

# Beef Cattle Value Chain Analysis in East Hararghe Zone, Oromia Regional State, Ethiopia

Solomon Ayele, Kibret Ketema, Hussein Abro

Socio-Economics Research Team, Fedis Agricultural Research Center,  
Oromia Agricultural Research Institute, Harar, Ethiopia

## ABSTRACT

This study was initiated to identify beef cattle value chain actors, mapping, and their activities and roles in beef cattle value chain in the study areas. Primary data were collected from randomly selected beef cattle producers, input suppliers and traders at various levels using pre-tested semi-structured questionnaire. Besides, data were collected through Focused Group Discussions and key Informant interviews to substantiate the survey data. And secondary data was collected from published and unpublished sources. Descriptive result indicated that, input suppliers, cattle fatteners, brokers, traders, hotel and restaurant owners, and consumers were the major beef cattle value chain actors identified in the study areas. High broker interference, illegal traders, low producers price, weak linkage, lack of access to adequate institutional services, and lack of market infrastructure were observed among beef cattle value chain actors in the study areas. This study suggests the concerned stakeholders at different levels should have to give attention and policy support for the strengthening and development of beef cattle cooperative marketing, strengthen the linkage among chain actors, adding value at each value chain stage, and improving supportive institutions to improve beef cattle productivity and management practices are crucial in the study areas. Revising beef cattle marketing rules and regulations and taking legal action on illegal traders are important in the study areas.

**KEYWORDS:** *Beef cattle, Value chain Analysis, East Hararghe*

## 1. INTRODUCTION

Agriculture is an important sector and it is taken as the government priority so as to stimulate the overall economic development, reducing poverty and achieving food security in Ethiopia [1]. Livestock subsector as one component of agriculture provides an opportunity for further development of the country. The total size of Ethiopian livestock herd, one of the largest in Africa, makes it a potential resource to contribute significantly to national development, including poverty reduction [1]. According to Ethiopian Central Statistics Agency the compositions of livestock production in Ethiopia are cattle, sheep, goats, horses, mules, donkeys, camels, poultry and beehives among which the cattle production is the largest composition of the Ethiopian livestock herd size. The total size of cattle population in Ethiopia is estimated to be about 59.5 million [2].

As to the research work of **Gebreselassie [3]**, the economic contribution of the livestock sub sector in Ethiopian economy is about 12% of the total gross domestic product (GDP) and 33% of agricultural GDP and it also provides livelihood for 65% of the population in general. In many circumstances livestock are also central component of small holder risk management strategies in adverse situations. While specifically discussing about cattle production in Ethiopia it is an integral part of all farming categories in the country mixed farming, agro-pastoral and pastoral production systems. This reality holds true in the context of East Hararghe Zone where the study is intended to be done in.

Hararghe farmers have also their own indigenous fattening practice which is one of the fattening systems in Ethiopia and known as Hararge fattening

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system. Hararghe fattening system is manifested by cut and carry type of feeding young cattle. This practice has a locational trade mark of Harar beef production and fattened cattle for Harar fetches a premium price of up to 50% over other condition cattle in the Addis Ababa market [3]. However, because of various socioeconomic, institutional, natural and technological factors farmers in Ethiopia in general and fattening farmers in Hararghe in particular are not getting fair market access for their beef cattle. According to Sisay [4], the major cattle fattening constraints for smallholder farmers in Somali Regional State were diseases, lack of grazing lands, lack of management, poor market information, unavailability of veterinary service and lack of road for transportation. Moreover, Addis [5] figure out that absence of market information system, inadequate infrastructure, absences of veterinary services, contraband and clan conflict are the constraints of livestock marketing in the lowland area of Ethiopia. To address those constraints/challenges analysis of beef cattle value chain was an important strategy in such a way that the current characteristics of the chain were identified. From this study alternative market channels and areas of intervention in the chain was suggested for better functioning of existing beef cattle value chain in the study area, East Hararghe Zone.

## 2. Methodology

### 2.1. Description of the study areas

This study was conducted in the eastern part of Ethiopia specifically in East Hararghe zone of Oromia National Regional State, Ethiopia. From the zone four districts namely Babile, Fedis, Kurfachalle and Meta districts were selected based on their extent of beef cattle production potentials and beef cattle fattening practices.

**Babile District:** It is located in the eastern part of East Hararghe Zone. Babile district is geographically located between  $8^{\circ}9'$  and  $9^{\circ}23'N$  latitude and  $42^{\circ}09'$  and  $42^{\circ}55'E$  longitude to the south east of Harar town. The district is bordered by Gursum district to the north and north east, Harari Regional state to the north and north west, Fedis district to the west and Somali Regional state to the south, south west and south east directions. Babile district is classified into woina dega and kola agro-climatic zones, covering about 10% and 90% of the total area of the district respectively. Weina-dega agro-climatic zone (1500-2007.08m.a.s.l) is characterized by average annual rainfall and temperature ranging between 600 and 1200 mm and  $15^{\circ}C$  and  $20^{\circ}C$ , While Kolla agro-climatic zones (900-1500m.a.s.l) is explained by average annual rainfall and temperature varying between 410 and 820mm and  $20^{\circ}C$  and  $25^{\circ}C$  [6].

There are different types of crops such as cereals, oil seeds, vegetables, fruits and cash crops are that produced in Babile district. Cereals types of crops that are highly produced in the district are maize and sorghum. Ground nut is the major type of oil seeds which highly known and produced by farmers of the district. Tomatoes, mangoes and chat are well known and produced types of vegetable, fruit & cash crop respectively in the district. Babile district is one of the well-known districts of east Hararghe zone with livestock resources. As rural population of the district is semi pastoralist, livestock plays major role in their life economically and socially. The livestock reared in the district are cattle, goat, sheep, donkey, camel and poultry [6].

