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From margins to markets: overcoming stakeholder and information barriers in south Omo's pastoral livestock trade, Ethiopia

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Livestock marketing plays a vital role in Ethiopia's economy, especially in pastoral regions such as South Omo, where it supports livelihoods, income generation, and market integration. This study examined stakeholder coordination, broker dynamics, market information access, and governance in four districts (Benatsemay, Dasenech, Nyangatom, and Hamer) using qualitative methods, including key informant interviews, focus group discussions, and market observations. The findings indicate that, although informal institutional arrangements, such as steering committees and role definitions, are in place, their practical effectiveness is constrained by weak coordination, fragmented communication, and inconsistent implementation. This situation appears to create governance gaps within which brokers play a central but dual role. While they facilitate transactions by linking buyers and sellers, their influence, reinforced by limited market information and weak regulatory oversight, enables them to shape price formation and information flows. Access to reliable and timely market information was found to be limited, with pastoralists largely relying on informal sources and intermediaries. This contributes to information asymmetry, which may weaken their bargaining position and affect market outcomes. The livestock marketing system is further characterized by a multi-layered and partly informal structure, with a significant proportion of transactions occurring outside formal market settings. Overall, the findings suggest that market inefficiencies are associated with the interaction of weak coordination, information asymmetry, and informality, rather than the absence of institutional frameworks. Strengthening the implementation of existing coordination mechanisms, improving regulatory enforcement, and enhancing access to reliable market information are critical areas for improving pastoral market participation and outcomes.

KEYWORDS

brokers, Ethiopia, livestock, marketing, pastoralists

Introduction

Ethiopia possesses the largest livestock population in Africa, with an estimated total of over 213 million head (CSA, 2020; Shapiro et al., 2017). Livestock contributes significantly to Gross Domestic Product (GDP), food security, employment, and export earnings. Despite this potential, the sector continues to face persistent challenges, including low productivity, dependence on indigenous breeds, limited commercialization, and weak integration into formal markets (Mekuriaw and Harris-Coble, 2021; Gebremedhin et al., 2016).

Livestock production systems in Ethiopia are highly diverse, encompassing mixed crop-livestock systems, pastoral and agropastoral systems, and urban and peri-urban production (Li et al., 2023; FAO, 2010; Tegegne et al., 2010). Pastoral and agropastoral systems dominate the lowland areas of Ethiopia, including regions such as Afar, Somali, southern Oromia, and South Omo in the South Ethiopia Regional State. These areas are characterized by arid and semi-arid conditions, where livelihoods are heavily dependent on livestock production and mobility (Mekuriaw and Harris-Coble, 2021; Yami et al., 2015; Catley et al., 2013). In these systems, livestock serves not only as a source of income but also as a key asset for risk management and social security.

Livestock marketing is therefore central to the economic wellbeing of pastoral communities, providing a critical pathway for income generation and market participation (Al-Ghaswyneh and Oweis, 2022; Erick, 2022; Lamesegn, 2018). However, pastoral livestock markets are often constrained by institutional and structural challenges, including limited physical infrastructure, long distances to markets, high transaction costs, and weak market information systems (Nwafor and Ogundeji, 2020; Arero, 2018; Zuwarimwe and Mbaai, 2015; Lubungu et al., 2013; Barrett, 2008). In many pastoral areas, market participation is further complicated by information asymmetry, where producers have limited access to reliable and timely market information, reducing their bargaining power and influencing market outcomes (Lutta et al., 2021; Nwafor and Ogundeji, 2020; Mafukata, 2015; Fafchamps, 2004).

Market intermediaries, particularly brokers, play a central role in addressing some of these constraints by linking producers to buyers, facilitating negotiations, and enabling transactions in contexts where formal market institutions are weak (Aklilu and Catley, 2010; Little et al., 2001). Their role, however, is inherently dual. While brokers can reduce transaction costs and improve market access, their dominance, especially in poorly regulated environments, may also contribute to information asymmetry, influence price formation, and reduce the share of value captured by pastoralists (Negassa et al., 2011; Barrett, 2008). Evidence from Ethiopia suggests that the presence of multiple intermediaries and unregulated brokerage systems can increase transaction complexity and limit market efficiency (Abebe et al., 2024; Benti et al., 2022; Chekol et al., 2020).

A well-functioning livestock marketing system depends not only on the presence of market actors but also on effective stakeholder coordination and governance. Key stakeholders, including pastoralists, traders, brokers, government institutions, and development actors, are expected to play complementary roles in

facilitating market access, regulating transactions, and providing support services such as veterinary care and market information (Catley et al., 2013; Solomon et al., 2003). However, studies across pastoral systems indicate that, despite the existence of formal institutional arrangements, coordination among stakeholders is often weak, leading to fragmented market systems and limited effectiveness of interventions (Musa et al., 2020; Rich and Perry, 2011).

