MAJOR ANIMAL HEALTH PROBLEMS OF MARKET ORIENTED LIVESTOCK DEVELOPMENT IN ALABA WOREDA, SOUTHERN NATIONS NATIONALITIES AND PEOPLES REGION

BY
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List of Abbreviations

AAPBMDA	Animal, Animal products and By-products Market Development Authority
AAU	Addis Ababa University
AI	Artificial Insemination
AWARDO	Alaba Woreda Agriculture and Rural Development Office
CSA	Central Statistical Authority
DVM	Doctor of Veterinary Medicine
FAO	Food and Agricultural Organization
GDP	Gross Domestic Product
ILCA	International Livestock Center for Africa
ILRI	International Livestock Research Institute
IPMS	Improved Production and Market Success of Ethiopian farmers
LSD	Lumpy Skin Disease
Masl	Meter above sea level
MoARD	Ministry of Agriculture and Rural Development
NCD	New Castle Disease
PA	Peasant Association
SNNPR	Southern Nations Nationalities and Peoples Region

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ABSTRACT

A study was conducted to identify the major animal health problems and to look at the animal production system in Alaba Woreda, of the Southern Nations and Nationalities People Region from December 2006 to May 2007. A total of 80 respondents were selected from four peasant associations and interviewed using structured questionnaire. Focus group discussion was also made with key respondents from each PA and the participants described the major husbandry problems in their area. Retrospective study has been done on the past four year clinic record and a two year abattoir record. The results reveled that Mixed crop-livestock production system is the predominant system in the area in which animals are kept in very limited grazing land. Cattle were the most dominant from the animal species and kept primarily for draft power and milk purposes also as a source of income. Communal housing for both the families and animals were the characteristic of most households. Livestock feeding mainly relay on crop residues (maize stover and cereal straw). There is a wide use of traditional salt sources. In cattle anthrax was the most frequently mentioned disease problems. In all age groups of sheep and goats, fasciolosis was the major constraint. The second and third important diseases in sheep and goats were Anthrax and pasteurellosis. In equines the predominant health problems were epizootic lymphangitis. NCD and respiratory diseases were the most frequently mentioned poultry diseases. An investigation made on the clinic records shows the highest proportion of cases recorded for LSD, anthrax, pneumonia and endoparasitic cases. Major organ condemnation at the abattoir reveals that liver was the organ condemned the most followed by lung and heart. Result of the present study suggests the need for an in depth study on the exact prevalence of diseases of major importance as well as on their control strategies to compete in the current attractive market.

Key words: *animal health Problems; focus group discussion; questionnaire survey; Retrospective study; livestock; Production system*

1. INTRODUCTION

Livestock in the Greater Horn of Africa is vital resource in promoting development. They provide 20- 30% of the Gross Domestic Product (GDP), and at the farmer level as much as 70% of cash in come is generated from live stock (Ndikima *et al*., 2000). Nevertheless, several factors exert an influence on the production and productivity of livestock mainly kept under extensive and unimproved management conditions. Diseases, Seasonal feed scarcity and poorly developed infrastructures curtail the production potential (Solomon, 1994).

Ethiopia takes the lead in livestock population in Africa, with an estimated number of small and large ruminant populations of 40.3 million cattle, 20.7 million sheep and 16.3 million goats (CSA, 2004).

The livestock sector in Ethiopia has substantial contribution to the economy. Ethiopia's economy is agriculture dependent and the role of livestock as farm input including traction and manure use is quite considerable. Livestock shares 12 and 23 percent of the total and agricultural GDP, respectively (AAPBMDA, 1999)

Despite the large number of livestock there has been a decline in national and per capita production of livestock and livestock products, export earning from livestock, and per capita consumption of food from livestock origin since 1974. The per capita consumption in compared to other African countries is low (Assegid, 2000).

Diseases in farm livestock have always been constrains of considerable importance to farmers. Good livestock husbandry means caring for animals properly and maintaining them in good health to obtain optimum production of their products. The assistance of the veterinarians and of other agricultural specialists who can provide knowledge, skills and other resources may be sought. The entire process aimed at the production of wholesome human food, such as meat and milk, and other commodities, such as wool at a reasonable price to the consumer, while yielding a net profit for the farmers (Radostitis, 2001).

Due to lack of any recording system and extensive way production, information on diseases is not well documented. The measurement of the account of infectious and non-infectious diseases in a

population assists in determining their importance and the efficacy of control campaign (Thrusfield, 2005).

Knowing the type and extent of the common and/ or major health problems is very important to the livestock owners, veterinarians and researchers which can assist in the development of heard health strategies and in the selection of possible interventions (Radostitis *et al*., 1994). Animal diseases in general and particularly those caused by parasites are the major constraints to livestock production in the humid and sub-humid portions of the country (Palling and Dwinger, 1993; Bennett and Ijpelar, 2005).

Under development and lack of market- oriented production, lack of adequate information on livestock resources, inadequate permanent animal routes, prevalence of animal diseases, illegal trade and inadequate market information, both internal and external are mentioned as some of the major reasons for the poor performance of the livestock sector (Hurissa and Eshetu, 2002; Aklilu, 2002). The low productivity that is attributed to the low genetic potential of indigenous cattle, in adequate management, poor nutrition and reproductive performance are also commonly accused causes of low productivity (Arthur *et al*., 1984).

In order for the country to halt this trend and achieve poverty alleviation and food security, and much greater attention need to be given to livestock productivity and health, including post-harvest processing and marketing (Dalgado *et al*., 1999). Various project are engage in improving livestock productivity, recently an integrated project has been initiated by International Livestock Research Institute (ILRI) and the Ministry of Agriculture and Rural Development (MoARD), entitled: “Improving productivity and market success” (IPMS) of Ethiopian farmers, aims at contributing to a reduction in poverty of the rural poor through market oriented agricultural development (ILRI, 2006).