**Fedis District:** It is one of the administrative districts of East Hararghe zone of Oromia Regional State with a total area of 720,791 km<sup>2</sup>. The district is located in the Eastern part of Oromia within the range of  $8^{\circ}52' - 9^{\circ}24'N$  latitude and  $42^{\circ}02' - 42^{\circ}19'E$  longitude. The district is bounded by Harari Regional State from north, Haromaya and Kurfachale woredas from north west, Girewa woreda from west, Midhaga Tola from south and Babile administrative woreda from north east side. It estimated to have a total length of 125 km boundary with the region and administrative woredas. In general the districts is divided in to two urban and 19 rural sub administrative *kebeles*, and divide in to two climatic zones, namely, semi-temperate (Woyna Dega) and semi-arid (Kola) covering 28.2 % and 71.8 % of the total area of the administrative district respectively. The altitude ranges from 1437 – 2118m.a.s.l while the topography of the woreda comprises 70 % flat 15 % plateau and the remaining 15 % is running in to gullies and bush land.

The major crops produced in the woreda are stalk crops such as sorghum and maize. Cereal Crops like wheat, barley and oat are also produced to some level. In addition to cereal crops produced, pulses and oil seeds such as groundnut, chicken pea, haricot bean, field peas, lentils, are produced as cash crops. Besides chat is the widely cultivated permanent cash crop in the woreda. Regarding fruits and vegetables sweet potato, potato, onion, tomato, carrot, beetroot etc. and Banana, papaya, guavas, Mango are the major ones that are produced in the woreda.

The district has a significant Livestock population & potential. It constitutes a significant amount of house hold income of farmers in the woreda. Despite traditional animal fattening practice, the woreda is well known for its good quality oxen it supplies for national and abroad markets. Farmers of the woreda have a good reputation in the animal fattening practice.

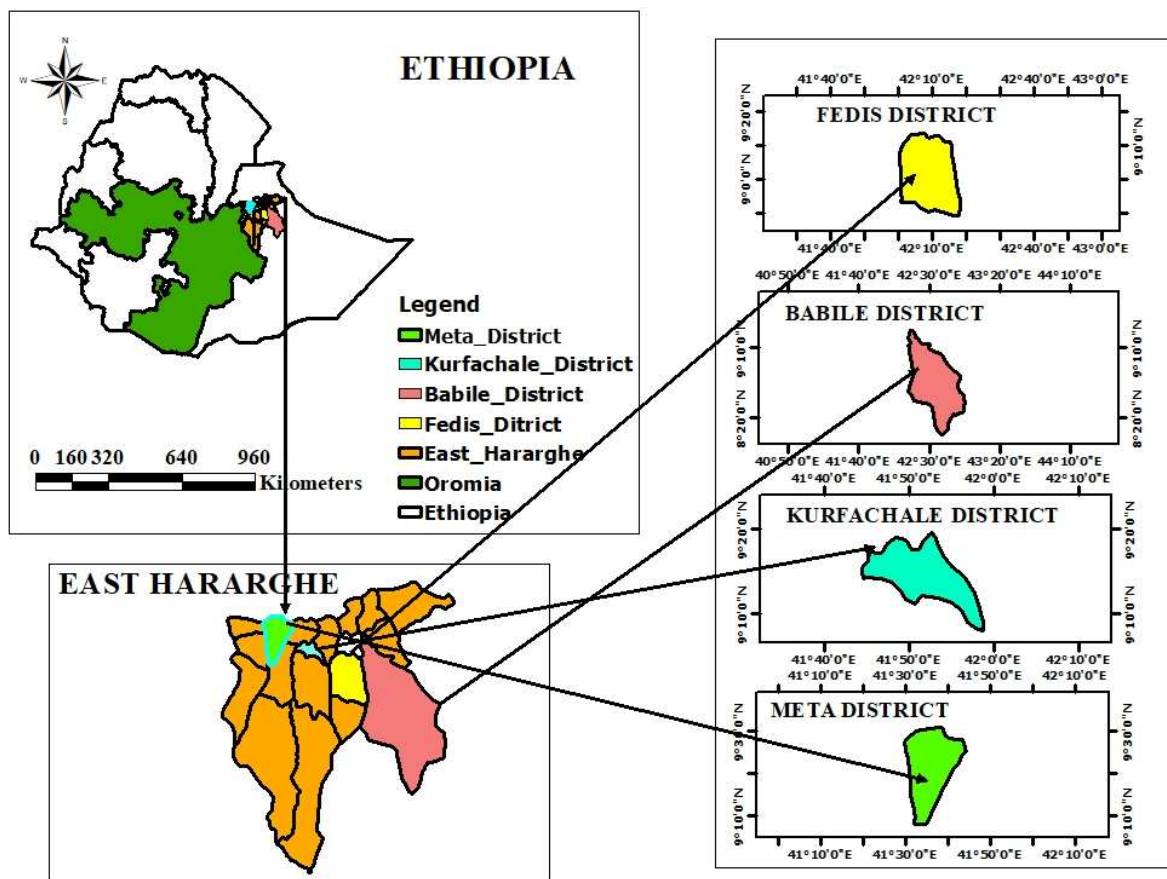
**Kurfachele District:** Kurfachele district located between 9° 07' and 9° 20' N latitude and 41° 43' and 42° 02' E longitude in the south east Harar town. The study district is bordered by Bedeno district to the west, Kersa district to the North West and north, Haromaya district to the East and northeast, Fedis district to the southeast and Girawa district to the south and southwest directions. It is the smallest district among the districts of east Hararghe Zone [6].

