



An Evaluation of Village Chicken Management Practices in Bauchi State, Nigeria

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SUMMARY

A study to identify gaps in the management practices given to village chickens was conducted using a structured questionnaire administered on 72 farmers drawn from eight communities in Bauchi State, Nigeria for the purpose of obtaining information that could be used to improve the productivity of these chickens in the State. The demography of the respondents revealed that most of them were farmers 47/72 (65.3%) married 71/72 (98.6%), females 40/72 (55.6%) and over 20 years (77.8%) of age; many of them had received some formal education 37/72 (54.5%) and had kept village chickens for over 5 years 55/72 (77.8%). Income generation was the main reason why respondents reared village chickens 33/72 (45.8%). Breeding stock were mostly bought from the market 48/72 (66.7%) and reared under an extensive system of production 72/72 (100%) together with other rural poultry 41/72 (56.9%); with birds receiving feed supplementation 68/72 (94.4%) and water 72/72 (100%); and kept at night in some locally made housing 37/72 (51.4%). Respondent do not vaccinate chickens against diseases like Newcastle disease (ND) nor keep any production record 72/72 (100%). Poor biosecurity practices like permitting chickens to intermingle with those from other households 72 (100%); sales of sick chickens (80.6%); consumption of sick chickens and the disposal of its inedible parts on the garbage that is accessible to chickens from other households are common. The results seem to suggest the need for farmers to improve upon the existing management practices especially with regards to vaccination, record keeping, housing and biosecurity measures in order to increase the productivity of these chickens in Bauchi State.

Key words: Village chickens, management practices, biosecurity, vaccination, Bauchi State, Nigeria

INTRODUCTION

Among the Sustainable Development Goals of the United Nation is the need to eliminate of poverty and

hunger (SDG, 2015). According to Dolberg (2003) village chickens could play a role in eliminating poverty through generation of income

from the sales of chickens and eggs; and eradication of hunger when excess meat or eggs from these chickens are consumed. Village chickens, also known as rural, indigenous, scavenging, domestic or family chickens are the common type of chickens in rural areas that belong to the species *Gallus gallus domesticus* and constitute over 96% of the rural poultry (chickens, ducks, turkeys and pigeons and guinea fowl) population in Africa (Ahlers *et al.*, 2009; FAOSTAT, 2012).

The performance of village chickens is depended on its genetic make up and flock management in terms of husbandry practices, disease prevention and control (Othieme *et al.*, 2014). A small improvement in the management of village chickens had been reported to bring about a significant output of poultry product (Sonaiya, 2009). Learning how to manage chickens can positively improve food security and could also position a farmer to rise economically through the stage of owning a chicken to that of owning a cow- thus, bringing social acceptance and prestige to the owners of these chickens (Dolberg, 2003; Copland and Alders, 2009).

The paucity of information on the management of village chickens in Bauchi State makes it necessary to undertake this study for the purpose of generating a baseline information that will aid research and planning of disease control strategies in village chicken production in the Bauchi State, Nigeria.

The aim of this study is to evaluate problems associated with existing management practices given to village chickens by farmers in Bauchi State, Nigeria.

MATERIALS AND METHODS

Study Area

This study was carried out in Bauchi State, Nigeria (Figure 1). The State occupies a land mass of 48,382 sq km that is located within latitudes 7° 52'N and 8° 56'N and longitudes 7° 25'E and 9°

37'E. The state lies on the Bauchi plateau with dry and wet season and with a vegetation regarded as Savannah woodland. The state has river Hadejia in its Northern part and River Gongola in its Southern part. The state shares boundary with Kaduna, Benue, Yobe, Gombe, Plateau, Taraba, Kano and Jigawa States (INEC, 2008). The state has twenty Local Government Areas (LGAs), a human population of 4,676,465 (INEC, 2008) that belong to many ethnic groups whose occupation is mainly farming; and a village poultry population of about 5,832,750 (Adene and Oguntade, 2006).

Study Design and Sample Size

A multipurpose design was used to conduct this study. Nine out of the 20 Local Government Areas (LGAs) were randomly selected. One community was selected from the list of towns in each chosen LGA (INEC, 2008). With the aid of the Director of the State Veterinary Services, a staff from the veterinary office were contacted and directed to convene a focus group discussion during which eight active farmers (owning more than 20 village chickens) in each community were selected. A total of 72 farmers were selected and administered a close ended structured questionnaires on their practices of raising village chicken.

