

Assessment Of Poultry Production Practices In Tegede District, North Gondar Zone, North West Ethiopia

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Abstract: The study was conducted from January to May 2017 to assess the poultry production practices in three rural kebeles located in Tegede district North Gondar Zone, North West Ethiopia. Three rural kebeles were purposively selected based on their potentiality of chicken production, accessibility of the kebele's, area coverage and representativeness for the study areas. 30 households were purposively selected from the three kebeles for the survey part of the study and information were collected by using questionnaires from a total of 30 households. The study revealed that the objectives of keeping chicken were for income generation (51.3%), household consumption (46.7%) and hatching and rearing of chickens for replacement of flock (2%). The overall average flock size of respondent farmers in the study area was 17.9 chickens per household for local chicken and less than 5 cross-breed chickens per household. The major source of chicken for parent stock is market purchase (56.7%). The results of the study showed that the dominant chicken production system in the study area is an extensive type (83.3%). The average age of local village chicken at first egg laying was 6.3 months. The average egg production per hen per clutch of local hens, under existing farmer management condition, was 14.7. The number of clutch periods recorded per year was 4 giving a total of 58.7 per hen per year. The majority of farmers were housed their chickens by sharing the same room with perch (59%). The rest 30% and 11% respondents were used different shelter in the same room with the families and separate building house respectively. The major supplementary feed sources of chicken were obtained from their house (94.7%) and purchase from market (5.3%). The major water sources for chickens in the study area are pond and deep well water (39%) and river water (36.7%). Majority of the respondents (60%) experience daily cleaning of watering trough and others in varying times per week and depending on the conditions. The most widely used types of watering troughs in the study area were part of plastic equipments (43.3%), broken part of clay (30%), Purchased watering trough (3.3%) and other types (23.3%). The most important constraints of poultry production in the study villages were disease outbreak (26%) and predators (23.3%) were the first and second main constraints that devastating chicken productivity in the study areas. However, shortage of supplementary feed (20.3%) was the third village chicken production constraint in all study kebeles whereas credit access (17.8%) and animal health and extension service (12.7%) were the fourth and fifth most important chicken production constraints in the study area.

Keywords: chicken, constraint, production, productivity, village

INTRODUCTION

Animal production in general and chickens in particular play important socioeconomic roles in developing countries. Poultry provides rural households with scarce animal protein in the form of meat and eggs and a reliable source of petty cash. Rural poultry are also used as traditional ceremonies and festivals in some cultures [9], hence, they contribute significantly to the livelihoods of the most vulnerable rural households in developing countries. According to Klober et al, [22] chickens, ducks and turkey are the most common of all farm stock throughout Africa, Asia and Latin America. He further noted that in most tropical countries every family-settled owns some kind of poultry, indicating that poultry production is an important agricultural activity for most rural communities in Africa. Chickens largely dominate flock composition and make up about 98% of the total poultry numbers (chickens, ducks and turkeys) kept in Africa. [13] The rural chicken population accounts for more than 60% of the total national chicken population in most African countries. [31] The majority of the flock consists of indigenous chickens which are general hardy, adaptive to rural environments, survive on little inputs and adjust to fluctuations in feed availability. Population growth, urbanization and rising income in many parts of the developing world have caused a growing demand for food of animal origin. The proportional contribution of poultry by the year 2020 is expected to increase to 40%,

the major increase being in the developing world. [10] The International Food Policy Research Institute [17] has estimated that by the year 2015 poultry will account for 40% of all animal protein. Poultry production systems of tropical regions are mainly based on the scavenging indigenous chickens found in virtually all villages and households in rural area. Approximately 80% of the chicken populations in Africa are reared in scavenging extensive production systems. [14] The overall aim of this study will be to assess poultry production practices in North Gondar Zone Tegede District. To assess poultry Production and reproduction performance of village chickens in the Study district: -To identify the purpose of keeping village chickens, chicken production system and sources of foundation chicken, to know the flock size and breed composition, feed resources and feeding practices, water resources and watering practices and housing system of village chickens, to identify constraints and suggest possible interventions under village chicken production system in the study areas, to obtain baseline information on specific aspects of production systems and productivity in small-scale poultry farms.

