

Challenges Of Chicken Production On Farmers In Mogadishu, Somalia

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To cite this article:

Authors: Mohamed Ibrahim Abdi - Soojeede1 *, Atanga Desmond Funwie2. Paper Title: Challenges Of Chicken Production On Farmers In Mogadishu, Somalia

IQ Research Journal of IQ res. j. (2022)1(2): pp 01-10. Vol. 001, Issue 002, 02-2022, pp. 0531-0541

Received: 17 02, 2022; Accepted: 23 02, 2022; Published: 27 02, 2022

Keyword

Challenges, chicken, farmers, Mogadishu, Somalia.

Received:

17 02, 2022

Accepted:

23 02, 2022

Published:

27 02, 2022

Abstract

The objective of this study was to discover the main challenges of chicken farm production in Mogadishu, Benadir region, Somalia. The poultry farms have many challenges which limited the profit and production in Africa, particular in Somalia. So this study have significant role to the local chicken farmers, future poultry farm investors and policy makers or governments. Methods: The study design implemented in the study was a cross-sectional design, with sample size of 72 out of 89 and the data collection was structured questionnaire, and a face-to-face personal interview method. The data analyzing and interpreting data; by using frequency tables, figures, percentages and Descriptive statistics using SPSS version 20. Result: the results categorized into three sections the Feeds, diseases and other challenges, each has sub variables that respondents asked concerned challenges of chicken faced by Somali farmers. Feed: Lack of availability of feeds were Agreed (20.8% strongly agree and 37.5% agree) with average mean of 3.38 out 5, and SD 1.699, and the respondents strongly agreed that there is high price of chicken feeds, with (20.8 strongly agree & 20.8% agreed) with mean score 2.33 out 5 and SD 1.289. Disease: Diseases challenges of chicken diseases and health with mean score 2.00 out of 5 and SD 1.007, respondents answered that there occurrence of chicken diseases, were common in chicken farms with 41.7% strongly agreed and 25.0% agreed. And the respondent strongly agreed and agree (41.7% and 22.2% respectively) chicken farmers lack of biosecurity measures such cleaning, and disinfection with mean score mean 2.15 out of 5 and SD 1.218. Other challenges: 47.2% of respondent was agreed and strongly agreed that there lack of facilities like electricity and water with mean score mean 2.57 out of 5 and SD 1.432, and Climate change related issues includes drought, water shortages and variation of temperature also exists and 66.6% of respondents accepted (20.8% agree and 45.8% strongly agree) with mean score 2.04 out 5 and SD 1.180. Recommendation: must make collaboration of community association, government and internal agencies to mitigate those challenges faced by the chicken farmers, Government must make financial and emotional supports to the chicken farmers and local traditional chicken backyards to increase their products.

1. Introduction

In the world, the commercial poultry farming is also a very popular and profitable business. Which means it requires less investment compared to rearing other livestock. It gives rapid return on investment. Also it is one of the traditional business venture [1]. The poultry farms have many challenges which limited the profit and production in Africa, those challenges include lack of availability of feed, climate condition and market places of both layer and broiler producers. Delayed allocation of land and inadequate extension or advisory services to support developing farms is also major challenges.

In Somalia, Free backyards chickens are most widespread type than modern poultry farms. Somalia have different breeds of chickens traditionally rearing as free ranges or free backyards chicken, those breeds includes feather chickens, short chickens, naked neck chickens and American chickens. The breeds that common in Benadir regions are short chickens, naked neck chickens and American chickens. But other breeds like feather neck chickens can sometimes get in some places. The recently there were many exotic chicken reared in Large and small intensive modern framing with different breeds depends on purpose of breeding.

The objective of this study was to discover the main challenges of chicken farm production faced by local farmers in Mogadishu, Benadir region, Somalia, So that this study was define challenges of chicken production in Mogadishu, Somalia. This study have significant role to the local chicken farmers, future poultry farm investors and policy makers or governments, they will understand the problems facing the chicken farmers and they would try to solve it and to develop their own strategies that may influence chicken production.

