



Reconfiguring Property Rights and Customary Resource Governance among the Borana Pastoralists of Southern Ethiopia

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Abstract

This paper examines the changing nature of property rights, resource access and governance among the Borana Oromo pastoralist society of southern Ethiopia. Drawing on qualitative data collected from 56 key informants' interviews, 68 people taking part in eight focus group discussions, observations carried out in four pastoral districts and literature review, the paper analyzed the evolving nature of the transformation of customary resource access and governance institutions among the Borana Oromo pastoralists. The findings were assessed and interpreted using insights from political ecology, legal pluralism, and Ribot & Peluso's theory of access which together elucidated why and how the factors of environmental change, state policies, institutional pluralism and power relations have shaped property relations, resource access and customary governance among the Borana pastoralists. Results indicated that communal lands increasingly becoming fragmented and converted to private holding. This trend is driven by various factors, including climate change; elite-driven land commodification; state policies that encourage sedentary agriculture, ignore environmental limitations in the drylands, and overlook the socio-cultural basis of pastoral livelihood systems; and an underestimation of the drylands' potential to support pastoralism and other production systems. Consequently, customary institutions, including Abbaa Dheedaa and Abbaa Heregaa institutions, were gradually becoming undermined in land and water resource governance. Despite these changes, some pastoral society have adopted agro pastoralism as an adaptive response to climate stress, while the pastoral elders continue to reinterpret indigenous norms to sustain elements of collective resource governance. In this way, the study contributes to the literature on pastoral governance by demonstrating that the transformation of property rights in Borana represents not merely a shift from communal to private tenure but a dynamic process of institutional hybridity in which customary institutions, state governance, and market forces continuously reconfigure resource access and governance. This paper argues for a hybrid approach to pastoral natural resource governance that strengthens communal land rights, supports pastoral mobility, and recognizes the continued relevance of customary institutions in promoting sustainable resource management and pastoral resilience.

Keywords: Borana pastoralists; customary resource governance; property rights transformation; legal pluralism; political ecology; theory of access; communal land tenure; pastoral mobility.

Introduction

Across the globe, changing land tenure systems and natural resource management has had considerable influence on pastoralists' lifestyles (Galvin, 2009). This transformation can significantly impact pastoralists' interactions with the environment, mobility, access rights, and even social relations (Senda et al., (2020). Specifically, such changes have become highly visible among the pastoralists living in East African dry lands who traditionally relied on communal tenure systems, seasonal migration, and natural resource governance institutions to manage grazing lands and natural water resources.

Traditionally, the pastoralists' way of life in southern Ethiopia, particularly among the Borana pastoralist, has been regarded as one of the most organized and adaptive pastoral production system in East Africa. The sustainability of this system has historically depend on the Gadaa governance system and customarily institutions responsible for access to resources like communal grazing lands and water (Legesse 1973; Watson 2003).

Within this traditional arrangement, the *Abbaa Dheedaa* and *Abbaa Heregaa*¹ were the most prominent institutions that regulated the Borana society's movements, conflicts, and resource use (Tache and Oba 2010). Such institutions helped not only to maintain ecological and social stability but also to foster social unity and collective identity among the Borana Oromo society (Watson 2003). In this respect, the communal tenure system has provided the necessary flexibility for the use of natural resources in variable dryland ecosystems, and thus, it has been an important element for the sustenance of pastoral mobility, resilience building, equitable access to resources, and sustainable management of communal grazing areas and water resources.

In the meantime, various Ethiopian government development policies and strategies, including the Agricultural Development-Led Industrialization (ADLI) Strategy, the Rural Development Policies and Strategies (RDPS) from 2002, the Growth and Transformation Plans (GTP I and GTP II), and the Ten-Year Development Plan (2021–2030), have aimed to promote sedentarization, agricultural development, and livelihood diversification in pastoral lands to ensure food security, market access,

¹ '*Abbaa Dheedaa*' refers to the chief leader and administrator responsible for managing communal grazing lands, while '*Abbaa Hereegaa*' refers to the person in charge of overseeing and regulating water sources such as wells or springs, including organizing fair access for livestock through rotational use and ensuring the cleanliness and sustainability of the water resources.

and socio-economic development in the country (MoFED, 2002; National Planning Commission, 2016; Planning and Development Commission, 2021; OECD, 2019). These initiatives have also been instrumental in transforming traditional communal land-use systems, supporting a sedentary way of life, encouraging agriculture, and promoting individualized land use among the pastoral population in Ethiopia (Gebeye, 2016; OECD, 2019).

This has been done on the assumption that the livestock-raising practices of pastoralist society are highly unreliable and inefficient. These developments have led to a decline in the power held by customary governance institutions, as well as a new definition of how resources should be accessed, managed, and controlled (Tache and Irwin 2003).

Borana pastoralist is therefore; undergoing an intricate process of institutional transformation driven by interacting environmental, socio-economic, political, and legal factors. Climate variability, population growth, agricultural expansion, commercialization, privatization of communal resources, state development interventions, have collectively reshaped pastoral resource access, governance and property relations (Kamara et al., 2004; Flintan, 2011). Although institutional transformation includes numerous dimensions, the focus of this study lies in analyzing the interaction between customary institutions and the state administration in the governance of resource access and use.

The changes occurring within the Borana pastoral system are more than environmental and economic shifts. They also involving changing power relations, competing governance system, and evolving institutional arrangements. At this juncture, Political Ecology helps us understand how changes in the environment, state policy, markets, and power relations affect access to and control over natural resources (Blaikie & Brookfield, 1987; Bryant & Bailey, 1997; Robbins, 2020). This theory allows us to view land tenure, resource governance, and pastoral livelihood changes as shaped by politics. In addition, Legal Pluralism theory helps us understand the interactions between customary laws and statutes governing land and water, as well as the negotiations that take place regarding these issues (von Benda-Beckmann, 1981; Meinzen-Dick & Pradhan, 2002). Also, the Theory of Access explains that the ability to benefit from natural resources is influenced by factors beyond property rights, such as social and political relations, knowledge, capital, and institutions.

Although previous studies have made significant contributions to understanding Borana pastoralism, previous work has predominantly dealt with the analysis such as drought adaptation, livelihood diversification, local institutions, and pastoral resiliency (Watson 2003; Tache & Oba 2010; Coppock

2016), little emphasis has been placed on the impact of shifts in access to resource rights regimes, land commoditization, demographic pressures, and state-backed directions toward sedentarization, which collectively reshape access relations, communal tenure systems, and indigenous governance authority within contemporary Borana society. Another gap of the previous researches is that these aspects have hardly ever been explored within a unified framework of analysis. Existing works usually use the approaches of Political Ecology, Legal Pluralism, and/or institutional theory in isolation, providing fragmented explanations for the dynamics of pastoral transformation. Therefore, there was not enough attention drawn to the interrelation between environmental change, multiple legal orders, and power structures that affect resource access, property rights, and governance results in pastoral societies.