RESEARCH METHODOLOGY

Description Of The Study Area

The study was conducted at Tegede district. The district is found in North Gondar administrative zone of Amhara

National Regional State (ANRS) within 7°14'N to 7°45'N and 37°05'E to 7°52'E. The district constitutes 14 kebeles (the lowest administrative unit) of which 11 rural 2 rural town kebeles. It is bordered on the South by TachArmachiho, on the West by West Armachiho, on the North by the Tigray region, on the Northeast by Debark, and on the East by Dabat districts. Based on figures published by North Gondar zone Finance and Economic Development Department ^[27] annual statistical bulletin in 2011, this district has an estimated total human population of 77,772, of whom 39677 are men and 38,095 are women; 6079 or 7.81% of its population are urban dwellers, which is less than the zone average of 14.1% with an estimated area of 59.7 square kilometres. The district has an estimated population density of 23 people per square kilometre, which is less than the zone average of 60.23. The two largest ethnic groups reported in Tegede district were the Amhara (96.89%), Tigrayan (2.68%) and all other ethnic groups made up 0.43% of the population. Amharic was spoken as a first language by 96.61% and 3.21% spoke Tigrigna; the remaining 0.18% spoke all other primary languages reported. The majority of the inhabitants practiced Ethiopian Orthodox Christianity with 98.66% embracing that faith; while 1.25% of the population said they were Muslim. ^[9] Livestock are important component of the prevailing crop-livestock mixed farming systems of the study District. Small holder farmers of the study area owned various livestock species such as cattle, sheep, goat, chicken, Camel and equines. The study district has a total population of 252599 cattle, 10678 sheep, 14026 goats, 11847 donkeys, 664 mules, 25 horses, 246 camels and 127632 chickens in the district. Donkeys and Camels are the most common pack animal. The availability of feed and water are serious constraints to livestock production in the district. Communal grazing areas, private pastures and crop residues are the principal sources of feed. ^[37]

Sampling Size And Sampling Technique

The survey was conducted in three kebeles (Soroka, Adet and Gulkua) of North Gondar Zone, Tegede district from January to May, 2017, which are purposively selected based on their potentiality of chicken production, accessibility of the kebele's, area coverage and representativeness for the study areas. Similarly a total of 9 peasant associations, three from each kebeles were selected. A total of 30 households, (10 from Gulkua, 11 from Soroka and 9 from Adet), were selected for the interview purposively based on their poultry production experiences, possessing at least 7 chickens. For the interview, a semi-structured questionnaire was prepared and the interview was conducted with the household head. In addition to this, discussion with animal health experts was made.

Types And Methods Of Data Collection

A cross-sectional study design was used to carry out the study to collect data on all relevant information from the existing chicken management condition using well structured questionnaire. The questionnaire focused mainly on household characteristics, chicken production objectives (purposes), flock size and breed composition (local, exotic, cross breed), chicken production and

productive performances (clutch cycle per year, age at first egg), problems prevailing in chicken production and other related issues of poultry production. Moreover, in order to obtain actual information in common aspects of poultry production such as flock composition and routine management practices, close visits or personal observations around the residential quarters of the selected peasant associations were performed. Secondary data like livestock population and extension services were collected from the respective District livestock resource and development office.

Methods Of Data Analysis

The data was analyzed through simple descriptive statistics like average, frequency and percentage and presented in form of tabulation.

