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The Status of Small Scale Poultry Management at Rural, Peri-Urban and Urban Areas of Assosa District in Benishangul Gumuz Region, Western Ethiopia

[1]Nega Mekonnen, [2]Aklilu H. Michael and [1]Haimanot Disassa

[1]Department of Animal Science, Assosa University, P.O. Box: 18, Assosa, Ethiopia
[2]Axsum University, Axum Ethiopia

Abstract: The study was carried out from May 2012 up to June 2013 at urban, peri-urban and rural settings of Assosa district in Benishangul Gumuz Region, western Ethiopia. The aim of the study was to investigate and compare small scale poultry management at different settings of the study area. By using structured and semi-structured questionnaire, a cross-sectional systematic random survey of 90 households (30 from each study areas) was conducted and necessary information was gathered on poultry management practices of different settings. The study employed multiple methods of data analysis including descriptive statistics, ANOVA, index ranking and Qualitative analysis. Households' in all study settings rated income as the primary aim of keeping poultry. The utilization of feed obtained by scavenging birds was reported to be higher by respondents in rural (93.3%) than in peri-urban (83.3%) and urban (66.7%), who provided grains as supplements. Households in urban and peri-urban identified shortage of feed as first constraint, but for those in rural areas disease were found to be the key problem. The average mortality rate of chicken in the past 12 month per household was significantly ($p<0.05$) higher in rural (6.0) than in peri-urban (4.50) and urban (3.20). Difference in socio-economic status, growth and density of population; accessibility to social service, facility and infrastructure among urban, rural and peri-urban residents, resulted in variation on small scale poultry management at three different settings of the study area. Therefore area based development interventions could help to improve the management practices and increase productivity of poultry and thereby enhance the livelihood of small holders.

Key words: Assosa · Mangement · Peri-urban Poultry · Rural · Urban

INTRODUCTION

Population growth, urbanization and rising income in many parts of the developing world is believed to result in a growing demand for food of animal origin. Poultry products are also expected to play pivotal role on this line [1]. The world poultry population has been estimated to be about 14 billion heads [2] of which chicken are the most important poultry species. The majority of poultry production in tropical countries is based on the traditional scavenging system. The share of family poultry to the total poultry population in developing countries (in general and in Africa in particular) is not well documented, but estimated to reach 70 - 80 percent [3-5].

The chicken population of Ethiopia is estimated to be 65 million heads [2] and the country has about 60 percent of the total chicken population of East Africa [6]. Rural poultry production in Ethiopia represents a significant part of the national economy in general and the rural economy in particular and contributes 90 and 92 percent of the national egg and poultry meat production respectively [7] with an annual output of 72,300 metric tons of meat and 78,000 metric tons of egg [8].

Poultry production is an important economic activity in Ethiopia. Besides its social and cultural benefits it plays significant role in family nutrition. Village poultry occupy a unique position in rural community through contribution to the supply of valuable protein food to the families of

Corresponding Author: Nega Mekonnen, Department of Animal Science, Assosa University, P.O. Box: 18, Assosa, Ethiopia.

smallholder farmer. This is particularly true in Ethiopia, because there are few alternative animal protein sources and no cultural or religious taboos of any kind relating to the consumption of egg and poultry meat as that of pig meat [9].

The development of successful production strategies for poultry rearing depends on an accurate description of village chicken production systems [10]. Developing schemes that aim to promote and improve the village poultry sub-sector need to incorporate local knowledge in productivity and health management in addition to the roles and contributions of women [11].

Although difference in socio-economic status, growth and density of population, availability of social services, facility and infrastructure among urban, rural and peri-urban residents may cause variation in small scale poultry management practices, Relatively no or little research [12] has been carried out to characterize understand and improve small scale poultry management based on location. For any development intervention to be undertaken and become successful location based accurate evaluation of small scale poultry management practices are essential. However, little has been done to evaluate and determine small scale poultry management practices particularly at rural, peri-urban and urban areas of Assosa district in Benishangul Gumuz regional state of Ethiopia. Therefore, this research work was initiated to explore the existing situations of small scale poultry management practices in relation to urban, peri-urban and rural locations so that it would be used as an Input for further location based development interventions and researches.