Therefore, this study is intended to meet the following objectives: -

- To characterize the livestock production system in the selected peasant associations of the woreda
- To provide base line information on the major animal health problems in the area.

2. MATERIALS AND METHODS

2.1. Study area

The study was conducted from December 2006 to the mid of May 2007 in Alaba special woreda of the Southern Nations Nationalities and Peoples Region (SNNPR). Alaba district (woreda) is one of the 10 sites selected by the IPMS project.

The "woreda" located 315km south of Addis Ababa and about 85km south west of south Nation Nationalities and people regional state capital of Awasa. The "woreda" is geographically located at $7^{0}17'$ N latitude and $38^{0}06'$ E longitude. The Altitude of the, woreda ranges from 1554 to 2149m above sea level (masl), but most of the woreda is found at about 1800 masl. Agro ecologically, the woreda is classified as "Weina Dega" and in terms of topography the woreda has an agriculturally suitable land. The annual rainfall varies from 857 to 1085mm. The area receives a bimodal rainfall where the small rainy season/months are between March and April while the main rains are from July to September The annual mean temperatures also varies from 17^{0}C to 28^{0}C with mean value of 24^{0}C (AWARDO, 2004).

According to FAO (1995) classification system the major soils of the woreda are Anosol (ferralic), Andosol (Orthic), Chromic Luvisols (Orthic), Phaeozem (Orthic),Solonchak (Orthic). The most dominant soil of the woreda is Andosol (Orthic) which is followed by Phaeozems (Ortic) and Chromic Luivisols (Orthic).

Altitudinal, vegetation and soil variability's are similar, almost in all the "woreda". However, two major farming systems were identified, cereal crop/livestock farming system and pepper/livestock farming system (AWARDO, 2004).

The total land area of woreda is 64,116.25 he of which 48,337 he (75%) are considered suitable for agriculture. Of the total land area present in the woreda arable land represent 44,020ha, grazing land 4,316.95ha, forest 4,592.00ha, potentially cultivable 3,644.50ha, uncultivable land (hills) 2,805ha and others 4,737.80ha (AWARDO, 2004).

Resent information shows a total of 35,719 households were present of those 26,698 were headed by male the rest 9,021 by female. In general the total woreda population is 210,243, out of which 104,517 (49.7%) are male and 105,726(50.3%) are female. In the woreda, there are 76 peasant and 2 urban associations found (AWARDO, 2004).

Shortage of feed is the major problem in livestock production in Alaba followed by disease. The common animal diseases reported include, anthrax, blackleg, internal and external parasites. Water problem was also said very serious. The biggest river crossing the woreda is Bilate. The livestock population is very high though the output is poor There are different livestock species present in the "woreda" with the following estimates, 162728 cattle, 30750 sheep, 36552 goat, 62000 poultry, 8933 horse, 10685 mules and 29920. Beekeeping was also widely exercised; around 10000 traditional and 890modern hives are present (AWARDO, 2004).

2.2. Study Animals

The study population consists of all species of domestic animals owned by selected households and animals brought to the Alaba special woreda Kulito veterinary clinic having different health problems from 2002/03-2005/06 were considered as study animals

2.3. Study design

2.3.1. Sample size

For this preliminary survey 4 PAs namely, Wanja, Galeto, Gedeba and Andegena Chorekko were selected purposively since the Alaba IPMS project actively work in those selected PAs in addition to the accessibility and most PA members were farmers engaged in livestock rising that corresponds to the study aim. From each selected PAs 20 households were identified using simple randomization statistical technique. There were, therefore, a total of 80 households included in this study.

2.3.2. Study methods

The instruments used for data collection were questionnaire survey, focus group discussion and consultation of respondents and recorded documents.

Questionnaire Survey

A detailed questionnaire format (Annex I) was designed to generate information related to animal production (Demographic features of respondents and their land use pattern, livestock herd size, livestock function, feeding practice and availability, management systems such as watering, housing, breeding and record keeping, labor use and livestock marketing) with particularly emphasis on major livestock health problems in the area and measures taken by the farmers against livestock diseases and trend of using modern veterinary services. The questionnaires before its full implementation was pre tested and adjusted for clarity to as shorten the time it takes while administering and minimize recall bias.

Retrospective Study

Data were collected from Kulito veterinary clinic case registration book during the period from 2002/03 to 2005/06 to determine occurrence of major animal health problems encountered/examined during the past 4 years. Records from Kulito municipality abattoir were also collected for the period from 2004/05 and 2005/06 to determine the relative frequency of the organs condemnation and the causes for organ condemnation.

Focus group discussion

The focus group discussion was done with 15 key respondents from each PA identified by the PAs development agents. The major livestock problems such as major diseases, major feed types in the area, and other issues on livestock production have been raised for discussion to collect basic information.

Consultation of veterinary professionals

Consultation of the woreda veterinary professional to identify the major livestock health problems in their area and about the health service coverage of the wored

2.4. Data Analysis

The data collected were entered in to MS-Excel 2000 computer program. The analysis and summarization of the data were made using descriptive statistics.

3. RESULTS

3.1. Demographic and land holding features of respondents

Demographic feature

A total of 80 households participated in the present study. Demographic feature of respondent's shows most of the interviewees (95%) were male and the rest female (5%). Age range varied from 20 to 80 years (Average age of 41.9 years). Regarding respondents education level 42.5% were illiterates, 46.3% elementary level and the rest 11.25% above 6^{th} grade education. Respondent's family size proportion shows 88.8%, 60% and 2% have family members less or equal to 15 years of age, grater than 15 years of age and no families respectively.

Land holding and use pattern

Compared to grazing land, 86.25% (n=69) of the respondents owned at an average holding of 0.38he, in this present study all respondents have there own crop land on average 1.6he holding per household. In addition22.5% (n=18) of respondents rent land for crop production but insignificant proportion of the respondents rent grazing land, 1.25 (n=1).