Scope And Limitation Of The Study

The study covered indigenous chicken only and all farmers keeping more than five chickens. All households in the study area were considered irrespective of income levels. The study was limited to Tegede district within three kebeles. The study was a single-visit questionnaire survey, which may not have provided enough time to obtain accurate information from the respondents. Importantly, there was no opportunity to cross-check the productivity data provided by the respondents. Throughout the entire research process, poor record keeping at farm level, uncooperative respondents, poor infrastructure, and shortage of money and lack of incubator to incubate the eggs in the vicinity acted as a constraint.

RESULTS AND DISCUSSION

Households characteristics of selected farmers General characteristics of the respondents indicated that majority (99%) of the respondent farmers belonged to the Orthodox religion. Of which, (70%) were the male households and the rest were female (30%) (Table 1). The average family size of sample respondents is 5.3 (ranged 1-10), which is nearly similar to the national average of 5.2 persons ^[8], 5.1 for Eastern Hararge Gorogutu district [1] and 5.4 for north west Amhara. ^[16] However, the present finding is smaller than the findings of Fisseha *et al.*, ^[11] and Asefa ^[5] who reported 6.2 and 7 persons per household for the Buriedistrict in Amhara region and Awassa Zuria woreda in the SNNPR, respectively.

Table 1: Demographic characteristics of respondent households

Variables	Responses	Frequency	Percent
Sex	Male	21	70
	Female	9	30
Educational status	Illiterate	7	23.3
	Read and write	12	40
	Grade 1-8	6	20
	Grade 9-12	5	16.7
	Others	0	0
Farming system	Livestock production	3	10
	Both crop and livestock	27	90
	Others	0	0
Responsible family member to manage	Females only	18	60

chicken	Males	2	7
	Both females and males	10	33

The analysis for educational status of the respondents disclosed that 23.3% of the respondents were illiterate while 40% of them were found to be capable of reading and writing in the study area. About 20%, and 16.7% of the literate respondents had gone through primary first cycle and primary second cycle (1-8) and high school (9-12) respectively. The survey result also indicated majority (90%) of the respondent farmers practiced mixed crop-livestock production activities. Concerning chicken management, female family members (60%) in the households manage the chicken, although both men and women (33%) share most of the poultry rearing activities. the rest (7%) was given to males only. In line with this result Fisseha *et al.*,^[11] reported that, all members of the family in a household participate in chicken husbandry and management practice in one way or another.

Purpose Of Keeping Village Chickens

The result of this study indicated that keeping of chickens is widely practiced in the study area. Almost every farmer keep chicken in varying number of flock size aiming of producing egg and meat for income generation (51.3%), household consumption (46.7%) and hatching and rearing of chicks for replacement of flock (2%) in the study area. In line with this study Tadelles *et al.*^[36] and Halima *et al.*,^[16] with their studies in different areas reported that, income generation and household consumption are the main production objectives of keeping village chicken in Ethiopia.

Table 2: Flock size and Breed composition

Types of breed	Number of chicken in each study areas				Percentage (%)
	Gulkua	Adet	Soroka	Total	
Localbreed	168	149	184	501	93.1
Crossbreed	8	7	8	23	4.3
Exoticbreed	4	4	6	14	2.6
Total	180	160	198	538	100%

Table 3: Purpose of keeping chicken in the study areas

Purposes of keeping chickens	Respondents' percentage in each study area			
	Gulkua (n=10)	Adet (n=9)	Soroka (n=11)	Overall (N=30)
For household consumption (%)	52	45	43	46.7
For income generation(%)	46	52	56	51.3
For replacement (%)	2	3	1	2
Total	100	100	100	100