MATERIALS AND METHODS

Study Area: The study was carried out at three settings (amba-16 that represent rural, amba-14 that represent peri urban and Assosa town that represent urban) in Assosa district of Benishangul Gumuz Region, Western Ethiopia, located 660 km away from Addis Ababa. Based on difference in (Socio-economic status, demand for poultry meat, poultry meat consumption habit, growth and density of) population and availability of (social services, facility and infrastructure) the three settings were classified as urban, rural and peri-urban. According to this classification urban areas were characterized by having population with (better economic status, higher density, good demand to poultry meat). Urban areas also have a good access to social services, facility and infrastructure. To the contrary rural areas are characterized by having population with (relatively low economic status, lower density and lower demand to poultry meat) rural areas also have a lower access to social services, facility and infrastructures. Peri-urban locations are intermediate areas in terms of socio- economic status and accessibility to facilities. This location difference was expected to have a variation on production and marketing of poultry as a result the study was conducted in relation to setting difference. Assosa district is located between geographical coordinates of 9o 30'N to 11o 39'N latitude and 34o 20'E to 36o30'E longitude [13]. It is 2330 km2 wide and range in altitude from 1300-1570 masl [14]. According to [15], the human population size of the BGRS is 670847 with 6.7 persons per km^2 and the majority (more than 91%) of the population living in rural areas [16]. Assosa zone comprises 39.9% of the regional population and 37.4 and 40.3% of the regional urban and rural population respectively. Based on [15], Assosa comprised of 28.0% of the zonal rural population [15]. The rainfall pattern of the district is mono-modal occurring for 6 or 7 months of the year usually between March/April and August/ September. Mean annual rainfall is about 800-1200 mm [14]. Mean annual temperature in Assosa ranges between 25 -30ºC and 21-35ºC. According to Assosa metrological report of 2008, the hottest period in this district extends from January to May, the peak being March. Whereas, the coolest periods occur from June to November, the lowest being August.

Data Collection and Management: Both primary and secondary data were collected on various aspects of poultry management practices, primary data were collected from 90 sample respondents through semi structured, pretested and restructured questionnaire. Focus group discussion and personnel observation were also carried out to strengthen the information collected from questioner based house hold survey. The questioner covers various aspects of poultry management at different settings. Parameters such as socio economic characteristics of households, purpose of keeping poultry, poultry feeds and feeding, poultry housing and sanitation, poultry disease and treatment as well as poultry management constraints.

Sampling Procedures: A three stage sampling procedure was used in the house hold survey. In the first stage, the three study settings were chosen purposively based on

the availability of poultry and representativeness in terms of the rural, peri-urban and urban areas of Assosa district. In the second stage, since, the study was intended to describe the poultry production situations, households who owned at least one or two birds (target population) were identified and listed from each location with the help of the livestock development agents of the site. In the third stage, based on the information obtained, a total of 90 households were chosen using systematic random sampling (30 farmers from each locations) to participate in the house hold survey.

To complement the information collected by using house survey, three focus group discussions (one group discussion from each location) comprising eight participants were held with the respective districts livestock production experts, veterinarians and development. Care full personal observation was also followed by household survey and focus group discussion.

Data Analysis: Data collected by different methods were analyzed by using SPSS version 16. Descriptive statistics, one way ANOVA, ranking and narrative analysis were also used in data analysis. Descriptive statistics was used to summarize information.