In order to overcome the above mentioned gaps, Political Ecology, Legal Pluralism, and the Theory of Access by Ribot and Peluso used within one analytic framework in this study. The originality of this integrated perspective consists in the possibility not only to explain the causes of transformation of customary institutions but also to understand how environmental change, legal institutions (both customary and formal), and power relations affect new forms of resource access, institutional legitimacy, and property rights in the context of the Borana pastoral system. Through this process, the study enriches existing knowledge through an explanation of how political, legal, and institutional processes underlie the restructuring of customary resource governance in pastoral societies, and thus contributes to the discourse on pastoral governance, common property management, legal pluralism, and institutional change in African dryland areas.

For the purpose of achieving its objectives, the study set out to answer the following research questions:

1. In what way have changes in property rights regimes and land tenure systems influenced customary resource governance of the Borana pastoralists, and what environmental, political, legal, and socio-economic factors have led to such institutional changes?
2. How do Political Ecology, Legal Pluralism, and the Access Theories account for the changing dynamics of resource access, governance, and authority in the contemporary Borana pastoral society?

Theoretical Framework

In this study, we applied three different but interconnected approaches in order to have a holistic view of resource ownership and control development among the Borana pastoralists: Political Ecology, Legal Pluralism, and Access theory by Ribot and Peluso. The Political Ecology approach can be used as an effective way to analyze the impact of environmental changes, periodical droughts, state-sponsored modernization programs, economic development, and other political economic processes on the life of pastoral communities and communal land tenure (Blaikie & Brookfield, 1987; Robbins, 2012). Through analyzing resource scarcity and institutional change from a political perspective, this approach makes it possible to look not only at ecological aspects, but also at political and social ones which influence the access to natural resources. The Political Ecology approach is particularly applicable in our case since the issues of communal land tenure and pastoral migration are closely connected with the politics of the state, demography, and environment.

Moreover, the Legal Pluralism framework and Access Theory as suggested by Ribot and Peluso are quite valuable to explore transformation through institutional and socio-political lenses. The legal pluralism theory is concerned with the interaction and conflict between various bodies of norms and the regimes of resource governance, which brings out the importance of the interplay of regimes and their regulation of social norms and rights relations (Merry, 1988). By contrast, the Theory of Access extends beyond property regimes to examine mechanisms that enable people to acquire or lose access to resources through power, social ties, politics, economic factors, and culture (Ribot & Peluso, 2003).

As opposed to using the three theories separately, this research incorporated the theories together as complementary approaches for analyzing the process through which property rights and customary resource governance were transformed in the Borana pastoral system. Political Ecology provided the larger political-economic and environmental context through which land-use change and institutional transformation took place. Legal Pluralism helped in understanding the dynamics between the two systems of law (customary and statutory law) in terms of how they governed and regulated communal natural resources. The Theory of Access by Ribot and Peluso was a good complement to the above two in the sense that it explained how social relations, institutions, social networks, and economic resources determined people's ability to gain from land and natural resources in the Borana pastoral system.

Materials and Methods

Study Area Description

The research was conducted in four districts of the Borana Zones, namely Yabello, Moyale, Dirre, and Arero, located in the Borana Zones of Oromia Regional State in southern Ethiopia. The Borana Zones lie in the country's arid/semi-arid lowlands and are primarily inhabited by the Borana Oromo people, who are among the most renowned pastoral peoples in East Africa. Livestock rearing, especially cattle, camels, goats, and sheep, is the mainstay of their economy (Bassi, 2005; Homann et al., 2008).

In addition, communal grazing areas, recurrent droughts, erratic rainfall, and mounting environmental threats associated with climate variability and land-use changes have been common features of the Borana rangelands. Additionally, the Borana rangelands receive bimodal rainfall; while the long rains are referred to as “*rooba gannaa*” and occur from March to May, short rains referred to as “*rooba Hagayaa*” occur from September to November. The above climatic conditions have always been the determinant of pastoral migrations within the Borana community (Oba, 2013).

In addition, the unique feature about this research area is the existence of strong customary institutions of governance that are entrenched in the Gadaa system which is a socio-political institution founded by the native community to manage social and natural resources among other things. Borana society has managed grazing lands and water resources through customary institutions such as *Abbaa Gadaa*, *Jaarsa dbeeda*, *Abbaa hereegaa*, and others (Bassi, 2005; Tache & Oba, 2009). Nevertheless, over the last few decades, there have been several socioeconomic and environmental developments within this region, including the expansion of agricultural production, sedentization, resource privatization, infrastructure development, and a gradual population increase. These developments have gradually reshaped land use, resource access, and pastoral practices in the Borana rangelands (Flintan & Cullis, 2010; Oba, 2013).

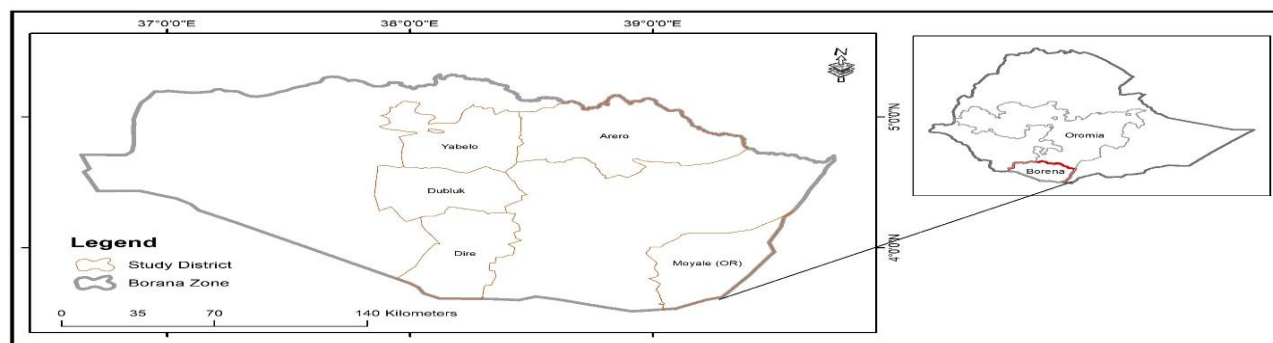


Figure 1: Location map of the study area Author's own compilation using GIS data (2023).

