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Production and Marketing Behaviour of Hadiya Pastoralists, Southern Ethiopia

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Abstract

The paper characterises Hadiya pastoral cattle production system by explaining the nature of production and marketing. Both secondary and primary data were employed. Face to face interviews focus group and key informant discussions took place in the two districts considering 160 pastoral households. The main Findings of the work are the Hadiya pastoralists are keeping large number of cattle like other pastoralists not as a security against risks but it is their cultural obligation to do so and attain the cultural titles though still economic factors affect the system. Moreover, Ethiopia being a wide multiethnic country and pastoralism is an ethnic based production system. However the sample size was limited to only one part of the country and may not represent all Ethiopian pastoralists the study gives a meaningful insight into the pastoralists' production system and serves as useful reference for future studies in studies and interventions in pastoral areas.

Key words: Hadiya pastoralists', Marketing Behavior, Ethiopia

1. Introduction

Livestock farmers keep cattle for multiple purposes like the milk, meat, blood, hides, horns and income (Belachew, 2003; Sharon *et al.*, 2003). Socio-cultural functions of cattle include their use as bride price and to settle disputes (as fine) in communal areas (Chimonyo *et al.*, 1999). They are reserved for special ceremonial gatherings such as marriage feasts, weddings, funerals and circumcision. Cattle are given as gifts to relatives and guests (visitors), and as starting capital for youth and newly married man. They are used to strengthen relationships with in-laws and to maintain family contacts by entrusting them to other family members (Dovie *et al.*, 2006). Cattle also play an important role in installation and exorcism of spirits. They are given as sacrificial offerings to appease avenging spirits (Bayer *et al.*, 2004).

In Ethiopia livestock production is undertaken both in highland and lowland areas. The lowlands' pastoral areas are situated in the Eastern, South Eastern, and Southern parts of the country. These are Afar & Somali regions, Borena and Omo/Ghibe River basins respectively. Among the total livestock resources (number) of the country 20% of cattle, 25% of sheep, 73% of goats and 100% of camels are found in the lowland pastoral areas (Alemayehu, 2007). Pastoralism is an economic and social system well adapted to dryland conditions and characterized by a complex set of practices and knowledge that has permitted the maintenance of a sustainable equilibrium among pastures, livestock and people (Koocheki and Gliessman, 2005). Today there are nearly 200 million pastoralists in the world solely dependent on livestock production. However, pastoral communities are marginalized and generally not given due consideration in wider socio-political analysis (FAO, 2005; Misginaw, 2011).

Pastoralists can be nomads (exclusive pastoralists), *i.e.* solely livestock producers, who grow no (small) crops and simply depend on the sale or exchange of animals and their products to obtain foodstuffs. Or they can be transhumant, who often have a permanent homestead and base at which the older members of the community remain throughout the year (make a regular movements). Or they may be agro pastoralists; which can be described as settled pastoralists who cultivate sufficient areas to feed their families from their own crop production (FAO, 2003; Bekele, 2008).

Ethiopia is a country of an agrarian economy characterized by high population growth, huge dependence on erratic rainfall, low agricultural productivity, structural bottlenecks and land-lockedness (MoFED, 2006). But the country is known to be the largest livestock inventory in Africa with the total of about 47 million heads of cattle, 26 million heads of sheep 24 million of goats 49 million of chicken, 6 million of equines (donkey, horses and mules) and 2 million of camels (CSA, 2007). The richness of the country is both in terms of large number and diversity of livestock population. Although the lowland has fewer animals than the highlands, the lowlands play an important role in the economy. The highland is considered as livestock deficit the lowlands being a major source of supply, for instance 20% of the highland draught animals come from the lowlands (Coopock, 1994 as cited in Kejela and Bezahih, 2006).

Different development programs have been undertaken in pastoral areas of the country but most of them did not succeed in getting the required result. Different stakeholders suspect that the development programs did not consider the socioeconomic setup of the pastoralists rather most of them are pro highland; implying development effort in pastoral area could succeed if it suits the pastoral way of life. The basic objective of this paper is to characterise the cattle production system among the Hadiya pastoralists. The study is unique in that it looks at the production system of the Hadiya pastoralists who have rarely been in any literature and brings out some distinguishing features of the system. The paper focuses on socioeconomic factors than the biological because pastoralism is a tribe based cultural and economic system.

2. Material and Methods

This chapter discusses the research methodology used in the study including description of the study areas, data and data source, methods of sampling and method of data collection. It also contains method of data analysis.