Data Analysis

Data was imputed into Microsoft^RExcel programe (version 2007). Data were reduced using tables and a bar chart and were analyzed using simple percent

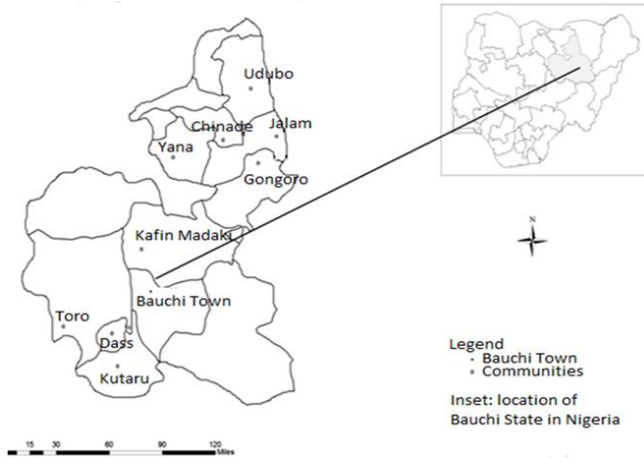


Figure I: Map of Bauchi State Nigeria showing studied communities Sampling design

RESULTS AND DISCUSSION

The demography of respondents (Table 1) revealed active owners of village chickens have farming as their sole occupation (65.3%) and are the likely beneficiaries from any improvement in village chicken production. The fact that most of the respondents were married (98.6%) seem to suggest the possibility of sharing gender responsibilities related to village chicken production. The knowledge that a significant number (45.6%) of respondents had no formal education may probably be attributed to early marriage and/or the attendance of non formal Arabic schools; this knowledge could be useful in designing multiple extension programmes for formally and informally educated farmers. The involvement of of respondents in village chicken production for over five years (77.8%) may indicate some level of interest in village chicken production and the likelihood that respondents may even be making some profit out of it.

The consideration of income generation (45.8%) as the main reason why respondents rear village chickens (TABLE 2) strongly supports the view that village chickens could be used as a tool for alleviation of poverty and attainment of SDGs. This is in agreement with the findings of Sonaiya (2009) who observed that ‘poor

TABLE 1: Demographic characteristics of respondents on management of village chickens in Bauchi State, Nigeria.

Demography		Respondents number (n = 72) (%)
Occupation	Farmer	47 (65.3)
	Civil servant	7 (9.70)
	Trader artisan and others	18 (25.0)
Gender	Male	32 (44.4)
	Female	40 (55.6)
Age	<20	1(1.40)
	>20	71(98.6)
Marital status	Single	1(1.40)
	Married or widowed	71(98.6)
Education	Non western or Informal	35 (45.6)
	Formal	37 (54.4)
Experience in chicken	<5 years	16 (22.2)
	>5 years	56 (77.8)
Rearing		

*n=Total number of respondents

households prefer to sell their chickens to generate money rather than consume them’. The association between income generation and village chicken production has been recognized as the basis for the use of village chicken as a tool for poverty eradication (Pica Ciamara and Otte, 2010). Studies conducted in Borno, Kaduna Nasarawa States and Yobe State reported income generation as the main reason why farmers rear village chickens(Ajala et al., 2007; El-Yuguda et al., 2007; Yakubu, 2010; Sule et al., 2014). Other reasons why respondents raise village chickens include: consumption of chickens and their eggs which could enable the attainment of SDG of elimination of hunger or malnutrition and food security. Festivities, spiritual and medicinal reasons for raising chickens have the

TABLE 2: Management practices employed by respondents to rear village chickens in Bauchi State, Nigeria

Village chicken management practice		Number of Responses *(n=72) (%)
Reasons for raising village chickens	Income	33 (45.8)
	Consumption	11 (15.3)
	Medicine	1 (1.4)
	Spiritual	2 (2.8)
	Medicine	12 (16.7)
	Multiple purpose	10 (13.8)
	Gift	3 (4.2)
Sources of chickens	Market	48 (66.7)
	Gift	5 (6.90)
	Market/gift	19 (26.4)
Production system	Extensive	72 (100)
	Semi-intensive or intensive	0 (0.00)
Housing	Present	37 (51.4)
	Absent	35 (48.6)
Provision of supplementary feed	Yes	68 (45.8)
	No	4 (5.60)
Provision of water	Yes	72 (100)
	No	0 (0.00)
Chickens reared with other species	Yes	41(56.9)
	No	31(43.1)
Record keeping	Yes	0 (0.00)
	No	72 (100)

*n= Total number of respondents.

capacity to bring satisfaction to the social and religious lives of its owner.