3.2. Livestock Inventory and Composition

The average herd size and composition of cattle, sheep, goats and equines per households are presented in table 1. Cattle comprise the largest proportion of the livestock herd (41.5%) followed by poultry (33.4%), sheep (10%), goats (9.4%) lastly equines (5.6%) in their order of appearance. Lactating cows (23.3%) dominate the most shares of cattle herd size followed by castrated ox (22.6%). In the case of small ruminants, the flock is comprised primarily of female animals. In goats does represent 43.2% and in sheep ewe's proportion was 51%. The equines

herd is very much dominated by donkeys taking 88.6% of the share of which mature female donkeys are the predominant ones (58.5%).

Table1. Livestock composition per sampled households (80 households, 2006/2007)

Livestock species	Mean	Range (Max-Min)	Proportion from the total livestock population	Proportion form the species herd
Cattle			**41.5**	**n=390**
Male calf	1.28	(4-1)	5.43%	13.1%(n=51)
Female calf	1.28	(4-1)	5.43%	13.1%(n=51)
Heifer	1.42	(3-1)	3.9%	9.49%(n=37)
Dry cow	1.5	(3-1)	3.8%	9.2%(n=36)
Lactating cow	1.63	(5-1)	9.7%	23.3%(n=91)
Castrated ox	1.52	(4-1)	9.4%	22.6%(n=88)
Bull	1.24	(3-1)	3.8%	9.2%(n=36)
Goats			**9.4**	**88**
Male kid	1.4	(3-1)	1.5%	15.9%(n=14)
Female kid	1.55	(3-1)	1.8%	19.3%(n=17)
Yearling	1	(1-1)	0.32%	3.4%(n=3)
Doe	1.41	(3-1)	4%	43.2 %(n=38)
Castrated	1.4	(2-1)	0.75%	7.95%(n=7)
Buck	1.5	(4-1)	0.96%	10.2%(n=9)
Sheep			**10**	**94**
Male lamb	1.38	(4-1)	1.17%	11.7%(n=11)
Female lamb	1.33	(2-1)	1.7%	17%(n=16)
Yearling	1.83	(3-1)	1.17%	11.7%(n=11)
Ewe	1.4	(5-1)	5.1%	51%(n=48)
Castrated	1	(1-1)	0.53%	5.3%(n=5)
Ram	1	(1-1)	0.32%	3.2%(n=3)
Equine			**5.6**	**53**
Young donkey	1	(1-1)	0.4%	7.5%(n=4)
Mature female donkey	1.11	(2-1)	3.3%	58.5%(n=31)
Mature male donkey	1.1	(2-1)	1.28%	22.6%(n=12)
Young horse	**1**	(1-1)	0.1%	1.9%(n=1)
Mature female horse	1	(1-1)	0.1%	1.9%(n=1)
Mature male horse	1	(1-1)	0.4%	7.5%(n=4)
Poultry	6.28	(21-1)	33.4	314

Beehives =16 respondents had a total of 48 beehives

3.3. Livestock Products and Functions

Most respondents (90%) primarily keep cattle for draft purpose followed by milk products (78.8%), selling live animals (48.75%), for skin and hide purpose 15%, for meat 12.5% and lastly for manure and loading each 1.25%. In small ruminants skin production in sheep and milk production in goats were reasons mentioned for keeping the animals by larger proportion of the respondents. Milk is mostly used row (60%) this is similar in meat consumption pattern, only 30% of the respondents cook meat before consumption. From the respondents who have equines (n=49) equal proportions were attributed for transport and loading (44.9%).

3.4. Livestock Management

Housing

About 96.3% (n=77) of respondents keep their animals in the same house where they live. This is due to lack of space to construct separate shelter outside the main family house and due to fear of theft. Only 3.8% (n=3) out of the total respondents had separate shelters for their animals. House where animals and family members live together was internally partitioned by maize stover. Cattle and small ruminants were also kept separately.

Watering

Generally water is a problem in the study area. Water shortage was most acute during the period from December to March, pick at January and February. During this shortage period most respondents indicated that animals are watered at a frequency of once every two days. River (87.5%), stream (36%) and pond (5%) were watering sources for their animals.

Breeding

Breeding options that the interviewed households used are mostly natural, 77.5% (n=62) using local bulls. The rest 22.5% (n=18) practice Artificial insemination (AI). The reasons mentioned for not using AI by large proportion of households was fear dystocia with the assumption of the small Zebu cow not capable of bearing crossbreed fetus due to large fetal size. 50% (n=40) of respondents properly follow the heat sign cows shows and bring to the local bulls near by on

time, while 20% (n=16) of respondents bring their animals on proper time to the veterinary clinic in search of AI service.

Feeding

The different feedstuffs provided by farmers to there animals in the study area are indicated in table 2. All the farmers indicated that stover and serial straws are the most important feed resource available, even though the former has much more importance according to their feeding practice prioritization. Both feedstuffs are most available at dry seasons. There are also efforts to introduce different forage species. These included sesbania, cow pea, lablab, vetch, Napier grass, alfalfa and *Desmodium* sp. by the woreda of agriculture office but only 11.25% (n=9) of respondents use cultivated pasture in order to fill the gap of feed shortage. Feed shortage is aggravated in the area where, there is no communal grazing land other supplementary feed source.