The district is classified in to dega (Temperate rainy climate), Woina-dega (Tropical rainy climate) and Kolla (Tropical arid climate) agro-climatic zones, covering about 93.55%, 57.34 and 19% respectively. The total area kurfachale district is 268km<sup>2</sup>. Average annual rainfall and temperature ranging between 1200 and 700 mm and 10<sup>o</sup> and 15<sup>o</sup> c characterize degas agro-climatic Zone (2300-3405m.a.s.l). Similarly, weina-dega agro-climatic zone (1500-2300 m.a.s.l.) is characterized by average annual rainfall and temperature varying between 500 and 1200mm and 15<sup>o</sup>c and 20<sup>o</sup>c. While kola agro-climatic (1400-1500 m.a.s.l.) is explained by average annual rainfall and temperature ranging between 410 and 8820 mm and 20<sup>o</sup>c and 25<sup>o</sup>c.

The cereal crops produced in the district are sorghum, maize, wheat, barley, oat and Teff. In addition to cereal crops produced, pulses and oil seeds such as faba bean, field peas, lentils, ground nut and linseeds are produced as cash crops. Besides chat and coffee are the two permanent cash crops in the district. The district has a significant Livestock population & potential. It constitutes a significant amount of house hold income of farmers in the woreda. Despite traditional animal fattening practice, the woreda is well known for its good quality oxen it supplies for national and abroad markets. Farmers of the woreda have a good reputation in the cattle fattening practice. The livestock reared in the district are cattle, goat, sheep, donkey, horse, mule, camel and poultry [6].

**Meta District:** Meta District is one of the administrative districts of East Hararghe Zone of Oromia Regional State. Meta district lies between 9° 07' and 9° 32' N latitude and 41° 29' and 41° 44' E longitude to the west of Harar town. The study District is bordered by Gorogutu & Deder district to the West, Kersa district to the East, Bedeno & Melkabelo district to the South & Somali regional state to North Dire Dewa Administrative council to the North East. Climatically Meta district is classified in to *Dega* (temperate rainy climate) *weina-dega* (tropical rainy climate) & *kolla* (tropical arid climate) agro climatic zones, covering about 31%, 38% & 31% of the total area of the district respectively. Average annual rain fall & temperature ranging between 1200 & 2015/16 mm & 10<sup>o</sup>C & 15<sup>o</sup> C explain highland agro climatic zone (2201-3200m.a.s.l). Similarly, weina-dega agro climatic zone (1901-2200 m.a.s.l) is characterized by average annual rainfall 200 -600mm and Temperature Varying b/n 15<sup>o</sup>C to 20<sup>o</sup>C while lowland agro climatic zone(1400-1900 m.a.s.l) is explained by average annual rainfall b/n 410-820mm temperature varying between 20<sup>o</sup>C - 25<sup>o</sup>C [6].

The cereal crops produced in the district are sorghum, maize, wheat, barley, oat and Teff. In addition to cereal crops produced, pulses and oil seeds such as faba bean, field peas, lentils, ground nut and linseeds are produced as cash crops. Besides chat and coffee are the two permanent cash crops in the district. The district has a significant Livestock population & potential. It constitutes a significant amount of house hold income of farmers in the woreda. Despite traditional animal fattening practice, the woreda is well known for its good quality oxen it supplies for national and abroad markets. Farmers of the woreda have a good reputation in the cattle fattening practice. The livestock reared in the district are cattle, goat, sheep, donkey, horse, mule, camel and poultry [6].



**Figure 1. Map of the study areas**

## 2.2. Sources of data and methods of data collection

The study used both primary and secondary data sources. Primary data were collected from sample farm households, traders, and respective experts. Survey method was applied to the sample farm households using semi-structured questionnaires. And, case study was used in the case of traders, cooperatives (if available), and experts where checklists were developed for the purpose of data collection. Secondary data were also gathered from secondary sources (published and unpublished materials), Districts Office of Agriculture and Natural Resource Development, and Office of Trade and Industry.

## 2.3. Sampling procedure and sample size

For survey part of this research, a multi-stage sampling technique was used to select sample farm households in the study areas. In the first stage four districts were selected purposely based on their potential in beef cattle production. This was done in collaboration with zonal agricultural experts. In the second stage, out of total kebeles, three potential kebeles were selected randomly from each district. Lastly, 236 sample farm households were selected randomly using probability proportional sampling technique (PPS). A purposive sampling technique was used to select respondents among traders, experts, and other relevant stakeholders in the beef cattle value chain for this study.

## 2.4. Method of data analysis

As to the methods of data analysis in order to address the research objectives, value chain mapping, narrative explanations, content analysis for qualitative data and descriptive statistics analysis were used.

## 3. Results and Discussion

### 3.1. Socio-economic characteristics of beef cattle producers

Table 1 below summarizes the dummy variables that were used in the analysis. The data revealed that high percentage of respondents study areas were male headed (93.22%) when compare to female's (6.78%). The education level of sampled household heads' indicates that about 64.83% were literate while illiterate (35.17%). The survey result showed that 97.888% of the respondents were married, and 1.69% of them were single and the remaining was widowed.

According to the survey result, about 50.42% of smallholder beef cattle producers had access to extension services in the study areas. Access to credit service is an important input in beef cattle value chain. The study

showed that about 67.80% of household respondents were not used or no access to credit services that affects cattle production and marketing in the study areas. The study result revealed that, about 77% of beef cattle producers had access to market information. Large percentage of respondents reported to depend on actual market day information/through personal observation, market information obtained from fellow/other farmers in the neighbors' betrothed on the same activities, and friends for prices and selling decisions. Results revealed that about 92% and 8% smallholder beef cattle producer farmers are non-participant and participant on non/off-farm income generating activities, respectively. Majorities (86%) of household respondents had accessed to animal health services in the study areas.

