



Backyard Poultry Rearing Practices in Some Rural Areas of Yemen

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Abstract

Backyard poultry plays an important role in the livelihood of rural families in developing countries. This paper was based on a study conducted in 6 districts from different areas in Yemen to present an overview of different managerial practices in those areas for backyard poultry. This study focused mainly on the characterization of the flock size, housing system, feeding, and constraints in rearing of poultry. Data was collected through personal interviews from the respondents using a simple questionnaire. The results shown the existence of few birds in the study area with an average flock size of 4-12 birds per household. The survey indicated that among poultry species surveyed, local poultry predominated in all households (79.1%), followed by hybrid (hybrid or crossbred) (18.9%) and commercial birds (2.4%). About 66.2% households were space rearing the poultry for their own consumption and 33.8% as source of supplementary income. Most of respondents keeping their birds in their house or in shed of animals during the night only. Daily feed consumption was low in birds as scavenging was the only feed source for most of them (62%). Most of the respondents (45%) indicated that the disease was the major constraint in rearing of the backyard poultry in the rural areas. Therefore, efforts should be geared up towards the improvement of health and management practices to improve rural backyard chicken production.

Keywords: Backyard Poultry, Feeding, Housing, Rural Areas, Yemen

Introduction

Indigenous poultry plays a significant role in the livelihoods of people and it contributes significantly to the food security, poverty alleviation and the promotion of gender equity in rural communities (Mutombo, 2014). The term backyard poultry or rural poultry in most developing countries is indicative of the traditional domestic poultry with low input that are typically maintained by rural households (Akinola and Essien, 2011). In this type of poultry rearing, usually few birds are kept primarily for household needs. The surplus birds and eggs are sold in the village or nearby market and the cash earned are utilized for fulfilling other needs of the household. In most of the developing countries, backyard poultry keeping has been practiced for many generations. Despite of the efforts to develop intensive poultry farming, backyard poultry rearing is still very important and a common practice in many developing countries. Although rural poultry farming doesn't produce a large income, it doesn't require any extra skill and assist rural families a lot in taking them out of poverty (Jensen and Dolberg, 2003).

In Yemen the poultry sector can be subdivided into the modern and the traditional subsectors. Each of them has its own peculiarities that make them so special with respect to their contribution to national food security. The traditional poultry rearing system is distributed all over the country, it's a valuable asset for local human population who live in the rural areas (77% of the total Yemeni population). The rural poultry in Yemen believed to be a viable and promising alternative source of cash income for poor women in the rural areas due to its high return rate and low input investment requirements. Despite all the good qualities of the local chicken, this system is still very backward and suffers from several constraints, In the recent past decade the domestic poultry farming has been decreased significantly and it faced with many challenges including diseases resulting expanded exotic birds of commercial poultry sectors. In additional, very little information is available on backyard poultry in rural communities. Therefore, this study was carried out with the objectives to characterize the flock management practices to identify the prevailing constraints of backyard poultry production in the rural areas of different areas in Yemen.

Material and Methods

Study Design and Sampling Procedure

Present study was planned to assess how rural families keep their poultry birds. The study was conducted in six districts selected from four governorates in different ecological zones including Al-Hodeida governorate (Zabid, and Bit Al-Faqih districts), Ibb governorate (Baddan, and Al-Qafer districts), Al-Mahweet governorate (Al-Mahweet district) and Sana'a governorate (Bani Mater district). The data was collected about 60 households from each district thus giving the total sample size of about 360 distributed with 254 respondents (Table 1). Random sampling method was followed to select each household within the study areas. During the study period only those farmers who owned poultry and were willing to participate in this study were considered.

Table 1: Tabular representation of households with poultry rearing

Governorates	District	Distributed	Responses
Al-Hodeida	Zabid	60	39
	Bit Al-Faqih	60	46
Ibb	AlQafer	60	48
	Baadan	60	41
Al-Mahweet	Al-Mahweet	60	36
Sana'a	Bani Mater	60	44
Total		360	254

Data Collection and Analysis

Data of households were collected by using semi-structured questionnaire and individual interview in order to obtain quantitative data. Direct observation of flocks, feeding, housing and watering practices and poultry houses was carried out during the survey period. Information regarding the types of poultry reared, flock size and composition, production and reproductive performance, management practices, provision of additional feed, vaccination, constraints of backyard poultry production system and causes of mortality were recorded. The obtained data were

entered using Microsoft excel spreadsheet and analyzed using SPSS (Version, 20) and presented as percentage.

