



A senior research project on assessment of dairy cattle production systems, challenges and opportunities in Abaya Woreda

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Abstract

The study was conducted to assess dairy cattle production, challenges and its opportunities in Abaya Woreda. Purposive sampling technique was employed and three kebeles were selected. Data was collected through questionnaire with secondary information from different sources. Primary data from surveyed household was organized and analyzed using descriptive statistics. The study was expected to deliver scientific assessment on dairy cattle production constraints and the vital information for designing and promoting appropriate development interventions and management systems to avoid the problems occurs in dairy cattle production was provided for those involved in dairy cattle production as well as policy makers and further related research gaps will be suggested. The dairy cattle production system was mixed farming system. The major crops like tiff, wheat, and livestock. The respondents 60% kept local breed. The study revealed that 43%, 37% and 20% of the respondents faced shortage of feed, health problem and water scarcity respectively. Improving the management practice, breed advising the farmers are viable option to improve the dairy production.

Keywords: Dairy cattle production, opportunities, challenges, Abaya woreda.

Introduction

Ethiopia is home for large and diverse resource livestock production. the total cattle population for the country is estimated to be about 60.39 million. Out of this total cattle population, the female cattle constitute about 54.68 percent and the remaining 45.32 percent are male cattle.CSA, 2018.This is in the hands of small -holder farmers and pastoralists under traditional management (Azage *et al.*, 2002). It has huge dairy

cattle production potential for various reasons (prattet *et al.*, 2008). The 2017/18 livestock survey has covered the rural sedentary areas of the country on sample basis. Then According to (CSA 2018) the estimate of cattle for the rural sedentary areas at country level, the total cattle population for the country is estimated to be about 60.39 million. Out of this total cattle population, the female cattle constitute about 54.68 percent and the remaining 45.32 percent are male cattle.

Regarding age groups, the majority of the cattle population (that is about 63.09 percent) is in the 3 years and less than 10 years age category, with about 28.15 percent male and about 34.94 percent female. Moreover, about 16.9 percent are between age one and three years and those with age category 10 years and over took small portion i.e. 2.03 percent of the total estimated number of cattle population. On the other hand, the results obtained indicated that 98.24 percent of the total cattle in the country are local breeds. The remaining are hybrid and exotic breeds that accounted for about 1.54 percent and 0.22 percent, respectively. Among cattle aged 3 years and less than 10 years, those used for draught purposes accounted for 25.77 percent and the percentage share of beef cattle is the lowest that is about 0.81 percent. The estimate of total cow milk production for the rural sedentary areas of the country during the reference period, is about 3.32 billion liters(CSA, 2018).

In Ethiopia milk production and productivity is low due to different constraint such as lack of market, lack of adequate information on livestock resource inadequate permanent trade routes, other factors like feed, water, holding grazing land, lack of provision of transport, lack of infrastructure, prevalence of disease. In generally, based on production system, dairy cattle production in Ethiopia is grouped as pastoralists, agro-pastoralist, mixed crop livestock producer, urban 3and per-urban dairy cattle system(Ketema,2000; Zegeye,2003).The dairy production potential of zebu cattle breeds in the high disease, genetic factor, illegal trade and in adequate market information(Belachew,2002).The dairy production potential of zebu cattle breeds in high land mixed crop-livestock system of Ethiopia cannot existed400-500 kg of milk lactation per cow and the raised milk production potential through selection is about 1% per year or 3-4 kg per location (EARO,2004). The pre-urban milk production is developed in areas where the population density is high and agriculture land is shrinking due to urbanization around big cities. It possesses animal type ranging from 50% cross to high grade Friesian in too small medium sized farms and improves dairy cattle (Tsehay,2001).

Opportunities for improvement dairy cattle production and its system wound enhance the benefit to small-holder dairy farmer and its surrounding. To enhance dairy establishing commits based on grazing land management, improving crop residue utilization, enhancing fodder production and conservation strengthen and veterinary services, genetic production

developing infrastructure and strengthen collective milk marketing strengthen of farmers' cooperative and private sector input supply as drug, AI, health services deliveries and marketing production activities could also play a significant role (Belete *et al.*, 2009). So this project provides opportunities in Economic policy, dairy marketing and Opportunity in new products and ease of entry into the dairy Sector.