The study result showed the majorities (90%) of the smallholder beef cattle producers were not the member of any cooperative or not organized in beef cattle production and marketing. About 76% of the respondents' household heads had mobile phone which is play crucial role in beef cattle value chain as means of market information.

**Table 1. Summary statistics of sample respondent households (dummy variables) (N= 236)**

Variable	Categories	Frequency	Percentage
Sex of household head	Male	220	93.22
	Female	16	6.78
Education of household head	Literate	153	64.83
	Illiterate	83	35.17
Marital status of household head	Married	231	97.88
	Single	4	1.69
	Widowed	1	0.42
Access to extension services	No	117	49.58
	Yes	119	50.42
Access to credit services	No	160	67.80
	Yes	76	32.20
Animal health services	No	33	13.98
	Yes	203	86.02
Access to market information service	No	54	22.88
	Yes	182	77.12
Membership to cooperatives	No	212	89.83
	Yes	24	10.17
Mobile ownership	No	56	23.73
	Yes	180	76.27
Participation in no/off-farm activities	No	217	91.95
	Yes	19	8.05

*Source: Computed from survey data result, 2022*

The survey on age provided a clue on working ages of households. The survey result indicated that, the average age of cattle fatteners were 35.1 years with the minimum and maximum age of 19 and 71 years (Table 2). The result indicates that productive aged was involved in the beef cattle value chain in the study areas.

The study result showed that the average available labor forces (labor supply) estimated by adult equivalent scale was about 6.56 persons per household. This implies that most households had enough family labor and might not hire labor for their cattle fattening operation, which might assist them for a better participation in the cattle fattening business (Table 2).

The average landholding respondents' households were 0.43 hectare on average which includes both cultivated and grazing land. About 62.2% households' holds less than 0.5 hectare. The minimum and maximum land holding size was 0.125 and 1.5 hectare respectively which indicates scarcity of this resource in the study areas (Table 2). This has implication of livestock feed shortage due to limited land size per household.

The study result indicated that, beef cattle keepers had on average 12.36 years of general experience in practicing cattle keeping with the minimum and maximum experience of 1 and 45 years respectively (Table 2). In addition the beef cattle keepers had on average 6.56 years' experience in beef cattle fattening with the minimum and maximum experience of 1 and 30 years respectively in the study areas (Table 3). This indicates that the sub-sector is very old as compared to other parts of the country where cattle fattening are practiced and important income source in the study areas.

The study result indicated that the total livestock owned by the respondent households was on average 4.19 TLU with the minimum and maximum livestock owned of 0 and 13 tropical livestock unit (TLU) respectively in the study areas. Moreover, the mean total number of cattle owned by the respondents' households was 3.24 tropical livestock unit (TLU) with the minimum and maximum livestock owned of 0 and 11 tropical livestock unit (TLU) respectively in the study areas.

**Table 2. Summary statistics of sample households (continuous variables) (N= 236)**

Variable	Mean	Std. Dev	Min	Max
Age of household head in years	35.097	9.727	19	71
Household size in numbers	6.56	2.36	1	14
Total landholding owned in hectares	0.421	0.254	0.125	1.5
Grazing land owned in hectares	0.021	0.059	0	0.5
Cultivating land owned in hectares	0.404	0.248	0	1.5
Number of total livestock owned in tropical livestock unit	4.18	2.86	0	13
Number of cattle owned in tropical livestock unit	3.24	2.42	0	11
Farm experience in cattle keeping in years	12.36	9.63	1	45
Farm experience in beef cattle fattening in years	6.57	4.92	1	30
Distance to the nearest market place in minutes	97.62	54.29	15	360
Distance to the main road in minutes	18.37	10.86	5	60
Beef cattle supply to market in numbers (heads)	1.84	1.14	1	9
Male cattle sold in numbers (heads)	1.63	0.890	1	6
Female cattle sold in numbers (heads)	1.203	0.65	0	5
Animal mean age for fattening (years)	4.23	1.12	2	10

*Source: Computed from survey data result, 2022*

### 3.2. Producers characteristics by market outlets

In this study four major beef cattle market outlets were identified as alternatives to smallholder farmers to sell their beef cattle. These were traders (both small and larger traders) which accounts for 71 percent of total sells followed by consumers (13 percent), collectors (9%) cooperative (7 percent). The study result indicated that most of the respondents (53 percent) were selling at the local/primary markets followed by woreda and zonal markets sales with 44% and 3% respectively in the study areas (Table 3).

**Table 3. Producers' characteristics by market outlets**

Variables	Categories	Frequency	Percentage
To who did you sold Beef cattle?	Collectors	21	9
	Cooperatives	17	7
	Traders	167	71
	Consumers (hotel owners, institutions, individuals)	31	13
Where did you sell Beef cattle?	Primary local market	127	53.81
	District market	103	43.64
	Zonal market	6	2.54

*Source: Computed from survey data result, 2022*

### 3.3. Socio-economic characteristics of beef cattle traders

The study result indicated that 100% of the sample traders were male. Average traders age was 36.5 years. The average family size of the sample traders was found 6 persons in the study areas. With regards to business experience, 9 average years of business experience in beef cattle trading in the study areas. Table 4 summarizes the demographic characteristics of sample traders in the study areas.

