



Research Paper

Major Constraints on Small Scale Dairy Cattle Farmers In Benadir Region, Mogadishu Somalia

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ABSTRACT

A cross sectional study was conducted in Benadir Region, Somalia between July 2019 and June, 2020 to identify major constraints in small scale dairy cattle production. A questionnaire was collected to 66 dairy farm owner and attendants.

It was reported that major constraints frequently mentioned by dairy cattle keepers in the study area were inappropriate waste management, high cost of inputs (feed and drugs), cost and quality of concentrated feed and grass hay, and poor reproductive performance of dairy cows, poor availability of AI technician and a shortage of semen. Dairy production plays a role on food security, increase economic growth, create opportunities for employment and investments for investors, also it relatively important as provides a cheap source of protein, and increase per capital consumption of poultry meat. Thus it should be provided Training for feed formulation to access to the farms to prepare feed for their own dairy.

KEYWORDS: constrains, production

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I. INTRODUCTION

Dairy farming in agriculture enriched with agro-ecological, political and social dimensions across countries, region and the vast continents. According to Knechtges (NICOSTRATUS KIGINGA MAGORI, 2016), approximately 900 million of the world's 7.53 billion people are poor and live in rural areas. The majority of these people depend on agricultural activities or food and income. Dairy farming, directly and indirectly, utilize 80% of land surface and is projected to escalate to the tune of 30% of the total value of the global agricultural production (OECD, 2002).

In the United States of America (USA), dairy farming is a large scale and highly mechanized with milk marketing mostly done through cooperatives. Dairy product sales represented 42 percent of the total commodity marketed by Agricultural Cooperatives in 2007 alone. The Danish dairy industry can be traced back into the eighteenth century and comprises of the universal dairy assemble Foods and 30 little dairy organizations, together generating 4.7 billion kilograms of milk from an aggregate of 61

Livestock in Somalia is the major repository of individual and national wealth. In Relation to potential, however, they have failed to achieve their potential in contributing to increased incomes and greater food security. Growth in output has varied over the years but General has barely kept pace with population growth inside and outside the country and hence the demand for products of animal origin. Livestock furnish end products that include milk, meat and hides and skins and intermediate products such as manure, fuel, and power for draught and transport. They thus contribute to food security but also are a store of wealth that is readily realizable in times of need, reduce the risk associated with crop failures in the agro-pastoral areas and have important social and cultural connotations.

In addition to the technical constraints to animal production associated with nutrition, disease, genetic resources, and poor management, other constraints include structural and institutional weaknesses, marketing constraints, domestic price distortions, and production and Consumption orientations due to the adoption of inappropriate policies and (often artificially) limited Intra- and inter-regional trade. (FAO, 2004)

Poor dairy performance in Somalia is due to the low genetic potential of the local breeds and perhaps difficult in nutritional, disease and environmental management.

National plan addressing priorities is missing. Opportunities are great as the demand for fresh milk and its products are grown locally.

Although many studies related to the problem under investigation have been conducted in many parts of the world, yet there is a literature gap in the study area, therefore, this study is aimed to bridge this literature gap and find out the challenges and opportunities of Dairy cattle Farming in Mogadishu.

II. RESEACH METHODOLOGY

1.1 Purpose of the study

The purpose of this study to Study major constrains in small scale dairy cattle production in the Benadir region.

1.2 General Objective

The general objective is to assess constraints in small scale of dairy production in Banadir region.

1.2.1 Specific objectives

i) To identify the constraints in dairy production in Banadir Region

ii) To identify the strategies to mitigate the constraints for improvement in dairy production in Benadir Region.

1.3 Research questions

1. What are the major constraints of dairy production in the Banadir region?

2. What are the strategies that mitigate the constraints for dairy improvement in dairy production in the Banadir region?

1.4 Significance of the study

Poverty reduction and food security are among the major millennium development goals of the Somali government. The findings of this study were serving as guidance for the local authorities, civil society and international community operating in Somalia.

The challenges and information resulting from this study help different stakeholders in smallholder dairy development such as planners and donors who want to establish new smallholder dairy projects. Information from this study can also help to streamline/up-scaling the already established smallholder dairy development programs/schemes/projects in the country.

The findings of this study provide researcher based and update information for future research and academics about major constraints of small scale dairy production.

1.5 Scope of the study

The study focused on Study on major constrains in small scale dairy cattle production in the Banadir region. The study was conducted from July 2019 to june 2020.

3.1 RESEARCH DESIGN

This study follows Descriptive Research design. It is cross-sectional and both qualitative and quantitative. In analytical research, the researchers have to used facts or information already available and analyze them to make a critical evaluation of the material (Kothari, 2006). It is a cross-sectional survey and the researcher was examining many people at same time because most research projects undertaken for academic courses are necessarily time-constrained.