Result and Discussion

Household Characteristics

The observations indicated that most of the respondents were women in the study areas (Figure 1), which reflected that the management and care of poultry flocks is primarily the responsibility of women. This includes letting the flock out for scavenging, providing supplementary feed and water, and cleaning of shelters. However, since most households migrate in search of work in the summer, during this time, the care of poultry flocks is carried out by the elderly and children who are left behind. Several previous surveys have indicated that rural poultry is mostly managed by females (Desalew *et al.*, 2013; Meseret, 2010). In contrary to this results Mekonnen (2007) reported that nearly equal proportion of males (49.5%) and females (50.5%) in the South part of Ethiopia.

Analysis of educational status (Figure 2) observed under the present study revealed that about 73% of the respondents in the study area were illiterates, however, a better education status with only 28% of respondents (secondary school and can read and write).

Rearing Poultry and Flock Size

As per survey, for household subsistence, about 70.6% of the families were rearing poultry but it was found that 29.4% of the families have no poultry birds (Table 2). The flock size per household for the most of respondents was ranged from 4-12 birds (78%) while about 19.6% respondents having birds between 13-20 birds in the present study (Table 1). This finding is in agreement with the reports from Pakistan (Kalim Ullah *et al.*, 2019) who reported the mean flock sizes of 10-15 birds for village chicken production system. In contrast, the mean flock size recorded in this study was lower than the mean flock size of 22 birds in Sudan, for village chicken production system (Khalafalla, 2000).