**Table 4. Summary statistics of socio-economic characteristics of sample traders (Continuous variables)**

Variable	Mean	Std. Dev	Min	Max
Age of traders in years	36.5	9.96	20	60
Sex of trader	1	0	1	1
Household size in numbers	6.3	2.33	1	11
Education level of traders in year of schooling	8.06	2.44	2	12
Business experience in years	9.56	7.089	1	25

**Source:** Computed from survey data result, 2022

The results (Table 5) showed that about 93% of the respondents operate trading using their own capital sources and others (7%) receives a loan from friends, micro-finance institution, family and private money lenders. Most of the time traders purchase cattle by themselves, and sometimes they use a broker/commission agent who facilitates simply buying and selling activities. Since there is no pricing system for livestock in the market, selling and buying price of the cattle mostly set by supply and demand and sometimes traders have more bargaining power due to access of market information than farmers in the study areas.

The majority (76%) of the trader respondents use truck as a means of cattle transportation and others (24%) use trekking during trading. The survey result showed that almost all the sample beef cattle traders had business license since the beef cattle trading the study areas needs business license. Most of the time the buying and selling activities of beef cattle trading is undertaking at the districts livestock market center. The study result indicates that the majority the beef cattle supplied by the smallholder producers were exported to the outside of the study areas like the central market (Addis Ababa), West Harargehe Zone (Hirna and Chiro) and Jigjiga as the market outlets. Here, attention should be given by the concerned bodies about illegal traders and border cross trading of beef cattle in the study areas.

**Table 5. Description of beef cattle traders and their activities**

Variables	Categories	Frequency	Percentage
Participated in beef cattle trading year round	Yes	17	56.67
	No	13	43.33
Sources of capital	Own	28	93.33
	Loan	2	6.67
Traders having trade license	Yes	30	100
Cattle trading need a trading license?	Yes	30	100
Purchasing market place	Woreda market	30	100
	Woreda	11	36.67
	Zonal	8	26.67
Selling market place	Outside of the districts	11	36.67
	Truck	23	76.67
Mode of cattle transportation in trading	Trek	7	23.33
	Who set purchase price	Self (Buyer)	5
Demand and supply		9	30.00
Negotiation		11	36.67
Broker		5	16.67
Who set selling price	Self (Seller)	13	43.33
	Demand and supply	17	56.67

**Source:** Computed from survey data result, 2022

### 3.4. Beef cattle value chain actors and value chain mapping

The value chain analysis starts with the process of mapping out the existed value chain which allows one to visualize the flow of the products from the commencement to the final users [7]. In Ethiopian meat and live animal value chains have developed over the years into a series of complex constituents involving various actors. The main actors in meat and live animals include producers, collectors, small private and cooperative fatteners/feedlots, brokers/middlemen, and livestock trading cooperatives, individual traders and exporters [8]. Thus, the current value chain map the potential well-known beef cattle actors, relationships, marketing and associated support service providers; their roles and functions was developed and portrayed in Figure 2.

### 3.4.1. Primary actors in the beef cattle value chain

The primary actors are those directly involved in beef cattle value chain starting from input suppliers, producers, local collectors, traders, cooperatives, butchers, hotels and restaurants to end users. Each of these actors adds value in the process of changing product title. With these components, beef cattle pass through different channels before it reaches the end users in the study areas.

**Input Suppliers:** Value chain function starts from inputs use to produce beef cattle and beef products (meat). Veterinary services/drugs, feeds and improved breeds are the major inputs used in beef cattle keeping practices (Table 6). The major suppliers of breeding stock in the study areas are farmers and government. Majorities (97.46%) of the cattle used by sampled household producers are the local breeds, 2.12% exotic breeds and the remaining was cross-breeds that issued for fattening purpose. The study result indicated that about 65.25% of the respondents households responded that crop residue was used to feed their beef cattle from different feed sources in the study areas. About 86.02% of the respondent households had accessed to veterinary services for their beef cattle in the study areas. The survey result indicated that most of the animal healthy veterinary services/drugs (88.68%) were rendered by the districts office of livestock and fishery development in the study areas.

**Table 6. Descriptions of inputs supply for beef cattle production**

Inputs/variables	Categories	Frequency	Percentage
Type of feed resources used	Crop residues	154	65.25
	Hay (local plus improved forages)	7	2.97
	Concentrates (factory by-product)	11	4.66
	Pasture	4	1.69
	Crop residues, hay & concentrates	37	15.68
	Crop residues & concentrates	23	9.75
Sources of feed resources	Own farm	115	48.73
	Feed suppliers (traders)	10	4.24
	Purchasing from neighbor farmers	30	12.71
	Both own & feed suppliers	81	34.32
Animal health services	No	33	13.98
	Yes	203	86.02
Sources of veterinary services/drug	Public clinic center (government)	188	88.68
	Private veterinary drug shop	16	7.55
	Free service from NGOs	2	0.94
Type of cattle breeds used	Local breed	230	97.46
	Exotic breed	5	2.12
	Cross breed	1	0.42

**Source:** Computed from survey data result, 2022

**Producers:** Is one among value chain actors who are involved in fattening of different age categories of cattle for a limited period of time usually 3-6 months and finally supply for sell when the cattle conditioned. They fatten the cattle by traditional fattening system through utilizing available feed resources mostly in semi-intensive type of feeding system. The sources of cattle for fattening might be from own herd or could be purchased from local cattle market based on different selection criteria's such as breed, frame size, age, body condition, horn size, initial price, health, adaptation, and physical appearance among others. Accordingly, about 32% and 43% of the small-scale cattle keepers were used from their own herd and purchased from local market for fattening in the study areas respectively (Table 7). Thus, in the study areas, the core functions of producers in the beef cattle value chain include the husbandry practices to produce the cattle for traction purpose, milk purpose and fattening and asset building (Table 4). Thus, their function includes feeding the animal, watering, provision of veterinary services and housing the animal for production. This study indicates that about 77% of the sample respondents were not castrates their bull/ox for the fattening purpose. About 60% of the sample respondent households were use young with no or relatively low service bull or ox for fattening purposes. This indicates young or relatively low service bulls or oxen were used for fattening purposes.