RESULTS AND DISCUSSIONS

Purpose of Keeping Poultry: Households' ranking of purpose of keeping poultry in the urban, peri-urban and rural study areas is given in Table 1. Income/sell was by far the most important purpose of keeping poultry. [17] reported income/sell as the main purpose of keeping poultry in high and low market access areas of Tigray Ethiopia. More over [18] in a study of three villages, found that it is the women that look after the birds and the earnings from the sale of eggs and chickens are often their only source of cash income. This is followed by consumption in the three settings. Farmers invite special guests to partake of the popular dish "*doro wat*", which contains both chicken meat and eggs and is considered to be one of the most exclusive national dishes [19]. Rearing poultry for saving as live animal rated third in rural and peri-urban study areas while in urban study area Rearing poultry for saving as live animal rated fourth. Even though manure is not important product in urban it is rated fourth in rural and peri-urban study areas. Although this result shows the priority given by farmers for the purposes of keeping poultry, it is apparent that farmers keep poultry not for single purpose rather for multiple purposes. Chickens are given or received to show or to accept good relationship or to say thanks for a favor or help [4]. Besides, poultry can serve as a unit of exchange in societies where there is no circulation of money [20]. For example in Gambia five adult hens can be bartered for one sheep and 25 hens for one head of cattle. Under normal conditions, birds were sold when the household is in need of money. The income from the sale of chickens is additional revenue to earnings from cash crops from the field [4].

Sources of Foundation Flock: Respondents of about 86% in urban, 74% in peri-urban and 68% in rural areas indicated market /purchasing as the main source of foundation poultry. This would suggest the importance of market in establishing poultry flocks compared to other sources of foundation stock. About 12, 18 and 26% of respondents in urban, peri -urban and rural respectively had used gift as means of establishing poultry flocks. Other sources of foundation stock include sharing and loan from the government. Likewise, purchase, gifts from different sources and inheritances from family are reported as important ways of building livestock including poultry [21].

Flock Structure of Poultry: The result of this study has reflected that flock demography (age and sex distribution) of poultry was dominated by young growers less than the age of three months in all study areas. Female chicken of all age group comprise the highest ratio which accounted 75, 70 and 69% in urban, peri-urban and rural respectively (Fig. 1). The proportion of male chicken of all age group was (10% in urban, 16.4% in peri-urban and 19.5% in rural). This may be because males are either sold in the market or consumed at home, while females are kept for egg production and breeding purpose [22]. As shown from the result in all studied locations number of female birds kept was higher than male birds. Under normal socio-economic and ecological factors in the tropical Africa a flock will contain 70-80% of females. In earlier study conducted by [23] on village poultry production in the central highlands of Ethiopia, the typical number of birds per household in three study villages in 1980's was 10 -15 but has decreased to 4-10 birds per household today [23]. The male to female ratio of the flock was 1:3 to 1:4 in most case, although some families kept additional double combed male birds with special colors for cultural proposes.

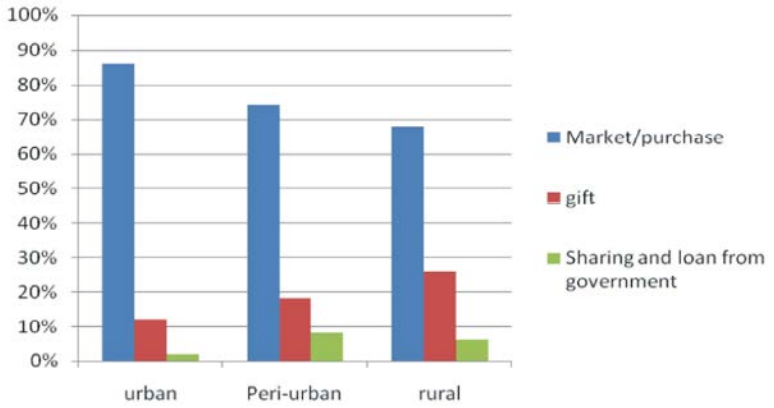

Fig. 1: Percentage source of foundation flock in urban, peri-urban and rural areas of the study