2.1. Description of the Study Area

The study was conducted in Hadiya zone; southern Ethiopia. Two districts of the zone, Soro and Gombora were selected for the study due to their importance in pastoral livelihoods. The survey was carried out in 2009 between September and December. The time was chosen for the reason that the pastoralists are relatively stable because of availability of water and pasture in the area.

2.2. Method of Sampling and Data Collection

The data for the study were collected from both primary and secondary sources. Primary data were collected using both formal and informal methods. Individual interviews using the pre-tested questionnaire were made to generate pastoral household level data. For the overall understanding of the study areas' production and marketing system, area visit, focus group and key informant discussions (experts and knowledgeable elders of pastoralists, traders and consumers) were undertaken using the checklist prepared for the purpose.

In the study a two stage purposive sampling (to select the districts and the PAs) followed by random sampling techniques (to select the households) was used. Factors like percentage of pastoral population of the districts, number of pastoral PAs and cultural issues (local titles based on cattle number) were important while selecting the districts. Six major pastoral PAs (Peasant Association) from Soro district and three PAs from Gombora district (one third of the pastoral PAs from each district) were then identified based on season the pastoralists are available in the PAs, accessibility, tribe/clan distribution, neighbouring ethnic groups and area of production. From total of these nine PAs, proportional to the pastoral population, 160 pastoral households were selected 108 from Soro and 52 from Gombora districts. The markets considered for this study were selected purposively based on their importance in cattle marketing in the study area and representation of primary and secondary markets.

2.3. Methods of Data Analysis

Descriptive statistical analysis was applied in the documentation of the basic characteristics of the sampled households along with the characterisation of the cattle marketing system in the area. The study also tested variables individually whether they had an effect on the pastoralists' choice of commercial off-take strategy using the Chi-square test for categorical variables and F-tests for continuous ones.

The productivity of a livestock production system is considered using different parameters. Division of labour, ownership pattern, herd/flock demographic structure, role of livestock in the livelihood, reproductive performance/ age at first parturition, parturition interval, litter size, and calving rate/, productivity (milk, age), mortality and off-take are mostly used indicators. Different researchers used one or combinations of these parameter in characterising a production system. However, there is no standard index to say the system efficient with regard to its commercial off-take or mortality level. To facilitate the characterisation process, the producers are categorised according to their marketing behaviour (commercial off take positions) as seller only and those selling more than bought are categorised under the selling category, only buyers and those buying more than sold are under the buying position, and under autarky no sell and no purchase and neither sold nor purchased during the study time are considered.

3. Result and Discussion

3.1. Demographic Characteristics of Pastoral Households

Age, education level, family size, dependency ratio are discussed below as indicators of the demographic characteristics of sampled pastoralists. The F test statistics in Table 1, shows that there is significant difference ($P < 0.01$) in the age of the household heads in the three commercial off-take positions. Household heads in the selling position (43.4 years) are significantly older than that of autarkic (36.6 years) and buying positions (37.3 years) while the average age of the respondents was seen to be 39 years. Similar to age of the respondents, the herding experience (35 years) and selling experience (27.5 years) of the respondents in the selling position was significantly higher than the autarkic position with 28.8 years and 20.8 years respectively, and that of buying position was 31.4 and 23.5 years respectively. The dependency ratio of the sample respondents was 160%. This ratio is possibly attributed to polygamous nature of the pastoralists.

Table 1. Demographic characteristics of the pastoral households by commercial position

	Autarky	Selling	Buying	Total sample	F value
	Mean (SD)	Mean(SD)	Mean(SD)	Mean (SD)	
Number of wives	1.51(.856)	2.24(1.02)	1.4(.754)	1.71(0.88)	14.03 ^{***}
Age	36.6(12.3)	43.4(10.2)	37.3(9.87)	39.0 (11.1)	6.2 ^{***}
Education level of Head	2.3(2.7)	1.34(1.9)	2.4(2.3)	2.04(2.38)	3.2 ^{**}
Herding experience	28.8(12.0)	35.6(9.6)	29.9(10.1)	31.4(10.9)	5.9 ^{***}
Selling experience	20.8(10.4)	27.5(9.5)	22.4(9.3)	23.5(9.99)	6.34 ^{***}
Family size (AE)	5.3(1.46)	6.1(1.48)	5.4(1.3)	5.6(1.4)	4.2
Dependency ratio	1.72(0.65)	1.53(0.63)	1.58(0.60)	1.6(0.62)	5.71