**Table 7. Descriptions of beef cattle producers and their activities**

Variables	Categories	Frequency	Percentage
Primary purpose of keeping cattle	Milk	92	38.98
	Fattening	66	27.97
	Asset building	7	2.97
	Traction	12	5.08
	Both milk and fattening	59	25
Sources of beef cattle used for fattening	Born at home (own herd)	76	32.20
	Purchased for fattening purpose	102	43.22
	Both	58	24.57
Male cattle kept for fattening	Castrated	41	17.45
	Uncastrated	181	77.02
	Both	12	5.11
Status of beef cattle you kept for fattening	Young with no/low services	142	60.68
	Old with relatively low services	72	30.77
	Old with relatively high services	20	8.55

**Source:** Computed from survey data result, 2022

**Brokers:** Brokers are mediators between sellers and buyers in beef cattle value chain. They are usually expected to link buyers with sellers and facilitate the terms of exchange. They are often criticized for creating a communication gap between buyer and seller and then mediate them in the way they like. Farmers are usually price takers and loss negotiation power while brokers are act as price setters in the beef cattle markets in the study areas. The problem is very serious especially for those who do not have much information on market price and experience of such markets. And also, the brokers can charge as they like the amount of money from both sellers and buyers. Usually they get more benefit than the producers and traders per head of beef cattle sold at a time.

**Collectors:** These important market agents collect animals, usually from remote locations and gather animals to the producer areas where watering points are found. They become an important source for big and small-scale traders and livestock trading cooperatives, which lack the local knowledge and relationships. They are usually constrained by a financial capacity that limits their operations and keeps them within a narrow geographic range. The collectors are not always good sources of market information, however, and they may take advantage of a producers' limited knowledge of the markets. This can lead to distortional pricing, almost always benefiting the collector. Designing and implementing dependable information dissemination mechanisms is essential in order to develop significant levels of trust and cooperation among producers and other market actors in remote areas. Collectors may also operate as agents for exporters and traders usually on a fixed-fee or commission basis.

**Traders:** Beef cattle traders are categorized to small and large traders based on their weekly purchasing capacity, capital and resources ownership. Accordingly small traders are who purchase beef cattle from producers and farmer traders at local markets through broker interferences. After they purchase mostly they sell to butchers, hotels and restaurant owners, and large traders who transport to other large cities outside of the study areas. Most of the purchasing power of the small traders is up to a maximum of five to ten beef cattle. Large traders are those traders purchasing mostly the beef cattle from farmer trader, small traders, and sometimes from the producers at local markets through high broker interferences. They sometimes give capital to other traders to buy on their behalf. Large traders usually use trucks for transporting beef cattle. In the beef cattle market other actors believe them as the ultimate source of market information.

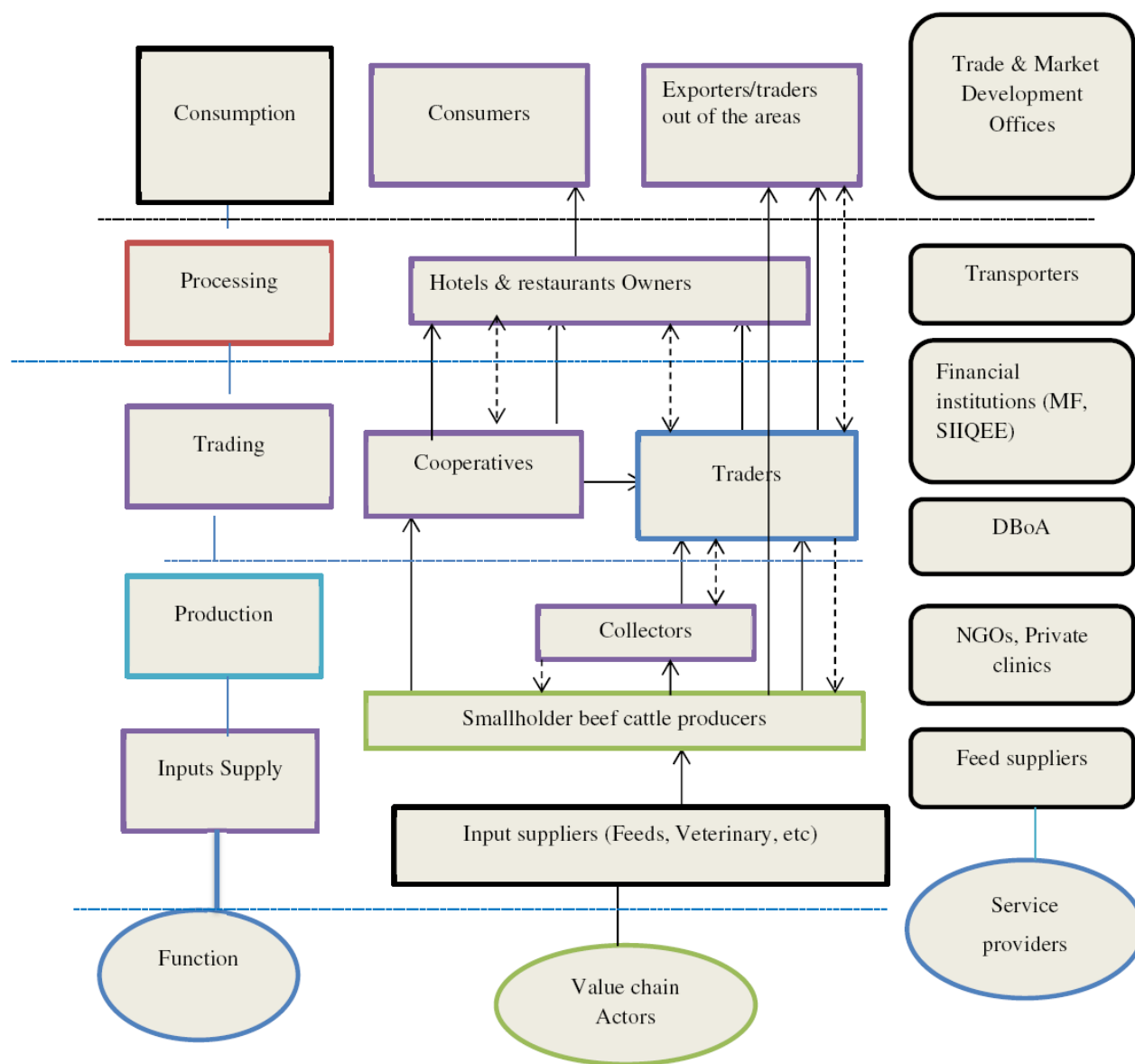
**Hotel and restaurant owners:** Are those who invest and control the hotel or restaurant business which belongs to the sole proprietor or partnership. They sometimes buy beef cattle from producers, farmer traders and small traders through broker interference. They slaughter the beef cattle at abattoirs, cook them and serve them as meals to their customers. Sometimes they are directly purchase beef from butcher shops to serve the consumers in different forms.