3.2 POPULATION OF THE STUDY

Population refers to the entire group of people that the researcher wishes to investigate (Sekaran, 2003). The populations of the study were dairy cattle farmers in Hodan, Dherkinley, Yaqshid and Wadajir Districts in Benadir region Somalia for both exotic and indigenous which are reared ascommercial dairy cattle performances. In this study, it was selected some farms in Mogadishu. The target population of this study was 140 farmers; in this case, the researchers selected 4 districts in Mogadishu namely Dharkinley, Yaqshid, Wajir and Hodan, The reasons we have chosen this Institutions were their popularities and their easy way to reach and meet our objectives of the study.

3.3 STUDY AREA. This study is carried out in Mogadishu Banadir Somalia especially Hodan, Wajir, Yaqshid and Dharkinley Districts.

3.4 SAMPLE SIZE DETERMINATION

The researchers used Slovene’s formula to select the respondents of the study from the population; using the following formula:

$$N = \frac{n}{1 - N(e)^2}$$

Where n is the required sample size, N is the target population size and e is the standard error or level of significance, which is popularly known to be =0.05 or 5%. For this study, N = 79 and so the sample size calculated as follows;

The researchers used Slovene’s formula.

$$N = \frac{79}{1 - (0.09)^2} = 66$$

The sample size for this study was 66 employees from the target population of local dairy farming in the Banadir region in Mogadishu-Somalia.

Table 3.3.1 Target population

Name of the districts	Number of Farms
Hodan	22
Wadajir	20
Dharkinley	15
Yaqshiid	9
Total	66

3.5 SAMPLING PROCEDER

In this study, purposive sampling technique was being employed According to Amin (2005). Purposive sampling is the type of sampling where the researcher uses his/her judgment or common sense regarding participants from whom the information was collected. The researchers have used purposive sampling in order to choose the respondents that he believes to have the information concerning this study by using his own judgment, and then the researcher was distributed the questionnaire to them. Moreover, the researchers choose purposive sampling because the researcher wants to get the key informants of this study, for that reason; selecting the respondents is more useful for this study than the representativeness of the sample.

3.6 DATA COLLECTION INSTRUMENT

The study was used administered questionnaire method to collect data from the sample chosen because questionnaire can be used to collect the information related to the feeling and attitudes of the people .therefore, this study is concerned with variables that cannot be found through observation such as feeling and options of the respondents, such information is best collection Through questionnaire. The selection of this tool has been guided by the nature of the data to be collected; the availability of time and the objective of the study The aim of this study investigate major constrains in small scale dairy cattle production in Benadir region in Some selected Farms in Banadir region in which the researcher is mainly concerned with the feelings and attitudes of interested organization member and other stakeholders. (Onen and Oso, 2008).

III. DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

4.1 Section A objective one: To identify the constraints in dairy cattle production in Banadir Region

4.1.1 Location of the farm

Location of the farm	Frequency	Percent
Hodan	22	33.3
Wadajir	20	30.3
Dahrkinley	15	22.7
Yaqshiid	9	13.6
Total	66	100.0

The above table 4.1.1 shows where the farms located, 22 farms located their Farm in Hodan District, while 20 of the farms located in the Wadajir District, while 15 of farms located in Dhariinley District, while 9 of the farms located their farms in Yaqshiid.

4.1.2 Prior knowledge of dairy farming

Prior knowledge of dairy farming	Frequency	Percent
Yes	1	1.5
No	65	98.5
Total	66	100.0

Table 4.1.2 shows the answers of the respondents in the above table, the majority of the respondents 65(98.) they do not have prior knowledge about livestock, while 1 (1.5%) have prior knowledge in Farming.

4.1.3. The one who encouraged dairy farming

The one who encouraged dairy farming	Frequency	Percent
Encourage by parents/relatives	2	3.0
Self –motivated	64	97.0
Total	66	100.0

The above table 4.1.3 shows the majority of the respondents 64 (97%) are self-motivated in farming, while 2(3%) encouraged by parents or relatives. That shows means they morality in dairy Farming.

4.1.4. Purpose of established dairy farming

Purpose of established dairy farming	Frequency	Percent
To increase income	62	93.9
To diversify the source of income	3	4.5
Others	1	1.5
Total	66	100.0

The above table 4.1.4 shows the majority of the respondents 62(93.9%) shows why farming dairy is to increase income, while 3(4.5%) their purpose of rearing dairy is to diversify the source of income.

4.1.5 Number of cows milked daily on the farm

Number of cows milked daily on the farm	Frequency	Percent
5	38	57.6
10	14	21.2
20	8	12.1
30	6	9.1
Total	66	100.0

The above the table 4.1.6 shows the majority of the respondents 38(57.6%) their cows milked daily are 5 cows, while 14(21.2%) of respondents milked 10 cows daily, while 8(12.1) milked 20 cows daily, while 6(9.1) of the respondents milked daily in 30 cows.