In the same manner in the study are asin Abaya woreda, here have been practicing dairy cattle productions for many years. However, there has no documented information regarding dairy cattle production system, constraints and opportunities including feeding, watering, housing and health care management system etc. Therefore, the study will be accessed on points of dairy cattle production system, constraints and opportunities. The obtained information from the study will be relevant for the farmers, researchers, government and non-government institution etc. Moreover, the study was used as base line for further researchers.

1.1 Statement of the problem

Dairy cattle production systems are one of the integral parts of livestock keeping that are really kept for immediate cash source, milk, meat, wool, manure, and saving or risk distribution (Markos, 2006). Even though dairy cattle production needs more treatment to the cattle's, however in Abaya woreda due to absence of treatment for the cattle's, the dairy production is not as expected as the cattle's number. Not only in decreasing of dairy production but also it leads to increase challenges of the community. Additionally it also brings loss of opportunities in new product and ease of entry in to the dairy sector. Therefore this project will solve the challenges of the community in dairy cattle products and it will create opportunities such as economic policy, dairy marketing in the community.

1.2 Significance of the Study

The result of these study benefits to providing proper methods, housing, feeding and management. In addition, it provides information for policy makers in improvement of dairy cattle production system practice will be a secondary source of data for further study regarding with dairy cattle production system, opportunities and challenges in Abaya Woreda.

1.3 Objective

1.3.1 General objective

To carry out systemic inquiry about the dairy cattle production system, opportunity and challenges in the Abaya Woreda.

1.3.2 Specific objectives

- To identify the dairy cattle production system in the study area
- To explore the opportunity of dairy cattle production in study area
- To assess the dairy cattle production challenges in a study area

Literature Review

2.1. Dairy Cattle production System in Ethiopia

Dairying is practiced almost all over Ethiopia involving a vast number of small, medium or large sized, subsistence or market oriented farms. Based on climate, land holdings and integration with crop production as a criterion, according to Azege and Alemu (2003) there are four major types of dairy production system in Ethiopia. These are pastoral, high land small-holder milk production, urban and per-urban and intensive farming system.

2.1.1 Urban and per-urban milk production system

Urban dairy production systems are located near or proximity to Addis Ababa and regional towns and take the advantages of the urban market. These sector controls most of the countries improved dairy stock. Urban and per-urban milk production system involves the production, processing and marketing of milk and milk products into urban centers (Tshay, 2000). It is mainly motivated by availability of good market for animal products, benefits urban farmers through increasing income, food and nutrition and creating employment opportunity (Livestock Research for Rural Development (LRRD, 2012). The informal raw milk marketing provides the urban dairy farmers with a direct daily source income through sales of milk and milk products. The dairy farmers in urban and per urban area have a little access to grazing land they mainly depend on purchased feeds and feed resources are grass hay, and agro industrial by-products (LRRD,

2012). This results into dairy cattle to receive sub optimal level of nutrition during dry periods. The total milk production from this system amounts to 34.64% million liters/ annual of this total, 73% is sold, 10% left for house hold consumption 9.4% goes to calves and 7.6% is total production of the country (Azage and Alemu, 2003).

2.1.2. Highland small holder milk production

This system found in the central part of Ethiopia where milk production system is subsistence and mixed crop livestock farming. The majority of milking cows are indigenous breeds which have low production performance. According to Belete *et al* (2010) reported the average cow lactation milk yield is 524 liters over a lactation period of 239 days. The average age at first calving is 25 months. Cows are kept to provide milk primarily for house hold consumption and reproduce to replace draught oxen and heifers. Surplus milk is sold by women to buy house hold needs. In this farming system all the feed requirement comes from pasture, crop residues and grazing (Segue, 2003).