Source: survey result, 2009

***, **, * statistically significant at 1%, 5%, 10% levels of significance,

Numbers in the bracket are standard deviations

There is a significant mean difference in terms of possession of wives among the categories where those in the selling option have higher number (on average 2.24) wives than the other positions. Even though 91.1% of the respondents were married, marital status of the respondents was seen to be statistically significant among the commercial off-take options. The Chi-square test for marital status among the buying, selling and autarkic positions was significant at 10% significance level. Also the test reveals that there is significantly higher number of singles (24% of those in the autarky) in autarky position than in the selling (3%) and buying (3%) positions. Regarding religion, 85% were Protestants and only 7% of the respondents practice traditional Hadiya religion (*Wa'a weshima/worship*). The ANOVA result implied that there is statistically significant ($p < 0.05$) mean difference among the positions of the commercial off-takes with regard to their education level. The average year of schooling 1.34 years for the selling position was significantly lower than 2.3 years for autarkic and 2.4 years for buying positions.

3.2. Resource Ownership of the Households

3.2.1. Livestock holding

Livestock are the single most important assets that pastoralists heavily depend on to safeguard their household from any sort of crisis and to secure everything they need. As depicted in Table 2, the livestock species of the study area are cattle, goats, donkeys, and poultry. There is statistically significant difference in the size of livestock owned by market positions where the highest average TLU owners are pastoralists with selling position (about 90 TLU/household) followed by pastoralists with buying position (about 75 TLU/households) and pastoralists with autarkic position (about 72 TLU/household).

Table 2 also demonstrates that there is a statistically significant ($P < 0.01$) difference in average possession of oxen, cows, chicken. Significantly higher number of oxen (about 24 oxen/household) was in the selling position than about 15 oxen/household under autarky, and about 17 under buying options. Similarly, the difference in the possession of cows among the commercial off-take options was statistically significant where there are higher number of cows (about 26 cows/household) in the selling option than about 20 and 19 cows/household in the autarkic and buying options of commercial off-take, respectively. The survey showed that numerically cattle are the most important species followed by goats. According to the pastoral households surveyed, the topography, climatic condition, and cultural issues do not allowed them to rear camel and sheep.

Table 2. Livestock possession of the pastoral households by commercial off-take position

Livestock species	Autarky	Selling	Buying	Total sample Mean(SD)	F value
	Mean(SD)	Mean(SD)	Mean(SD)		
Oxen	14.81(11.9)	23.74(1.68)	16.83(1.84)	18.4(1.1)	6.43***
Bulls	1.74(.607)	1.90(.071)	1.76(.151)	1.8(0.069)	0.486
Cows	20.38(11.9)	25.50(1.479)	19.03(1.264)	21.5(0.87)	5.38***
Steers	33.68(2.12)	38.22(1.6)	38.57(1.77)	37.1(1.07)	2.05
Calves	20.5(1.864)	24.10(1.540)	20.41(1.466)	21.5(0.933)	1.65
Goats	15.34(.723)	13.96(.98)	13.5(.85)	14.2(0.5)	1.1
Donkeys	1.89(.082)	2.04(.070)	2.10(.063)	2.02(0.041)	2.1
Chicken	16.43(1.28)	11.96(.95)	17.35(.82)	15.4(0.65)	8.2***
TLU	71.5(4.16)	89.7(3.11)	75.3(3.36)	78.7(2.2)	6.8***

Source: survey result, 2009

***, significant at 1%, level of significance

3.2.2. Type of House Owned by the Pastoral Households

Ninety six percent of the respondents do not have permanent houses to stay long *i.e.* widena and 'hut half covered with mud'. According to the participants of the group discussion households having 'widena' /'Sheraton' type of houses do not stay there for more than three weeks. But those construct houses 'half covered with mud' can stay in that area for not more than three months until the pasture conditions deteriorate. Basically besides pasture disease, traditional faiths, and insecurity are the major reasons for migration as revealed in the focus group discussion. Table 3 also exhibits that there is a statistically significant ($P < 0.1$) difference in terms of ownership of houses among the three marketing positions. And those households who are in the selling position and possessing houses 'half-covered with mud' are greater in number than those in the buying position. The cattle too have shed (fence) to stay at night, mostly this house is needed in summer (rainy season) on the ground that if the animals stay in the wet grasses all the night they easily pick up disease but if they stay in a fenced place they preserve heat, and will be easy to manage.