Sampling Procedures and Study Participants

This study employed qualitative research methodology to investigate the changes that have occurred in the system of property rights and customary governance of natural resources among the Borana pastoral community in southern Ethiopia. The application of qualitative research methodology was appropriate for this study since it facilitated an in-depth understanding of how the participants experienced, perceived and interpreted the changes that had taken place.

The sample size was determined using the principle of information richness (data saturation) rather than statistical representativeness, which is consistent with qualitative research. Drawing from this, the participants were selected based on their social and institutional standing and involvement. A total of 56 semi-structured key informant interviews (KIIs) were conducted in the four districts involved in the study. The KIIs included key informants from traditional governance institutions, including the Abbaa Gadaa (head of the Gadaa institution), the Abbaa Dheedaa (the customary leader of the pasture/territory), the Abbaa Herreegaa (the customary leader regulating access to and use of water sources by the community), community elders, kebele administrators, women/youth affairs officers, and development practitioners.

In addition, eight focus group discussions (FGDs) with 68 participants were held to gather the community's perceptions. Given that in Borana society, there is normally no free mixing of genders during public discussions of issues, separate homogeneous FGDs were conducted with elders, women, young males, young females, and women's associations. This encouraged free discussion among the participants regarding resource governance and institutional change.

Data Collection Methods

Data collection used multiple qualitative methods, including semi-structured interviews, focus group discussions, observation; transect walks, and document analysis. Triangulating methods strengthened the validity of the results by cross-checking findings from diverse sources. Semi-structured interviews were conducted in Afan Oromo and lasted 60 to 90 minutes per interviewee. They were held at different times between September 2024 and June 2025. The interviews covered the historical management of resources under the Gadaa system, factors contributing to changes in land use, the privatization of communal lands, changes in institutions, the effects of drought, and local adaptation.

Focus group discussions explored community views on the fragmentation of communal lands, restrictions on mobility, water resource management, livelihood diversification, and changing trends in access to grazing land and water resources. Special emphasis was placed on gender and age variations in the context of environmental stress and the growing commercialization of land. Observations were conducted in grazing areas, enclosed farmland, watering points, marketplaces, and traditional meeting areas governed by Gadaa systems. This provided an opportunity to learn about land use practices, social interactions, and emerging trends in land-use change. Transects were also used to study rangeland fragmentation, pasture degradation, settlement expansion, and individual-based land-use practices.

Secondary data sources were also used to enrich and validate the primary data. These included district land-use planning documents, drought analysis reports, policy documents, NGO reports, and relevant scholarly articles on pastoralism, the communal tenure system, and indigenous governance institutions in Ethiopia and Eastern Africa.

Data Analysis

A thematic analysis strategy guided the data analysis in this study. The interviews, focus group discussion content, observation notes, and other documents were analyzed using a thematic approach, in which the data were categorized into themes related to access, authority, institutional change, mobility, adaptability, and resource governance. Moreover, data analysis was conducted

from the theoretical perspectives of political ecology, legal pluralism, and the Theory of Access developed by Ribot & Peluso (2003).

To improve the validity and reliability of the study results, methodological triangulation was used to test the consistency of information collected through interviews, focus group discussions, observations, transect walks, documents, and secondary sources. Investigator reflexivity was ensured at all stages of research and analysis in order to avoid bias. In addition, prolonged presence in the field and constant cross-checking of emerging results improved the reliability and validity of the analysis.

Ethical Considerations

All ethical guidelines were scrupulously followed in the course of the research. Ethical approval for data collection was obtained from Bule Hora University with permission Approval Reference No. BHU 109, dated 23 April 2024. Also, an official permission to carry out the research was secured from the Borana Zone Administration with Reference No. 01/G6/434/Bo.2, dated 29 May 2024.

Prior to each interview, focus group discussion, and observation, the participants were adequately informed about the purpose of the research, their right to participate voluntarily, right to refuse and withdraw without facing any penalties, and the use of the research results. Verbal informed consent was gained from all participants before engaging them in the research process. Privacy of participants was ensured through confidentiality and anonymity as well by not including any personal identifiers in interviews, field notes, and all other findings presented in this report.

Results and Discussion

Socio-Ecological Context, Livelihood Systems, and the Transformation of the Borana Pastoral System

Traditionally, the pastoral Borana society in southern Ethiopia has been structured around extensive livestock production, collective resource management, and seasonal migration, as dictated by the drylands' ecological conditions. Indeed, the Borana pastoral area, found in the Oromia Regional State, adjacent to Kenya, is an arid area characterized by unreliable rainfall and drought seasons and fragile rangelands. This is an ecological setting whereby the Borana Oromo people evolved a sophisticated method of pastoral production revolving around cattle rearing, common resource

ownership, and customary governance systems that governed under the Gadaa system (Legesse 1973; Bassi 2005).

Pastoral mobility was the core characteristic of this socio-ecological organization. Seasonal mobility across common rangelands enabled the pastoralists to cope with variations in rainfall, pasture, and water availability. The pastoralists had common ownership of the grazing lands and water resources, and they were managed by customary institutions, such as the *Abbaa Dheedaa* and *Abbaa Heregaa*, which controlled mobility, allocated resources, and arbitrated conflicts according to customary laws (Watson 2003). These institutional structures not only facilitated equal access to natural resources but also improved social solidarity and ecological resilience of the Borana pastoral production system. Pastoralism among the Borana historically involved livestock mobility, communal grazing lands, and collective management of water resources, enabling pastoralists to utilize highly variable dryland ecosystems effectively (Helland, 1997; Tache & Irwin, 2003; Angassa & Oba, 2008). Access to resources, including key resources such as pasture and water, was governed by customary regulations that were incorporated into the Gadaa system and provided rules for resource use, distribution, and conflict resolution (Legesse, 1973; Watson, 2003). This governance system illustrates the fact that access to the natural resources depended more on the authority of tradition, social interactions, and collective responsibilities as opposed to private ownership rights.

Furthermore, it is clear from the findings that this resilient socio-ecological system has undergone fundamental transformations within the past two decades. Information obtained through interviews with key informants, focus groups, and field observations has clearly illustrated that the changes have not been caused by one particular element but rather a combination of factors such as recurring droughts, population increase, increased agriculture, land commercialization, state development projects, and property relations.

Among these interacting drivers, recurrent drought emerged as the most frequently mentioned environmental stressor. Mainly the participants agreed that the droughts witnessed between 2020 and 2023 were very severe and caused deaths of animals and made existing adaptation methods less effective. The point that droughts had become more common over the past several decades than in the old days was also highlighted.