N= total number of respondents, n= number of respondents in each study area

Flock Size and Breed Composition

The overall average flock size of respondent farmers in the study area was 17.9 chickens per household for local chicken and less than 5 cross breed chickens per household. Similar to this study, Ahmedin^[1] was reported the mean flock size of 17.7 local chicken per household in Gorogutu district, Eastern Hararghe, Ethiopia. An average flock size of 16 chickens was also reported in the central parts of Ethiopia.^[36] Moreover, the result of this study is in line with the work done by Gueye^[14] who reported that the flock size generally ranged from 5 to 20 fowls per African village household. The mean number obtained in this study was also comparable to their reported mean flock size of 18 in Uganda by (Sewannyana *et al.*, 2004). In contrast, the mean flock size recorded in this study was lower than the mean flock size of 22 in Sudan and 24.2 in Tanzania by Khalafalla^[20] and Maphosa *et al.*,^[23] respectively. On the contrary, the mean value (17.77) obtained in this study was higher than the value of 6.24 reported by Meseret^[24] in Jimma. In terms of breed composition, the overall mean of local village chicken population was 16.7 which was the highest value than others (exotic and crossbred). This might be due to poor improved breed distribution program, its more susceptibility to predators and poor extension work done on improved breed in the study district.

Sources of chicken foundation

Table 4 provides information on source of first foundation and means of replacement. The major source of chicken for parent stock is market purchase (56.7%), while family and gift accounts for the remaining percentages. This indicates that most of the households started poultry keeping with foundation chicken obtained from the market, which is followed by that obtained from parents. This study was in line with report of Tadele *et al.*,^[34] in Ethiopia, that identifies, purchase as the main source of chickens for foundation.

Table 4: Sources of foundation stock of chicken in the district

Parameters	No of respondents in each study kebele			Total	Average (%)
	Adet	Gulkua	Soroka		
Market	5	6	6	17	56.7
Family	3	3	3	9	30
Gift	1	1	2	4	13.3
Total	9	10	11	30	100

Chicken production system

The results of the study (Table 5) showed that the dominant chicken production system in the study area is an extensive type (83.3%). Chickens were managed mainly on free ranging, utilizing various feed sources searching by their own in the field, with conditional feed supplementation. However, some (16.7%) of the respondent farmers practice semi

i intensive type of chicken magement using fences around their homestead.

Table5: Responses of farmers regarding chicken management system

Production system	No of respondents	Percent (%)
Extensive	25	83.3
Semi-intensive	5	16.7
Intensive	0	0
Total	30	100

This result is agreed with various research reports done in different areas. Tadelles *et al.*,^[36] and Solomon^[29] in their study reported, in Ethiopia the small holder chicken production system is characterized by keeping under free range system with the major feed sources of insects, worms, seed and plant materials.

Production and Reproduction Performance of Village Chicken

The average production and reproduction performance of village chicken is illustrated in table 6. The average age of local village chicken at first egg laying was 6.3 months.

Table6: Production and reproduction performance of village chicken in the study area

Characteristics	No of respondents in the study Areas			Total	Average (%)
	Adet	Gulkua	Soroka		
Average age at first egg Laying (months) (Month)	6	7	6	19	6.3
Number of eggs laid/clutch	15	14	15	44	14.7
Number of clutches/hen/ year	4	4	4	12	4
Hatchability (%)	83	82	83	248	82.7
Totalegg production/hen/year	60	56	60	176	58.7

Housing System of Village Chickens

The housing systems of village chicken are presented in table 7. The majority of farmers were housed their chickens by sharing the same room with perch (59%). The rest 30% and 11% respondents were used different shelter in the same room with the families and separate building house respectively. Even if; the farmers were used the same room with and without perch to housed chickens, they can produce low amount of products. However they were constructed chicken houses to protect chickens from predators, rain and wind during night time. These agree with report of Kitale^[21] who indicated that majority of chicken producers housed chickens by sharing the same room with people particularly over night time than day time in Ethiopia.