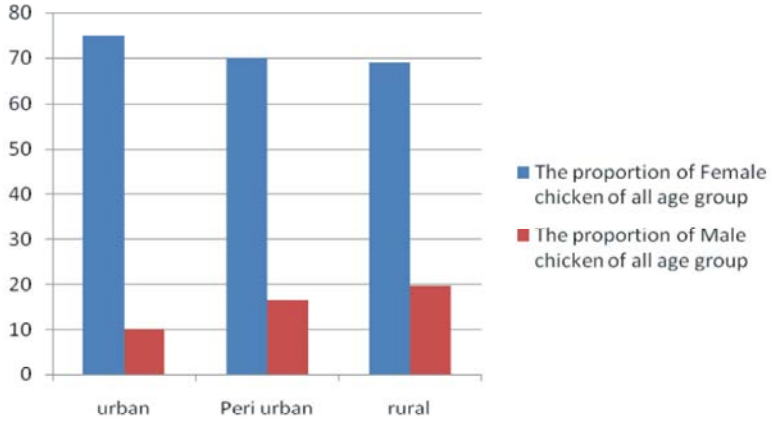

Fig. 2: Percentage sex proportion of flock structure of poultry in urban, peri- urban and rural

Feed resources and feeding of poultry in urban, peri-urban and rural areas of Assosa

Table 1: Households ranking of purpose of poultry keeping in urban, peri-urban and rural

	Area N (index) Rank		
Variables	Rural n=50	Urban30 n=50	Peri-urban n=50
Income/sell	50(0.44)1	48(0.46)1	49(0.40)1
For Consumption	10(0.20) 2	27(0.21) 2	18(0.22) 2
Saving/asset	27(0.19)3	22(0.17)3	23(0.18)3
Manure	25(0.15) 4	-	21(0.19) 4

*N=Number of respondents,*Rank 1= most important, *Rank 4 = less important

Table 2: Major feed resources of poultry in urban, peri-urban and rural Areas of Assosa district

	Area N (%) R		
Feed types	Urban n=50	Peri-urban n=50	Rural n=50
Feed obtained from scavenging	30(66.7)1	45(83.3)1	48 (93.3)1
Homemade wastes	18(23.3)2	5(10)2	5(3.3)2
Grain supplements	3(6.7)3	2(3.3)3	2(3.3)3
Industrial by products	1(3.3)4	1(3.3)4	0

*N=Number of responses, R= rank

Major Feed Resources of Poultry: In this study the major feed resources of poultry are presented in Table 2. Overall, the most important feed resources of poultry in the three surveyed locations were feeds obtained from scavenging around the back yard (herbage seeds, worms, green leaves and minerals), homemade wastes and grain supplements and industrial by products. [24] indicated that, in Ethiopia, Gambia and Tanzania, scavenging was the major feeding system; however, chickens food was supplemented with household refuse and grains. According to [23] in village chicken production systems, the major proportion of the feed was obtained through scavenging.

Poultry production in tropical countries was based on the traditional scavenging system and characterized by low output per bird [24]. In a study conducted by [25] in Rushinga district of Zimbabwe, about 6.2 percent of the households practiced zero supplementation, 93.6 percent partial supplementation and 0.2 percent always provided supplementary feed to their chickens.

The larger proportion of respondents in rural and peri-urban area reported in making use of feeds from scavenging. Larger proportion of respondents in urban area reported in making use of feeds from homemade wastes than respondents in rural and peri-urban. Comparable proportion of respondents' in all locations reported in making use of grain supplements. Few respondents in urban and peri-urban use industrial by products. But respondents in the rural do not have access to Industrial by products. As described by [19] the small scale poultry production system is characterized by minimum inputs, with birds scavenging in the backyard and no investments beyond the cost of the foundation stock, a handful of grain each day and possibly simple night enclosures.