These dynamics can be understood through several complementary theoretical perspectives. Market Access Theory emphasizes the role of intermediaries in connecting producers in remote areas to broader markets, particularly in contexts where infrastructure and direct market access are limited (Arero, 2018; Aklilu and Catley, 2010; Barrett, 2008). Value Chain Theory highlights how value is created and distributed along the supply chain, noting that while intermediaries perform essential functions such as aggregation and transport, the presence of multiple actors may increase transaction costs and reduce producer returns in poorly regulated systems (Bassa and Woldeamanuel, 2018; Rich and Perry, 2011). Information Asymmetry Theory further explains how unequal access to market information can shape bargaining power and price formation, often reinforcing the influence of intermediaries in pastoral livestock markets (Barrett, 2008; Fafchamps, 2004).

Empirical studies across Ethiopia and sub-Saharan Africa consistently show that pastoral livestock markets are characterized by fragmentation, informality, and weak institutional coordination (Catley et al., 2013; Negassa et al., 2011). Regulatory frameworks, where they exist, are often constrained by limited capacity, weak enforcement, and poor communication among actors, resulting in governance gaps that affect both efficiency and equity (Musa et al., 2020). At the same time, market information systems remain underdeveloped, with pastoralists relying heavily on informal networks or intermediaries, further reinforcing information asymmetry and limiting informed decision-making (Barrett, 2008; Fafchamps, 2004).

While existing studies provide valuable insights into livestock marketing in pastoral areas, there remains a limited understanding of how stakeholder coordination, broker dynamics, market information access, and governance interact within specific local contexts (Abebe et al., 2024). In particular, empirical evidence from the South Omo Zone is scarce, especially regarding the functionality of coordination mechanisms, the regulation of brokers, and the effectiveness of market information systems.

In addition, existing empirical evidence indicates that inefficiencies in pastoral livestock markets have measurable economic consequences. The presence of multiple intermediaries can significantly reduce producers' share of final market value, with pastoralists often receiving substantially lower prices than those observed in terminal markets (Aklilu and Catley, 2010; Negassa et al., 2011). High transaction costs, long market chains, and limited access to reliable market information further constrain market participation and have been associated with reduced livestock off-take and lower levels of commercialization among pastoral households (Barrett, 2008; Lubungu et al., 2013). These findings underscore the importance of addressing structural and

informational inefficiencies to improve income generation, market participation, and livelihood outcomes in pastoral areas.

This study addresses these gaps by providing an integrated analysis of pastoral livestock marketing systems in the South Omo. The specific objectives of the study are to: (i) assess stakeholder participation and coordination in livestock markets, (ii) examine the role and influence of brokers in livestock transactions, (iii) evaluate pastoralists' access to and use of market information, and (iv) analyze the structure and governance of livestock markets in the study area. By addressing these objectives, the study contributes to a more nuanced and context-specific understanding of the structural and institutional constraints shaping pastoral livestock markets and provides insights for more effective policy and development interventions.

Materials and methods

Description of the study area

The South Omo Zone, located in the Southern Ethiopia Regional State, borders Kenya to the south and neighboring zones to the west, north, and east, with Dimeka as its administrative center. The zone comprises diverse landscapes, from lowland pastoral and agropastoral areas to more densely populated highlands, and hosts notable ecological sites such as Mago National Park, Tama Wildlife Reserve, and Lake Chew Bahir. Livestock production is a key livelihood activity, with an estimated 15,964,591 Tropical Livestock Units, representing 36.3% of the region's total livestock (South Omo Zone Agriculture Department, 2022; SNNPR Plan Commission, 2020, both unpublished data). Pastoral development initiatives, including the PCDP and LLRP, have been implemented to enhance livelihoods and market access for pastoral communities.

Sampling technique

Ethiopia is a country that is divided into regions and city administrations. The South Ethiopia region was chosen using purposive sampling due to its pastoral population and the implementation of pastoral development initiatives like PCDP and LLRP, as well as its proximity to the authors. This region is divided into Zones, Special districts, and City administrations based on political structures. Among the zones in the region, the South Omo zone was selected because it is the only zone where agropastoral and pastoral production systems are practiced. Four out of the six districts in the zone were chosen based on their accessibility and stability - Benatsemay, Dasenech, Nyangatom, and Hammer. In each district, two kebeles, which are the smallest administrative units, were selected for a total of eight kebeles included in the study.

