

Production and Marketing of Indigenous Chicken in Mubi North Local Government Area, Adamawa State, Nigeria.

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ABSTRACT

The study examined the production and marketing of indigenous chicken in Mubi North Local Government Area (LGA) of Adamawa State, Nigeria. Data were collected purposely from 110 respondents using structured questionnaire. Descriptive statistics, Net Farm Income (NFI) and Marketing Efficiency (ME) were used in analyses of the data. Results revealed that indigenous chicken production in the study area was mainly undertaken by women (81.81%) while the marketing was done by men. Majority of the respondents were between the age bracket of 41 years and above (65.45%) while 34.55% were less than 40 years. The spread of gender revealed that males formed the majority (83.64%) with females accounting for 16.36%. About 65.46% were married, 18.18% were single and 16.36% were divorcees or widows/widowers (fell under others). The major occupation of the respondents was farming and chicken marketing (87.27%) which was mostly undertaken by the males. About 67.29% had one form of formal education or the other ranging from primary to tertiary. Marketing experience revealed that 58.18% of respondents had more than five years and 41.18% had below. Values of 40.92 and 168.77 accounted for return on sales and marketing efficiency, respectively, indicating that the enterprise was profitable in the study area. It is therefore, recommended that the production should be improved through good veterinary services and the marketers be encouraged with soft loans to expand both production and marketing services in the area.

Keywords: Indigenous Chicken, Production, Marketing, Efficiency, Veterinary Services, Nigeria.

Introduction

The Nigerian indigenous chicken (*Gallus domesticus*) is light breed with small body size and variable plumage. The birds weigh between 460-1380 and 690-1840gm live weight for hens and cocks, respectively. The hen produces 40-80 eggs per annum when raised under extensive or free range and may reach 100-200 under intensive system. The indigenous chicken outnumbered all other

livestock species in Nigeria. The population was estimated at 133-165m in 2006. Indigenous chicken or domestic fowl production is important in low-protein food areas in the country. It is an appropriate system of supporting the fast growing human population with quality animal protein (Kperegbey, *et al.*, 2009; Okon, 2010; Ayodele *et al.*, 2012). It accounts for 25-30% of total local meat produced in Nigeria (Lamorde, 1991; Olaniyi *et al.*, 2012) and about 36.5% of the protein intake in the country (Maikasuwa and Jabo, 2011).

The indigenous poultry farming is usually a collection of 5 - 10 birds (may surpass this number) kept by one family and most often managed by women who derive an independent source of income (Adene and Oguntade, 2006). In Nigeria, most of the chicken and products sold come from this group (Ikani and Annatte, 2000). The production and management are easier and cheaper when compared to the modern systems. Indigenous chicken are adapted to local climate and harsh ecological conditions which they can withstand and survive thereby making their management not too labourious and cheaper (Fisseha, 2009). It was reported that these chickens can withstand local disease conditions and therefore, may require less veterinary services (Paul *et al.*, 2003; Ayodele *et al.*, 2012).

In Adamawa State, it has also been estimated that there are 119,355 households that keep an average of 10, 9, 5 and 1, of chicken, ducks; guinea fowls and turkey, respectively. The population of poultry stands at 1,460,125 comprising the following: chickens, 1,193,550; guinea fowl, 65,290; duck, 200,835; and turkey, 450 (Adene and Oguntade, 2006).

The aim of this study was to find out the type of production system and marketing of indigenous chicken by specifically describing the socio-economic characteristics of the farmers and determining the return on sales and marketing efficiency of the enterprise.

Methodology

Study Area

Mubi North Local Government Area of Adamawa State is located between Latitude 9°30' and 11° North of the Equator and Longitude 13° and 13°45' East of the Greenwich Meridian; it lies on the west bank of Yadzeram stream, which flows into Lake Chad (Adebayo, 2004). The Local Government Area is situated on the western flanks of the Mandara Mountains where it shares common boundaries with Borno State to the North, Hong Local Government Area by West, while Maiha Local Government Area by South and Cameroun Republic to

the East. The temperature is normally warm to hot with minimum of 12^oC and 37^oC as maximum and mean annual rainfall range from 900-1050mm (Adebayo, 2004). The inhabitants are predominantly farmers and traders.

Production System

The production system of most households is free range, where in most cases there is no supplementation. Birds may perch on roof tops or trees over night (Nwagu, 2002; Ayodele *et al.*, 2012). This system is very cheap in terms of rearing cost (Sunil, 1999), and does not require much labour. The owners do not provide protection against predators like kites, snakes, dogs and man (Kekeocha, 1985). At times waste grains are offered as supplementary feed while most times they feed on insects, spoiled food on refuse dump and water is provided at will by women.