4.1.7. On average cost spend farmers on clinical treatment per monthly

On average cost spend farmers on clinical treatment per monthly	Frequency	Percent
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\$50	22	33.3
\$100	18	27.3
\$150 above	26	39.4
Total	66	100.0

The above table shows the majority of the respondents 26(39.4) they spend \$150 on clinical treatment per month, while 18(27.3%) spend \$100 On clinical treatment per month, while 22 (33.3) of the respondents spend \$50 on clinical treatment per month.

4.1.8 Ownership of house

Ownership of house	Frequency	Percent
own house	54	81.8
house with family	12	18.2
Total	66	100.0

The above table 4.1.8 shows the majority of the respondents 54(81.8%) raring cows their owner house, while 12(18.2) of the respondents raring their cows a house with family.

Table 4.1.9 Type of mating used Dairy Farmers

Type of mating used Dairy farmers	Frequency	Percent
Natural mating	65	98.5
Artificial mating	1	1.5
Total	66	100

According to the above table 4.1.9 shows the majority of farms 65(98.5) use natural mating in their cattle, while only one farmer of the 66 farms use Artificial insemination on his cattle.

4.1.10 production systems of dairy farms

According to the above table 4.1.10 shows the majority of the respondents 64(97%) their system of production is a Free Range system, while one of the farmers is intensive, while the other one is semi-intensive.

production systems of dairy farms	Frequency	Percent
Free Range	64	97.0
Intensive	1	1.5
semi-intensive	1	1.5
Total	66	100.0

4.1.11 Facilities of dairy farm

Facilities of dairy farm	Frequency	Percent
waste drainage, milk room,		
Electrics, access of water, store,		
dip tank, protective equipment's	1	1.5
No	65	98.5
Total	66	100.0

According to the table 4.1.11 shows the majority of the farms 65((98.5) their farms have no facilities such as waste drainage, milk room, Electrics, access of water, store, dip tank , protective equipment's, while only one farmer has al the facilities.

4.2.1 Common breed cattle found in dairy farm

Common breed cattle found in dairy farm	Frequency	Percent
Surqa	64	97.0
Friesian	1	1.5
Dawara	1	1.5
Total	66	100.0

The above table 4.2.1 shows the majority of dairy farmers 64(97%) hold Surqa Breed in their herd, while one of the farmer holds Friesian, while one of the farmers holds Dawara breed. So the majority of the cows were they hold farms are Surqa breed that is a local breed of Somalia.

4.2.3 The way you plan to increase your milk production

The way you plan to increase your milk production	Frequency	Percent
To increase the number of dairy cows	40	60.6
To improve the grade of animal Genetic	3	4.5
To produce or buy more feeds staff	5	7.6
To spend more on controlling disease.	16	24.2
Others	2	3.0
Total	66	100.0

According to the above table 4.2.3 shows the majority farmers were 40(60.6%) they plan to increase milk production to increase number of dairy cows, while 16 (24.2%) plan to increase their milk production to spend more on controlling disease, while 5(7.6) plan to increase their milk production To produce or buy more feeds staff, while only 3 of the respondents plan to increase their milk production to improve the grade of animal genetic.

4.2.4 Major significant constraints that you faced in your dairy farms

Major significant constraints that you faced in your dairy farms	Frequency	Percent
Lack /low of fodder/roughages	25	37.9
low quality of concentrates feeds and high cost of concentrates	17	25.8
lack of or no credit to buy new dairy cows	3	4.5
lack of personal skill and experience labor on dairy farm	6	9.1
low quality and low yield dairy cows, infertility, disease, genetics and poor quality semen	15	22.7
Total	66	100.0

According to the above table, 4.2.4 shows majority of dairy farmers 25(37.9%) they complain Lack /low of fodder/roughages, while 17 (25.8) faced constraints in low quality of concentrates feeds and high cost of concentrates, while 15(22.7%) were complain low quality and low yield dairy cows, infertility, disease, genetics, and poor quality semen, while 6 (9.1%)of the respondents complained lack of personal skill and experience labor on dairy farm while only three of farmers complain lack or no credit to buy new dairy cows.

4.2.5 Incidences of feed shortages during various seasons

		Frequency	Percent
Valid	Jilaal	63	95.5
	Xagaa	3	4.5

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	Total	66	100.0
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According to the above table 4.2.5 shows the majority of the respondents 63(95.5%) answered their worst season of the shortage of feed is Jilaal,(Dry season) while only three of farmers answered their worst season of feed shortage is Xagaa(rainy season).