The selection of study districts and kebeles was based on accessibility and security considerations, which were necessary given the logistical and political context of the South Omo Zone. However, this introduces a potential selection bias, as inaccessible or unstable districts may exhibit different livestock market dynamics, levels of stakeholder coordination, and levels of broker influence. Therefore, the findings of this study should be interpreted with

caution and are not fully generalizable to all pastoral areas in the region.

Data collection

The study employed primary data to accomplish its objectives. The primary data was collected from purposefully selected pastoralists, and other relevant stakeholders, including regional and district offices of pastoral affairs, trade and market development offices at both the zonal and district levels, agricultural offices (notably the Department of Livestock Production) at the zone and district levels, the Revenue office at the district level, as well as the zonal and district administrations. Data collection methods included key informant interviews (KIIs), focus group discussions (FGDs), and market observations.

Semi-structured interview guides, FGD protocols, and an observation checklist were developed to ensure consistency and alignment with the study objectives. These instruments covered key thematic areas, including stakeholder coordination, broker involvement, market information access, and governance mechanisms. The full versions of these tools are provided in the [Supplementary Material S1–S3](#).

Key informant interview

Key informant interviews (KIIs) play a crucial role in qualitative research by enabling the collection of in-depth and context-specific information from knowledgeable participants (Babbie, 2020; Bernard et al., 2011). In this study, in-depth interviews were conducted with key stakeholders, including value chain actors, product organizations, cooperatives/unions, agricultural offices, private traders, producer organizations, cooperatives/unions, agricultural offices, private traders, producers, and other relevant actors across four administrative levels: regional, zonal, district, and kebele.

Participants were purposively selected based on their expertise, experience, and roles within their respective institutions. Semi-structured interview guides were used to ensure consistency while allowing flexibility to explore emerging issues.

The sample size was determined based on the principle of data saturation (Bernard, 2017). Accordingly, six key informants were selected from each study district, resulting in a total of 24 interviews. The semi-structured interview guide used for KIIs is provided in [Supplementary Material S1](#).

Focus group discussion

Focus group discussions (FGDs) were conducted to capture community-level perspectives and to complement the data obtained from KIIs (Babbie, 2015; Bernard et al., 2011). This method facilitated interactive discussions among participants, allowing for the exploration of shared experiences and collective views on livestock marketing practices.

Participants were purposively selected from pastoral and agropastoral communities in the study areas. One FGD was conducted in each selected kebele, resulting in a total of eight FGDs. Each group consisted of 6–12 participants, consistent with recommended qualitative research practices (Bernard, 2017).

TABLE 1 Illustration of the qualitative coding process and theme development.

Raw data (example quote)	Open codes	Categories	Final themes
"We do not have access to any market information... we rely on neighbors or visiting markets." (FGD participant)	Lack of information access; reliance on informal sources	Information constraints	Market information access and asymmetry
"Brokers decide the price and tell us what the market price is." (FGD participant)	Broker price control; information manipulation	Broker influence	Brokers' role and market power
"Most brokers working in the market are not licensed." (KII, government official)	Unlicensed brokers; weak regulation	Governance gaps	Market structure and governance
"There is a structure, but coordination is weak and inconsistent." (KII, stakeholder)	Weak coordination; poor implementation	Institutional inefficiency	Stakeholder coordination
Observation: multiple brokers involved in a single transaction; no visible license checks	Multiple intermediaries; lack of enforcement	Informal practices	Market structure and governance

FGDs focused on key themes such as stakeholder participation, broker involvement, access to market information, and challenges within the livestock marketing system. A semi-structured FGD protocol was used to guide discussions while allowing flexibility for participants to express their views. The FGD protocol is provided in [Supplementary Material S2](#).

Market observation

Market observation was employed to complement data obtained from KIIs and FGDs by providing direct insights into market practices and interactions. This approach enabled the documentation of real-time behaviors, transactions, and institutional dynamics within market settings (Bernard, 2017).

Observations were conducted across multiple market days in selected districts, including both formal livestock markets and informal roadside trading locations, using a partial participant observation approach. A structured observation checklist was applied to systematically capture key aspects, including market infrastructure, stakeholder participation, broker activities, transaction processes, pricing interactions, regulatory practices, and the availability of market information.

Field notes were recorded systematically during each observation session. The observational data were used to triangulate and validate findings from KIIs and FGDs, thereby strengthening the credibility and trustworthiness of the study. The observation checklist used in this study is provided in [Supplementary Material S3](#).