Table2. Ranking of feedstuffs based on availability and use (80 households, 2006/2007)

Feed type	Number of farmers Providing the feedstuff	Rank of using the mentioned feed stuff as				
		1st	2nd	3rd	4th	5th
Stover	80	41	24	15	-	-
Cereal straws	80	9	34	35	2	-
Natural pasture	72	30	21	21	-	-
Vegetable garbage's	11	-	-	6	5	-
Cultivated pasture	9	-	1	2	3	3

Regarding mineral supplement, 75 % of the interviewed households traditionally supply salt for there animals. In the woreda there is a natural spring water called "*Arto Spring Water*'' it has high mineral content and most farmers brought there animals here specially the summer time. The other natural mineral source that most of the farmers in the woreda use is a soil called locally ''Bole". Therefore, out of the respondents who supply minerals traditionally 58%, 16.4% and 25% use mineral soil (Bole), watering point and simultaneous use of the both respectively. During the survey and focus group discussion, the owners responded that if they don't supply minerals, the animals show deficiency signs such as the animals become emaciated, anorectic and

weak, cows do not show heat signs properly, they will have bad mouth breath and poor and dirty hair coat as perceived by the owners.

3.5. Livestock Marketing

Many farmers were complaining that because of the poor body weight conditions of their livestock, the market value is very low. In addition to this, lack of market information to sell animals was also pointed out during focus group discussion. From the total respondents 50% sold one or more of their animals during last year for reasons such as buying household commodities 32%, to pay tax and fertilizer credit 21.25% and to buy agricultural inputs 16.25%. Most livestock selling periods/ seasons are January and February followed by September and March as shown in the Figure1.

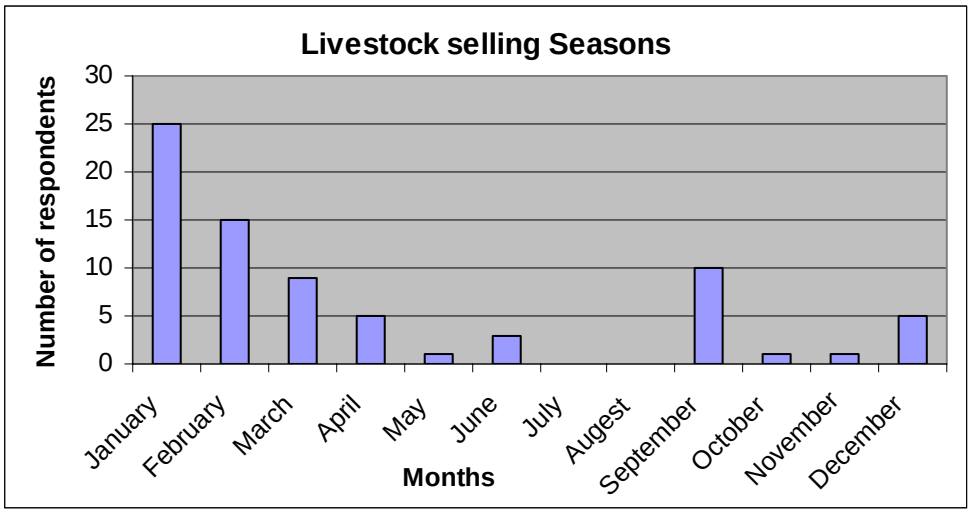

Figure 1. Major livestock selling months/seasons in the study area

3.6. Method of Disposing Dead Animals

Means of disposing off dead animals, as indicated by respondents are presented in Table 3. Nearby half of the respondents (43.7%) said that dead animals (as most respondent confirm deaths occurrence especially in small ruminants), after birth fluids and abortus were simply thrown away in the nature. Giving to scavenger animals also mentioned as a disposing means (37.5%). This was also practiced in a significant proportion of farmers (31%) who encountered

abortion during the last 2 years mainly in cattle. There is a traditional practice, which is exercised for many years and still used by most of the peoples in the woreda is when animals are dead the cadaver is given to local tribes who eat dead animals, those people are informed when one encountered death of animals. Those peoples locally called “Fugas”. From the respondents 15% (n=12) use this traditional practice as a mode of disposing animal.

Table 3. Mode of disposing dead animals

Disposing Methods	Proportion of respondents	Rank
Throwing	43.8 (n=35)	1
Giving to dogs or scavenger animals	37.5 (n=30)	2
Burring	25 (n=20)	3
Giving to ‘’Fugas’’*	15 (n=12)	4
Burning	2.5 (n=2)	5

3.7. Control Measures Against Livestock Diseases

Although the majority of the farmers on the study area have access to modern veterinary service (92.5%/n=74), a considerable proportion of respondents, 75% (n=60) use traditional healer for many different abnormalities and diseases conditions such as infectious diseases, parasitic diseases and non infectious cases. From the proportion of respondents who use traditional healer, infectious cases (100%) are the most treated using traditional medicament followed by parasitic cases (35%). Modern treatment is given in the Kulito veterinary clinic at Kulito town; there was no other private veterinary clinic in the area. Other service providers in the area were only one AI center and 3 private drug shops. From the proportion of respondents who use modern veterinary services 21.6% mentioned transport/ distance to the veterinary clinic as a main problem faced when they want to treat or vaccinate their animals. Drug and vaccine shortage were also mentioned by a good number of respondents (16%). Lack of modern clinical services and the non-ethical practice of professionals were also mentioned by 10% of the respondents.

3.8. Market Oriented Livestock Production Constraints

The information generated through the questionnaire survey, focus group discussion and review of documents and records obtained from clinic and abattoir indicated that diseases are one of the

important limiting factors of livestock keeping in the area. Scarcity and shortage of livestock feed are also known to be limiting factors to animal production by making animals unproductive and susceptible to many diseases.

3.8.1. Health problems identified by respondents at survey

The common diseases and disease conditions causing losses in animal production in Alaba special woreda as reported during questionnaire survey and group discussion are listed in Table 4. Livestock owners were asked to describe 5 important diseases, which affect animal species in the study area (Cattle, Sheep, Goats and equines) and prioritize them based on their relative degree of importance. Respondents described diseases in there local names (Table 5.). These local names were given their veterinary equivalent name based on, the symptoms mentioned, postmortem lesions and discussions with veterinarians in the area.

