastoralists share a similar indigenous institution called the *Gada* system that governs intra and inter-community affairs. In this regard, the *Gada* system has facilitated cross-border mobility, where ethnic and social networks play significant roles. Informant pastoralists and focus group discussants stated the *Gada* system (which governs the indigenous peoples’ political, social and economic affairs) substantially contributed to the transboundary environmental resource use on the principle of reciprocity and trust. The *Gada* system has reduced conflicts that arise as a result of resource competition and has served in environmental resource governance and natural resource management in the area although it is not as strong as previously.

This study argues that informal rather than formal network (inter-state cooperation) is more effective in promoting cross-border mobility where ethnic social organization contributed to the connection of cross-border communities that straddled the border sharing common backgrounds, histories and culture. As observed by Nshimbi (2016), social networks have noticeably contributed to connecting such people.

One informant stated that the restriction on mobility due to the international boundary affects environmental sustainability and pastoral livelihoods, as it confines pastoralists to only one area, and leads to overgrazing which increases pastoral conflict over natural resources and vulnerability to droughts. This aligns with Widdis (2021) who discussed border governance challenges, indigenous people and geographies since, for indigenous people, the only important boundaries are those agreed between groups (ethnic borders) and their natural environments. Also, participating pastoralists pointed out that:

If properly managed, borderland resources can enable pastoral people to support each other especially during drought seasons that means; if it rains on the side of Ethiopia, pastoral communities from Kenya can be supported and vice versa. Moreover, it opens opportunities of interactions for the people and governments; as such cross-border environmental management programs can be designed to protect natural resources to the desired level.

This suggests proper institutions and policies can make border administration convenient for borderland people. In this regard, research respondents indicated that, as a side effect of an international boundary, a lack of proper legislation governing environmental resources along the international boundaries poses significant risk of natural resources depletion, leading to degradation. Human interactions should be properly managed by both administrations for harmonious co-existence. Border administration need to be properly regulated in a way that supports safe pastoral mobility, otherwise, the likelihood of conflicts increase that will cause adverse effects on pastoral livelihoods as currently observed. Similarly, a research informant from the Kenyan Pastoralist Community Initiative Development and Assistance (PACIDA) stated that the international boundary has limited the access to ritual or sacred sites, and limits community interactions curtailing social support mechanisms. Thus, communities view their kinsmen as people of other nationalities, creating differences and conflicts, break long-standing family ties and kinships, and exacerbate resource overuse and thus environmental

damage and degradation, as well as limiting smooth movement and entrepreneurship (business activities). He also indicated that the customs and immigration systems constrain livelihood sustainability. According to this respondent, establishing good border cooperation for the common good by the two states is vital to address inconveniences related to cross-border environmental resource use.

Pastoralists migrate in search of water or pasture often lead to conflict. Consequently, many households have been displaced from original settlements by conflicts arising from cattle rustling, administrative boundaries and inter-clan disputes. The colonial boundary has led to resource depletion in the area (Diba 2015), while administrative inconvenience affects peoples' traditional adaptation strategies (Oba 2000).

A research informant from Borana University with the rank of vice President indicated that the international boundary has created a venue for good market opportunities, and the opportunity to learn about different cultures. In contrast, border restriction for security reasons exacerbates resource degradation in border areas. Moreover, the research participant further outlined that there are economic concerns raised by the increase of illegal animal trade that causes disease infection in livestock.

In brief, the data obtained from research participants in the interviews and FGD from the Moyale pastoralists showed that they have faced a number of challenges related to trans-boundary resources use and management, stating that "the most obvious of which is the outright closure of frontiers. Frontiers may be nominally closed without use of a physical barrier, but in some cases, a wall or fence is erected to ensure the closure is enforced". They also remarked that restriction of movement across borders has frequently led to changes in herding practices and has undermined pastoralism in several ways, from restricting access to vital resources, to narrowing the gene pool. They discussed the following constraints:

(i) Conflict in frontier areas. This can effectively close a border because of the heightened risk to pastoralists and their livestock. Pastoralists may find themselves living on the front line of conflict between two states. In some cases, the relative openness of borders in pastoral areas has been exploited by armed groups, and this has placed additional constraints on pastoralists. Governments respond by protecting and closing their borders, and pastoralists are often blocked from accessing pastures and water in neighbouring countries. This puts pressure on the resources within their limited reach and contributes to localized environmental degradation ultimately affecting their livelihoods.

(iii) Transboundary livestock diseases. In an effort to control the spread of disease, governments have frequently closed their frontiers. Animal movements can facilitate the spread of pathogens over long distances, and quarantine measures usually impose restrictions on pastoralists.

(iv) Regulation of cross-border trade. This has in some ways constrained pastoralist mobility, but also facilitated mobility as governments recognize the value of pastoralism and the benefits of promoting trade. However, governments often fear the flow of contraband goods across borders, which may lead to efforts to limit trade. Historically, cross-border trade has been intimately related to the exchange of culture, practices and knowledge. The trading system is mainly maintained by indigenous institutions and pastoral social networks to access credit and markets. These exchanges are challenged when boundaries are "closed" and when cross-border trade is heavily restricted. Most of the trading activities conducted are more informal; this informal trade has lately received recognition from IGAD within 20kms of the border area according to the IGAD representative in Ethiopia (a participant in this study).