Use of Purchased Feeds: Households' of only 10% in urban and 6.6% in peri-urban indicated the use of purchased feeds. Rural respondents did not use purchased feeds. Respondents who did not use purchased feeds were asked to pinpoint the reasons for not using purchased feeds. Accordingly, 45, 70 and 80% of them in urban, peri and rural respectively have reported that scavenging on locally available feeds is enough for poultry. As a result poultry do not require purchased feeds. Overall the system is quite productive in relation to the very low input levels and this is underlined by [26] who states that the net output from poultry rearing is higher in scavenging systems compared to commercial systems and the scavenging flock is not in competition with humans for feed. Despite their significant contribution in generating household income, this result apparently revealed the very low attention given for poultry. Respondents of 45% in urban, 27.4% in peri-urban and 20% in rural mentioned lack of money as the second most important restraining factor that impedes them from not using purchased feeds followed by use of own feeds and unavailability of feeds to be purchased . Livestock production experts expressed that farmers in and around the towns utilize purchased feeds (particularly industrial by products and grains).

Supplementary Feeding of Poultry: According to the present household survey result, about 10, 6.6 and 3.3% of the interviewed poultry owners in urban, peri-urban and rural respectively reported the use of supplementary feeding for poultry (grains, household wastes and refusals, wheat bran, oil seed cake and atella (residues of local drink). Households' noted that whenever supplementary feeds are available priority is given for chicks, laying hen, broody hen and sick birds. There are different reasons for not practicing regular supplementary feeding of poultry. Among the reasons, the majority of the interviewed flock owners (40% in urban, 41.3% in peri-urban and 58% in rural) who did not practice supplementary feeding claim that poultry do not require supplementary feeding as they can or scavenge effectively. Experts during group discussion explained that most of the time farmers do not supplement poultry, because of the less attention given and increment of feed cost. About 31.1, 21.7 and 6% of the respondents in rural, peri-urban and urban areas who did not practice supplementary feeding Reported unavailability of supplementary feeds followed by lack of money and awareness on supplementary feeding of poultry. Few farmers in rural areas supplement their birds with grains; early in the morning grain is spread on the ground so that birds get grains before they go to scavenging. In urban and peri urban areas birds were supplemented early in the morning.

Water Sources and Watering in Rural, Urban and Peri-Urban Areas

Sources of Water for Poultry: The main source of water for 83.3and 16.7% of respondents in urban area were pipe water and well water respectively. Perennial springs and river were the main sources of water for 73.3 and 26.7% rural respondents. In peri-urban areas 66.7% of respondents use perennial spring but the rest 33.3% of respondents use well water for their birds both during dry and wet seasons (Table 3). As poultry needs small amount of water and all study areas get adequate water from different sources, there is no problem with accessibility to water in all study areas.

All poultry owners in rural, peri-urban and urban areas fetch water from a distance of less than one kilometer. All birds have free access to water (water is provided adlib). Water is provided on locally constructed water trough.

Table 3: Source of water for poultry in urban, Peri-urban and rural study areas

	Area N (%)		
Water sources	Urban N (%)	Peri-urban N (%)	Rural N (%)
Pipe water	45(90)	0	0
Perennial Spring	0	40 (80)	45 (90)
Well water	5(10)	10 (20)	0
River water	0	0	8(10)