The type of house an individual possesses is thought to be determined by the type of production being undertaken and the economic condition of the household. According to MoFED (Ministry of Finance and Economic Development) (2002), about 85% of the household in Ethiopia live in low quality houses of wood and mud, with 65% of the houses that are grass roofed. In the surveyed area the type of houses owned by sampled household is totally made of grass, wood and/or mud. Households moving from place to place shortly may prefer to construct simple hut but those leading a semi sedentary life construct permanent houses.

Table 3. Houses possessed by the pastoral households by commercial off-take position

Type of house for human	Autarky	Selling	Buying	Sum N=160	χ^2 value
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	n%(n=47)	n%(n=50)	n%(n=63)	N%	
'widana'/sheraton'	35	29	53	40	8.805*
hut half covered with mud	55	61 ^{*c}	36	56	
hut totally covered with mud	10	10	10	4	

Source: survey result, 2009

*Statistically significant at 10% level of significance

^{*c} There is significantly higher numbers of households in the selling than buying positions possessing house half mud covered.

3.2.3. Social Capital of the Households

Social capital refers to community and wider social claims on which individuals and households can draw by virtue of their belonging to social groups of varying degrees of inclusiveness in society at large (Bekele, 2008). Social capital is a 'stock' of trust resulting from close functional or emotional attachment to a group or society that facilitates the provision of public goods (Fukuyama, 1995). Social capital gains higher value in communal livelihood conditions (Chimonyo *et al.*, 1999). The role of social capital in pastoralist societies, which live communally in clans or tribes in household level decision making along with influencing marketing behaviour is considerable.

According to Bailey *et al.* (1999), social capital helps in exchange of market information, on credit purchase and sale, making a number of local and distant contracts. Besides (Bekele, 2008) noted that it can generate benefits for those who owned it by building strong social ties and maintaining information flows, conserving resources, establishing strong vertical/external linkages (trusts). Based on the group and key informant discussions undertaken, the major social capital substances which affect cattle production and marketing in the area are number of livestock owned (wealth), number of wives married (wide marital relatives), beginning from own source, the number of times the household restocked after drought, social status (prestige), existence of relative cattle traders, traditional knowledge and skills, number of *denbegna* known. As indicated in Table 4, 72% of the respondents have no relative (kin) cattle trader and those having relative (kin) cattle traders were higher in number in the selling position. There was a significant difference ($p < 0.05$) among the off-take positions of the respondents in terms of having regular client/*denbegna*. Households who have no *denbegna* under autarky position are significantly greater in number than those in the selling category. As indicated in Table 4, there are significantly higher numbers of respondents holding title in selling options (74%), than buying (38%) and autarky (37%) positions.

Table 4. Social capital of the pastoral households by commercial off-take position

Social capitals		Autarky n%(n=47)	Selling n%(n=50)	Buying n%(n=63)	Total sum	χ^2 value
Regular client/ <i>Denbegna</i>	yes	58	83	66	69	8.39**
	no	42	17 ^{**b}	34	31	
Relative(s) cattle trader	yes	27	12	23	27	.939
	no	73	88	77	72	

Title holder	yes	37	74 ^{***ac}	38	49	18.6*
	no	63	26	62	51	

Source: survey result, 2009

***, **, * statistically significant at 1%, 5%, 10% level of significance

^{***ac} there are significantly higher numbers of holding title in selling position, than buying and autarkic

^{**b} those have no denbegnas are significantly higher under autarky than selling position

3.3. Gender and Division of Labor

The nature of pastoral production system necessitates the division of tasks. The division of labour by age and gender determines who takes care of different activities. Like other pastoral production areas, management and taking care of large species, building and repairing shelters and marketing of livestock among the Hadiya pastoral communities is the responsibility of adult men. Whereas, women and children take a larger role in herding small stock, dung clearing, besides women processing and marketing of dairy products. Owen *et al.* (2005) reasoned that labour is a key factor in livestock development in SSA/Sub Sahara Africa/, mainly because of the technologies developed for improving livestock feeding are more labour intensive. Women are the most over burdened social groups engaging in productive, reproductive and social affairs. And men have the highest role in social activities and a full control over almost all the basic resources. In line with the findings of Abubeker *et al.*, (2007) women and children among the Hadiya pastoralists own small flocks and hens.