As stated by one of the elders who participated in the KII conducted in Yabello:

“Drought used to occur after many years, and the community would recover through mobility and rebuilding of the herds. Now drought occurs recurrently even before people can recover from the last drought.”

The reflection of this particular individual was not only an indication of environmental changes. According to political ecologists, the impact of drought is not only based on climatic but also socio-economic processes that have impact on people’s access to their resources (Blaikie & Brookfield, 1987;

Robbins, 2012). As for the Borana culture, their mobility made it possible for them to distribute the grazing pressure and adjust to environmental changes. However, restrictions of access to grazing lands make them more vulnerable to drought. Apart from the above-mentioned facts, it should be noted that constant droughts seem to impact herd composition. The majority of respondents in the FGD argued that more and more people are shifting from keeping cattle to keeping goats because goats are drought-resilient and require fewer resources. Though cattle rearing remains culturally significant, goat farming has emerged as an economic activity due to its resilience to changing climatic conditions. The same trend has been observed among pastoral society in East Africa experiencing prolonged climate-related pressures (Ayele et al. 2022). This change is a clear indication of adaptation to environmental changes, and, in a broader sense, there has been a shift in the material aspects of Borana pastoral culture.

Overall, these results indicate that alterations in herd structure are not merely a reaction to drought but rather part of a wider adaptation to shifts in the ecology, economy, and institutions that influence pastoral production. In a recent study in other parts of East Africa's drylands, similar trends were identified; whereas earlier research viewed changes in herd structure mainly as an adaptive strategy to climate variability, this study shows that they are just as much a function of changing property regimes and reduced access to common grazing areas.

It is also noteworthy that the drought has led to diversification of livelihood options. A significant number of respondents from households told us that they practice agro-pastoralism, integrating agriculture with livestock production. In addition, respondents consistently insisted that people resorted to cultivation out of necessity rather than preference.

According to one FGD, a participant from Dirre explained:

“After my livestock were destroyed by drought, farming was the only alternative I could think of to feed my family. Re-establishing livestock can take many years, whereas cultivating crops will take only a few months after the rains have fallen.”

The finding indicated that the phenomenon of livelihood diversification cannot be seen merely as an adaptive strategy against climate variability but also as a result of structural transformations within the Borana pastoral production system. The loss of communally-owned grazing land, the decline in livestock holdings, changes in property regimes, and access to natural resources drove many families to adopt agro-pastoralism and other types of non-pastoral livelihood systems. Diversification thus was not only an ecological adaptation but also an institutional response to the transformations within the governing regime and access to resources. According to the Theory of Access by Ribot and Peluso (2003), this finding implies that households were seeking alternative sources of livelihood as access to the livestock-based one was becoming increasingly difficult.

Although many households diversified their livelihoods, respondents consistently maintained that livestock remained central to Borana identity. Based on this the participants emphasized that agricultural activities regarded as a livelihood diversification strategy but not a substitute for pastoralism. Alongside the climatic influences already highlighted, the agricultural policies imposed by the government and sedentarization were some of the major reasons for changes in the livelihoods of the participants interviewed through KII. The importance attached to cultivation, settlement, and low mobility as development was another point made by the majority of the participants. As argued by government officials, in the recent past, they had been encouraging people to engage in farming and settlement. Field observations verified that many communally-owned grazing lands had been converted to farming plots and settlements, thus reducing the flexibility of the pastoral production system.

The aforementioned cases demonstrated the tensions that have arisen due to the contradiction between the state-led approach to development and the traditional pastoralism engaged in by the Borana pastoralist society. From a Political Ecology point of view, this is a conflict that results from a clash of land management and use paradigms in the pastoral environment. For example, the

conflict became particularly significant in Ethiopia after the implementation of the Pastoral Development Policy and Strategy of the EPRDF Government in 2002. The policy aimed at changing pastoralists through promoting voluntary sedentarization and irrigation agriculture in river basins.

However, pertaining to Borana pastoralist society, movement was an important aspect in several ways such as because of varied climate, availability of grazing grounds and water sources, and the productivity within the herds. Thus, this has always been a practice that goes against the customary traditions of pastoral communities. Moreover, as seen in the findings, the expansion of agricultural practices has put pressure on communal grazing grounds. It has been seen that communal grazing grounds which are close to highways, urban centers, and administration centers are slowly being divided into smaller pieces and are being used for agriculture and settlements. The impacts of this practice do not end up at mobility issues but also overgrazing and degradation of the environment.

Most importantly, the interviewees have observed that over time, communal lands have become more individualized and privatized. This is a significant change in resource governance. Application of the theory of Legal Pluralism in this context reveals that conflict arises between the traditional tenure system which focuses on community access to the natural resources and the formal institutions which advocate for the individualization of land use. However, according to the theory of access by Ribot and Peluso, the transformation of property systems may affect the access and ownership of resources and their distribution among people.

These results also confirm that livelihood diversification is reshaping social relationships at the household and community levels. Women engage in petty trade, firewood gathering, farming, casual labor, and other livelihood activities to ensure household survival.

In one FGD conducted in Dirre, a woman testified:

“In the past, women's roles were limited to milking and household chores. Now we are compelled to cultivate crops, gather firewood, buy and sell goods in the market, and help our families, since livestock alone does not make ends meet.”

The results show that despite the increase in economic contribution through livelihood diversification, this phenomenon has little impact on the involvement of women in natural resource governance and decision making processes. It is clear from the interviews conducted that the

decisions made regarding communal grazing management, land distribution and water management involve only the traditional men and government representatives. Thus, the increasing economic contribution of women has not resulted in the power of managing productive resources, as there are still gender-based inequalities. Not only has livelihood diversification been effective for increasing household resilience, but it has increased the amount of work for women, as well as their vulnerability to livelihood risks. In accordance with Flintan (2008), the results imply that environmental changes and livelihood transformation affect men and women differently and even the growing economic participation limited the involvement and contribution of women in resource management processes.

According to the interviewee who participated in the KII in Moyale district:

“Today's youth go to schools and look for jobs in cities. They leave the herd to the old people.”

This trend of sending youth to school, along with the broader social changes it reflects, might affect the reproduction of customary knowledge systems and institutions. Traditionally, knowledge within the pastoral community was accumulated through active involvement in grazing and moving across the territory. Therefore, in cases where the younger generation shows reduced interest in these activities, some social mechanisms used for knowledge transmission can be affected. On the other hand, youngest people had good feelings about being part of Borana culture. It indicates that although there may be social changes, there may be no resultant erosion of identity and cultural belonging, instead, social change brought new opportunities for interacting with the culture.