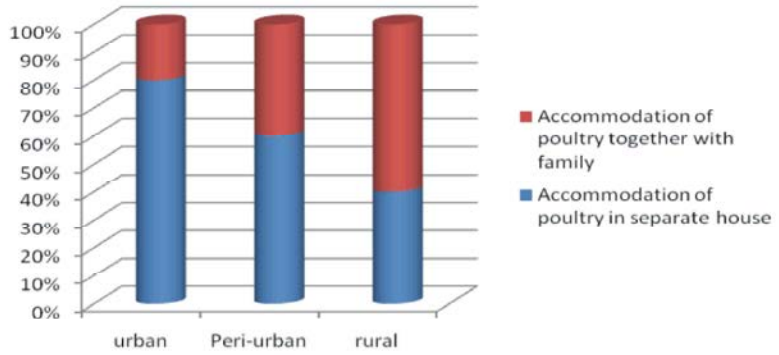

Fig. 3: Percentage accommodation of poultry in separate house and with family

Housing of Poultry in Rural, Urban and Peri-Urban Locations: Of the interviewed households, 80% from urban, 60% from peri-urban and 40% from rural areas reported accommodation of poultry in a separate house built either adjacent or few distance far from the family house. About 20, 40and 60 % of the respondents in urban, peri-urban and rural households' respectively indicated accommodating poultry together with the family in the family house (Fig. 2). [27] reported that, in South Wollo, Ethiopia, about 41.3 percent of the households shared the same room followed by a separate quarter in the same roof (37.5 percent) and separately constructed houses (21.2 percent). [23] reported that few households (11.5 percent) have constructed a small enclosure outside the house and the poultry night shelter was occasionally cleaned by the house wife, depending on her work load Similarly, [24] reported that, in Ethiopia, all the households visited have no separate house for chickens. However, with in the family house there was an area marked for the chicken. During group discussion, livestock production experts in peri-urban area explained lack of awareness in some of the farmers in constructing house for livestock in general and poultry In particular. Housing of poultry by classes (age and sex category) was virtually unknown in the three surveyed locations. However, newly hatched chicks are separated from adults and kept in family house until they become strong enough to prevent damaging by larger birds. As described by [19] the small scale poultry production system is characterized by provisions of simple night enclosures.

Poultry Health Management in Rural, Peri-Urban and Urban Locations

Major Poultry Diseases and Parasites: Households were interviewed to identify the diseases and parasites by local names and the symptoms that they have observed. Then, the information was taken to the districts veterinarians in the three surveyed locations for finding the veterinary equivalent of the diseases identified by the respondents. According to the respondents, the common poultry diseases in the three surveyed locations, in their order of importance, include coccidiosis (protozoal), Newcastle (viral) and other respiratory problems. Livestock production experts and veterinarians during focus group discussion in the three locations also cited disease as one of the major poultry production constraint of which coccidiosis is the major one followed by new castle. [27] after summarizing the reports from six African countries, reported that the mortality caused by Newcastle disease ranges from 50-100% per annum and its severity is higher in the dry season, whereas the disease is more widespread in the rainy season in the central highlands of Ethiopia [19]. According to [28], family poultry suffer losses from predators and from disease caused by viruses, bacteria and parasites. [11] in Ethiopia, [29], [24] in Africa, [4] in Sub-Saharan Africa, [30] in Asia and [31] in America reported that, among the diseases of village chicken, New Castle disease ranked as the most important. The farmers do not have any preventive medicine or practice for this fatal disease and only after the start of an outbreak do they treat their birds with socially accepted medicines [19]. However the effectiveness of these treatments is not satisfactory. Infestation of ticks and lice are the main external parasites recognized by the majority of the interviewed Households in the three surveyed locations. Even if, the habit of vaccinating animals is getting better and better, farmers still resist vaccination poultry. Considerable numbers of farmers do not vaccinate and treat their birds for just not to pay money for treatment and vaccination, this is particularly true for those farmers who have large number of poultry. In addition, most of the farmers try to seek treatment for their birds after they are infected or critically sick. This implies farmers give less attention in maintaining the health of their poultry.