3.4. Purposes of Production and Source of Beginning Stock

Cattle production is the major part of all production systems in Ethiopia. There are a wide range of reasons for which households keep cattle. The reasons vary across ethnic groups, ecologic and socio economic conditions. If the household keeps cattle for several reasons like the pastoralists, livestock can be regarded as means towards the realization of several needs (Musemuwa *et al.*, 2007).

Though the Hadiya pastoralists share many similarities with other pastoralists, they have distinctive motive to keep cattle. They keep large size of herd as a guarantee against loss during drought and diseases. Traditionally the Hadiya pastoralists have something special with their cattle both culturally and from religious point of view (the belief that the spirit of traditional god ("wa'a") dwells in cattle. This tradition is hitherto being mainly practiced by the 'Soro' clans (occupy three districts) and yet the motive behind the pastoralists is to secure the cultural title of 'Tibima/Abegaz/Gerad and Kumima' which is attained in ascending order after achieving the first stage *i.e.* possession of at least 100 cattle would be "Tibima/Gerad" and the second, in which single individual can own more than 1000 cattle and hold the "Kuma" title.

The Chi-square test confirmed that there is statistically significant ($P < 0.1$) difference among the three positions of commercial off-take in terms of purpose of production. Thirty percent of the respondents kept cattle for presage as their first reason, 29% kept for as source of income (livelihoods), 18 % for social functions 15% for they have no land, and the remaining 3% for cattle products. All the pastoralists did not get any extension service and their only access to information on herd management, health, feeding system was from elders in the community, and family members.

In Hadiya pastoral community women are not entitled to inheritance of property of their parents, but when she gets married will be given heifers to begin her own. There is a significant difference ($P < 0.01$) in terms source of beginning stock among the off-take positions, 22% begin from better return from other businesses (farming, production of charcoal, making farm equipments for farmers, swimming transportation and the like). Forty percent and 39% begin from gifts during marriage (male's family gift as his share) and female's family gift (*gegeya*).

3.5. Breeding and Breed Type

In the study of cattle marketing chain, production is the most important component of the chain which comprises a number of agents including input suppliers. Traditional breeders are one of those input suppliers supporting respondents who do not have experience in selecting best cattle type for breeding/mating. The traditional breeders used selection parameters like sex of the offspring (33%), body confirmation (19%) conduct of the animal (25%), for the products of cattle (27%) and 6% coat cover. The pastoralists believe some birds and flies do not attack cattle with those colours: (colours '*Dalecha*', (white headed red) '*Bora*', (Red and white) '*Bure*', (Black and white) '*Elewa*'. Belete (2006) implied that the cattle in the area are endogenous short horned African zebu, the '*Guraghe-Hadya*' family. None of the respondents were found to own cross breed cattle and reasoned that the exotic breeds could not stand the hardship (in terms of feed shortage, heat and long distance travel) in the desert.

Even if all the respondents used natural breeding, 53% of the pastoral households selected the bull and inseminate (controlled breeding), and the remaining 47% let their cattle for uncontrolled breeding. Pastoralism, by its nature makes it difficult to control which animal breed to reproduce, unless poor-quality males are excluded, either by mechanical means or castration. But they are better at ensuring that their herds do not mix with other herds than controlling breeding within their own herd (FAO, 2004).

3.6. Seasonality of Production and Price Variation

Agricultural products have their own unique features that affect the consequent marketing activity; seasonality is one of these features (Vander Laan *et al.*, 1999). In the same argument, livestock marketing is deemed to possess seasonality mainly due to the fact that animals need to be trekked, fed, and watered. In the study area prices of cattle are lower between mid October and December *i.e.* (*fite* season locally). During this period first the neighbouring farmers' crops are not mature enough to be harvested, hence the highlanders (farmers) would not have money, and second, the pastoralists do not buy in fear of the hardship in the coming dry season. After January, the farmers can sell their crop and livestock to pay their *Meskel* festival debt (pay for the cattle they purchased on credit), and for improved seed and fertilizer. Even though (possibly) the high supply pulls the price down, the farmers do not prefer to purchase breeding or drought animals from pastoralists. First, most of the cattle from the *Gibe* basin (highly tsetse fly infested area) are suspected of their health. Second the cattle could not easily adapt to the feed shortage and restricted movement (tethering). Third the oxen do not have experience of ploughing.