Data management and analysis

Data analysis followed a systematic qualitative approach informed by grounded theory principles. Transcribed data from KIIs, FGDs, and field observations were analyzed through iterative coding procedures. Initially, open coding was conducted to identify meaningful units of information from the data. These codes were then grouped into broader categories through axial coding based on conceptual similarities and relationships. Finally, selective coding was used to synthesize categories into overarching themes aligned with the study objectives.

The coding process was primarily inductive, allowing themes to emerge from the data, while also being informed by the study's conceptual framework (e.g., market access, value chain, and information asymmetry). To enhance analytical rigor, coding and theme development were conducted through repeated data review and team discussions to ensure consistency and credibility.

Triangulation was applied by comparing findings across data sources (KIIs, FGDs, and observations) to validate emerging patterns. Observational data were used to corroborate reported practices, particularly regarding broker activities, transaction processes, and regulatory enforcement.

An illustrative summary of how raw data were transformed into codes, categories, and final themes is presented in Table 1.

Reflexivity statement

The research team acknowledges that the study area was partly selected due to logistical accessibility and proximity. As external researchers affiliated with an academic institution, efforts were made to minimize bias through triangulation of data sources, use of multiple informant groups, and careful interpretation of participant perspectives.

Results

This section presents the empirical findings of the study based on qualitative data collected through KIIs, FGDs, and market observations. The results are organized into four major themes: (1) stakeholder participation and coordination, (2) the role of brokers in livestock marketing, (3) market information access, and (4) market structure and governance.

Stakeholder coordination and institutional functionality

The livestock marketing system in the study areas involves multiple stakeholders, including pastoralists, traders, brokers, government offices, cooperatives, and development projects. Across all districts, formal coordination structures, such as

steering committees and inter-sectoral platforms, were reported to exist. However, their functionality was consistently described as limited.

Key informants indicated that coordination mechanisms are formally established but irregularly implemented. Government officials and project coordinators noted that meetings are infrequent and often lack follow-up actions, leading to weak institutional engagement. As one informant explained, “There are structures in place, but they are not functioning as expected due to lack of regular coordination and follow-up” (KII, government official).

FGD participants similarly perceived limited interaction between stakeholders and expressed uncertainty regarding the roles and responsibilities of different actors within the livestock marketing system. Pastoralists reported minimal direct engagement with formal institutions, indicating that coordination efforts are not effectively reaching community levels.

Market observations provided indirect support for these findings, showing a limited visible presence of regulatory authorities or coordinated institutional activities during market operations. No routine monitoring, organized coordination activities, or structured stakeholder engagement mechanisms were observed during market days.

Overall, the findings suggest that while institutional arrangements exist, their operational effectiveness is constrained by weak coordination, fragmented communication, and inconsistent implementation.

In well-functioning livestock markets, such coordination structures are expected to play a critical role in improving market performance. Specifically, they facilitate information sharing among actors, support the enforcement of regulations (including licensing, taxation, and animal health requirements), coordinate service delivery such as veterinary and extension services, and strengthen linkages between producers and buyers. Effective coordination can reduce transaction costs, enhance transparency in pricing, and improve trust among market participants, thereby contributing to more efficient and equitable market outcomes. The limited functionality of these structures observed in this study, therefore, has important implications for overall market performance.

Brokers' role in livestock marketing

Livestock marketing in the study areas operates through a multi-actor value chain involving pastoralists, brokers, collectors, traders, and wholesalers. In most cases, pastoralists bring livestock to primary markets, where interactions with buyers are mediated by brokers. However, transactions are not limited to formal market settings. A significant proportion of trade also occurs at informal roadside locations, where collectors (often referred to as roadside buyers) purchase animals directly from pastoralists or local brokers for resale in secondary or terminal markets.

Buyers, including traders and wholesalers, typically operate in larger market centers, while smaller-scale collectors function closer to pastoral communities, sometimes traveling between settlements to source livestock. Brokers play a central role throughout this chain by linking sellers and buyers, facilitating communication and negotiation, and coordinating transactions across different actors.

Transactions are predominantly cash-based, with payment usually made immediately at the point of sale by the buyer. In some cases, particularly where there are established relationships between actors, informal credit arrangements may occur, although these are less common. Brokers typically mediate negotiations and may handle communication during the transaction process, but they do not usually provide the final payment themselves.

FGD participants consistently reported that brokers are essential for accessing markets and completing transactions. As one participant explained, “Without brokers, it is very difficult to find buyers or agree on prices” (FGD participant). Similarly, pastoralists emphasized their reliance on brokers for identifying potential buyers and navigating market interactions.