Poultry Mortality Rate: As indicated in Table 4 show that the average mortality rate in all flock of poultry during the past 12 months was significantly ($p<0.05$) higher in rural than urban and peri-urban. The result obtained through farm monitoring survey also revealed the presence of high mortality in rural According to the respondents, the main reason for the loss of their flock in the past 12 months was mainly disease followed by predators and injury. Therefore, this result suggests the need to develop poultry health interventions which can reduce mortality of poultry to optimize the productivity of poultry. Chick mortality represents a major loss in scavenging small scale chicken production systems (Table 4). [32] and [18] reported that chick mortality represents a major loss in village chicken production system. Reports from different countries show that 50 to 70 percent of chicks die between hatching and the end of brooding. [33] in Nigeria, [34] and [35] in Indonesia, [36] in Srilanka, [18] in Ethiopia, reported mortality rates of chicks as being 69, 65, 53, 61 and 60 percent respectively. In another study, [11] has reported chick mortality rate of 49 percent in the first two months after hatching with expected increase when disease outbreak occurs in the area. Similarly in Zimbabwe reported that, survival among young chickens was low (45 percent until 16 weeks of age). Most of the death (69 percent) occurred during the first three weeks after hatching. [10] in Zimbabwe indicated an average of 80 percent mortality of the total exists. Various authors attribute these losses to different causes, for example [36] reported that in Indonesia losses were due to a combination of poor nutrition, predators and various diseases factors and although predators were blamed for the majority of losses, other biological and environmental factors made significant contribution. The low input as regards health care may have contributed to the observed high mortality, which occurred mainly during the dry season. [29] and [25] reported that in Rushinga district of Zimbabwe predation and disease attribute to 40.5 and 30.2 percent of the total death respectively.

Access and Distance to the Nearest Veterinary Service: Respondents of 100% in urban, 80% in peri-urban and 30 % in rural locations indicated the presence of access to veterinary services. The remaining stated lack of access to veterinary Service. The percentage of households who have access to veterinary service is lower in rural compared to peri-urban and urban. Distance to the nearest veterinary service is presented in Table 5. The majority of the overall urban flock keepers receive veterinary services at the radius of less than one kilometer followed by six up to ten kilometer distance for peri-urban respondents and fifteen up to forty five for rural respondents. Nevertheless, the response of respondents Pertaining distance to the nearest veterinary service varied significantly ($p<0.05$) across the three study locations.

The proportion of households using veterinary services is higher in urban areas than that of rural and peri-urban. Most of the households in rural trekked on foot to get veterinary service at a radius of more than fifteen kilometer. In general, as reported by rural and peri-urban households provision of animal health service is not satisfactory. Livestock production experts and veterinarians during group discussion expressed that animal health service provision is constrained by various restraining problems; absences of enough animal health clinics and inadequate trained animal health professionals are among others. In addition, the existing animal health clinics are not well equipped with the necessary materials, equipment and drugs to provide services at their full potential. Farmer's consciousness on maintaining poultry health is negligible and this coupled with the above mentioned problems has reduced the efficiency of animal health service provision as required in rural and peri urban areas.

Table 4: Average mortality rate of poultry in the past 12 months in rural, urban and peri-urban

	Area (Mean±SD)			
Flock type	Urban n=50	Peri-urban n=50	Rural n=50	p-value
Poultry	3.20±15.6 [b]	4.50±21.6 [ab]	6.0±43.6[a]	0.0045

*Levels not connected by same letter are significantly different within rows ($p<0.05$),

*SD= standard deviation,*n (N) =Number of observations

Table 5: Distance to the nearest veterinary service in urban peri-urban and rural areas

	Areas N (%)		
Distance	Rural	Urban	Peri-urban
<1km	0	42(84)	0
1-5 km	0	8(16)	41(82)
6-15km	42(84)	0	9(18)
>15 km	8(16)	0	0

N = Number of respondents

Table 6: Sources of breeding males in urban, Peri-urban and rural locations

	Area N (%)		
Source of cock	Urban n =50	Rural n=50	Peri-urban n=50
Own breed	40(80)	40(80)	40(80)
Bought	6(12)	4(8)	2(4)
Neighboring	4(8)	6(12)	8(16)

Breeding Management in Rural, Peri-urban and Urban Locations

Type of Mating and Sources of Breeding Males: According to the result of this cross-sectional survey, controlled mating/breeding was virtually unknown. All of the respondents in all locations revealed the use of flock mating /uncontrolled mating. This result implies lack of intentional mating system to avoid unwanted mating. In the traditional system of poultry production, mating is uncontrolled and type of mating practiced is flock mating. Majority of respondents in all areas had used their own cocks for breeding purpose.