Beginning from the second rainy season (after February-May which is the local *Kerato/tsesey* season) the price of cattle, especially that of heifers and steers begins to rise up. First, the pastoralists begin to replace old or barren animals, and the cattle that died in the winter. Second, the farmers begin to purchase cows for milk and oxen for the coming ploughing season as well as those engaged in fattening for the *meskel* festival. In the beginning of the main rainy season (early June *Hageye/kremt* season) which is also the main ploughing season for the crop producers, the market price falls again the reason for this includes a) the crop producers are constrained financially, and even they will be forced to sell some of their livestock to procure production inputs (fertilizer and improved seeds). b) The pastoralists' 'winter weakened' cattle do not fetch

better prices. The price of cattle will be the highest during the *Meskel* festival season (August to half September) even though the cattle 63% of the cattle sold at this time is on credit to be paid after crop harvest in January.

3.7. Livestock Mortality and Commercial Off-Take

Mortality is defined as death of livestock due to factors other than slaughtering which can be expressed as the number of death that occurred during a given phase (pre or post weaning) as a percentage of herd size during the previous phase (Mukasa-Mugerwa, 1981). According to Otte and Chilonda (2002), high mortality and mortality risks especially in young stock are a major cause of low productivity in traditional cattle production systems in SSA. The magnitude of factors on mortality rate differs among different husbandry and management practices (El Abib and Nkhaila, 2009). In the study area, the average mortality rate among young stock is more than twice as high as the older staff and according to the pastoral elders the male animals resist drought and disease more than the females. Mwangombe *et al.*, (2011) noted that livestock loss in the drylands has mainly been due to severe and persistent droughts which have led to tremendous human suffering. But the participants of the group discussion emphasised that the death of cattle in wet season is comparable with that of dry season. The possible explanation is the study area is located in the hub of tsetse fly infested area and just with the coming of the rainy season the problem becomes severe. As depicted in Table 5, the pastoral households encountered an average loss 0.91 TLU (cattle) per household during the survey period. The calculated mortality rate for the system was 1.5% this lower rate possibly because the TLU calculation attaches lower value for younger stocks.

Table 5. Livestock off-take and mortality rate by commercial off-take position

	Autarky Mean(SD)	Selling Mean(SD)	Buying Mean(SD)	F-value
Cattle sale(TLU)	3.68(2.3)	5.74(3.05)	2.42(1.8)	26.3***
Purchased cattle(TLU)	3.84(2.4)	2.23(2.5)	6.52(2.1)	48.5***
Net off-take rate	.00(.02)	.04(.04)	-.07(.06)	90.3***
Cattle died(TLU)	.98(1.7)	1.00(1.4)	.81(1.2)	.282
Mortality rate	0.1(.02)	0.1(.02)	0.2(.03)	.234
Non cattle sale(TLU)	.026(1.5)	.43(.3)	.3(.55)	3.4

Source: survey result, 2009

*** Significant at 1% level of significance

In developing countries animal production is being subjected to great pressure to satisfy the demand for animal protein required by the continued increase in human population and also to have surplus for international trade in which to subsidise their imports (Kinunghali *et al.*, 2004). But in order to reap the maximum possible benefit from the available herd, their off-take level needs to be higher. Based on Asfaw and Jabar (2007), off-take rate was calculated by dividing the commercial off-take to total cattle (TLU) times 100, to put in percentage terms. Table 6 shows a statistically significant difference ($P < 0.01$) in the average number of cattle sold among the commercial off-take positions where the higher 5.74 cattle/household was for the selling position and 3.68 and 2.42 cattle /household was for autarky and buying positions respectively. On the contrary, the number of cattle purchased in the selling position was the lowest, purchasing on average 2.23 cattle/household while the statistics for the autarky and buying positions were 3.64 and 6.52 cattle/ head respectively.

The calculated net off-take rate was -1% implying that the pastoral households were net buyers, *i.e* their prime objective is to stock cattle. The average net commercial off-take rate of cattle, for smallholder farmers in highland and lowland sedentary areas of Ethiopia was 7% which is much higher than the pastoralists' under consideration (Asfaw and Jabar, 2007). Additionally, Barrett *et al.* (2004) has documented justifications limiting the market off-take from the pastoral areas; first, there is lack of investment opportunities in the pastoral areas, thus making live animal herd building the best investment alternatives. Second, most of the producers have limited demand for cash income and because of this they have limited supply response to prices. This is because most of the resources required for livestock production are free.