2.1.3 Pastoral milk production

The pastoral system practiced mostly in lowlands where livestock production is very common to sustain the livelihood of pastoral society without crop cultivation. The population covers 50-60% of the total area mostly lying at an altitude ranging from below 1500m.a.s. l (Ketema and Tsehay, 2004). Milk is primarily consumed as fresh at the household followed by sales to urban centers. Pastoralists' raises mainly indigenous breed which about 30% of the livestock population. It contributes major milk production system in the lowland areas, an estimated 10% of the country's human population. Milk productions characterized by low yield and depend on season (Belete *et al.*, 2010).

2.1.4 Intensive dairy farming

This is a more specialized dairy farming practiced by sector and very few individual on commercial basis. These are concentrated in and around Addis Ababa and are basically based on exotic pure-breed stock. The urban and per-urban and intensive farming are produce 2% of the total production of the country (Sintayehu *et al.*, 2003). In this system, the animals are confined in feedlots or pens and receive in the trough completely balanced ration of forage, concentrate feed

or divers agro-industrial by-products. These techniques should experience considerable development in all the regions where agricultural activities (Pagot, 2002).

2.2. Opportunities for Dairy Cattle Production

Dairy production system in Ethiopia forms a continuum with postural form of production system dominating the lowland agro ecological set up (livestock production is dominant to sustain the livelihood of the society) to market oriented urban and per urban dairy production system that exists in mid to upper highlands (Ilica, 1993). There are indications dairy product yield among the indigenous animals is variable improving that there are opportunities for improvement. Then Advantage of dairy cattle production in Ethiopia crates opportunity in new products and ease of entry into the dairy sector, dairy marketing opportunities etc.

2.2.1 Economics policy

The success of any livestock development scheme depends in part on the broader development objectives pursued by a country and the corresponding government policies used to secure those objectives. A strict self- sufficiency goal implies that all dairy consumption must be supplied by domestic production. The opportunity cost of this option, i.e. the benefit for gone by note using the resource applied in dairy production in the best alternative (Solomon, 2006). The dairy industry is essential for rural Ethiopia and it is potentially the largest rural employer in the Ethiopia high lands and pastoral or agro-pastoral areas. With continued urbanization, growing population site, demand for milk by children and younger generation, it is expected that there dairy industry will become a major player in agricultural development and has further potential to contribute significantly towards increased income and employment. The ultimate goal of the intervention in the dairy industry in general and milk value chain to increase rural incomes by increasing the number of rural households deriving their livelihood from dairy business enterprises, while delivering quality and affordable dairy products to the market (Workineh, 2003).

2.2.2 Dairy marketing opportunities in Ethiopia

Products wound to market place where commodities are traded. A market can be visualized as a process in which goods is transferred from sellers to buyers who may be final consumers (Debraha, 2001). Overall, it is important for government to implement appropriate pricing and marketing policies as well as provided facilitating institution include agricultural extension for providing information, education and training; necessary to support technological change (Senaitet *al.*, 2001). The principal opportunity for dairy development in edacities include the growing market for dairying cattle population and increasing reconvection of the importance of urban dairying by dairying non-governmental organizations (NGO) and municipal authorities (Sintayehu,2008).

2.1.3 Opportunity in new products and ease of entry into the dairy Sector

The dairy industry has a number of specific features that distinguish it from the other agricultural industries. Milk is a bulky commodity, highly perishable, and produced on a daily basis. Therefore, milk requires timely management and implies high transportation and transaction costs. This makes milk Avery valuable but at the same time extremely expensive raw material. All over the world the challenge of dairy manufacturers is to keep on adding value to milk, as rival products (soft drinks, fruit juices, vegetables, oil, etc.) attract consumers away. In many developing countries manufacturers have found strong incentives to diversify and extend products' shelf-life (UHT milk is the most successful example), so as to promote consumption across all the highly variegated segments of the society, including those households that do not have fridge (Euro Monitor International, 2004). The dairy industry is essential for rural Ethiopia and it is potentially the largest rural employer in the Ethiopian highlands and pastoral/ agro-pastoral areas. With continued urbanization, growing population size, demand for milk by the children and younger generation, it is expected that the dairy industry will become a major player in agricultural development and has further potential to contribute significantly towards increased income and employment. The ultimate goal of the intervention in the dairy industry in general and Milk Value Chaining particular is to increase rural incomes by increasing

the number of rural households deriving their livelihood from dairy business through managing high productivity enterprises, while delivering quality and affordable dairy products to the market (SNV, 2006)