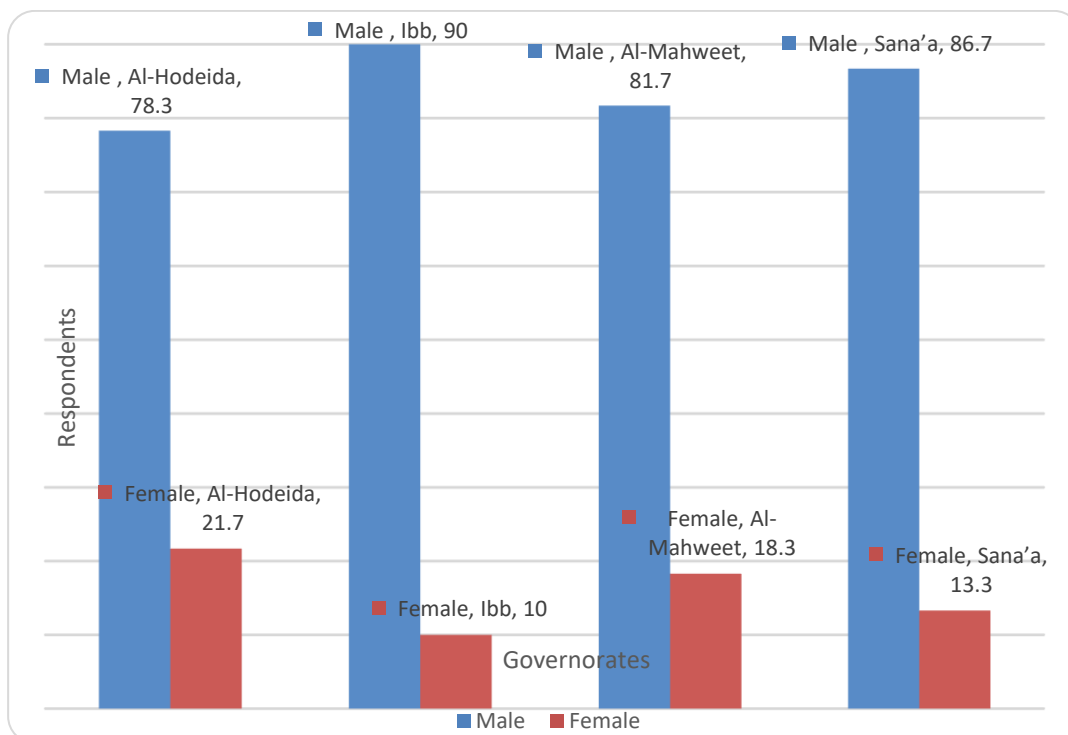


Figure 1: Sex ratios of respondents in study areas

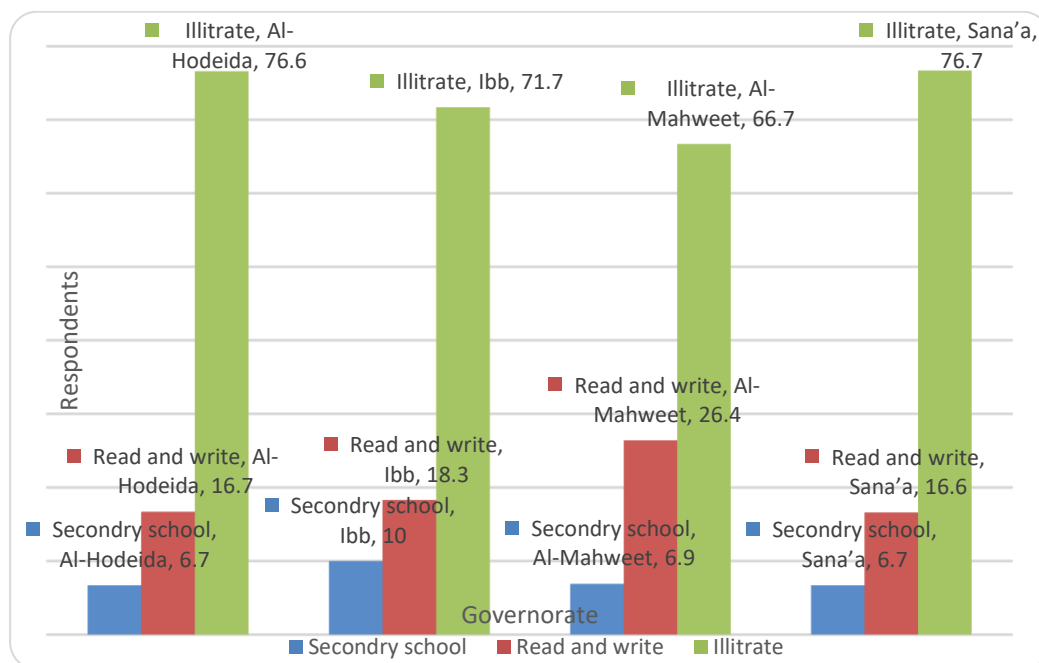


Figure 2: Educational level of the respondents of the study area

Purpose of Rearing Poultry

The results of the survey showed that chickens were kept in order of priority as a source of food then a source of income. The source of food was ranked as most important (66%), while the source of income was considered less important for 34% of respondents. These results reveal that families who depend on subsistence or semi-subsistence farming are engaged in poultry keeping. The results of the present study are in agreement with Solomon *et al.* (2013) who reported that local chicken sector constitutes significantly to human livelihood by being affordable sources of animal protein and contributes significantly to food security of poor households, and also serves as source of cash income in Ethiopia. The domestic market for chicken meat and eggs is yet to be satisfied and prices for chickens and eggs are becoming increasingly attractive to producers and traders alike (Dessie *et al.*, 2013). This reflects that the situation creates opportunity to generate cash from poultry through domestic market.

Type of Birds

Almost all households (79.1%) reared local/ non-descript poultry. Very few households (18.9%) rear the mixed flock of local breed with exotic breed (commercial hens), and hybrid hens from local and exotic hens and breed and only 2.4% household rears exotic breed (commercial breeds).

Source of Poultry

The results for the sources of poultry procurement (Table 2) revealed that an overall of 46.8% respondents hatched fertile eggs naturally using broody hen at home while about 28% respondents obtained the chickens from Neighboring. In addition to this finding about 18.9% respondents purchased their chickens from local market, while only 6.2% respondents obtained their chicken from different sources as a gift or barter between women. However, Khandait *et al.* (2011) reported 100% hatching of eggs naturally at home in backyard poultry production at Bhandara district of India. And, Nath *et al.* (2012) reported that 74.4% of respondents purchased poultry chicks from the local market in rural tribal areas of India.

Feeding Methods

The results for poultry feeding practices (Table 2) revealed that about of 62% of the respondents in study area mentioned poultry is primarily reared under scavenging system for up to 10 hours each day and 33% respondents practice scavenging system with supplementary feeding by way of cereals (only wheat or sorghum) while only 4.5% respondents used commercial feed supplementary feeding, this finding was not in agreement with reported by

Desalew *et al.* (2013) in East Shewa and by Asefa (2007) in Hawassa zuria zone, backyard chicken owners provide additional supplement with 90%.