Key informants reinforced this facilitative role, particularly in relation to negotiation and communication. A trader noted that brokers often act as intermediaries during bargaining processes, stating, “Brokers help connect us with traders and translate during negotiations” (KII, trader). This highlights the functional importance of brokers in contexts where language barriers and limited market experience constrain direct engagement between actors.

These reported roles were corroborated by market observations, which showed that most livestock transactions involved one or more brokers actively participating in negotiation and price-setting processes. Observations further indicated that brokers frequently positioned themselves between buyers and sellers, facilitating communication and influencing transaction outcomes.

Despite their facilitative role, participants widely perceived brokers as influential in shaping prices and controlling market information. FGD participants reported that pastoralists often depend on brokers for price information, which may not accurately reflect prevailing market conditions. As one participant stated, “They decide the price and tell us what the market price is, but we cannot verify it” (FGD participant).

Key informants, particularly from government offices, also expressed concern about the dominance of brokers and their influence on market dynamics. One official noted that the lack of effective regulation has created conditions that may enable brokers to exert influence with limited oversight, stating, “Most brokers working in the market are not licensed, and it is difficult to control them” (KII, government official).

Market observations supported these concerns, revealing the presence of multiple brokers involved in single transactions, many of whom lacked visible licensing or formal authorization. In several cases, more than one broker was observed facilitating a single sale, contributing to increased transaction complexity.

In principle, livestock brokers are expected to operate within existing regulatory frameworks that may require registration or licensing by local trade and market authorities. Licensing is intended to formalize brokerage activities, improve accountability, and enable oversight of transaction practices, including fees and conduct during negotiations. However, in the study areas, enforcement of these requirements appears to be limited, resulting in a large number of brokers operating without formal authorization. This weak enforcement reduces the effectiveness of regulation and contributes to the persistence of informal market practices.

FGD participants further reported that the involvement of multiple intermediaries increases transaction costs and reduces the share of value received by pastoralists. As one participant explained, “Sometimes several brokers are involved in one sale, and each takes a share” (FGD participant).

Overall, the findings indicate that brokers perform both facilitative and influential roles within the livestock marketing system. While they help overcome structural barriers such as limited market access and communication challenges, their dominant position, combined with information asymmetries and weak regulatory enforcement, appears to shape pricing processes and transaction outcomes in ways that may disadvantage pastoralists.

Market information access

Access to reliable and timely market information emerged as a critical constraint across all study sites. FGD participants consistently reported limited access to formal sources of market information, relying instead on informal networks and personal experience.

Participants from the Dasenech district emphasized the lack of structured information systems, stating, “We do not have access to any market information” (FGD participants). They further explained that market information is primarily obtained through neighbors or repeated visits to local markets, noting that “We mostly attempt to obtain market information from our neighbors or independently through frequent in-person market visits” (FGD participants).

FGD participants perceived that limited access to market information weakens their bargaining position and increases dependence on brokers. They reported that this situation reduces their ability to benefit fully from livestock sales, particularly when price information is controlled by intermediaries.

Key informants confirmed the existence of gaps in formal information dissemination systems. One informant highlighted efforts to improve service delivery through community-based approaches but noted significant limitations in coverage, stating, “We select educated youth from the community and train them to provide services, but since kebeles are far apart and the number of workers is limited, accessibility remains a challenge” (KII, development actor).

Another key informant described attempts to establish market linkages and improve market access, noting that such initiatives have been implemented but not sustained. As explained, “We established market linkages with wholesalers... but the system was discontinued due to lack of stakeholder support and drought” (KII, project coordinator).

Key informants also pointed to institutional and logistical challenges affecting coordination and information flow. One respondent stated, “*Due to the remoteness of districts, it is difficult to monitor all activities... we collaborate with other sectors, but gaps still exist*” (KII, government official).

Market observations supported these findings, revealing limited visible mechanisms for disseminating market information, such as price boards or formal communication channels. Transactions were largely based on verbal negotiation, with no observable standardized pricing systems.

Overall, the findings indicate that limited access to reliable market information, combined with weak institutional dissemination mechanisms, contributes to information asymmetry and reinforces dependence on intermediaries.

Market structure and governance

The livestock marketing system is characterized by a multi-layered structure involving several intermediaries. Across all study sites, a typical transaction chain was identified as: pastoralist → local broker → roadside collector → market broker → wholesaler.

FGD participants consistently described this structure, emphasizing the involvement of multiple actors at different stages of the marketing process. Pastoralists reported that direct sales to end buyers are uncommon, with transactions typically mediated through brokers and collectors.

Key informants supported this characterization, noting that the presence of multiple intermediaries reflects both structural constraints and the absence of streamlined market linkages. Government officials and traders highlighted the role of brokers and collectors in facilitating transactions, but also acknowledged the complexity introduced by multiple layers of intermediation.