Lastly, another key issue related to socioeconomic transformation of Borana culture is the connection between these transformations and conflict dynamics. Conflict was especially observed around borderland areas where there was competition over grazing land and water points. Nevertheless, in the Political Ecology framework, conflict over resource use does not arise out of scarcity of natural resources directly. This conflict emerges from inequalities in access to and control over the natural resources as a result of power differentials. Development trends such as commercialization, state regulation, and population growth have altered existing regimes of resource management, thereby increasing competition for essential resources for their livestock. Thus,

conflict can be better described as resulting from changes in economic and political relations regarding access to resources rather than resource scarcity itself.

Another finding to highlight here is that the socio-ecological context of Borana is very much shaped by the knowledge and institutions of the indigenous population, which used to control access to the land, water, and pasture resources. Most of the interviewees were of the opinion that natural resources are common property, endowed by God and termed as '*Waaqa*.' As explained by one elder from Areeroo in the FGD:

"Pastures and water are common property because they have been provided by God. No one can stop others from accessing means of survival."

An adequate knowledge of this perception is crucial for the development of communal tenure systems and resource sharing through indigenous institutions. Traditional governance system, particularly the structure responsible for governing water resources like spring (eelaa), pond (haroo), and madda, is an important aspect in organizing and settling conflicts regarding the use and management of resources. In addition to this, the respondents have indicated that Gadaa is an important part of their culture, unity, and moral values.

Despite its continued relevance, many responses pointed out the difficulties that hinder the proper functioning of indigenous governance systems. Specifically, participants noted increased state intervention through development and modernization perspectives and administrative procedures. Furthermore, participants mentioned tensions between the community's tenure system and the formal land management systems developed under sedentary agricultural production. Even though the rights of pastoralists to their lands are secured in national legislation, the FDRE Constitution under Art. 40(5), and a proclamation amending Oromia Regional State Rural Land Administration and Use Number 248/2023 under Art. 11, implementation is very limited, providing little protection to communities' resources and mobile livelihoods. Therefore, indigenous governance systems continue to face increasing pressures from new strategies, social and economic developments, and resource competition.

Generally, the results presented indicate that the transformation of resource governance in Borana entails not only a decline in the influence of the customary system but also broader reconfigurations of access relations, institutional arrangements, and resource control. The processes discussed are not

a straightforward example of decline but rather the product of negotiating customary systems of resource governance with existing state regulation, markets, and environmental conditions. As a result, the emergence of hybrid institutions taking into account ecological reasoning, socio-political viability, and adaptability is under way. It may be the more effective foundation for reconciling resource preservation, accessibility, and livelihood security in Borana's evolving pastoral environment.

Transformation in the Governance of Natural Resources and Access Rights

Under this section, the finding that transformations of natural resources among Borana extend beyond change in institutional structures to encompass broader shifts in authority, power relations, and mechanisms governing access to communal resources. Traditionally, the management of access to grazing land and water resources were governed through the Gadaa system, customary institutions such as the *Abbaa Dheedaa* and *Abbaa Hereegaa* which facilitated communal management, negotiation of access and movement, and reciprocity among pastoral societies. (Bassi, 2005). In this governance system, access to the natural resources was more of an aspect of social belongingness, reciprocity, and obligation than individual ownership and legal right. Therefore, through communal governance, there was an equal distribution of resources alongside the ability to move the herds to maintain livestock production in the drylands.

Grazing land (dheeda) and water points were governed under the customary regime by community-based organizations led by customary officials such as the *Abbaa Dheedaa* and *Abbaa Hereegaa*. This system managed seasonality and resource availability; arbitrated conflicts; and enforced traditional norms governing the use of natural resources. In their responses, almost all informants characterized these organizational systems as adaptive and participatory, effectively responding to the constraints of the arid environment.

Nonetheless, findings from personal interviews, focus group discussions, and field observations indicate that current governance structures are undergoing substantial transformation, driven by the complex interplay of environmental, political, economic, and demographic conditions. Many informants cited government-supported agricultural development programs, the adoption of private land ownership, drought, demographic pressure, administrative reorganization, and market

integration as triggers of change. These factors do not operate independently, as they influence each other to define the structure of governance and access to communal resources.

According to the political ecology approach, these processes reflect wider changes in the pattern of power distribution and development paradigms, which tend to favor sedentarism, commercialization, and individual property regimes rather than mobile pastoral production. In terms of the study results, it becomes clear that changes in the process of resource governance are not merely the result of environmental pressure; rather, they are politically and economically defined through state policies, market interests, and changing discourses of development. Most of the FGD participants pointed out that government policy on agricultural development is transforming communal governance systems.

One of the most important aspects of this transformation is the expansion of individualized landownership in regions that used to operate under communal tenure systems. It was noted that communal lands close to roads, urban areas, and administrative centers are being enclosed and turned into arable and, settlements, ranching, and economic activities. While these processes are often justified as development and economic modernization, they also fragment grazing landscapes and restrict pastoral mobility, a critical adaptive strategy in dryland environments.

One of the elders interviewed in a Key Informant Interview (KII) in Moyale had the following to say regarding these trends:

“Communal grazing land has been reducing due to increased personalization of land. Where we used to share everything, now things have become privatized and are now under private control.”

In addition to the responses, the above trends can be further explained with the help of the Concept of Access developed by Ribot & Peluso (2003). As per these authors, the concept of access means having access to the advantages of resources rather than just enjoying legal ownership. As per the findings gained from the research, the access to the communal grazing land and the communal routes used for creating private enclosures depends on the extent of access to political power, capital, and markets. Individuals with greater economic power, closer connections to government institutions, or more political power tend to be more successful at converting communally held resources into their own private property, which means a redistribution of access opportunities that advantages some actors while marginalizing others.

Furthermore, the study identified that state-sponsored development activities are hastening the processes. Almost all informants in FGDs and KIIs stated that government officials deliberately promote settled agriculture and settled living to prove that they are developing and making progress. Accordingly, pastoral societies are forced to plow their common grazing fields and limit the mobility of their livestock.

Based on one of the key informants in Areeroo:

“although the government claims all lands should be ploughed, this will not be possible in Borana land because rainfall patterns are unpredictable and movement is the only means to survival.”

As discussed earlier, this problem is indicative of an important conflict between development policies and ecology. Under the lens of Political Ecology, this external intervention in terms of increased agricultural activities can be seen as an altered land use practice that does not consider ecological factors. The promotion of settlement farming in this very dynamic ecosystem is motivated by some development assumptions about productivity and growth, ignoring the traditional ways of dealing with environmental uncertainties. Consequently, mobility which has served as an important mechanism to utilize dispersed resources and manage environmental risks have been increasingly constrained.