2. Literature

Somalia witnessed an occurrences frequency of droughts and conflicts. Lwanga-Ntale, & Owino,(2020), they revealed that there are an inextricable link between vulnerability, conflict and disasters, [2] which are also challenges facing the most vulnerable Somalis. There are an estimated more than 2 million internally displaced people (IDPs) settled in megacities like Benadir regions. The main economic resource in Somalia is livestock production including camel, goat, cattle and chickens. As estimated in 2020, the total number of poultry birds live in Somalia was 3,771,000 heads [3].

The availability of Feed as safe, adequate and balanced affects the quantity and quality of chickens' products. Because the Feed contribute to 70% of total

variable cost of chicken rearing and therefore greatly influencing the economics of chicken production management. Also the cost of feed ingredients was increasing day by day which has increased the per-unit cost of production of poultry, which is the major challenges for the poor Nepalese farmers. [4].

Feed supplementations are necessary from chicken to allow them reaching maximum production of meat and eggs. This is especially in free range chickens which usually require feed supplements, if it's not they will starve out during the dry season as a result of diminishing Scavenge feeds. This will create reduction of chicken's immunity to resist diseases and parasites. [5].

The chicken production constraints include use of poor quality and high cost feed rations, lack of disease and predator control, harsh environment and limited production skills [6]. The second main challenge was lack of diseases control which have large role in bankruptcy of many chicken farms and massive losses of chicken. But the serious diseases like avian influenza and Newcastle disease was the most prevalent health problem. It suggested the Predators should be controlled by housing, trapping, hunting and use of repellants, because can be challenge of chicken farms [7].

Ebsa, et al. (2019), was found the three main challenges to producers were first sudden outbreak of diseases, second the cost of commercial feed, and third the lack of availability of day-old chicks [8]. While some other researchers mentioned that biggest challenge of poultry farming were diseases and parasites with 85.3% of respondents were answered, in addition of this the related constrains were high cost of chicken feeds ingredients, poor housing, inadequate chicken rearing competence and skills and inadequate knowledge on biosecurity.

The adult chickens had Newcastle diseases significantly higher prevalence (43.8%) than grower (19.4%) as mentioned by the Osman, et al. (2021). They made study of Sero-prevalence of Newcastle disease of backyard chickens in Banadir region, Somalia [9]. Also there were high prevalence of parasites of local free scavenging backyard chickens and farmed chickens [10, 11]. The current and future challenges to the poultry industry were includes disease outbreaks, welfare regulations, house environment, food safety, and a other issues relating to nutrition and feeding particularly small-scale farms [12]. Lastly the remain constrains that can regard most useful one was lack of high performing chicken breeds, or problem of selecting accurate breeds that can give the farmers to produce high products. [13].

3. Methods

3.1. Study area

The geographic scope of this study was Mogadishu, Somalia, Mogadishu is the capital city of Somalia, located horn of Africa, south east of the country and it has edge to Indian Ocean in east, it has seventeen districts belongs to the benadir region they grows last seven years.

3.2. Study design

The study design implemented in the study was a cross-sectional design. The researcher used this approach in order to explain and to investigate the current challenges of chicken farm production in Mogadishu, Somalia. The target populations was 80 from Mogadishu- Somalia; which consist of owners of chicken farms, traders of chicken products, manager and workers of farms.

3.3. Sample size

The sample size of this study was 72 out of 89 target population, used the sample size calculation formula confidence interval with 95%. The sample procedure was Purposive sampling technique.

3.4. Data collection

The data collection was structured questionnaire, and a face-to-face personal interview method which administered to obtain information required and considered ideal for collecting such data. It is suitable tool for collecting lot information over short period of time. This was Self-developed questionnaire related possible expected challenges of chicken farming.