Attributes of Poultry for Selecting Breeding Stock: The major attributes of chicken used by farmers in selecting breeding stock are given in Table 7. Higher percentage of respondents in the three surveyed locations indicated the use of body size followed by color, productive and reproductive performance as the main criteria during selection of breeding flock in their order of importance. Farmers use multiple attributes of poultry durings.

Table 7: Poultry attributes for selecting breeding flock in urban, peri-urban and rural locations

	Area N (%) R		
Attributes	Urban n=50	Rural n=50	Peri-urban n=50
Body size	42(84)3	45(90)3	38(76)4
Color	36(72)4	42(84)4	40(80)3
Productive performance	48(96)1	46(92)2	49(98)1
Reproductive performance	45(90)2	47(94)1	45(90)2

* Percentages exceed 100% as respondents mentioned two or more sources of Breeding Males

Table 8: Households' ranking of poultry production constraints in rural, urban and peri-urban

	Location N(%) rank		
Constraints	Rural n=50	Urban n=50	Peri-urban n=50
Shortage of feed	48(96)2	50(100) 1	44(88)1
Health problem	49(98)1	47(94) 2	46(92)2
Predator	25(50)6	20(40)5	20(40)6
Poor extension service	30(60)4	24(48) 3	35(70)4
Shelter	33(66)3	22(44) 4	36(72)3
Market	35(70)5	20(40) 6	20(40)5

*Rank 1= most important, *Rank 6= less important

Poultry Production Constraints in Rural, Urban and Peri-Urban Areas: During cross-sectional survey, households' were asked to indicate and prioritize the most important constraints of poultry keeping. The result in Table 8 presents households' ranking of poultry production constraints in rural, urban and peri-urban study areas. Shortage of feed ranked the first most important constraint that afflicts poultry production followed by animal health problem and lack of shelter in urban and peri-urban. During group discussion, experts in urban and peri-urban identified similar production constraints of poultry. In rural areas animal health problem rated the first most important constraint of poultry production Followed by shortage of feed, lack of shelter and poor extension service. [36] reported that in Indonesia losses were due to a combination of poor nutrition, predators and various diseases factors and although predators were blamed for the majority of losses, other biological and environmental factors made significant contribution. The low input as regards health care may have contributed to the observed high mortality, which occurred mainly during the dry season. [29] and [25] reported that in Rushinga district of Zimbabwe predation and disease attribute to 40.5 and 30.2 percent of the total death respectively. In urban households' rated lack of shelter, predator and market as the fourth, fifth and sixth most important constraint that affected poultry production, respectively, whereas respondents in rural area ranked poor extension service, market and predator respectively as the fourth, fifth and sixth constraint of poultry production respectively. In peri-urban study area respondents rated poor extension service, market and predator respectively as fourth, fifth and sixth constraint (Table 15). In addition to the production constraints summarized in Table 15, experts' in the three surveyed locations during group discussion underlined that poultry Production system is backward i.e. the production system is not market oriented; farmers focus only on number rather than productivity per head. Moreover, farmers do not give attention for poultry, especially in supplementary feeding, health care, housing management and breeding management.

CONCLUSION

The current study has produced a range of insights use full for further research and development activities. More generally the finding of the study indicate options for up scaling and intensification of poultry breeding and production of poultry egg and meat in sites (urban) with better market access feeding and housing resulted in relatively higher return as compared to the rural settings. Thus urban households with better market access and consumer are advisable to use more production inputs. Overall, the study showed the presence of different preference for poultry holdings. It also indicated the presence of poor poultry breeding practices and limited

egg and poultry meat production efficiency in urban, peri-urban and rural settings. This implies that any area based development interventions aiming to improve the productivity of poultry and thereby enhance the livelihood of small holder farmers should be planned and implemented in relation to the felt need of the farmers to promote productivity of poultry.

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