Poultry Housing

Housing is important for the birds as it protects them from varying temperatures, rain, wind and predators etc. The observations on poultry housing (Table 2) indicated that 75.6% of the respondents in study areas constructed separate house within or near home for _ night shelter only. In this way the birds are left to scavenge during day and confined at night only. While 20% respondents confirm that poultry stay all the time in shed of other animals. Only 4.7% respondents were kept their birds on separate house all time and these birds cannot move out their house constructed. The percentage of respondents for separate poultry housing under this study was very less than the finding of Khandait *et al.* (2011) who reported that 90% owners of backyard poultry provided separate poultry house in Bhandara district of India.

Table 2: Tabular representation of obtained data

Parameters	Frequency	Percentage
Number of houses visited	360	-
No. of houses having birds	254	70.60%
No. of housing without birds	106	29.40%
No. of birds	2032	
Flock size		
4-12 birds	198	78%
13-20 birds	50	19.60%
More than 20 birds	6	2.40%
Purpose of rearing poultry		
Source of food	168	66.20%
Source of income	86	33.80%
Type of bird		
Local birds	201	79.10%
Hybrid bird	47	18.90%
Exotic birds (commercial breeds)	6	2.40%
Source of poultry (Fre (%))		
Purchased from local market	48	18.90%
Naturally hatched at home	119	46.80%
Neighboring	71	28%
Other sources	16	6.20%
Feeding method		
Only scavenging	157	62%
Scavenging with Grains	85	33.50%
Commercial feed	12	4.50%
Poultry Housing		
Share same house with people and night shelter only	192	75.60%
Separate house	12	4.70%
With other animals	50	20%
Constraints		
Presence of disease	114	45%
Predators	51	20%
Absence veterinary service	45	18%
Lake of knowledge in poultry rearing	31	12%
Feed shortage	13	5%

General Constraints on Traditional Backyard Poultry Production

In the study areas, 70.6% of the household rear poultry. The eggs are mainly used for domestic consumption. However, rearing of large animals has been decreasing steadily over the last years.

Information collected on major constraints in backyard poultry production in the study areas was diseases, predators, absence of veterinary services, lack of knowledge of poultry rearing and feed shortage (Table 2). The disease was the most important problem affecting poultry productivity, about 45% of respondents indicated that the disease was the major constraint in rearing the backyard poultry in the rural areas (Table 2). The most prevalent disease signs as perceived by the respondents in the study areas were decreased or loss of appetite, watery and yellowish droppings, paralysis and, consequently, death. This syndrome was called 'fengle' by the community in the study area. This disease, which was probably Newcastle disease, was an acute condition, lasting for only 3-5 days, and usually resulted in the death of the whole flock because transmission was very rapid. Newcastle disease is one of the major threats faced by birds specifically during the changing weather (Yongolo, 1996). The farmers did not have any preventive medicine or practice for this fatal disease and only treat their birds with accepted traditional medicines after the start of an outbreak. These findings in the study area are agreed with the reports of Khandait *et al.* (2011) and Desalew *et al.* (2013) who have observed that in the free-range and backyard poultry production system, diseases are the major limiting factor to the production of backyard chickens in Bhandara district of India and in East Shewa Ethiopia respectively. Also Meseret (2010) and Moges *et al.* (2010) reported Newcastle disease as economically important diseases in North West Ethiopia.

On the other hand, 12% respondents complained that lack of knowledge in poultry rearing. Majority shared that lack of training and awareness is one of the major barriers in the development of their household poultry. They desired that training programs in the rural areas for women may be arranged regularly. Facilities for immunization of rural poultry should be made available. Lack of poultry production knowledge was constraint agreed with the report of Moges *et al.* (2010) in Ethiopia and Khandait *et al.* (2011) in India. Other constraints include from 8-16% respondents' predators, absence veterinary services and feed shortage in the study area. Limited veterinary services for village chickens were also reported by Moges *et al.* (2010) in North West Ethiopia.

Conclusion

Backyard poultry production is playing an important role in the livelihood of rural families. It's a way of improving rural income and also empowering women since income directly comes in the hands of rural women. However, the backyard chickens suffer low productivity and high mortality. Disease control and improved management in backyard chicken production are lacking in the study area. Therefore, animal husbandry and health extension service units should be strengthened to train chicken farmers to increase the level of awareness and benefits from backyard birds. Furthermore, improvements in management by provision of feed, suitable housing, indoor management of chicken and control of diseases and predators and improving the genetic potential should also be promoted. Vaccination schemes should be developed by availing vaccines and training to community vaccinators to carry out vaccinations at rural level in a wide coverage.

Conflict of Interests

There is no conflict of interest.

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