3.5. Data analysis

After the data collected from the respondents, the researchers use the quantitative method for analyzing and interpreting data; by using frequency tables, figures, percentages and Descriptive statistics. The data analyzed through statistical package for Social Science technique SPSS © version 22.4.

4. Results

This research accomplished to categories the result into demographic data, Feeds, diseases and other challenges; the last three challenges each have sub variables that respondents asked concerned challenges of chicken faced by Somali chicken farmers.

4.1. Reliability test

Table 1. Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
.860	15

4.2. Demographic data

Table 2. Demographic Table

Age of respondents			
		Frequency	Percent
Valid	20-30	27	37.5
	40-50	14	19.4
	Above 50yrs	31	43.1
	Total	72	100.0
Gender of respondents			
		Frequency	Percent
Valid	Male	54	75.0
	Female	18	25.0
	Total	72	100.0
Education level			
		Frequency	Percent
Valid	Secondary	3	4.2
	Bachelor degree	44	61.1
	Master Degree	25	34.7
	Total	72	100.0
Occupation of respondents			
		Frequency	Percent
Valid	Student	16	22.2
	Lecturer	14	19.4
	Manager	1	1.4
	Businessman	9	12.5
	Farm owner	32	44.4
	Total	72	100.0

Source: primary data.

The Age of respondents showed that the highest percentage were those who fall within above 50yrs of age, had 31 (43.1%), 20-30 representing 27 (37.5%), and While those between 40-50 years only 14 (19.4%) of age out of 72. Respondents were asked to specify their Gender. As summarized in Table 1 that presented 54 (75.0%) of the respondents were male and 18 (25.0%) were female. That means Male were largest respondents collected their thoughts.

The education level were asked to specify there level. They chose 15 (20.8%) of the respondents were in secondary, 44 (61.1%) had Bachelor, and while 13 (18.1%) had Master, that means the most respondents

were educated groups. The occupation of the respondents were asked the respondents they responds 16 (22.2%) of the respondents were 'Students', 14 (19.4%) of them were 'Academic experts', 1 (1.4%) of them was Manager, 9 (12.5%) were Businesses groups and the remaining 32 (44.4%) of the respondents were 'Farm Owners'. This data collected mostly the farm owners who knew the challenges of their farm, the second group was academic fields like experts and students.