Similar studies by various authors also indicated that the age at sexual maturity for local breed hens were; 28 weeks in Tanzania,^[19] 24 weeks in Mali [18],32 weeks in Sudan,^[39]28 -36 weeks in Benin^[4] and 25 weeks in Senegal.^[28] The result indicated that local chicken breeds found around the study area were late maturing. The average egg production per hen per clutch of local hens, under existing farmer management condition, was 14.7. The number of clutch periods recorded per year was 4 giving a total of 58.7 per hen per year (Table 6). The number of eggs per clutch found in the current study falls within the range (9–19 eggs/clutch) reported by Halima^[15] in North west Ethiopia. Mogeset *al.*,^[25] also reported similar values, 15.7, 13.2 and 14.9 eggs/hen/clutch and total egg production/hen/year of 60, 53 and 55, in Bure, Fogera and Dale districts of Ethiopia, respectively. The average number of eggs/clutch identified in this study also was similar with the reported 9-19 eggs in Northwest Ethiopia by Halima (2007), 12-18 eggs in Nigeria by Gueye^[12] and 6-20 eggs in Tanzania by Aichi *et al.*^[2] Hatchability percentage in this study was 82.7% and it is agreed with the report of Mogeset *al.*,^[25] These authors reported 13 eggs (ranged 7–22) with hatchability percentage of 82.6 and 89.1 at Bure and Dale districts of Ethiopia, respectively.

Table7: Housing system of village chickens

Housing	Percentage(%)of respondents in the study areas			Overall
	Adet	Gulkua	Soroka	
Share theroom withperch	63	59	55	59
Different shelter in the same room	26	31	33	30
Building house	11	10	12	11
Total	100	100	100	100

Feed resources and Feeding practices

The major feed resources, feeding practices and frequency of giving to eat in the study area indicated by the respondents showed on (Table 8). Virtually all respondents provide homemade supplementary feeds without separating different age groups of chicken and more than 91.7% of the farmers in the study areas throw the supplement on bare ground, which is contrary to commercial poultry production. Moreover, as research indicated on the table farmers have no fixed time of providing supplementary feed although there seem higher tendency in the morning which is about (32%). Similar results have been reported by other researchers (Addis and Malede, 2014) higher frequency of feed supplementation takes place in the morning (34.44%). The major supplementary feed sources of chicken were obtained from their house (94.7%), and are mainly cereal grains (wheat and Barley) which were the major crops grown in the study areas.

Table 8: Feed resources, feeding practices and feeding frequency of village chickens

Parameters	Percentage of respondents in three kebeles (%)			
	Adet	Gulkua	Soroka	Overall
A. Frequency of feeding (%)				
Morning, afternoon, and evening	5	7	6	6
Any time during the day	21	23	18	20.7
Morning and afternoon	11	11	9	10.3
Morning and evening	31	19	22	24
Afternoon only	0	2	1	1
Morning only	28	32	36	32
Evening only	0	0	0	0
No feeding	4	6	8	6
Overall	100	100	100	100
B. Feeding practice (%)				
Throw on the ground	89	94	92	91.7
On feeding trough	11	6	8	8.3
Overall	100	100	100	100
C. Sources of feed (%)				
From the house	96	93	95	94.7
Purchased from market	4	7	5	5.3
D. Ways of supplementation (%)				
Separate to different classes	0	0	0	0
Together for the whole group	100	100	100	100

Water resources and watering practices

Almost all farmers provide water for their chickens; however the frequency of provision per day varies mainly based on the availability of labor, water and their understanding label about the use of water. According to the response of respondents 30% and 60% of them were filling the varying types of watering troughs (Table 9) twice and more than two times per day, respectively for unlimited access. The major water sources for chickens in the study area are pond and deep well water (39%) and river water (36.7%). The most widely used types of

watering troughs in the study area were part of plastic equipments (43.3%), broken part of clay (30%), Purchased watering trough (3.3%) and other types (23.3%). Majority of the respondents (60%) experience daily cleaning of watering trough and others in varying times per week and depending on the conditions.