2.3 Challenges of Dairy Cattle Production

2.3.1. Feeding

Feeding of dairy animals is the basic input and mainly dependent on natural pasture in our country. Feed resource derived from grazing, browsing, crop residue and industrial by products account feed availability for the major livestock. The quality of feed determines production level. Livestock feed affected by its availability, which is dynamic throughout the year (Alemayehu, 2003). In small holder highland crop livestock system and pastoral system feed resources are not fully utilized due to poor in quality, inadequate availability and seasonal variation of plant growth and causes fluctuation in the production of milk (Getachew and Gashaw, 2012). According to the same source, in general shortage of feed supply, its seasonal variation and low quality are the major problems for livestock development in Ethiopia which needs improvement of both supply and quality of feed to attain improvement in the sector. However, the supply of quality feed is not sufficient and limits productivity of local breeds, decreases animal weight and mortality in young stock (McIntire *et al.*, 2002).

2.3.2 Water

Water is a determining factor for all activities of animals. Water problem in amount and quality can cause different problem like constipation, drying of digestive tract, low milk and related products and low metabolic activities with lowered body condition (emaciation). Water shortage is seen in most low land areas in which a limited amount of rain fall is available at a time in mid altitudes (Tsedeke *et al.*, 2007). Rain fall rather than livestock density determinate primary production and vegetation cover, its variability is the most climatic factors determining the status of natural resource base (Serial, 2003).

2.3.3. Housing

Housing needed to the cattle in order to reduce environmental stress and provide a healthy, comfortable environment. Almost all of the households (80%) in rural and mixed crop livestock system rear their cattle either family house, while 10%

use a separate shelter for their animals and the rest 10% used open barn (shed) or fences within their own compounds (Radostits *et al.*, 2004). Because of this high yielding dairy cows are sensitive to environmental stress and decrease in milk production. In commonly, majorities of the local farmers experienced in living with their cattle in the same shelter separating their rooms by enclosure (Workineh, 2002).

2.3.4. Climatic factors

Animals are able to maintain normal body temperature under cold environmental conditions. Under hot environmental condition animals become stress and shows physical signs of discomfort such as shade seeking, high respiration rate and possibly salivation. In addition to that, there will be a decline in feed intake and the efficiency of feed utilization too declined it is accompanied by decrease in milk production. High milk holder first show signs of stress and reduced production under such hot condition (Asrat *et al.*, 2013) and suited to colder environments than hotter environments.

The reduction in milk yield under hot conditions depends on environmental factors such as air temperature and wind speed, composition and quality of the diet. When the animals are stressed by heat the respiratory pathways are so activated result by in salvation animal to reduce body temperatures, decrease feed intake and utilization and affects physiological processes that disrupt hormonal balances and normal function (Payne and Wilson, 2003). This resulted in changes in estrus cycle, decrease conception rate and depression in milk yield.

2.3.5 Genetics

In Ethiopia livestock genetic resource dominated by the indigenous breeds and exotic breeds and their crosses mainly concentrated in urban and per urban areas (Getachew and Gashaw, 2001). According to LRRD(2012), less than 1% of the total cattle populations of Ethiopian are exotic or their cross bred dairy cows. Milk production from a local cow rarely exceeds 250kg per year (Assaminewand Eyes, 2009). The low productivity in general is due to poor management practices, low improved nutritional inputs and low genetic potential. Low genetic potential is associated with natural selection to the tropical environment of the local cattle types which have low production performance with the average at the first

calving is 53 months and the average cows' lactation yield 524 liters for 239 days of which 238 liters of take for human consumption while 286 liters is suckled by the calf (FAO, 2009).