4.3. Challenges related to chicken feeds

Figure 1. Challenges of chicken feeds

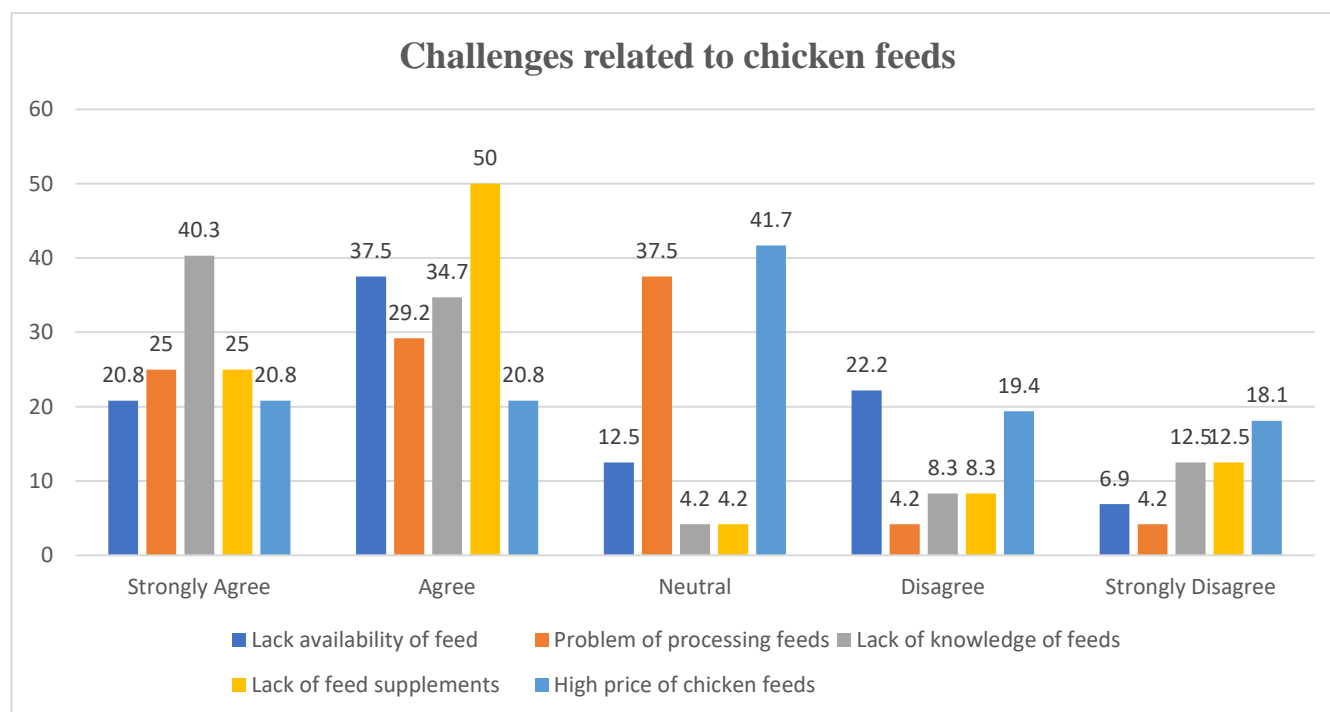


Figure 1. Presented the challenges of chicken feeds were viewed different angles like availability feed & supplements, price, processing, and knowledge essential feeds of chickens. The first lack of availability of feeds were Agreed (20.8% strongly agree and 37.5% agree) with average mean of 3.38 out 5, and SD 1.699. Second constrains the respondents answered was the problem of chicken feed processing (mixing and preparing), they were agreed (25.0% strongly agree and 29.2% agree), the average mean of 2.33 out of 5, with SD 1.035. Third challenges was Lack of knowledge of

feeds, the respondents were strongly Agree with percentage 40.3%, and agreed 34.7%. The mean was 2.18 out of 5, with SD 1.377. Fourth challenges lack of feeds supplements with 25.0% & 50.0% of the respondents were strongly agreed and agreed respectively with mean score 2.18 out of 5, and SD 1.377. Furthermore, the respondents strongly agreed that there is high price of chicken feeds, with (20.8% strongly agree & 20.8% agreed) with mean score 2.33 out 5 and SD 1.289.