4.2.6. knowledge of bovine tuberculosis can be transmitted to man through raw meat consumption obtained from bovine tuberculosis-infected cattle

knowledge of bovine tuberculosis can be transmitted to man through raw meat consumption obtained from bovine tuberculosisinfected cattle	Frequency	Percent
Yes	7	10.6
No	59	89.4
Total	66	100.0

The above table 4.2.6 shows the majority of the respondents 58(89.4) they are not aware bovine tuberculosis is a zoonotic disease that can be transmitted cattle to Human, while only 7 of the respondents' aware bovine tuberculosis is a zoonotic disease.

4.2.7. There is anyone has had tuberculosis on your farm, did he/she drink raw milk/milk products

There is anyone has had tuberculosis on your farm, did he/she drink raw milk/milk products	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	1	1.5	1.5	1.5
No	65	98.5	98.5	100.0
Total	66	100.0	100.0	

According to the above table 4.2.7 summarize the majority of respondents 65(98.5%) they are not seen anyone of their family who has had tuberculosis while he/she drinks raw milk or milk products, while only of respondents see the one who had illness with tuberculosis while he/she drinks raw milk or milk products.

IV. DISCUSSION

Boitumelo and Mahabile (1991) who reported that the inadequacy of feed (quantity and quality) to sustain milk production is one of the major constraints in dairy farming in Botswana, particularly during the dry season. The findings reported by Pelaelo-Grand et al. (2010) that milk production in Botswana has not increased over time due to inter alia feed shortages are also similar to the findings of his study.

This may be attributable to unreliable rainfall and recurring droughts which result in seasonal pasture variations that are not able to sustain the livestock sector throughout the year. These results are also similar to the findings of Geleti et al. (2014) and Galmessa et al. (2013) who reported that the problem of feed shortage is one of the major factors that hinder urban and peri-urban dairy development in Western Ethiopia which is of similar climate as Botswana. Inadequate supply of quality feed has been reported as the major factor limiting dairy productivity in Ethiopia (SNV, 2008). The most important reason for the unpredictable availability of feed and high feed cost in Botswana can be because most of the feeds are imported from neighboring countries. Supplementary feeding in dairy farming is important if animals are to produce a good quantity and quality of milk throughout the year. If farmers are supplementing the feeding of their dairy animals with these expensive feeds, it increases the cost of milk production which dairy farmers cannot afford and thus, forces to shut down the milk production units. Therefore, it is suggested that all the efforts should be made to ensure the availability of enough quantity of dairy feed at reasonable prices all the times. Lack of technical support and lack of skilled manpower were also identified as the fourth and fifth topmost production constraints. Dairy farming requires good management but dairy farmers do not have the skill and knowledge to run dairy production enterprises and they also do not get enough technical support which makes dairy farming fail to continue a profitable enterprise. There are many parasites and diseases affecting dairy cattle. For example ticks, worms, heartwater, gall sickness and so on. Dairy farmers need to control parasites and diseases before they negatively affect the milk production of animals as animals affected by parasites and diseases tend to produce less milk than their usual production. Lack of dairy technologies such as storage and cooling facilities contribute to spoilage of the milk after milking. The lack of adequate transportation and cooling infrastructure in rural areas accounts for a loss of large volumes of milk in developing countries (Ndambi et al., 2007). Due to high costs incurred in collection and cooling of milk, it is important that larger

volumes are handled at a time to reduce unit costs of transactions. A common means of doing this is the installation of cooling centres for milk in production areas and the organisation of farmers into dairy cooperatives (D'Haese et al., 2005). A well organized dairy infrastructure especially, storage facilities and transportation of milk and milk products is needed to support the growth and development of dairy production.

V. CONCLUSION AND RECOMMENDATION

CONCLUSION

Dairy farming constitutes an important part of the Banadir Region smallholder dairy sector, which plays a crucial role in the economic development of the country as a source of feed and income and making it one of the biggest potential producers of milk and milk products. Dairy farm plagued with several challenges these include:

Health problems, environmental issues and lack of access to credit, reproductive challenges and lack of trained manpower are some of the major reasons for the poor performance of dairy cattle production and cause a huge loss of production and productivity of dairy cattle in the country.

Dairy farming also creates different opportunities for dairy development such as indigenous knowledge, access services, and land inputs, demand for and consumption of milk and create conducive policy and increase diversity, improve the quantity, quality and distribution of dairy products in Banadir. The prospects of dairying seem to be bright and much expected to be one of the major targets of the prospective agro-processing industries in the country.

RECOMMENDATIONS FOR FURTHER RESEARCH

Based on the above conclusion the following recommendations are forwarded:—

1. Dairy farmers should cooperate for the prevention and control of animal disease.
2. Government and funding organizations should encourage the improvement of indigenous dairy cattle and cross-breed with exotic breeds.
3. The Government should ensure proper marketing of milk along with proper feeding, breeding and improve health practices of dairy cattle.
4. Detailed studies should be done on major challenges of dairy cattle production in the future.
5. Further research should be carried out for the dairy farmers in Banadir Region

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