Table 4. Proportion of respondents mentioned the major livestock diseases in their area

Sheep diseases	Mean		Percentage		Rank given	
	Lamb/kid/foul	Adult	Lamb/kid/foul	Adult	Lamb/kid/foul	Adult
Fasciolosis	10	10.4	26	25	1	1
Pasteurellosis	8.2	8.2	22	20	2	3
Anthrax	8.2	10	22	24.8	2	2
Enzotic ataxia	4.2	3.6	11	9	4	5
Sheep pox	3.8	5.8	10	14	5	4
Others	3.2	2.8	9	7		
Goat diseases						
Fasciolosis	12.2	12	36	32	1	1
Anthrax	8.2	11.4	24	30	2	2
Pasteurellosis	4.6	5.4	13	14	3	3
Goat pox	3.6	4.4	11	12	4	4
Pneumonia	2.8	2.2	8	6	5	5
Others	2.8	2.2	8	6		
Equine diseases						
Epizootic lymphangitis	7.6	8.2	44	38	1	1
Pneumonia	5	4.4	28	20	2	3
Anthrax	3.8	6.2	22	29	3	2
Strangles	0.6	0.4	3	2	4	5
Colic	0.6	2.4	3	11	4	4

Continued….

Calf diseases	Mean Calf/heifer/cow/bull	Percentage Calf/heifer/cow/bull	Rank given Calf/heifer/cow/bull
Anthrax	9	32	1
Pneumonia	8.2	30	2
Lice	2.6	10	3
Tcik	2.4	9	4
Fasciolosis	1.6	6	5
Pasteurellosis	1.6	6	5
Others	1.8	7	
Heifer diseases			
Anthrax	13.2	35	1
Black leg	7.8	20	2
LSD	6	15	3
Pneumonia	4.4	11	4
Fasciolosis	4	10	5
Others	3.4	9	
Cow diseases			
Anthrax	12.2	24	1
LSD	7.8	16	2
Black leg	7.4	15	3
Mastitis	7	14	4
Pneumonia	5.6	11	5
Others	9.8	20	
Bull diseases			
Anthrax	14.2	31	1
Black leg	11.2	25	2
LSD	5.4	12	3
Fasciolosis	5	11	4
Pneumonia	4	9	5
Others	5.4	12	

Table 5. Description of major diseases identified by sampled farmers

Major diseases (Veterinary equivalent)	Vernacular name	Species affected
Infectious disease		
Bacterial		
Anthrax	Tereje/ Arae Tizenat	Cattle, sheep, goats and equines
Black leg	Habussa	Cattle, occasionally sheep
Mastitis	Hanti Tizenat	Cattle, sheep and goats
Pasteurellosis	Gororsa	Cattle, sheep and goats
Actinobacillosis	Koyechu	Cattle and occasionally sheep
Pneumonia of different types	Sombe	Cattle, sheep, goats and equines
Viral		
LSD	Gameli Tizenat	Cattle
NCD	Fengil	Poultry
FMD	Maza	Cattle, sheep and goat
Sheep/ goat pox	Kurkussa/ Humimeta/ Baga	Sheep and goat
Parasitic		
Fasciollosis	Losha/ Lugo	Cattle, sheep and goats
Fungal		
Epizootic lymphangitis	Nidf	Equines (mostly horses)
Non infectious diseases		
Enzootic ataxia (Sway back)	Allatte	Sheep and goats (mostly lambs)
Bloat	-	Cattle, sheep and goats
Colic	-	Equines

3.8.2. Retrospective study result and response during consultation of Veterinary professionals

Summery of clinic record and abattoir

Summery of the retrospective data on the major health problems during the last four-year (from 2002/03-2005/06) were presented in the Table 6 and 7. The proportion rate in different species found that, in cattle LSD (12.6%) recorded as highest followed by anthrax (10.2%), in sheep pneumonia (10.9%) takes the lead and endoparasitic cases (9.1%) follows, ectoparasitic cases (8.9%) and pneumonia (8.6%) was recorded in goats where as epizootic lymphangitis (16.7%) is the most recorded equine diseases followed by pneumonia (12.9%).

Table 6. Major animal health problems encountered in Alaba woreda Kulito veterinary clinic during the last 4 years (2002/03-2005/6) periods

Cases	Species				Total Cases
	Bovine	Ovine	Caprine	Equine	
LSD	578 (12.6)	-	-	-	586
Anthrax	467 (10.2)	27 (4.3)	21 (7)	36 (5.2)	551
Pneumonia	334 (7.3)	68 (10.9)	26 (8.6)	90 (12.9)	518
Endoparasite	235 (5.1)	57 (9.1)	18 (6)	56 (8)	366
Enteritis	278 (6)	34 (5.4)	21 (7)	29 (4.2)	362
Surgical and obstrical cases	144 (3.1)	47 (7.5)	24 (8)	80 (11.5)	295
Pasteurellosis	187 (4.1)	43 (6.9)	25 (8.2)	-	255
Ectoparasitism	114 (2.5)	28 (4.5)	27 (8.9)	12 (1.7)	181
Epizootic Lymphangitis	-	-	-	116 (16.7)	116
Mastitis	90 (1.96)	11 (1.8)	7 (2.3)	-	108
Fasciolosis	51 (1.1)	27 (4.3)	16 (5.3)	-	94
Black leg	92 (2)	-	-	-	92
Sheep pox	-	21 (3.4)	5 (1.6)	-	26

* Numbers in the bracket indicate the percentage

A a total of 6199 animals attend the clinic (Table 7), from the cases presented to the clinic during the past four years LSD (9.3%) is the highest case recorded followed by anthrax (8.9%), pneumonia (8.4%), endoparasitic cases (5.9%) and enteritis (5.8%). Most cases have variation in occurrence from year to year (Figure 2)

Table 7. Summery of different animal species presented in Kulito veterinary clinic for various reasons (2002/03-2005/06).