2.3.6 Disease

Good health care and disease control methods have impact on dairy cow productivity combined with good herd management such as nutrition, cow handling, sanitation and housing. In different ecological zones prevalence of wide range of disease, internal and external parasites cause direct economic loss through high mortality of animals and contributes to the poor production performance. An animal health problem that contributes to the low productive performance includes absence of proper disease control measures, inadequate veterinary service and budgetary constraints. The annual mortality of livestock is estimated at 8-10% cattle, 14-16% sheep and 11-13% goat (Getachew and Gashaw, 2012).

According to Daniel (2000) livestock movement can cause direct or indirect transmission of various livestock diseases. Such movement includes contact of livestock during grazing of communal pasture and watering and transmission of parasite and other infectious diseases. It against, which actions have been caused by highly virulent and conscious infection agents against which vaccination and sanitation measures have been effective (Payne and Wilson, 2004).

Many diseases are however, the results of complex inter-relationship of the animal with its environment. For example, illness causes reduce out of this product produced through the life of animal such as milk, egg, wool and work. For instance, sub clinical mastitis may reduce the yield of an effective quarter by 20% in lactation, but in even in hand milked helps the true significant of this situation may only be apparent. If the quarters are milked separately it will good for animal health (Payne and Wilson, 2003).

On the other hand, mastitis may develop if the quarter becomes intended as when the cows lies in mud or manure and bacteria intended, the tent canals or drudger udder through the deep-dairy and results from brazing the quarter may be permanent damage without prompt treatment (Rosati *et al.*, 2009).

Materials and Methods

3.1 Description of the study area

The study was conducted in Abaya Woreda, located 365 km from Addis Ababa. Abayais one of the districts that are found in Oromia region, Ethiopia. This district is located between latitude of 5⁰ 45'0''N-60⁰ 45'00''N and longitude of 37⁰44' 00''E-38⁰020' 00''E. It is part of the West Guji zone, bordered on the south by Bule Hora and on the west, north and east by Southern nations, nationalities, and people's region (SNNP). The altitude of this districts ranges from 1200 to 2000 m. a. s. l. A survey of the land in this district shows that 41%, 28.7%, 35%, 15% and 9% were arable, annual crops, pasture, forest, and swampy or degraded or otherwise unusable land respectively. (District Agriculture and Natural Resource Office, 2018). The total population of Abaya woreda according to 2007 national censuses reported the total population at this woreda is 103,348 as whom 52,015 where the men and 51,333 the women.

3.2 Sampling techniques

Through formal administrative channel, a legal letter would be taken from our University and discussion was undertaken with kebele administrative office and agricultural center office of the kebele. *Then based on dairy cattle production potentials, three kebeles were selected purposively. From selected kebeles, ten households will be selected based on production potential and a total of 30 total house hold /respondents would be used.*

3.3. Method of data collection

For the success of the assessment, two types of data (primary and secondary) were collected using the following methods. Primary data were collected through questioner by preparing important question for the respondents. Secondary data related to the study and back ground information of the kebele would be collected from available written documents of organization which are found in kebele administrative and agricultural center of the Kebele ,journals, internet and books.

3. 4 Method of Data Analysis

The data collected on different parameters was analyzed using simple descriptive statistics like percentage, frequency, and were illustrated through table form by using MS-excel 2010.

Results and Discussion

4.1 Socio-economic characteristics of the house hold

Table 1. Household characteristics

Category		Semero		Bunata		Odomike		Overall%
		N=10	%	N=10	%	N=10	%	
Sex	Male	9	90%	8	80%	7	70%	80%
	Female	1	10%	2	20%	3	30%	20%
Educational Status	Illiterate	4	40%	3	30%	2	20%	30%
	Grade 1-8	6	60%	6	60%	8	80%	67%
	Grade 9-12	0		1	10%	0		3%
	High level	0		0		0		-
Marital status	Married	10	100%	9	90%	10	100%	97%
	Single	0		1	10%	0		3%
	Windowed	0		0		0		

The household characteristics are presented in Table 1. From 30 samples of households 80% were male headed. The rest of 20% were female headed. This indicates that male was headed [dominantly] found in the study area. The educational status among the sample respondents [30%] were not educated, have

while [67%], and [3%] were educated elementary and secondary, respectively, but among household not in education level at high level. Of the interviewed household most were married (97%) while some are single (3%) but not windowed.