Moreover, the study findings indicate that the recurrence of drought aids the transformation of governance regimes in terms of intensifying competition for limited resources and its effects on access to those resources. It was highlighted that drought intensifies competition for resources, thus making it difficult for customary institutions to regulate access and resolve conflicts. Even though customary institutions play important roles in governance, their capacity to exercise collective regulation becomes more complicated in times of resource shortage and socio-economic changes.

With regard to the Theory of Access, drought impacts the experiences of access for different households in diverse ways. The shortage of resources in combination with existing social, economic, and political inequality produces unequal access experiences. Some research papers indicate that wealthy households and politically influential people had more opportunities for accessing necessary resources when there is a shortage. Therefore, the issue of access cannot be

viewed anymore only in customary terms with regard to reciprocity and collective access to resources.

Field observations also showed that environmental degradation caused by limited cattle movement and grazing near the settlement area was a widespread concern among the local population. Participants noted that confining communally managed grazing lands restricts movement within traditional grazing grounds, leading to overgrazing in certain locations. This demonstrates that governance transformation can have environmental implications beyond institutional changes. In turn, as mobility becomes limited, the process that traditionally helps maintain ecological balance is impaired, weakening the system's resilience.

Additionally, it can be said that institutional pluralization has been observed where both traditional and statutory governance systems coexist and compliment, and on some concerns they overlap each other, and sometimes compete to control. Even as there is an increase in the role played by formal government institutions in land management and planning, traditional institutions still maintain social legitimacy and credibility, particularly within rural communities who view the government with much mistrust. The most common consensus was that any intervention done without adequate participation of traditional leaders would fail in such communities.

On the other hand, when viewed through the lens of Legal Pluralism, the results reveal that resource governance in Borana is in a setting where there is a pluralism of orders of norms and institutions rather than one legal order. Customarily organizations govern access to properties, resolve conflicts, and provide legitimacy, though the mounting impact of government administrations on land distribution and development policies.

In general, the results show that the shift in governance of natural resources among the Borana people can be understood as part of a wider process of reorganization of power and control over communal resources. Environmental changes, government policy, the commercialization of resources, demographic changes, and changes in property rights have all led to shifts in governance structures and produced new patterns of institutional hybridity, differential access to resources, and socioeconomic inequality. The results are important for advancing scholarship on pastoral governance by showing that pastoral governance today is not only customary or statutory but hybridized.

Transition from Pastoralism to Agro-pastoralism

The findings revealed that the change from pastoralism to agro-pastoralism in the Borana people resulted from the effects of recurring drought, reduced livestock assets, and dwindling grazing land. Borana people were traditionally pastoralists and would use their livestock for all activities. This is facilitated by seasonally migrating from one place to another where there were sufficient grazing areas and sources of water. However, through time, recurrent droughts, and other socioeconomic issues resulted in small herds and difficulties in pastoral livelihoods. Consequently, many families had to engage in crop farming as a source of livelihood. These findings suggest that farming in Borana people was not a deliberate choice to engaged in agricultural activities reduce the pastoralist livelihood as usual but rather a necessary action owing to reduced livestock assets. According to Degen (2011), cultivation was only meant for survival where pastoralism failed.

An agro-pastoralist from Yabello expressed his views on KII in the following way:

“We are not culturally crop farmers. However, as a result of losing our cattle, we had no option but to adopt agriculture to survive. If the rains come in good time, we can be fed by the crop yield after a short while.”

As time has passed, there has been a change in the pattern of resource utilization and habitation, as people stay close to their agricultural plots, thereby losing the mobility to use the grazing lands flexibly. In terms of resource management, the earlier method, which involved society-based decision-making, has been replaced by an approach based on individual resource management due to the greater role of individual plots of land.

In terms of the institution, this transformation is more than just a change in the livelihood activity of people. It is a gradual restructuring of the institutional relationship between people, land, and customary institutions of governance. As cultivation increases, resource management moves away from collective decisions in relation to customary institutions towards individualization of the use of the land through administration. The diversification of the livelihoods thus changes production systems, settlement systems, and governance systems in the Borana pastoral system.

All these suggest that the adoption of agro-pastoralism can best be interpreted as a multi-dimensional phenomenon influenced by various factors such as environment, politics, economics,

and institutions. Agro-pastoralism is not an alternative to pastoralism, but rather a blend where efforts are made to sustain the traditional practice of pastoral production alongside farming in light of environmental changes and changes in ownership systems.

Privatization, Institutional Displacement, and Emerging Inequalities

The results indicate that privatization of land is changing the way resources are owned and altering resource ownership rights, authority, and power relations in the Borana pastoral community. This change is associated with the gradual erosion of customary land tenure systems that managed the use of pastures and water through reciprocity, responsibility, and common access.

An elder interviewed from Moyale in the focus group discussion said:

In the past, there were customary institutions in place for managing grazing land and water resources of the Borana in an efficient manner. The communal land was not considered as private property and helped in maintaining social harmony and cooperation where those people who had more resources would come to help those who had fewer resources. However, these traditional governance systems are being eroded through time with the gradual shift of governance systems from traditional institutions like Abaa Dheedaa and Abbaa Hereegaa to administrative institutions such as Abbaa Garee and Kebele administrators. This has led to the conversion of communal land into private land and hence growing inequality in the society.

The testimony of the participants, shows that privatization has resulted in much more than changes in property ownership; it has brought changes in the way authority and access to resources are organized in Borana pastoralist society. The findings indicate that changing property rights have increasingly concentrated control over productive land and water resources in the hands of economically and politically influential actors, while poorer pastoral households have become progressively dependent on shrinking communal grazing lands. Consequently, emerging social inequalities are no longer determined primarily by livestock ownership but by differential access to land, political influence, administrative authority, financial resources, and decision-making processes. These changes have altered not only patterns of resource ownership but also the distribution of power and opportunities within the pastoral society, creating new forms of social differentiation and elite capture.

Moreover, the study reveal how the governance of land allocation and natural resources has moved away gradually from the customary system and towards the administrative system of governance. With land allocation and investment approval being done through bureaucratic methods and with

little intervention from customary institutions such as the Abbaa Dheedaa and Abbaa Hereegaa, the regulatory power of the indigenous institutions has undergone a process of erosion. Despite this fact, the customary institutions still maintain strong legitimacy and cultural power in the areas of resolving conflicts, natural resource management, and pastoral mobility. Instead of signaling the death of customary governance, this shows how a hybrid system of governance is at work whereby both the customary and statutory institutions coexist and sometimes fight for authority and legitimacy. Poor coordination between these institutions has led to fragmentation of governance and failure of collective action in the management of shared grazing lands and water resources.