Mobility along international boundaries is key to pastoralists' adaptation involving movement during dry and wet seasons, and coping strategies during catastrophes such as drought, flood, conflict and disease outbreak, and access to better market opportunity through kin ties. This is a source of both conflict and cooperation, which requires applying a similar pastoral policy to ensure good governance on border administration and to improve the living conditions of people who straddle the border. Border studies scholars such as Hataley and Leuprecht (2018) opined that border cooperation is influenced by networks (formal and informal), the presence of supportive institutions (governmental and non-governmental), leadership, infrastructure development and organizational capacity. Thus,

strengthening existing social capital networks and working on the missed links (building viable institution and consulting pastoralists in development and public policy making in their affairs) are advisable in smoothing the life of cross-border pastoralists.

5. Conclusion and way forward

5.1. Conclusion

The arbitrary international boundaries between Ethiopia-Kenya have constrained pastoral mobility, environmental resource use and livelihoods. Moreover, border officials have not been particularly sensitive to the pastoral lifestyle. Lack of good governance (corruption and harassment) in border areas has affected pastoral mobility along international boundaries. In addition to the associated constraints of international boundaries, this study identified illegal settlements, household based land fencing and land privatization for grazing purposes. A lack of coordinated border coordination between the two states to defend the rangelands from invasive species resulted in rangelands invaded by the invasive species that affect pastoralists' environmental resource use since such species deplete palatable forage. Similarly mobility constraints create incompatibility between the livestock population and grazing land carrying capacity, leading to rangeland degradation along border areas.

The ethnic kinship relationship and indigenous institutions facilitated the Moyale pastoralists' mobility along Ethiopia-Kenya border to access environmental resource use, resource use related conflict management and supporting pastoral livelihoods. It is ethnic social networks that assisted cross-border mobility, particularly during severe dry season.

This study explored how the pastoralists use ethnic social organizations to cross an international boundary to access pasture and water. Nevertheless, movement restriction along the borders has raised the threat of serious degradation. Hence, constraining mobility restricts indigenous practices of rotational resource use that enables pastoralists to sustainably exploit environmental resources. In other words, ethnic social networks and indigenous institutions have become more effective compared to inter-state institutions in cross-border environmental resource use. Therefore, for smooth pastoral movements, the formal inter-state institution and non-governmental organization should collaborate with indigenous institutions. It is advisable to consider instituting proper legislations by the two states regarding governing cross border environmental resource use by integrating customary rules or indigenous institutions. Moreover, ensuring participatory rangeland management is advisable to accommodate the needs of pastoralists or rangeland people in policy making and implementations that ultimately impacts rangeland resource sustainability.

To sum up, the findings of this study will serve as a reference to the global understanding of the border sharing rangeland states to enhance cross-border cooperation by establishing joint forums to work on environmental and natural resources to use them sustainably.

5.2. Way forward

Cooperative relations among the neighbouring states, territorial communities and all concerned stakeholders must be promoted and strengthened, as well as investment made in pastoral livelihoods that allows mobility of pastoral communities across the borders of member states. In the case of Ethiopia and Kenya, this implies putting into action the Niamey Convention (2014) on African Union cross-border cooperation and the IGAD transhumance protocol (2021).

Transboundary institutions (both formal and informal) can play a vital role to better govern mobility if they work together in an institutionalized way rather than function separately. For Ethiopia and Kenya, establishment of a joint pastoral commission in which the pastoralists' representatives have a special seat in the two states national parliaments to influence public policy making related to them and to redress challenges pertaining to cross-border mobility and resource use would be appropriate. All stakeholders in transboundary situations should strive to engage in joint rangeland management and cooperate to deter rangeland degradation. For Ethiopia and Kenya, this should include governments and other stakeholders (IGOs and NGOs) functioning in the region.

Governments and non-state actors should strengthen and enhance their engagement on cross-border development and humanitarian services for the benefits of the cross-border people.

Governments, including the IGAD in the case of Ethiopia and Kenya, should strengthen their supportive role in cross-border mobility and disease management and control, surveillance, vaccination and capacity building activities for the development agent workers and governmental and non-governmental bodies operating there.

Governments such as Ethiopia and Kenya and non-state actors should enable pastoralists to participate in the course of initiating and designing programs that can address issues affecting cross border mobility and environmental resource degradation.

Regional organizations such as IGAD in Ethiopia and Kenya and governments should review their existing practices and establish more consultative processes to develop a smooth joint plan regarding cross-border issues to facilitate movement of people across the international borders (markets, water points, health centres, and schools) and humanitarian services.

Cross-border governments such as those of Ethiopia and Kenya should strengthen pastoral oriented development programs like rangeland development, cross-border animal disease prevention, and mobile clinics both for herds and persons to ensure pastoral wellbeing, deter drought induced livestock loss and animal disease that can spread from one border to the other.

Finally, NGOs and government bodies such as those operating in the Ethiopia-Kenya Moyale border areas must ensure the involvement of the cross-border community in review of existing policies for ownership and ease of enforcement. This will allow the inclusion of traditional knowledge to support cross-border movement of pastoral groups for their prosperity and align traditional institutions to support the regional/inter-governmental policies and so enable the people to have trust and confidence in abiding by cross-border policies.

Conflicts of interest

We declare that there is no potential conflict of interest.

Data availability statements

The data sets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

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