4.2. Breed Type of Dairy Cattle

Table 2. Breed types of dairy cattle

No	Type of breed	Semero		Bunata		odomike		Overall %
		N=10	%	N=10	%	N=10	%	
1	Exotic	-	-	-	-	-	-	-
2	Cross	4	40%	3	30%	5	50%	40%
3	Local	6	60%	7	70%	5	50%	60%

In the study area, farmers were kept two types of dairy cattle. These local breeds and cross breeds but no presents exotic breed types. Most of respondents in the study area raised local breed (60%) and also keeping cross breed (40%) but smaller than local breed due to lack of awareness on improved breed. This result disagreed with Tsahay (2001) study who state that

more specialized dairy farming is practiced by investors and some small holder farmer in india and are basically based on exotic pure breed stock. It has been generally accepted that the first-generation cross is well adapted to the environment, performs satisfactorily and is accepted by farmers.

4.3 Dairy cattle management

4.3.1. Feed source and feeding system

Table 3 Feed source and feeding system by respondent in percentages.

Feed Sources	Semero		Bunata		odomike		Overall %
	N=10	%	N=10	%	N=10	%	
Natural pasture	6	60%	3	30%	3	30%	40%
Crop residues	2	20%	5	50%	4	40%	37%
Concentration	1	10%	1	10%	2	20%	13%
Nonconventional Feed	1	10%	1	10%	1	10%	10%
Feeding system							
Free grazing	2	20%	1	10%	1	10%	13%
Rotational grazing	2	20%	1	10%	1	10%	14%
Zero grazing	6	60%	6	60%	7	70%	63%
Others	-		2	20%	1	10%	10%

The major feed resource of cattle in the study area were natural pasture, crop residue (from tiff, maize and wheat), concentrate (furishka) and some farmers also used non-conventional feed like household left over and salt. However, the availability of feed resources was varying among kebeles, in semero more farmers used natural pasture [40%] to feed their cattle less than relative to two Kebeles those are all used natural pasture. In bunata and odomike more of used crop residue for feed their cattle. In general the three kebeles used more natural pasture than the other feed. In case of feeding system the majority of the farmers were used zero grazing (63%) but rotational grazing

(14) and free grazing (13) was used by only some farmers. However, the results of current study were agreed to Girma *et al* (2014) study in dairy production system due to shortage of grazing land most farmers feed their dairy cattle by cutting green feeds, crop residues, atela and mill by product. The current study was similar with Nanyeenya *et al* (2008) who reported that crop residues, kitchen wastes like crop peelings, sheaths and haulms, stems and leaves of cereals and bananas and false banana left after harvest and crop thinning of mostly cereals like maize are major sources of feed for cattle on crop-livestock production system.

4.3.2. Water sources and watering system

Table 4. Water source and watering system by respondent in percentage

Source of water	Semero		Bunata		Odomike		Overall%
	N=10	%	N=10	%	N=10	%	
River	8	80%	6	60%	7	70%	70%
Pond	2	20%	4	40%	3	30%	30%
Rain	-	-	-	-	-	-	
Watering system							
Once a day	2	20%	2	20%	1	10%	16%
Twice a day	5	50%	5	50%	4	40%	47%
Free access	3	30%	3	30%	5	50%	37%

In Table 4 shows that water sources and watering system by respondent is presented. In the study area, most of the respondents used river as water source for their cattle (70%) and others were used pond (30%) but not used rain water. Regarding on watering frequency, most of the respondents have drink once a day (16%), Twice a day (47%) and the rest are drink free accessibly. In semero the most water source is

river more than the two Kebeles of bunata and odomike about 80%, 60% and 70% respectively. This is special true in summer season because the condition is cold. However, some researchers reported that farmers drink water their cattle twice a day in particularly in winter season due to heat effect at that period (Tsedeke, 2007).