However, hens lay substantial number of eggs (8-12) at a time in their simple made nests. But this number is reduced by vertebrate predators and man. Consequently, very few chicks are hatched (5-7) and probably only two or three and at times no chick may be raised to 'weaning', (Kekeocha, 1985; Field Survey, 2012).



Fig. 1: Indigenous Hen Rearing 10 Chicks at Backyard

Note: The zinc was placed to protect the eggs in nest and chicks.

Source: Neils' Photograph

Health Care

On the issue of health care, it was found out that majority of the women were not aware that birds could be treated in cases of affliction with disease like other animals (goats, sheep or cow). All they do was to provide traditional herbs to the birds when sick especially during the early dry season (October - November), when they suffer from viral (Newcastle) diseases. It was obvious that the respondents did not use orthodox medicines to treat birds, though there was awareness on Veterinary extension services.

Nature and Scope of Data

The study used mainly primary data, collected through the administration of structured questionnaires to 110 respondents. Purposive and random samplings were used to select respondents for the study.

Analytical Tools

Descriptive statistics involving the use of frequency distribution, tables and the mean; net income and marketing efficiency were employed as tools for analyses. The Net Farm Income (NFI) is expressed as:

$$NFI = TR - TVC - TFC \quad (1)$$

TR = Total Revenue (₦) obtained as the product of unit cost of chicken multiplied by the total number of the chicken.

TVC = Total Variable Cost (₦)

TFC = Total Fixed Cost (₦)

The Marketing Efficiency (ME) was further used to determine how effective price of local chicken reflect the cost incurred in the marketing system. The price that consumers pay for the local chickens delivered by the marketing system should adequately reflect all marketing cost as in perfectly competitive economic environment, prices will definitely reflect all such cost (Olukosi *et al.*, 2007).

$$ME = \frac{\text{Value Added by Marketing}}{\text{Cost of Marketing}} \times 100 \quad (2)$$

Results and Discussion

Socio - Economic Characteristics of the Respondents

The result in Table 1 reveals that 65.45% of the respondents were from 41-61 years and 34.55% were below 40 years. This provides an indication that

majority of farmers in the study area were at terminal youthful age and may prefer poultry business which is not demanding. Mixed farming (Crop production and poultry) has turned out to be most noble profession that stabilizes household economy without which, there will be no food security. However, poultry production and marketing supplements the needs of the household in terms of school fees, household needs, and clothing (Ja'afar-Furo *et al.*, 2008). The people who carry out these functions were mostly males (83.64%) and only 16.36% of the respondents were females. The women were not practically involved in the sales of chicken, but in production of same and crop cultivation alongside the males.

Larger proportion (32.73%) of the respondents engaged in crop production for sustainability of the households, and because they were not educated, it is difficult for them to comprehend the marketing system of chicken as observed by Amaza, (2000) and Polycarp and Joshua, (2004).

Majority (65.46%) of the farmers were married while 34.54% were either single or fell in other categories. Most (56.36%) of the respondents had 6-15 members of family and this is rather very high population to depend on poultry business. These families need to supplement the business with crop production for them not to suffer from food insecurity. The household size distributions revealed typical village settlement although it provides enough farm labour for the house; it remains a burden on the bread winners of the households.

On the educational level, (67.27%) acquired one form of formal education or the other; whereas 32.73% did not have formal education. This might be responsible for the majority of respondents taking to self employment of chicken marketing as the readily available way of sourcing income in the study area. Those who had formal education have taken to crop production and chicken marketing (66.36%). This also clearly shows that acquaintance to education has played a tremendous role in deciding the type of work to be done. Only 20.91% depended on crop cultivation which may not be linked to education alone but could be matter of choice and convenience.

While larger proportion (41.82%) accounted for respondents with marketing experience of 1-5 years. While about 34.55% had experience of 6-15 years and 23.63% had more than 15 years experience.

Production System

The indigenous production system of poultry in the study area was also analyzed. Most (81.81%) producers of indigenous birds were women, 13.63%, were men while 4.54% were left with children. This finding is in consonant with earlier study (Ja'afar-Furo *et al.*, 2008) in Girei and Yola-North Local Government Area of Adamawa State in which they observed that women formed the bulk of the producers. In this study area, married men (13.63%) were involved chicken production. Larger proportion (45.45%) of households maintained 6-10 birds whereas 27.27% had 11-15 birds per household. Those households that maintained between 1-5 birds showed that they were always ready to sale their birds. Majority (90.90%) of the households kept 1-10 productive hens, with only 9.08% keeping more than 10 (Table II).

The number of eggs laid could be a factor that was used to keep back productive hens, since more chicks would be produced which will lead to more weaners. Majority (72.72%) of farmers reported that they lost 1-5 eggs to theft, reptiles or carnivores before hatching, while 24.54% lost 6-10 and 2.73 losses 11-15.