**Cooperative/union:** Livestock cooperatives are located throughout the livestock production areas in Ethiopia, however, very few exist in the study areas. *Afran Kello* union has been participating in the beef cattle value chain in the study areas. They purchased beef cattle from the farmers at districts market center. Before resold they are add value (fattening) in their feedlot operation and sold the fattened cattle to the existed market outlets in the study areas. In addition they are directly purchase Borana beef cattle for their feedlot operation.

**Consumers:** These are the final actors in the beef cattle value chain. They are domestic consumers who buy either processed meat from butchers and hotels or who, as a group buy beef cattle to slaughter and then share the meat particularly during holidays and other social occasions in the study areas.

### 3.4.2. Value chain support actors or service providers

These value actors were identified as those who provide supportive services at micro-level actors rather than supplying physical inputs which are including veterinary services, financial services, training and extension services, Inspection services, and business licensing services in the study areas. According to Key Informant Interview (KII) at zonal and districts levels indicates that zonal livestock and fishery office, District Agriculture Offices, District and Zonal Trade and Market Development Offices, Oromia Micro Finance Institutions, Districts municipality, Private transporters, Private clinic services and Non-Governmental Organizations (NGOs) are the most common supportive service providers in beef cattle value chain among others in the study areas.



**Figure 2. Map of beef cattle value chain in the study areas,**  
 Information flow <-----> Product flow ----->  
**Source:** Own sketch based on survey result, 2022

### 3.4.3. Beef cattle market channels in the study areas

The analysis of beef cattle marketing channels provides a systematic knowledge of the flow of livestock from their production areas to their final end-users. Marketing of beef in the study areas starts with the collection of beef cattle from production areas moving on to the districts marketplaces (Figure 3). In such marketing chains, the beef cattle passes successively through a number of market actors, implying a series of links in the value chain before it reaches the end-users. As mentioned above, the main actors in the beef cattle markets include

producers, collectors, traders, and hotel owners, cooperative and domestic consumers. These different channels represent the full range of available outlets through which the animals move from the different collection points in production areas and finally to the terminal markets to meet end-users needs. There were six major market channels for beef cattle produced in the study areas and moving to the different market outlets.

It was estimated that totally about 436 heads of beef cattle were supplied to the market by the sample smallholder beef cattle producers in the study areas during the survey time. From the total beef cattle heads supplied to the market about 357 were male cattle heads and 79 were female cattle heads respectively in the study areas. From the total beef cattle supplied to the market by the sample beef cattle producers, traders had the largest share where about 71% followed by collectors and hotels owners whom share about 9%.

Channel 1: Producers → Consumers (18 heads)

Channel 2: Producers → Collectors → Traders → Consumers (39 heads)