Market observations confirmed the prevalence of this multi-step structure, with transactions frequently involving several actors before reaching final buyers. Observations also revealed that a significant proportion of transactions occur outside formal market settings, including roadside trading points.

FGD participants reported that informal trading practices are common and often preferred due to convenience and flexibility. However, they also noted that such practices limit transparency and reduce the effectiveness of regulatory oversight.

Key informants highlighted that regulatory frameworks governing livestock marketing do exist, including local bylaws and national trade regulations related to broker licensing, taxation, animal health certification, and market fee collection. However, the implementation and enforcement of these regulations were consistently described as weak. Informants attributed this to limited institutional capacity, logistical challenges in remote areas, and insufficient coordination among responsible authorities. As a result, many market activities—including brokerage and roadside trading—occur outside formal regulatory oversight. Market observations corroborated these claims, showing minimal visible enforcement activities such as license verification or transaction monitoring. The presence of unregulated actors and informal trading practices was evident across observed markets.

Efforts to improve market linkages and governance were reported by key informants, including initiatives to organize pastoralists and connect them with buyers. However, these efforts were described as uneven and difficult to sustain due to broader systemic challenges.

Overall, the findings indicate that the livestock marketing system operates through a combination of formal and informal structures, with weak enforcement and limited coordination contributing to the persistence of complex and less regulated market practices.

Discussion

This study examined stakeholder coordination, broker influence, market information access, and governance within pastoral livestock marketing systems in South Omo. The findings reveal a structurally fragmented system characterized by weak institutional coordination, dominant informal intermediation, and limited access to reliable market information. These findings are consistent with a growing body of literature on pastoral livestock markets in Ethiopia and the wider Horn of Africa, which highlights similar structural and institutional constraints (Catley et al., 2013; Aklilu and Catley, 2010).

Stakeholder coordination: Institutional presence versus functional performance

The results show a clear gap between the existence of coordination structures and their practical functionality, characterized by weak implementation, irregular engagement, and fragmented communication. Similar patterns have been reported in pastoral livestock systems across Africa, where institutional arrangements often exist but fail to function effectively due to limited capacity and weak enforcement (Musa et al., 2020; Bonfoh et al., 2016; Catley et al., 2013).

Studies on pastoral livestock value chains further indicate that, despite the presence of multiple actors, market systems often remain fragmented and poorly coordinated, limiting efficiency and integration (Rich and Perry, 2011; Negassa et al., 2011). In the Ethiopian context, evidence shows that livestock marketing systems are constrained by fragmented institutional arrangements and weak stakeholder coordination, which restrict market participation and reduce opportunities for value addition (Negassa et al., 2011).

The findings of this study therefore reinforce the argument that the primary constraint is not the absence of institutional frameworks, but rather their limited operational effectiveness. However, consistent with broader literature, the direction of causality remains complex. Weak coordination may contribute to market inefficiencies, but entrenched informal systems may also undermine formal coordination efforts, suggesting a mutually reinforcing relationship (Barrett, 2008; Fafchamps, 2004).

Brokers in livestock marketing: between facilitation and market power

This study provides a comprehensive understanding of brokers, highlighting their dual role as both facilitators and influential intermediaries. This finding aligns with earlier studies in the Horn of Africa, where brokers (locally known as *dalala*) play a central role in linking pastoralists to markets, facilitating transactions, and overcoming informational and linguistic barriers (Aklilu and Catley, 2010; Little et al., 2001).

At the same time, the study found that brokers influence price formation and control information flows, which may disadvantage pastoralists. This pattern is consistent with findings from other pastoral markets in Ethiopia and other African pastoral systems, where broker dominance and multiple intermediaries reduce

producers' share of final value and increase transaction costs (Bassa and Woldeamanuel, 2018; Negassa et al., 2011; Barrett, 2008). However, the findings also support the argument in value chain literature that intermediaries persist because they provide essential services in contexts where infrastructure, information systems, and institutional support are weak. In line with this, studies emphasize that pastoral livestock markets are often characterized by informality and reliance on intermediaries, rather than direct producer–buyer transactions (Fafchamps, 2003; Rich and Perry, 2011).

Importantly, this study does not conclude that brokers are inherently exploitative. Rather, it shows that their influence emerges within a structural context of limited alternatives. This perspective is consistent with Market Access Theory, which recognizes that intermediaries can both reduce transaction costs and create opportunities for rent extraction, depending on institutional conditions (Barrett, 2008; Fafchamps, 2004).