Table 9: Responses of farmers regarding Feeding and watering experiences

Parameters	No of respondents in the study areas	Frequency	Percent (%)
Sources of water	Tape water	7	23.3
	Pond and deep well water	12	40
	River water	11	36.7
	Total	30	100
Types of watering trough	Broken part of clay	9	30
	Part of plastic equipments	13	43.3
	Purchased watering trough	1	3.3
	Other types	7	23.4
Total	30	100	
Frequency of water supply	Once per day	3	10
	Twice per day	9	30
	Three times per day	12	40
	Four times per day	6	20
Frequency of trough cleaning	Daily	18	60
	Once in two days	3	10
	Once in three days	3	10
	Once in four days	1	3.3
	Once per week	1	3.3
	Depending on the condition	4	13.4
	Total	30	100

Constraints of village chicken production

The results from both focused group discussion with animal health experts and respondents' interview revealed that disease outbreak (26%) and predators (23.3%) were the first and second main constraints that devastating chicken productivity in the study areas (Table 10). However, shortage of supplementary feed (20.3%) was the third village chicken production constraint in all study kebeles whereas credit access (17.8%) and animal health and extension service (12.7%) were the fourth and fifth most important chicken production constraints in the study areas. Comparable results have been reported from Rift valley of Oromia by which stated that disease, predators, lack of proper health care, poor feeding; poor marketing information and replacement of indigenous chickens by exotic chickens were found to be major barriers of chicken production. In the same way, Bogale^[7] also reported that diseases (48.6%) and shortage of supplementary feeds (19.4%) were the most important chicken production constraints in Fogera District. In other study, diseases and predators were the first and second major constraints that cause loss of chickens in North West Ethiopia.^[15] A study conducted in Mekele zone of North West Ethiopia also revealed that seasonal outbreak of diseases and predators

were major factors that cause loss of chickens, and lack of credit services, limited skill of management practices and low productivity of local chickens were outlined as major constraints of chicken production.^[30] The result of a survey carried out in Northern Gondar of Amhara Regional state of Ethiopia also disclosed that diseases (1st), predators (2nd), shortage of supplementary feeds (3rd), poultry housing problems (4th) and lack of veterinary health services (5th) were the most important constraints of village chicken production under urban system.^[40] It also somewhat corroborates the findings of Tadelles and Ogale^[35] who reported that diseases, scarcity of extension service, predators and parasites were the most serious constraints of village chicken production in the highland agro-ecology (Derek Wonz) while diseases and scarcity of extension services were outlined as most serious constraints of village chicken production in both midland (GendeGorba) and lowland (Awash) agro-ecological zones of the Central highlands of Ethiopia. Likewise, Solomon *et al.*,^[30] reported that seasonal disease outbreak (mainly Newcastle disease), predators, lack of credit services, limited skill of management practices (improved feeding and housing) and low productivity of local chickens were the major identified constraints of village chicken production in Metekel zone of Northwest Ethiopia. Ayalew and Adane^[6] also reported comparable results in selected Changni town in Awi- administrative zone of Amhara region in which poultry diseases, inadequate veterinary and extension services and high feed costs were the major constraints affecting village chicken production in the area. In the same way, Nkululeko^[26] also reported that outbreak of diseases, predators, theft, shortage of feed and housing problems at night were the major challenges of poultry farming in the Zhombe communal lands of Zimbabwe. However, Worku *et al.*,^[38] reported slightly different findings in which predators (97.6%) as primarily and diseases (2.4%) as secondary major constraints of village chicken production in West Amhara Region of Ethiopia.