Species	Number of animals	Sex		Age		
		Male	Female	< 1 year	1-3 years	>3 Years
Bovine	4575	2260	2315	311	827	3437
Ovine	625	318	307	61	179	385
Caprine	304	118	186	39	88	177
Equine	695	478	217	23	106	566
Total	6199	3174	3025	434	1200	4565

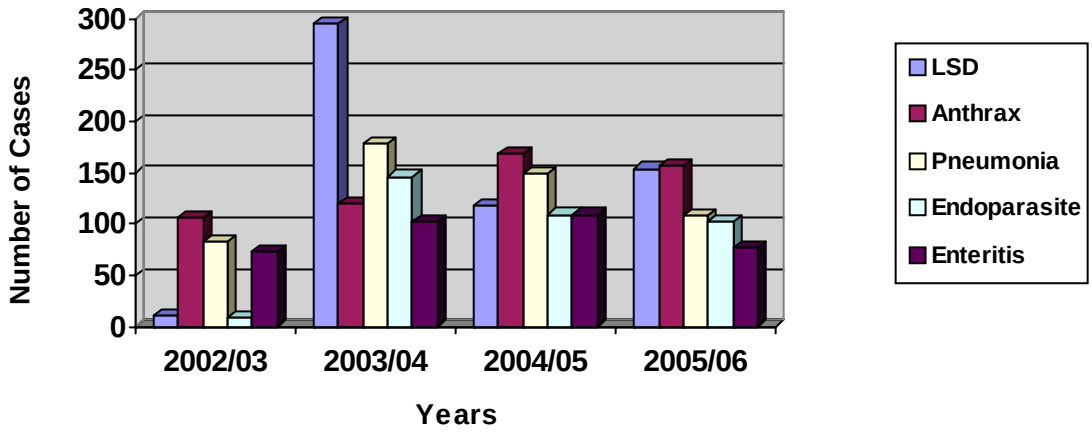

Figure 2. Major animal diseases affecting Bovine species during the specified years

An investigation made on the abattoir record shows (Table 8) liver (37.3%) was the most condemned organ followed by lung (32.3%) and heart (17.2%) during the period from 2004/05 to 2005/06.

Table 8. Proportion of organs condemned at the abattoir for various reasons (2004/05-2005/06)

Year	Slaughtered animal sex		Number of affected animals at post mortem	No. Of condemned Organs		Main reason for organ Condemnation
	Male	Female		Organs	Number	
1997 - 1998 (e.c)	2129	242	1332	Liver	849 (37.3)	Fasciollosis, cirrhosis and hydatid cyst
				Lung	735 (32.3)	Hydatid cyst, pneumonia and emphysema
				Heart	392 (17.2)	Cysticercus's bovis and hydatid cyst
				Kidney	103 (4.5)	Nephrites and calcification
				Spleen	195 (8.6)	Splenitis, Splenomegally and hydatid cyst
				Carcass	1 (0.04)	Anthrax case

Woreda Veterinary Professionals Response during consultation

According to the woreda animal health professionals the main problems affecting the livestock keeping in order of appearance is shortage of feed/ grazing land, water shortage and diseases respectively. Deworming conducted through out the year by giving priority to adult animals. Lack of transport followed by lack of drugs and vaccines are the major problems faced in the treatment of livestock in the woreda because of that most owners use traditional healers. The assistance veterinarians respond that there is strong participation from animal owners at

implementing animal health care services at the woreda level. Generally for improvement of animal health delivery in the woreda the following suggestion has been given:-

1. The special woreda have 76 PAs so health service coverage and delivery by agriculture office veterinary clinic is low, on average most owners travel more than 10kms in search of vaccines and treatment there for at least 9 animal health stations needed and on each health station assigned animal health professional must be assigned.

2. There must be effort made on changing the awareness of live stock owners about the general husbandry

3. Veterinary drugs, vaccines, medical facilities, budget for the health sector and motorbike which professionals use must be available.

3.8.3. Focus group discussion result

Group discussion on the major livestock production constraints of the all selected PAs in the study area are summarized as follows

Major feed types in the area are maize Stover (locally called *Kufa*) followed by straw of teff and wheat. Because of shortage of grazing land most owners not practice natural pasture as a feed source. On the dry period the main feed type is dry maize Stover followed by sorghum Stover and teff straw but on the rainy seasons the feeding relay mostly on wet maize Stover followed by the available natural pasture.

As discussion participant mentioned, most farmers use river (Bilate river) as a watering source during dry season. Except one PA in the study are (Andegena Chorekko), which is boundary, to the river, in all other study area there is water shortage sited by the participant covering from November to March pick at January and February.

As indicated most farmers use mineral soil as a mineral source for their animals, which is locally called “Bole”. Salt supplement practices mostly done at rainy seasons were because feed and water are most available, while animals excessively drink the available water at that time. But

occasionally mineral water is used as salt source at "*Arto spring water"*, which is located in the periphery of the town

On the focus group discussion period on a lot of problems/ with some anticipated directions are raised but the most important having constraints on the livestock production can be summarized as follows

►There is feed problem which makes animals susceptible to many diseases this problem must be resolved using cultivated pasture seed as animal feed

►Financial support to strength farmers to participate in agricultural business sector like dairy processing and fattening in order their production to be market oriented

►Establishment of veterinary infrastructure (clinic, animal health stations, drug stores and AI service) in there area is mentioned

►As most discussion participant indicate they require training provision about the general animal husbandry

4. DISCUSSION

Characteristics of the Livestock Production System

Depending up on the results of the study two farming system were identified, thus are cereal crop/livestock farming system and pepper/livestock farming system, although there is variation in the dominance of one species in one area than the other. This show Mixed- livestock production is most practiced in the area. Shortage of land is mentioned to be one of the constraints for the livestock development in the area, since food crop cultivation is give first priority, land allocated for grazing is very limited. 86% of the respondents owned grazing land at an average holding of 1.6 he. Cattle are the dominant livestock species present in the area. Sheep and goats also comprised a good proportion of from the live stock species. The farmers kept cattle mostly for traction power and milk although the yield of the local Zebu is not significant, which is not exceeding the house hold consumption.