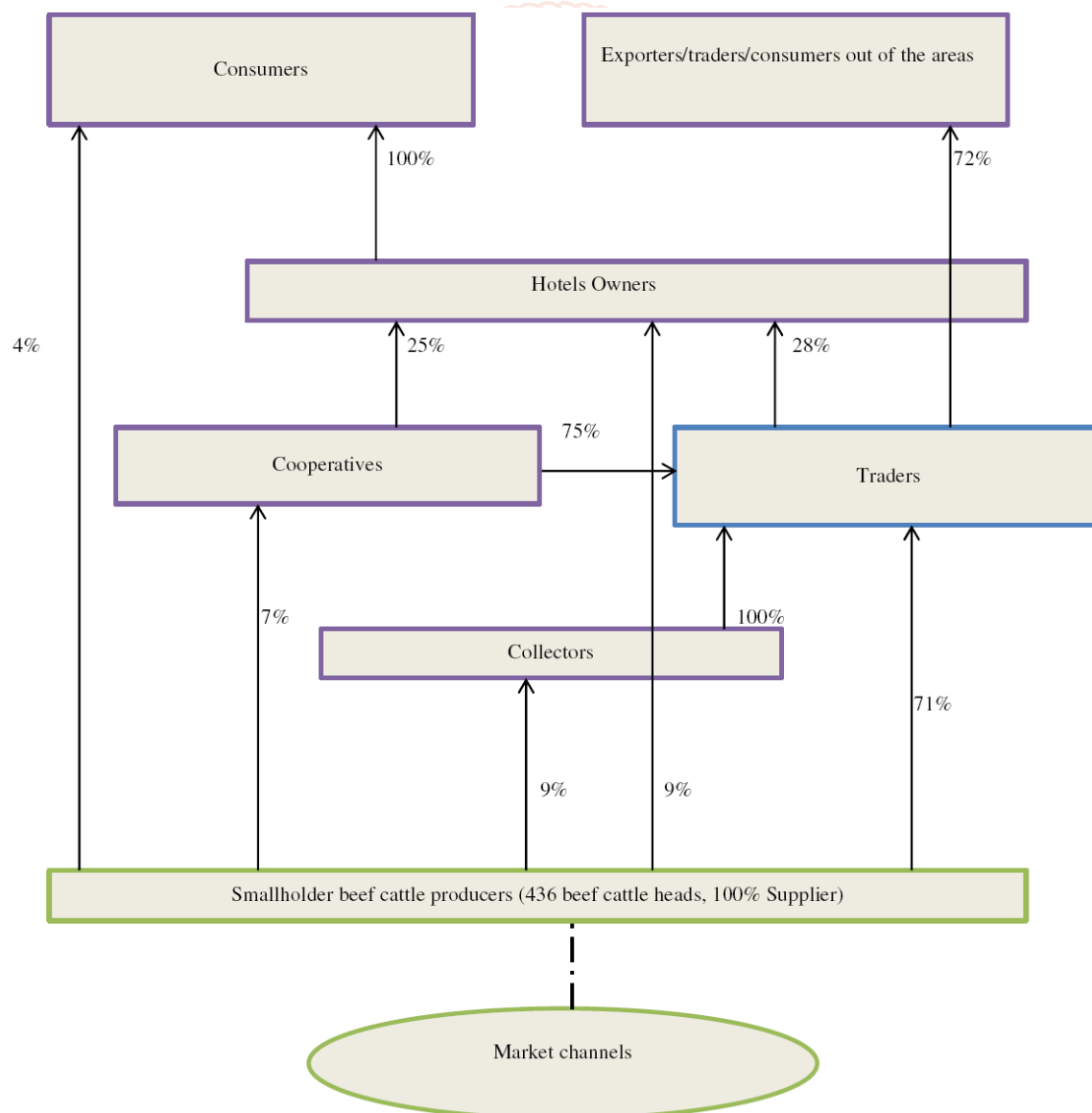
Channel 3: Producers → Traders → Hotel owners → Consumers (87 heads)

Channel 4: Producers → Traders → Exporters/Larger traders (223 heads)

Channel 5: Producer → Hotels owners → Consumers (39 heads)

Channel 6: Producers → Cooperatives → Hotels owners → Consumers (13 heads)

Channel 7: Producers → Cooperatives → Traders → Consumers (17 heads)



**Figure 3. Map of beef cattle market channels**  
 Source: Own sketch based on survey result, 2022

#### 4. Conclusion and Recommendations

This study was conducted in the selected districts of East Hararghe Zone which is highly known for beef cattle producing areas and known by locally called *Harar Sanga* in Ethiopia. However, because of various socioeconomic, institutional, natural and technological factors farmers in Ethiopia in general and fattening farmers in Hararghe in particular are not getting fair market access for their beef cattle. Therefore, to address those constraints/challenges analysis of beef cattle value chain is an important strategy in such a way that the current characteristics of the chain were identified. From this study alternative market channels and areas of intervention in the chain was suggested for better functioning of beef cattle value chain in the study areas.

The study results revealed that inputs suppliers, beef cattle producers/fatteners, collectors, cooperatives, traders, brokers, butchers, hotel and restaurant owners, consumers are the main primary actors in beef cattle value chain in the study areas. The study also identified enablers of beef cattle value chain such as macro finance institutions, veterinary and government extension service providers and business license providers among others. The study also identified inaccessibility of credit service and beef cattle market, weak linkage among chain actors, low information flow, and high illegal broker interference in beef cattle value chain in the study areas.

The findings of this study also confirm that the role of intermediaries has been still dominant in beef cattle value chain in the study areas. Large proportion of beef cattle sales was made by traders (71 percent) and only small volumes were sold directly to final consumers (13 percent), to collectors (9 percent) and to cooperative (7 percent) in the study areas. Most of the transactions were conducted in the local/rural markets in the study areas due to transaction costs.

The beef cattle marketing was conducted by eye inspection like by seeing body weight, color and age. Only hotels and restaurants owners were graded and sold meat by weighing machines in the study areas, even if the laws and regulations governing livestock state clearly all cattle should be sold upon use of weighing machines. Thus, the study recommends strict enforcement of existing laws and regulation governing beef cattle marketing through weighing machines in the areas.

Improving financial services, market price information, and implementation legal action on illegal broker interference in beef cattle value chain in the study areas is vital since it has multiple effects in all actors engaged on beef cattle business. Besides, the zonal Livestock and Fishery Office should enhance cattle fatteners bargaining power through launching marketing cooperatives which is believed to be the best measure to reduce long beef cattle value chain and increase producers' income from sell of their beef cattle. There should be a need to train the major value chain actors at various levels to enhance their capacity along the entire value chain from primary production to consumption. Particularly at the farm level, there is need for training in management of beef cattle producers as business orientation.

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