Market information and information asymmetry

Limited access to reliable market information was identified as a major constraint affecting pastoralists' market participation and decision-making. This finding strongly aligns with previous studies in pastoral systems, which highlight information asymmetry as a defining feature of livestock markets (e.g., producers and small sellers often lack timely data compared with traders and agents) (Roba et al., 2018).

For instance, research in pastoral meat supply chains in East Africa shows that inadequate and rapidly changing market information makes it difficult for producers and traders to make informed decisions, often resulting in suboptimal pricing outcomes and high variability in price data that producers cannot effectively interpret for strategic sales decisions (Roba et al., 2018). Similarly, studies focused on pastoralists in the Horn of Africa indicate that traders and market agents typically possess better access to price information and regional market knowledge than pastoralists, giving them a structural advantage in negotiations and bargaining processes (Little et al., 2014).

The findings of this study reinforce these observations, showing that pastoralists rely heavily on informal information networks and intermediaries. However, consistent with existing literature, improving information access alone may not be sufficient. Evidence suggests that even when technologies such as mobile phones are available, their effectiveness depends on the existence of reliable, timely, and institutionalized information systems. For example, while mobile phones have improved access to some market data, connectivity remains uneven—with better coverage around towns where traders are concentrated, but limited in remote pastoral areas, thereby maintaining information asymmetry between actors with different access levels (Little et al., 2014). Thus, the persistence of information asymmetry reflects not only technological gaps but also broader institutional and structural limitations, including weak infrastructure, poorly coordinated information systems, and the dominance of intermediary traders in information flows, as highlighted in the pastoralist literature (Roba et al., 2018).

Market structure, informality, and governance

The study found that livestock marketing operates through a multi-layered and largely informal system, with significant reliance on unregulated intermediaries and transactions occurring outside formal markets. This is consistent with findings from pastoral value chain studies across Africa, which show that a large proportion of livestock trade occurs through informal and weakly regulated channels, often characterized by spot markets and personal relationships rather than formal contracts and institutional rules (e.g., informal trading networks dominate domestic livestock sales) (Nyokabi et al., 2023). Similar market structures, characterized by multiple intermediaries and limited transparency, have been documented in pastoral cattle markets in Ethiopia (Bassa and Woldeamanuel, 2018).

In Ethiopia, similar evidence indicates that livestock marketing systems are characterized by limited integration into formal and higher-value markets, with most transactions occurring through domestic traders and informal networks. Many pastoralists and smallholder producers continue to sell through bush, street, and unregulated markets rather than structured primary or terminal markets, reflecting weak vertical and horizontal integration in the value chain (Ayele, 2019; Negassa et al., 2011; Aklilu and Catley, 2010). This reinforces the observation that pastoral markets remain weakly structured despite their economic importance, and that efforts to link producers to formal markets have often stumbled due to persistent informality and fragmented actor relationships (Nyokabi et al., 2023).

The study also highlights weak enforcement of existing regulations, which aligns with broader literature emphasizing that governance challenges in pastoral systems are primarily related to implementation gaps rather than policy absence. Research on meat and livestock value chains in Ethiopia underscores that regulatory frameworks focusing on formalization (e.g., licensing and taxation) often fail to incentivize small actors to comply, leading them to operate on the periphery where formal oversight is limited by institutional capacity and lack of collaborative enforcement mechanisms (Nyokabi et al., 2023). In this context, informal practices persist not because of a lack of rules, but because of limited institutional capacity to enforce them and the predominance of relational and spot governance structures among actors rather than formal institutional governance (Nyokabi et al., 2023).

Furthermore, the limited effectiveness of market linkage initiatives observed in this study is consistent with findings that short-term interventions often fail to transform deeply embedded market structures unless supported by sustained institutional engagement and investment. Pastoral market systems, remoteness, and weak infrastructure mean that one-off or pilot initiatives rarely alter the broader dynamics of informality and lack of integration; longer-term investments in infrastructure, institutional coordination, and value chain governance are needed to shift these patterns (Ayele, 2019) meaningfully.

Implications for policy and practice

The findings of this study, when considered alongside existing literature, suggest that improving pastoral livestock markets requires

addressing interconnected structural and institutional constraints. First, strengthening stakeholder coordination requires moving beyond formal structures toward functional systems of accountability, communication, and enforcement, as emphasized in value chain development studies. Second, brokers should be integrated into formal systems through regulation and incentives, rather than excluded, reflecting evidence that intermediaries play indispensable roles in pastoral economies. Third, improving market information systems should focus on institutional reliability and accessibility, rather than solely on technological solutions, as highlighted in studies on information asymmetry in pastoral markets.