Table 1: Socio-economic Characters of Respondents

Variable	Frequency	Percentage
Age (Years)		
<40	38	34.55
41-60	55	50
>60	17	15.45
Gender		
Male	92	83.64
Female	18	16.36
Marital Status		
Single	20	18.18
Married	72	65.46
Others	18	16.36
Household Size (Persons)		
1-5	34	30.9
6-15	62	56.36
>15	14	12.73
Educational Level		
Non-formal	36	32.73
Primary school	47	42.73
Secondary school	25	22.73
Tertiary	2	1.81
Main Occupation		
Farming	23	20.91
Farming and chicken Marketing	73	66.36
Others	14	12.73
Marketing Experience(Years)		
1-5	46	41.82
6-15	38	34.55
>15	26	23.63

Most (63.63%) respondents said their birds hatched 6-10 chicks, 22.72% reported 1-5 while only 13.63% said their hens hatched 11-15 chicks. However, there are loses of chicks after hatching to kites, cold, trembling, cats and pecking. Many (45.45% of the respondents reported loss of 1-5 chicks after hatching, and the same percentage (45.45%) reported loss of 6-10 chicks and 9.10% said they loss 11-15chicks after hatching.

Table II: Indigenous Chicken Production System in the Study Area

Variable	Number of Respondents	Percentage
Chicken producer		
Women	90	81.81
Men	15	13.63
Children	5	4.54
Number of chickens/household		
1 – 5	10	9.1
6 – 10	50	45.45
11 – 15	30	27.27
> 16	20	18.18
Number of productive hens		
1 – 5	60	54.54
6 – 10	40	36.36
11 – 15	6	5.45
> 16	4	3.63
Average number of eggs/ bird		
1 – 5	11	10.00
6 – 10	51	46.36
11 – 15	43	39.09
> 16	5	4.54
Number of eggs loss before hatching		
1 – 5	80	72.72
6 – 10	27	24.54
11 – 15	3	2.73
> 16	-	-
Number of eggs hatched at a time		
1 – 5	25	22.72
6 – 10	70	63.63
11 – 15	15	13.63
> 16	-	-
Number of chicks loss after hatching?		
1 – 5	50	45.45
6 – 10	50	45.45
11 – 15	10	9.10
> 16	-	-
Chickens weaned/hen		
1 – 5	79	71.82
6 – 10	31	28.18
11 – 15	-	-
> 16	-	-

COST AND RETURN

The NFI revealed a value of ₦4523.00. The information in Table III shows that the TVC incurred by all respondents was ₦6,577.00, with the transportation

cost accounting for the highest (72.14%). The high cost of transportation could be attributed to the number of villages that the marketer had to buy the birds from and the distance between same. Ja'afar-Furo *et al.* (2008) earlier reported similar finding that the cost birds are determined as a result of transportation (72.14%) and cost of feeding the birds at the market accounted for 23.3% of the TVC and could also be attributed to the system of animal husbandry practiced which required continuous supply of quality feed to animals. Gabdo *et al.* (2005) affirmed that better fed birds attract higher prices. Further, a value of 168.77 was obtained for M.E.

Table III: Estimated Cost and Return from Chicken Marketing in Mubi North Local Government Area

Items	Value(₦)	Percentage (%)
Variable Cost		
Transportation	4745	72.14
Feeding	1535	23.34
Tax	193	2.93
Medication/Vaccine	104	1.58
Total Variable cost (TVC)	6577	100
Return		
Total Revenue (TR)	11,100	-
Net Income (TR – TVC)	4523	-
Average daily Income per bird	146.55	-
Total number of birds sold by marketer	112	-
Return on sale ratio		40.92
Market Efficiency (ME)		168.77

The above findings show that the marketing of indigenous chickens in the study area was efficient; hence the profit maximization motive of the marketers was guaranteed.



Fig.2: Indigenous Chicken Marketer with Buyers

Source: Photograph by Neils

Table IV: Methods of Medication among the Respondents in the Study Area

S/N	Variable	Respondents	Percentage (%)
1.	Use orthodox drugs to treat birds	25	22.72
2.	Use herbs to treat birds	75	68.18
3.	Don't treat birds at all	10	9.09

Source: Field Survey, 2010

Of the total respondents, the bulk (68.18%) used herbs in treating their birds. While 22.7% use orthodox drugs, only 9.09% were said to leave their birds untreated. The high percentage in the utilization of herbs in medication could be attributed to the efficacy of the method or that the orthodox drugs were expensive in the market.

Conclusion

Based on the findings of the study, it could be concluded that indigenous chicken marketing was found to be profitable and efficient in the study area. It is recommended that the marketers should be motivated and encouraged with soft loans from the government, NGOs or private individuals and organizations to enable them improve the production and marketing which will invariably assist in alleviation of poverty in the study area. There is need to increased veterinary extension services as was suggested by Ja'afar-Furo *et al.*, (2010) and Ayodele *et al.*, (2012).

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