In line with the theories of Political Ecology and the Theory of Access put forward by Ribot and Peluso, the findings of this research reveal that privatization is not a mere economic phenomenon, but a politically engineered reorganization of property rights, institutional power, and access to natural resources. The access to productive resources is being decided on the basis of power dynamics, political weightage, bureaucratic clout, and monetary means instead of the reciprocity and collective sense of responsibility. In summary, this study reveals that the combination of environmental changes, commercialization, state policies, and changes in property rights systems have altogether transformed the institutional and ecological base of Borana pastoral communities, leading to the emergence of new inequalities as well as hybrid governance systems. This study adds to the existing literature on pastoral governance by highlighting that institutional changes should be viewed as a dynamic process of governance transformation, characterized by negotiation between customary institutions, statutory governance, and socio-ecological dynamics.

Gendered Impact of Transformation of Property Rights and Livelihood Systems among the Borana

From the analysis, there are implications of the change of property rights and access to natural resources and livelihoods systems on the gender system within the Borana pastoral society. The changes are not limited to increased women's economic workload but also affect their access to productive assets, decision making process and place within customary and formal governance systems. As a result of the transformation due to diversification of livelihoods, environmental pressures, and pastoral systems restructuring, there has been redefinition of gender roles and access to productive assets as well as redistribution of labor, authority and vulnerability according to

gender. Despite the continued dominance of men in governance and customary systems, women are playing different livelihood roles amid dwindling livestock productivity, recurrent drought, reduced communal land resources, and transformed property systems.

Key informant interviews, focus group discussions, and field observations have proven time and again that women play a crucial role in maintaining household livelihoods when there is any kind of economic and environmental insecurity. Besides doing their normal household duties, women now participate in agriculture, petty trading, firewood gathering, water gathering, rearing livestock, and various other economic activities in order to cover up the shortfall in livestock production. This shows that there has been considerable increase in women's economic involvement for the sustenance of households as well as an increase in their work burden.

A female key informant from Areeroo district said:

“Women carry double burdens today. We continue household work while also farming and searching for income because livestock alone no longer support families.”

Based on the analysis above, it is clear that diversification of livelihood has led to redistribution of labour among pastoral households without making reasonable positive impact on women's access to productive resources and governance. While women have been burdened with more responsibilities with regard to their households' livelihood, their ability to influence the process of decisions making with regard to land allocation, grazing, water and community resource management has remained limited. With increasing privatization of the communal lands, women's access to productive resources is becoming mediated through male-dominated customary and statutory institutions. Therefore, institutional transformation has actually increased existing gender disparities as women have gained additional responsibilities but no or little decision-making capacity and control over productive resources.

In terms of Political Ecology, the above findings suggest that the processes of environmental change, changing property rights and institutional transformation take place within an environment of unequal power relationships and women overburdened because of the high level of responsibility in maintaining the livelihood while being excluded from the process of governance. It becomes clear that besides the ecological factors, resource governance is influenced by institutional mechanisms which impact the ability to access productive resources and to benefit from them.

In addition, the existence of customary and statutory governance institutions has brought about little progress in terms of improving women's representation, illustrating the fact that institutional duality has not resulted in gender-sensitive governance. In sum, the study indicates that the changes in property rights and natural resource governance are inherently gendered and reinforce structural inequalities in land ownership and participation in governance and decision-making, even though women's contributions towards making households more resilient through diversified livelihoods have increased. Insights from this research to the study of pastoral governance are that institutional transformation will not bring about equitable resource governance unless women are adequately involved.

Conclusion

It can be seen that the evolution of the Borana pastoral system goes beyond changes in tenure regimes and economic activities of people living there. Instead, it is the result of broader reconfiguration of property regimes, access to natural resources, institutional authority, and governance due to the combined impact of environmental transformation, governmental policy, market economy growth, population growth, and customary institutions. The transition to agro-pastoralism resulted mostly from the need for adaptation due to the reduction of livestock assets and communal grazing areas rather than people's decision to abandon pastoralism. Privatization and the commercialization of communal resources, in turn, resulted in inequality and dismantlement of collective systems of governance which supported pastoral mobility and resource sharing in the past. Despite the persistence of social legitimacy of customary institutions, they function now together with formal administrative systems.

In terms of pastoral governance literature, this paper adds knowledge on how pastoral transformation should be viewed as an evolving process of institutional hybridity rather than a straightforward evolution from customary to statutory governance or from communal to private ownership regimes. Combining political ecology theory, legal pluralism, and access theory by Ribot and Peluso, the current paper offers a holistic approach to analyze how environmental factors, changes in property relations, state actions, and power politics transform access and governance of natural resources. What is more important, results demonstrate that changes in property rights are

inherently political and institutional processes of redistribution of powers and redefinition of access to productive resources.

Implications for policy are critical too. For sustainable pastoral development, there must be enhanced legal protection and enforcement of communal land tenure rights alongside the conservation of pastoral mobility as an appropriate ecological adaptation response for the drylands. There must be improved coordination of the institutions of governance in customary and governmental terms for more effective natural resources governance and institutional integration and enhanced institutional accountability. In addition, development programs must integrate the indigenous institutions like the Abbaa Dheedaa and the Abbaa Hereegaa into the processes of land tenure and natural resources management alongside ensuring that women and other marginalized groups play active roles in decision-making. Agricultural programs that lead to sedentarization must take account of the ecological features of the pastoral systems to prevent further fragmentation of communal grazing lands.

The current study has its limitations. First, the study was conducted in four districts of the Borana Zone and the method of research used was qualitative. Hence, the findings of this study are meant to be analytical and not statistical generalizations. Second, while the study provided important insights about institutional change, there was no attempt to measure quantitatively the impact that the new property rights had on land use, livelihoods, and ecological impacts. This calls for future studies that can take a longitudinal and mixed methods approach in exploring the impact of institutional hybridity, land privatization and resource governance. Comparative studies that can involve other pastoral societies within Ethiopia and the rest of East Africa will be more helpful in the analysis of resource governance among pastoralists.

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Conflict of Interest

The authors declare that there is no conflict of interest regarding this study because there were no commercial, financial or institutional affiliations associated with the research.