Practices of buying village chickens from the market by most respondents (66.7%) (TABLE 2) carries with it the risk of disease transmission if the chickens are incubating some diseases at the time of purchase (Nwanta, 2006; Sule *et al.*, 2014). The practice of permitting intermingling of chickens from different households within the

neighborhood under an extensive system of production (100%) increases the likelihood of contact between sick and healthy chickens which could aid the spread of disease to susceptible birds (Nwanta *et al.*, 2006).

Even though, the provision of some form of housing (51.4%) could reduce exposure to harsh weather and predators, such housing according to Awan *et al.*, (1994) tend to bring chickens into close contact with each other thereby increasing the risk of disease transmission if any of this chicken is sick. The practice of given water and supplementary feed to chickens by respondents are commendable practices that have the potential to improve the productivity of chickens.

Although, the rearing of village chickens with with other species of poultry (56.9%) could boost food security within farmers' households, such practices also have implications in terms of health maintainance. For example, Higgins and shortridge (1988) had reported the role of ducks, geese, turkeys and other rural poultry in the maintainance of Newcastle disease virus within an extensively managed chickens similar studies by Oladele *et al.*, 1996 and Sule *et al.* (2013) had demonstrated the occurrence antibodies to Newcastle disease among ducks and turkey that are reared together with chickens further highlights the role of these species of poultry in the transmission and maintainance of disease within a village chickens population. Among the health care practices respondents gave their village chickens (Figure 2), only sweeping of premises that attempts to remove organic debris from chicken housing was practised by all the respondents (100%). The destruction of pathogens exposed during cleaning by disinfection and the prevention of important diseases like newcastle disease by vaccination of chickens were not practised by all the respondents (100%). Consequently, production of these chickens could be threatened by these pathogens as reported by Dolberg (2003) who suggested that village chicken production should not be contemplated if

there is no programme to control diseases like Newcastle disease in place.

Respondents common practice (Figure 2) that permits intermingling of chickens with those in the neighbouring households; the sell sick chickens (80.6%), the consumption of sick chickens (97.2%) in the absence of any buyer and the throwing away of the inedible parts and dead chickens on the garbage (68.1%) seem to go against good biosecurity practices. Other unhealthy practices include the return of unsold chickens from the market and the inability to separate healthy chickens from the sick chickens. Ignoring some of these biosecurity practices may affect the health of any chicken flock with great consequences on disease transmission. Similar practices had been observed in the neighbouring Yobe State (Sule et al., 2014) probably highlighting a regional problem that public education on improved village chicken production needs to be addressed at the national level.

The lack of record keeping by all the respondents (100%) implies that quantification of profit and losses, risk and challenges associated with village chicken production will be difficult. This observation was also noted among commercial poultry farmers in the neighbouring Plateau State (Fasina et al., 2007) and seems to indicate the need to educate poultry farmers in general on the importance of record keeping.

CONCLUSION

Although village chickens could be used to attain the SDG of eradication of poverty alleviation and elimination of hunger, existing management practices could hinder the attainment of such goals. Practices of purchasing foundational stock from the market could result in introducing disease if the chicken is sick. Allowing intermingling of chickens from different households and the raising of other species of poultry has the potential of spreading and maintaining disease in a given community. Lack of vaccination against important disease of poultry, disposal of chickens on the garbage, sales

of sick chickens are among practices that need improvement in order to increase the productivity of these birds.

The study recommends that foundational stocks be purchased from neighbouring households with healthy chickens. Vaccination, housing, proper disposal of dead chickens by burial or burning are areas farmers need to be educated on by State veterinary services and other stakeholders interested in village chicken production.

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