4.3.3. Housing System

Table 5. Housing system and cleaning frequency by respondent in percentage.

Housing system	Semero		Bunata		Odomike		Overall%
	N=10	%	N=10	%	N=10	%	
Together with family	5	50%	1	10%	4	40%	33%
Separate with wall and roof	5	50%	9	90%	6	60%	67%
Housecleaning frequency							
Once a day	5	50%	1	10%	3	30%	30%
Twice a day	5	50%	9	90%	7	70%	70%

The majority of farmers were housed their cattle differently from family house [67%], whereas 33% of the respondent were house their cattle together with family house. The result of present study was in contrarily to workinesh (2002) result to report that the housing type was designed in proportional of number of the animal. In study area, about (70%) respondent of the cleaned dung and urine from dairy cattle house twice a day in morning and evening while (30%) were

cleaned only once per day in morning (table 5) sanitation of house is necessary to have health and good body condition performance dairy cattle as it enables to control and prevent of different transmissible and contamination disease and parasites which cause to sick, reduce production and reproduction performance of dairy cattle. The current result was in consistence with workneh (2002) study.

4.4. Opportunity of dairy cattle production

Table 6 Major opportunity of dairy cattle of dairy cattle production by Respondents in %

Major opportunity	Semero		Bunata		Odomike		Overall%
	N=10	%	N=10	%	N=10	%	
Marketing accessibility	3	30%	2	20%	5	50%	33%
Veterinary service	5	50%	5	50%	2	20%	40%
Starting land	2	20%	3	30%	3	30%	27%

Table 6. Major opportunity of dairy cattle of dairy cattle production by Respondents in % .Even if, there were many problems in the study area, there were also suitable condition to improve dairy production and productivity for the future such as marketing accessibility, veterinary and artificial insemination

service, and Family land start dairy production (Table 6). These were warranted to the dairy producers to remain with their dairy production activity .As indicated in (Table6), veterinary service was the primary opportunity (40%) while marketing accessibility (33%) and family land start are (27%).

4.5. Challenge of Dairy cattle production

Table 7Major challenges of dairy cattle production.

Characteristics	Semero		Bunata		Odomike		Overall%
	N=10	%	N=10	%	N=10	%	
Feed shortage	4	40%	5	50%	4	40%	43%
Health problem	4	40%	3	30%	4	40%	37%
Water scarcity	2	20%	2	20%	2	20%	20%

As presented in (Table 7), shortage of feed (43%), health problem (37%), water security (20%) where major challenges affect dairy cattle production and productivity. The cause for shortage feed may be due to most natural pastures areas area converting to crop production more ever , over grazing is common due to population explosion ,Shortage of feed and water are more aggravated during dry season . In comparable to current results. Loesser *et al* .(2015) study in agro-pastoral community reported that shortage of feed and water were ranked 2nd and 3rd respectively specially during dry season , other constraint included high price of veterinary drugs , low genetic potential of zebu cattle , and lack of market for the animal specially during the rainy season when road to live stock market are not possible .

producer to increase dairy production in the study area. The major challenges that cause to decline dairy production were feed shortage, health problems, water scarcity and scarcity of labor. Therefore, according to the present study for the major challenge of the dairy cattle productions system mention in the above the following recommendations were recommended.

- Provide the extension service like advising farmer to use new technology
- Disseminate the new technology to the individual farmer
- Improved cattle breeds should be distribute to the farmer in order to increase yield
- The housing design should be well design to make safe the cattle health condition

Conclusion and Recommendation

In Ethiopia there is a large and diverse resource livestock production and many opportunities for improvement dairy cattle production. The entire stockholder were rears the dairy cattle within mixed farming systems. The majority of feed source for dairy cattle production in study area where natural pasture and zero grazing was the major feeding system. The water source was river and the majority of the respondents provide water fortheir cattle twice a day. The housing systems were different from household to household houses, major have said open house thorny trees and some were used separated house with wall and roof. They treat their cattle by using traditional and modern medicine. Market accessibility veterinary service and AI and family land to start dairy cattle production on were major opportunity of dairy

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