References

- Abate, T., & Angassa, A. (2016). Climate change vulnerability and adaptation of pastoralists in southern Ethiopia. *Pastoralism*, 6(1), 1–15.
- Agrawal, A. (2005). *Environmentality: Technologies of government and the making of subjects*. Duke University Press.
- Ayele, S., et al. (2022). Drought impacts on pastoral livelihoods in southern Ethiopia. *Pastoralism*, 12(1), 1–14.
- Bassi, M. (2005). *Decisions in the shade: Political and juridical processes among the Oromo-Borana*. Red Sea Press.
- Birhanu, Z., et al. (2017). Pastoral adaptation and resilience in Borana, Ethiopia. *Climate and Development*, 9(3), 245–256.
- Blaikie, P., & Brookfield, H. (Eds.). (1987). *Land degradation and society*. Routledge.
<https://doi.org/10.4324/9781315685366>
- Bollig, M., & Lesorogol, C. (2016). *Pastoralism in Africa: Past, present and futures*. Berghahn Books.
- Bryant, R. L., & Bailey, S. (1997). *Third world political ecology*. Routledge.
- Chewaka, T. (2013). Land dispossession and inequality in pastoral Ethiopia. *Journal of Eastern African Studies*, 7(4), 690–708.
- CIOMS. (2016). *International ethical guidelines for health-related research involving humans*. Council for International Organizations of Medical Sciences.
- Coppock, D. L. (1994). *The Borana Plateau of southern Ethiopia: Synthesis of pastoral research, development and change*. ILCA.

Coppock, D. L. (2016). Livelihood diversification and pastoral transformation in Borana. *Pastoralism*, 6(1), 1–12.

Debela, H., et al. (2019). Indigenous water governance among the Borana Oromo. *Pastoralism*, 9(1), 1–13.

Degen, A. (2011). Sedentarization and pastoral livelihood change in southern Ethiopia. *Nomadic Peoples*, 15(2), 45–62.

Dereje, F. (2011). *Playing different games: The paradox of Anywaa and Nuer identification strategies in the Gambella Region, Ethiopia*. Berghahn Books.

Elias, E., et al. (2015). Drought and livelihood diversification among pastoralists in Ethiopia. *Pastoralism*, 5(1), 1–14.

Flintan, F. (2008). Women's empowerment in pastoral societies. *Gender & Development*, 16(1), 25–38.

Flintan, F. (2011). *Broken lands: Broken lives? Causes, processes and impacts of land fragmentation in the rangelands of Ethiopia, Kenya and Uganda*. REGLAP.

Flintan, F., & Cullis, A. (2010). *Introductory guidelines to participatory rangeland management in pastoral areas*. Save the Children USA.

Galvin, K. A. (2009). Transitions: Pastoralists living with change. *Annual Review of Anthropology*, 38, 185–198. <https://doi.org/10.1146/annurev-anthro-091908-164442>

Gebeye, B. A. (2016). Unsustainable the sustainable: An evaluation of the legal and policy interventions for pastoral development in Ethiopia. *Pastoralism*, 6, Article 2. <https://doi.org/10.1186/s13570-016-0049>

Haraway, D. (2016). *Staying with the trouble: Making kin in the Chthulucene*. Duke University Press.

Holechek, J., et al. (2016). Population pressure and rangeland degradation in East Africa. *Rangelands*, 38(2), 65–72.

Homann, S., Rischkowsky, B., Steinbach, J., Kirk, M., & Mathias, E. (2008). Towards endogenous livestock development: Borana pastoralists' responses to environmental and institutional changes. *Human Ecology*, 36(4), 503–520.

Ingold, T. (2000). *The perception of the environment: Essays on livelihood, dwelling and skill*. Routledge.

Kamara, A., Swallow, B., & Kirk, M. (2004). Policies, interventions and institutional change in pastoral resource management in Borana, southern Ethiopia. *Development Policy Review*.

Krueger, R. A., & Casey, M. A. (2015). *Focus groups: A practical guide for applied research* (5th ed.). Sage.

Legesse, A. (1973). *Gada: Three approaches to the study of African society*. Free Press.

- Little, P. D., et al. (2001). Avoiding disaster: Diversification and risk management among East African pastoralists. *Development and Change*, 32(3), 401–433.
- Mbah, M., et al. (2023). Ethical community engagement and Indigenous research practices in Africa. *International Journal of Qualitative Methods*, 22, 1–12.
- Meinzen-Dick, R., & Pradhan, R. (2002). *Legal pluralism and dynamic property rights* (CAPRI Working Paper No. 22). IFPRI.
- Merry, S. E. (1988). Legal pluralism. *Law & Society Review*, 22(5), 869–896.
- Oba, G. (2013). *Nomads in the shadow of empires: Contests, conflicts and legacies on the southern Ethiopian frontier*. Brill.
- OECD. (2020). *Rural development strategy review of Ethiopia: Reaping the benefits of urbanisation*. OECD Publishing. <https://doi.org/10.1787/a325a658-en>
- Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. Cambridge University Press.
- Ribot, J. C., & Peluso, N. L. (2003). A theory of access. *Rural Sociology*, 68(2), 153–181.
- Robbins, P. (2020). *Political ecology: A critical introduction* (3rd ed.). Wiley-Blackwell.
- Scoones, I., et al. (2012). Pastoralism and water governance in drylands. *Pastoralism*, 2(1), 1–15.
- Senda, T. S., Robinson, L. W., Gachene, C. K. K., Kironchi, G., & Doyo, J. (2020). An assessment of the implications of alternative scales of communal land tenure formalization in pastoral systems. *Land Use Policy*, 94, Article 104535. <https://doi.org/10.1016/j.landusepol.2020.104535>
- Tache, B., & Irwin, B. (2003). Traditional institutions, multiple stakeholders and modern perspectives in common property governance: Accompanying change within Borana pastoral systems. *Securing the Commons*, 4, 1–15.
- Tache, B., & Oba, G. (2009). Policy-driven inter-ethnic conflicts in southern Ethiopia. *Review of African Political Economy*, 36(121), 409–426. <https://doi.org/10.1080/03056240903209884>
- Tache, B., & Oba, G. (2010). Is poverty driving Borana herders in southern Ethiopia to crop cultivation? *Human Ecology*, 38(5), 639–649.
- Von Benda-Beckmann, F. (1981). Forum shopping and shopping forums: Dispute processing in a Minangkabau village in West Sumatra. *The Journal of Legal Pluralism and Unofficial Law*, 13(19), 117–159. <https://doi.org/10.1080/07329113.1981.10756257>

Watson, E. E. (2003). Examining the potential of indigenous institutions for development: A perspective from Borana, Ethiopia. *Development and Change*, 34(2), 287–309.