In most cases animals are kept in a communal house together with the family by making internal partition from family bedding and utensils which could lead to possible transmition of Zoonotic diseases from animas to humans and vice versa (Aiello and Mays, 1998). The poor ventilated house, were large number of animals confined in a small space may lead to respiratory infection (Quinn *et al*., 1994). Use of local bulls for breeding is the primary option for most farmers (75%). This may attribute to shortage of AI service coverage in the area. In appropriate follow-up of heat sign and performance of the local bulls in question was the main factors not to exploit the livestock sector to the maximum benefit in terms of productivity and good offspring (Arthur *et al*., 1984)

Agricultural bi-products are the main feed type used by most sampled farmers in the study area. These feedstuffs do not support good growth consequently animals have got poor body condition, lack of diseases resistance (Roeder, 1980). Natural vegetation is one of the limitations in the area for animal husbandry. Mineral deficiencies can lead to different diseases conditions and abnormalities (Radostitis, 2001). On such bases most farmers (75%) supply the available mineral sources for their animals, even though the exact chemical composition is not scientifically identified. Different reasons are mentioned for selling livestock such as, to buy household needs and to pay taxes are the most important ones. In January and February animals especially cattle

are brought to the market based on the demand. This time there is no agricultural activity done in addition to social activities (marriage) are performed this time in the area which makes farmers to sell their animals relative in higher price.

Animal Health Problems

Cattle

In cattle, Anthrax is one of the most important diseases described almost by all respondents and the disease has got the first rank in the study area. Retrospective study and group discussion result shows the diseases are constantly present in the area. This is due to the area may be deficient in phosphorous, the animals will have abnormal eating behavior which ingest the pathogens as spores or vegetative form from the soil therefore the likelihood of cattle contracting anthrax will increase. Human activities most practiced as indicated by the respondents for the likely presence of the disease commonly in the study area are mode of disposing cadavers. Only 2.5% (n=2) of the respondents burn cadaver and 25% (n=20) of the respondent's burry cadaver, both are safe mode of disposing. Similarly Seifert (1996) describes scavenger birds and carnivores are able to spread the causative agent spores over a wide area. Shortage of drinking water and feed shortage in the study area as mentioned by most respondents particularly during drought period animals infected when they graze at the base of the grass root and when animals use water holes as similarly described by Devos (1994).

Black leg was one of the most mentioned infection of cattle's as described in the in Table x. All of the respondents describe black leg to affect all age and sex groups of cattle except calves. Although the degree varies as found in heifer, cows and bulls as found in this study. This is consistent with that described by Radostitis *et al.* (1994) regarding the diseases incidence that is high when calves when calves reach the susceptible age group which is largely confined to young stock between the age of 6 months and 2 years. Black leg was also reported to be the most important infectious diseases with a prevalence rate of 20% in the north part of Ethiopia by Legesse (1996). Further more the diseases were clamed to be the leading cattle health problem together with anthrax in Ginchi water shade areas as reported by Belayneh (2002).

The result of this study reveled that Lumpy skin disease (LSD) was the most mentioned skin disease by respondents. Especially in cows (16%) has got the second following anthrax from the diseases affecting cows. This followed by in heifer (15%), which has got the third rank from the list of diseases affecting heifer groups. The result of the retrospective study shows this diseases occurs in an out break form in 2003 and group discussion with veterinary professionals revels that the diseases is recently introduced in this area. Tesfahiwot (2004) also report similar result (7%) incidence in Yerer water shade, Adaliben woreda. The disease is known to affect the body condition and work out put of the affected cattle and decreased milk yield as indicated by different authors (Quinn *et al*., 1994; Radostitis *et al*., 1994).

All age groups (except calves) and both sex are mention by respondents in this study to be affected by LSD. Similarly Aiello and Mays (1998) claimed that there is no age and sex difference on the susceptibility to the diseases.

Lice and tick infestation are the third and fourth most important ectoparasitic problems mentioned respectively by respondents from the listed calf diseases. Similarly a slight higher incidence rate of lice (4%) were reported over tick (3.4%) by Tesfahiwot (2004) this might be attribute to the poor hygienic housing system that most households use for their animals.

Mastitis were one of the most economically important multi- causal infection of cows in the study area, has got the fourth rank from the list of diseases affecting cows as mentioned by 14% of the interviewed farmers. The past four year clinic data also shows the diseases is frequently occurring this could be associated with poor sanitary management of cows. As the International Dairy Federation bulletin (1999) description, mastitis is economically the single most important diseases of the dairy cattle. It reduces milk yields, profit and the quality of milk and milk products in all dairy producing countries of the world. Bartlet (1991) estimates shows that on the average an affected quarter suffer a 30% reduction in productivity and an affected cow is estimated to lose 15%of its production for the lactation this lose is some times expressed as a lose of about 340 kg of saleable milk, due to loss of production and the value of milk that has to be with held from sale.

There is also culling due to decrease milk production as can effect of the diseases. This is true that, 30% (n=24) of the respondents sell their cows at a low price due to the infection, this is in

consistent with that described by Mungube (2001) who reported annual mastitis culling rate of 7.23% due to milk loss. Similarly Radostitis *et al*. (1994) describes the need to cull cows with badly indurate quarters or quarters which chronically secrete pus.

Endo parasitic infection are one of the most important diseases of cattle and small ruminants as sited on result of clinic record summery, getting the fourth rank, although farmers describe they encountered endoparasitic infection in calves and in lambs not frequently during interview. Even though deworming measures taken by farmers is high as this study shows 86% (n=69) deworm their animals. This may be due to the study design used and/ or the period of the interview may be low challenge for endoparasitic infection. Further more, the socio-economic conditions of the animal holders becomes difficult to carry out regular measures for diseases control and grazing management (Seifert, 1996). Endoparasitic infection is most important problem as indicated in the previous findings in Ethiopia (Tekalye *et al*., 1992; ILCA, 1993).