Formalization of livestock markets, particularly through improved regulation of brokers, standardized transaction procedures, and strengthened enforcement mechanisms, has the potential to enhance transparency, reduce opportunistic behavior, and improve accountability within the market system (Barrett, 2008; de Haan, 2016). However, evidence from pastoral and informal market systems suggests that formalization alone is unlikely to resolve underlying structural constraints. Without concurrent improvements in stakeholder coordination, market information systems, and infrastructure, formal regulations may remain ineffective or may inadvertently exclude small actors who depend on informal systems (Rand and Tarp, 2012). A gradual and context-sensitive approach that combines regulatory measures with incentives, capacity building, and institutional strengthening is therefore more likely to produce sustainable improvements in market performance (Barrett, 2008; Byerlee et al., 2009).

Limitations of the study

This study is based on purposive sampling in accessible and relatively stable districts, which may limit generalizability. Similar limitations are noted in other pastoral market studies, where logistical and security constraints influence site selection. In addition, the qualitative design provides in-depth insights into processes and perceptions but does not quantify economic outcomes. Previous studies using quantitative approaches have demonstrated the importance of factors such as market access, information availability, and infrastructure in influencing livestock sales and livelihoods. Future research could integrate qualitative and quantitative methods to better assess the magnitude of these effects and further clarify causal relationships.

Conclusion

This study examined stakeholder coordination, broker dynamics, market information access, and governance in pastoral livestock marketing systems in South Omo. The findings show that, although multiple stakeholders and formal institutional arrangements are present, their practical effectiveness is constrained by weak coordination, fragmented communication, and inconsistent implementation.

The results highlight an interconnected set of challenges that appear to reinforce one another. Limited coordination among stakeholders contributes to gaps in governance and oversight, which, in turn, creates space for informal and unregulated actors to operate. Within this context, brokers play a central and often

indispensable role in facilitating livestock transactions by linking buyers and sellers and supporting negotiations. At the same time, their dominant position—reinforced by limited market information and weak regulatory oversight—enables them to affect price formation and control information flows. The widespread presence of unlicensed brokers and the involvement of multiple intermediaries further increase transaction complexity and may reduce the share of value captured by pastoralists.

Access to reliable and timely market information remains a critical constraint. Pastoralists largely depend on informal sources and intermediaries, limiting their ability to make informed marketing decisions and weakening their bargaining position. In parallel, the livestock marketing system operates through a multi-layered and partly informal structure, with a significant proportion of transactions occurring outside formal market settings. These patterns are closely associated with limited enforcement capacity and institutional constraints at the local level.

Overall, the findings suggest that market inefficiencies are less a result of missing institutional frameworks and more a reflection of their limited functionality in practice. The interaction between weak coordination, information asymmetry, and informality appears to create a self-reinforcing cycle that constrains market performance and pastoralist benefits.

Improving the functioning of pastoral livestock markets, therefore, requires a stronger focus on implementation and governance. This includes enhancing accountability and coordination among stakeholders, strengthening enforcement capacity at local market levels, and improving communication mechanisms within existing institutional structures. Rather than eliminating brokers, interventions should aim to regulate and progressively integrate them into formal systems while addressing the underlying information asymmetries that sustain their influence. Developing reliable, accessible, and context-appropriate market information systems is also essential to support more informed decision-making by pastoralists.

Future interventions should adopt a systemic approach that recognizes the interdependence of these challenges, ensuring that improvements in coordination, governance, and information systems are pursued in a complementary and sustainable manner.

Data availability statement

The datasets generated and/or analyzed during the current study are not publicly available due to ethical and confidentiality considerations. However, anonymized data may be made available by the corresponding author upon reasonable request and with permission from the relevant institutional review body.

Ethics statement

The study was reviewed and approved by the Research Ethics Review Committee of Hawassa University. Informed consent was obtained from all participants before data collection. To ensure confidentiality and anonymity, no personal identifiers were recorded, and all data were anonymized and securely stored with access restricted to the research team. No financial compensation was provided. Data

collection was conducted in safe and appropriate settings, with due consideration to participant well-being and local context.

Author contributions

RA: Conceptualized and designed the study, analyzed the data, and reviewed/prepared the final manuscript. AF: Collected field data and wrote the first draft of the manuscript. AY, NA, YA, and HW: Collected field data and transcribed qualitative data. MM: Followed up on field data collection and contributed to data analysis. MG: Provided critical input on data analysis, study design, revision, and editing of the manuscript. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The author(s) declared that this work was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary Material for this article can be found online at: <https://www.frontierspartnerships.org/articles/10.3389/past.2026.15619/full#supplementary-material>

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