3.8. Purpose of Marketing

Markets link producers to consumers. Markets affect producers/pastoralists either when they trade cattle or purchase food and other necessities. The pastoral households purchased cattle for breeding, fattening, for gifts (marriage, circumcision, fines) or to be slaughtered and consumed. Moreover, the sample pastoralists ranked their reasons for selling cattle, 32% to escape the disease and drought, and 27% sold in fear of predators and raids/since both need the fattened animals, 16% to fly to South Africa, replacement and income need accounted for 14% and 11% (Table 6). But all the respondents who were engaged in buying, bought cattle for breeding purpose and all of them bought steers and heifers for the purpose. There was a statistically significant ($P < 0.05$) difference among the three off-take positions with respect to reason of off-take. As shown in the Table 6, about half of the households in the selling position are risk averse *i.e.* they sell cattle in expectation of bad weather and or disease. This is mainly due to the fact that since they have fulfilled their cultural obligations they do not want to lose their capital for nothing provided that a sales option is there.

Table 6. Reason of cattle commercial off-take by commercial off-take position

Reason of sales	Autarky n%(n=47)	Selling n%(n=50)	Buying n%(n=63)	Total sample	χ^2 -value
Escape disaster	41		23	32	6.34**
Insecurity	20	19	23	27	
Fly abroad/SA ^c	16	26	8	16	
Replacement	10	3	23	14	
Income need	14	3	23	11	

Source: survey result, 2009

**Significant at 5% significance level

^c migrate to South Africa

4. Conclusion and Recommendations

Cattle production among the Hadiya pastoralists has both economic and social/cultural values. Thirty percent of the respondents rear cattle for prestige as their first objective, 29% as source of income, and 18% for social functions. The surveyed respondents possessed 78.7 TLU on average. The respondents used natural breeding, 53% of them select the bull and inseminate, and the remaining 47% let their cattle for uncontrolled breeding. With regard to cattle mortality and commercial off-take, 58% of the respondents did

not face any death of cattle in the survey period; the remaining respondents reported that on average lost 0.91 TLU of cattle and the net commercial off-take for the system was -1% *i.e.* the system is a net buyer.

Cattle are bought for breeding, fattening, for gifts (marriage, circumcision, fines) or to be slaughtered and consumed. The surveyed pastoralists ranked their reasons to sale cattle as 32% to escape the disease and drought, 28% sold in fear of predators and robbers/since both need the fattened animals/, 16% to fly to South Africa, replacement and income need accounted for 18% and 18%. They have a clear marketing calendar, in which they exchange cattle *i.e.* they purchase cattle with the coming of the rainy season and sales are mainly the results of expectation of bad weather and disease. Factors like immediate cash needs, for replacement and to flee from robbery; to travel abroad to South Africa were the major reason for cattle commercial off- take. The pastoralists travelled 45 kms (killo meters) on average to sale their livestock and livestock products. Even though pastoralists are endowed with ample endogenous knowledge, and also know their environment more than anybody else, they need assistance to utilize their resources efficiently. Therefore, the following recommendations are forwarded to alleviate the problems and to use their opportunities efficiently.

As the results above suggests all the respondents reported that they do not get any extension service. In order for the pastoralists to improve their marketing system and hence improve livelihoods, extension on livestock management, marketing and small scale crop production is necessary. The delivery of the extension service should be in accordance with the livelihood of the pastoralists. Therefore, concerned agricultural institutions should train development agents equipped with basic knowledge about pastoralism, pastoralists livelihood. And the action to be taken should be based on utilization of local knowledge in combination of formal scientific knowledge which needs to win the convenience of clan leaders.

According to the statistics the pastoralists keep cattle for prestige and as an insurance against risks, if there are some kinds of social security for restocking, aid, or credit at least they do not rely on cattle as only insurance against risks. Apart from restraining from sale, also absence of institutions helping the pastoralist to rehabilitate from these disasters made them to rely on raiding as a restocking strategy. Above all, absence of social security systems created socio economic crises that are manifested in raiding/robbery. During the raiding all the capable family members/relatives participate in the warfare which may end up disastrously especially if the two parties in the skirmish are competent.

Absence of insurance against risks is not only limited to the aforementioned crisis but also to protect their livelihood in case of crises, the pastoralists engage in sharing cattle for someone. This effort creates difference of ownership, control and benefit which makes decision difficult either to slaughter or sale the animal shared. So any development effort need to acknowledge why the system exists and the mechanisms it sustains itself.

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