Table 10: Constraints of village chicken production in the study district

Constraints of village chicken production	Percentages of respondents in the study kebeles (%)			
	Adet	Gulkua	Soroka	Overall mean
Predators	22	24	24	23.3
Disease outbreak	24	26	28	26
Animal health and Extension service	15	11	12	12.6
Credit access	20	17	16	17.8
Shortage of supplementary feeds	19	22	20	20.3
Total	100	100	100	100

SUMMARY, CONCLUSIONS AND RECOMMENDATION

The study was conducted in three rural kebeles located in Tegede district North Gondar Zone, North West Ethiopia,

with the objectives of assessing poultry production and reproduction performance of village chickens, identifying the purpose of keeping village chickens, chicken production system, sources of chicken foundation and major constraints, knowing the flock size and breed composition, feed resources and feeding practices, water resources and watering practices and housing system of village chickens. The three rural kebeles were purposively selected based on their potentiality of chicken production, accessibility of the kebele's, area coverage and representativeness for the study areas. 30 households were purposively selected from the three kebeles for the survey part of the study. General characteristics of the respondents indicated that majority of the respondent farmers (99%) belonged to the Orthodox religion. From 30 households, (70%) were the male households and the rest were female households (30%). The average family size of sample respondents is 5.3 (ranged 1-10). Almost every farmer keep chicken in varying number of flock size aiming of producing egg and meat for income generation (51.3%), household consumption (46.7%) and hatching and rearing of chicks for replacement of flock (2%). The overall average flock size of respondent farmers in the study area was 17.9 chickens per household for local chicken and less than 5 cross breed chickens per household. The major source of chicken for parent stock is market purchase (56.7%). The result of the study showed that the dominant chicken production system in the study area is an extensive type (83.3%). The average age of local village chicken at first egg laying was 6.3 months. The average egg production per hen per clutch of local hens, under existing farmer management condition, was 14.7. The number of clutch periods recorded per year was 4 giving a total of 58.7 per hen per year. Hatchability percentage in this study was 82.7%. The majority of farmers were housed their chickens by sharing the same room with perch (59%). The rest 30% and 11% respondents were used different shelter in the same room with the families and separate building house respectively. Virtually all respondents provide homemade supplementary feeds without separating different age groups of chicken and more than 91.7% of the farmers in the study areas throw the supplement on bare ground. The research indicated that farmers have no fixed time of providing supplementary feed although there seem higher tendency in the morning which is about (32%). The major supplementary feed sources of chicken were obtained from their house (94.7%) and purchase from market (5.3%). The major water sources for chickens in the study area are pond and deep well water (39%) and river water (36.7%). According to the response of respondents 30% and 60% of them were filling the varying types of watering troughs twice and more than two times per day, respectively for unlimited access. Majority of the respondents (60%) experience daily cleaning of watering trough and others in varying times per week and depending on the conditions. Despite the variations in source of water and frequency of watering, almost all of the respondents provided water to their chickens. This is a promising and good experience and could be considered as one aspect of their concern to their chickens. The most widely used types of watering trough in the study area were part of plastic equipments (43.3%), broken part of clay (30%), Purchased watering trough (3.3%) and other types (23.3%). The most important constraints of poultry product

ion in the study villages were disease outbreak (26%) and predators (23.3%) were the first and second main constraints that devastating chicken productivity in the study areas. However, shortage of supplementary feed (20.3%) was the third village chicken production constraint in all study kebeles whereas credit access (17.8%) and animal health and extension service (12.7%) were the fourth and fifth most important chicken production constraints in the study area.

Recommendation

The following recommendations are suggested based on the result of this study:

- ❖ Design and implement more research, educating farmers, improve breeds and all management aspects to solve the existing village chicken production are viable options.
- ❖ Provision of proper trainings to chicken producers on modern husbandry practices could be important to improve the awareness of village chicken producers.
- ❖ Provision of credit facilities to village chicken producers will encourage chicken owners to participate in poultry industry and they contribute to the improvement of the sector.
- ❖ The farmers should reduce free ranging feeding system to reduce flock mortality by predators.
- ❖ The farmers should pay strong attention for appropriate intervention in disease and predator control and prevention to improve chicken product and productivity.
- ❖ The producers should provide adequate quality and quantity of feeds in regular manner for better production performance of chickens.
- ❖ The livestock resource and development office and producers should work in collaborating way in the area of diseases and predators control and prevention, feed and breed improvement and other management aspects.

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