Sheep and goats

All respondents confirmed during interview that fasciolosis is the leading disease in adults sheep and goats, mentioned by 25% and 32% of the farmers respectively, as well in lambs and kids, mentioned by 26% and 36% of the farmers respectively. Assefa (2001) found that fasciolosis and sheep pox were the second important infection of sheep and goats usually encountered by farmers in the Debere-Brehan. But the present study is incongruent with Tesfahiwot (2004) findings of a low incidence rate (1.4%) report. This could be associated with most livestock owners in the study area use riverbanks surrounded by marshy area for watering their animals. The present study is in agreement with the findings of Mekonnen (2000) who observed that faciolosis were the most serious diseases affecting sheep production in Arsi, south east Ethiopia which is the political boundary of the study are.

The parasite has also impact on the organ condemnation as shown from the retrospective study of the abattoir data in 2004/05 and 2005/6 a total of 461 and 388 liver condemned respectively due to infestation associated lesions to the liver.

In a designated study area most interviewed farmers possess sheep and goat with holding proportion from the total livestock herd to be 10% in the former and 9.4% in the latter. Sheep and

goat production is however, constrained by health problems of which pasteurellosis is the third killer diseases for adult sheep and goats as well for kids and has got the second position in lamb in the study area as disclosed by stock owners. An analysis on retrospective study and group discussion with both farmers and veterinary staff shows the disease is the main cause of mortality in small ruminants. This finding is in agreement with those stipulated in Aschalew report (1998) rate of 60.6% sheep mortality arising from pasteurellosis. The possible explanation for this could be due to the lack of an effective vaccine against pasteurellosis and the influence of the external climatic stress.

Nutritional disease in sheep such as copper deficiency may cause enzootic ataxia (sway back) in lamb and adult sheep as mentioned by 11% and 9% of respondents getting the forth in lamb from their respective diseases list in there group as shown in the Table 4 of the result part. Copper deficiency in the ovine races was repeatedly reported in Ethiopia rift valley areas (Roeder, 1980). In coordination of movement of the lambs when attempt to walk were as a result degenerative changes in certain regions of the central nervous system (Aiello and Mays, 1998).

Sheep and goat pox are the mentioned diseases of small ruminants and has got the fourth position from their respective diseases listed. Sheep and goat pox are highly contagious and spreads quickly among in contact animals (Kitching *et al*., 1989; Hailat *et al*., 1994), which makes control difficult. It has importance as it causes dawn grading skin quality due to skin lesions and mortalities (Radostitis *et al*., 1994).

Equines

Epizootic lymphangitis is one of the most common diseases in the area affecting equine species as shown from all result of this study. Especially carthorses are used as means of income generation, the affected equidae not able to perform this work and consequently causes cash gain reduction. The disease is reported to be enzootic in most African countries (Logas and Barbet, 1999). This could be associated with sharing of infected equidae harness to other one as its described as major means of the diseases transmit ion in addition to biting flies (Bridges, 1972).

Equine colic is one of the important mentioned diseases by respondents gating fourth and fifth rank in adult equine and in foul from the respectively listed diseases. This is attributed to poor

management, especially poor care of the teeth, feeding of equines that their intestine not able to digest and heavy infestation of equines with intestinal helmints, especially strongyles (Radostitis *et al*., 1994).

Pneumonic conditions are most important in foals as it is described by 28% of respondents and getting the second position and from the diseases affecting adult equines it has got third rank (20% of respondent). Foals are particularly prone to pneumonic condition (Alemnesh, 2004) could be due to the low resistance to microorganism causing the infection.

Poultry

From the observation made so far 62.5% (n=50) of respondents do have birds with 6.25 chickens on average per household. This is similar with the estimates of AACMC (1984) six birds, Tadelle (1996) 7-10 birds and FAO (1993) estimates of 6-10 birds per household. Although different poultry diseases have mentioned by the farmers at the survey and group discussion, of all Newcastle diseases causes the major economic losses due to mortalities as mentioned by 51% of respondents. A similar result of high mortality of NCD was described by Nasser (1998) at Dembi farm a mortality of 65.8% in unvaccinated chickens. This could be due to poor hygienic conditions of the back yard raising condition, selling or giving away sick birds and/or receive no health care especially vaccination.

5. CONCLUSION AND RECOMENDEATIONS

This study reveled that in Alaba woreda, which is one of the Southern Nation's Nationalities and People Region woreda, the mixed crop- livestock production system in the dominant system. Cattle are the most dominant animal from the livestock population, were raised extensively using the available feed in the area though there is shortage. Livestock plays a grate role in the livelihood of the farmers living in the area, which is used as a main source of income and as a food source in addition to supporting crop production. However, shortage of grazing land and diseases present in the area may decline the expected gain from different species of livestock in terms of impedance of productivity, market out put and due to mortalities. Anthrax, black leg, endoparasitic infection and LSD were the most important diseases of cattle. Fasciolosis and pasteurellosis were important in small ruminants. Epizootic lymphangitis and colic considered being important in equines. Mortalities of poultry is mainly associated with NCD.

Based on the findings of this study and considering the general status of livestock in the area, the following points are recommended

- A detail epidemiological survey is recommended to the most important diseases prevalent in the area
- Emphasis should be given in the animal health delivery to maximizes health service coverage of the area
- Introducing alternative feed sources (cultivated pasture) is mandatory to alleviate feed shortage
- Farmers must introduced market- oriented production and grate emphasis should be given to market information
- Livestock owners must receive basic training regarding animal diseases prevention, modern techniques in animal husbandry and managemental skills which can fit to the local situation
- The study serves as base line information to develop strategic diseases control scheme especially to commonly occurring infectious diseases like Anthrax, Black leg and LSD

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