4.4. Challenges related to chicken Diseases

Figure 2. Challenges of chicken Diseases

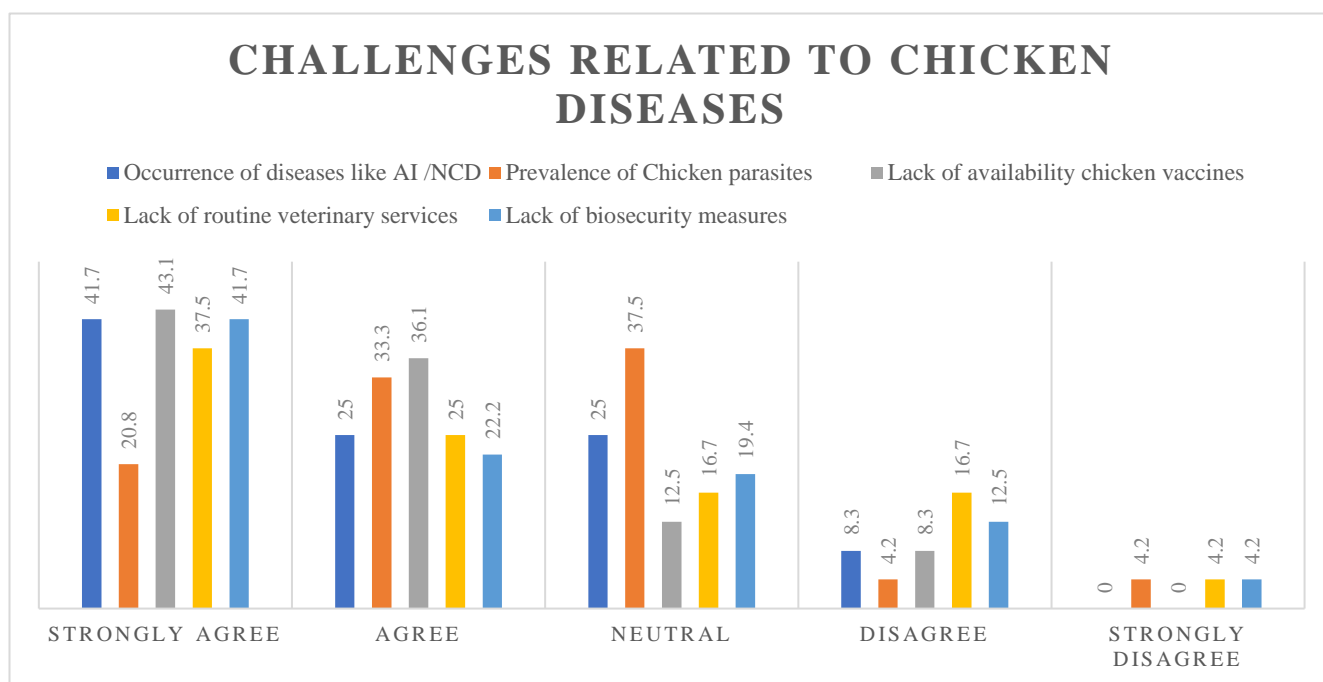


Figure 2. Showed challenges of chicken diseases and health with mean score 2.00 out of 5 and SD 1.007, respondents answered that there occurrence of chicken diseases, were common in chicken farms with 41.7% strongly agreed and 25.0% agreed but 25% of the respondent answered neutral. As well as 20.8% of them strongly agree prevalence of Ecto-parasites and Endo-parasites, 33.3% agreed total 54.1% with mean score 2.37 out of 5 and SD 0.999. But there is also another constrains such as lack of chicken vaccines, 43.1% &

36.1% of respondents strongly agreed and agreed respectively with mean score 1.86 out of 5 and SD 0.939. There were 37.5% & 25% of respondents strongly agreed and agreed that lack of routine veterinary services also influence chicken farms with mean score 2.25 out 5 and SD 1.242 and The last is of respondent strongly agreed and agree (41.7% and 22.2% respectively) chicken farmers lack of biosecurity measures such cleaning, and disinfection with mean score mean 2.15 out of 5 and SD 1.218.

4.5. Other Challenges related to chicken

Figure 3. Other challenges

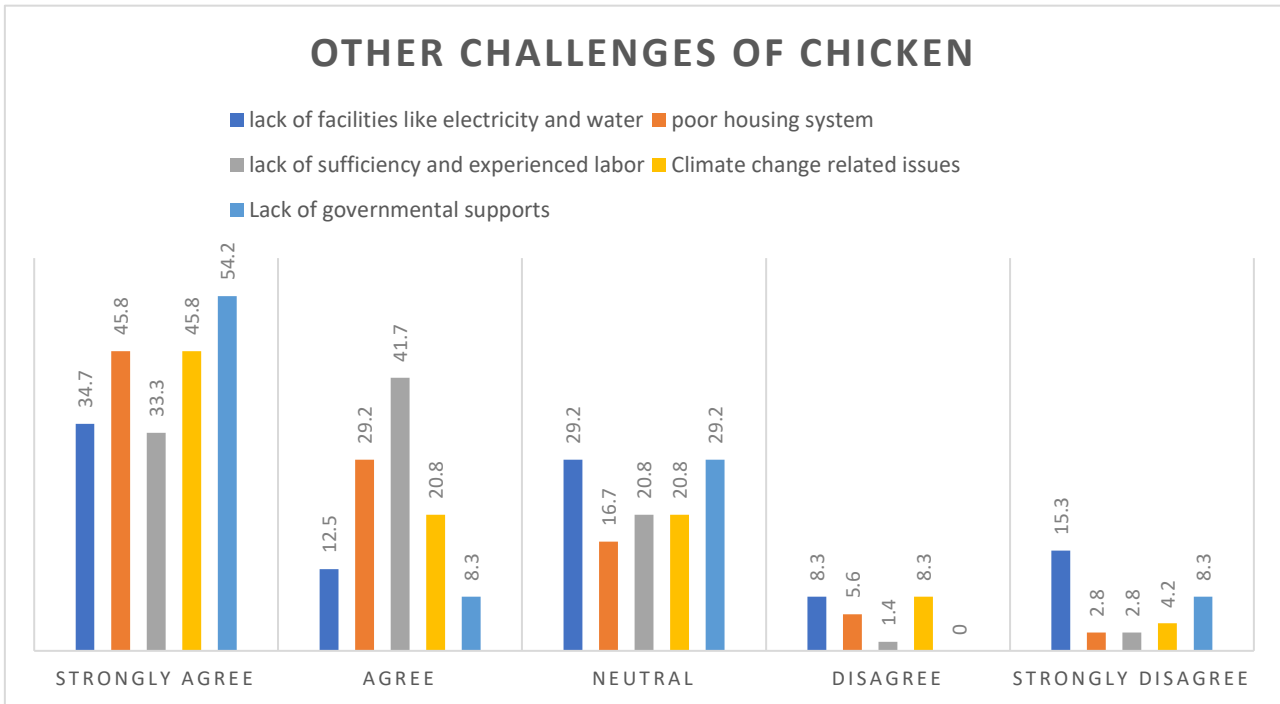


Figure 3 presents the results other challenges of chicken farms; the result suggested 47.2% of respondent was agreed and strongly agreed that there lack of facilities like electricity and water with mean score 2.57 out of 5 and SD 1.432. Moreover general there is also Poor housing or free scavenge chickens those not have housing at night 75.0% agreed and strongly agreed (45.8% and 29.2% respectively), with mean score 1.90 out of 5 and SD 1.050.. In general 75.0% of the respondents agree and strongly agreed in percentage (33.3% & 41.7 respectively) there is lack of

sufficient and experienced labor in the chicken farms with mean score 1.99 out 4, and SD 0.927. Climate change related issues includes drought, water shortages and variation of temperature also exists and 66.6% of respondents accepted (20.8% agree and 45.8% strongly agree) with mean score 2.04 out 5 and SD 1.180. As well as 62.5% of them answered agree and strongly agreed (54.2 strongly agreed and 8.3% agreed) that there is lack of governmental supports with mean score 2.00 out of 5 and SD 1.267.

Table 3. Descriptive Statistics

Descriptive Statistics			
	N	Mean	Std. Deviation
lack availability of chicken feeds	72	2.57	1.243
Problem of processing feeds	72	2.33	1.035
lack of knowledge of chicken feeds	72	2.18	1.377
Lack of feed supplements	72	2.33	1.289
High price of chicken feeds	72	2.35	1.009
Occurrence of diseases like AI/NCD	72	2.00	1.007
prevalence of chicken Parasites	72	2.37	.999
Lack of availability chicken vaccines	72	1.86	.939
Lack of routine veterinary services	72	2.25	1.242
Lack of biosecurity measures	72	2.15	1.218
lack of facilities like electricity and water	72	2.57	1.432
poor housing system	72	1.90	1.050
lack of sufficiency and experienced labor	72	1.99	.927
Climate change related Issues	72	2.04	1.180
Lack of governmental supports	72	2.00	1.267
Valid N (listwise)	72		

5. Discussion and Conclusion

Challenges have serious effects on chicken production as researchers mentioned, this study also discovered it. The challenges were divided into three main sections: feed, diseases and health, and other challenges. Let us explain each section. Chicken feeds also emerged five useful points that can be high constraints to chicken production, those include: The lack of availability of feeds (20.8% strongly agree and 37.5% agree), chicken feed processing (mixing and preparing) (25.0% strongly agree and 29.2% agree), Lack of knowledge of essential feeds, lack of feed supplements and existence of high price of chicken feeds. The respondents totally agreed all were challenges they faced during their chicken farming, with percentage between 50%-60%. That means this above mentioned were part of constraints faced by chicken farmers.

The next section in figure 2. Presented the health and disease challenges of chicken production, this section also classified five points: Occurrence of diseases like AI/NCD, Prevalence of chicken Parasites, Lack of availability of chicken vaccines, Lack of routine veterinary services and Lack of biosecurity measures. Each point has its own percentage, mean score and standard deviation (SD). The Occurrence of chicken diseases were common in any chicken farm and free backyards, the respondents accepted existence of this challenge in the community, with percentage of 41.7% strongly agreed and 25.0% agreed. Also respondents approved the prevalence of parasitic diseases of chicken local chicken farms with percentage of 33.3% agreed total 54.1%. The vaccines of chicken diseases were purchased outside the country, it takes several weeks to get full order vaccine, these will create serious delay of time needed the respondents answered with percentage 43.1% & 36.1% strongly agreed and agreed respectively. Lack of other veterinary service like veterinary extension in the community also created lack of information of surveillance diseases. Oosthuysen, (2013), mentioned inadequate extension or advisory services to support rising farms are also big challenges and lack of preventive measure or biosecurity which is importance of steps that prevent contact of agent to the chicken [14]. Some of them does not know about this procedure, the respondents answered with percentage 41.7% and 22.2% strongly agreed and agreed respectively. Furthermore researcher observed inadequate knowledge on biosecurity in the chicken farmers [15].

The other challenges which were limited the chicken production and profitability of products, those include: lack of facilities like electricity and water, Poor housing, lack of sufficient and experienced labor, Climate change related issues include drought, water shortages and variation of temperature and lack of governmental supports. The respondents were declared existence of those challenges in their chicken farms, with strongly agreed and agreed. Climate change related were 66.6% acceptance 20.8% agree, also Abdi-soojeede, (2018), mentioned challenges of crop production, like decreasing water resources with 60% of Respondents accepted (11.7% agreed and 48.3% strongly agreed) decreasing level of groundwater (shallow) and river is serious problem to crop production [16]. And 45.8% strongly agree and lack of governmental supports were 54.2% strongly agreed and 8.3% agreed. While others like lack of facilities like electricity and water, Poor housing, lack of sufficient and experienced labor were influencing chicken farms.

This study revealed some of challenges that faces chicken farmers in the local benadir region, as researcher liked to conclude to give some recommendation to the chicken farmers, livestock producers and policy maker or governments.

- 1) Must promote cereal producers to get sufficient chicken feed with low prices in the local market
- 2) Chicken farmers must adopt local climate change using flexibility of increasing chicken products, and must try to make strategies of mitigating climate adverse effects.
- 3) Government must reduce prevalent highly pathogenic diseases like avian influenza and new castle diseases. And must make surveillance of chicken diseases
- 4) Government must make campaigns of parasitic treatment and elimination of parasite reservoirs.
- 5) Government must make financial and emotional supports to the chicken farmers and local traditional chicken backyards to increase their products.

The scholars that are willing to undertake further studies in chicken production challenges are advised to examine challenges of exotic breeds rearing in Somali communities.

6.0. Acknowledgements

First I give thanks to Kesmonds International University, and Green Hope University at particular,
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also sends grateful appreciation to friends specially Mr. Ahmed Mohamed Farah, Dr. Mohamed Ali Yusuf and other colleagues, who participated for completeness of this research.

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