

# Challenges of Poultry Farming In Makurdi Benue State, North-Central Nigeria

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## Abstract

The study assessed challenges of poultry production in Makurdi Area of Benue State, North Central Nigeria. Information on production activities, management and problems were collected from 50 poultry farmers in the study area using structured questionnaire and assessment through direct observations. The data were analyzed using tables, frequency distribution and percentages. From the analysis, the poultry enterprises are confronted with a number of constraints mitigating against their efficient operation. Majority (66%) of the poultry farms in Makurdi were of low to medium scale with flock size of  $\leq 1000$  birds. The problems of low capital, high input costs, diseases and adverse weather conditions were identified in the study area. High cost of feeds and at times scarcity of layer feeds are major problems. They also identified proper marketing outlets especially for broiler sales. All these problems can be tackled by making loans/grants easily accessible by the government and encouraging farmers to organise themselves into cooperatives. By so doing their resources can be pooled together for meaningful development of their farms and the poultry industry in Benue State. Extension services should include creating awareness of the importance of biosecurity measures on farms in order to limit infections.

**Keywords:** Poultry farming; Constraints; Makurdi; Benue State.

## 1. Introduction

Poultry makes a substantial contributions to food security and nutrition, providing energy, protein, and essential micronutrients to humans, with short production cycles and ability to convert a wide range of agric-food by-products and wastes into meat and eggs edible by humans [1].

Due to the high population growth in Africa [2] and growing income, the demand for eggs and poultry meat has significantly increased in recent years across large parts of the continent [3]. Nigeria's population is projected at 300 million by 2050 and 280 million are projected to live in cities, significantly increasing the demand for poultry products [4].

The poultry sub-sector is the most commercialised of all Nigeria's agricultural subsectors with a current net-worth of N1.6 trillion [4]. According to the Federal Livestock Department FLD [5], the poultry population estimate in Nigeria as at 2009 stood at 183.16 million birds and producing about 650,000 MT of meat and 300,000 MT of eggs [4]. The demand situation is estimated at over 200 million birds, while the demand for eggs and meat are about 790,000MT and 1,500,000MT, leaving a huge demand gap, which unfortunately is met through smuggling. It is estimated that about 1.2 million of poultry meat is smuggled into Nigeria from Benin Republic [4]. From a market size perspective, Nigeria's egg production is the largest in Africa and it has the second largest chicken population after South Africa's 200 million birds [6].

Poultry represent an important source of high quality protein. Poultry meat is very tender and acceptability to consumers is high since there is no religious or ethnic restrictions. Also, eggs, one of the major products of poultry production, are more affordable for the common person than other sources of animal protein [7, 8].

Despite these positive aspects, poultry production has not been keeping pace with rapidly increasing domestic consumption. This can be explained by the fact that most producers in Nigeria still employ traditional rural poultry farming systems which is by convention a subsistence system comprising stocks of non standard breeds or mixed strains, types and ages. A majority of the farmers operate in these traditional, small-scale structures. Often, these farming techniques are characterised by outdated barn equipment, and production techniques and inadequate hygiene management [3, 9].

The other poultry management system is the intensive (including semi-intensive confinement and commercial subsystems), [10]. Commercial poultry farming is characterised by higher demands on capital and labour, as well as

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inputs and technology. Improvements in breeding, husbandry, and management are needed to increase efficiency in chicken production, which will lead to lower production cost [3, 9]. Even farmers using more commercial farming systems suffer from numerous challenges such as inefficient management, technical and economic inefficiencies, infection with diseases and parasites, high cost of feeds, poor quality day-old chicks and inadequate extension and training facilities. More importantly, is the problem of lack of access to low cost, long-tenured finance [3, 4, 11, 12].

Among the livestock produced in Benue State, poultry ranks the highest (48.25%) in terms of population followed by goat, pig and sheep with percentage populations of 35.09%, 11.40% and 5.26% respectively [13]. Preliminary survey showed that despite the abundant production of some livestock feed materials like soya beans and maize, Benue State has not been able to meet up with the increase demand in poultry meat and egg. Benue State still depends on neighbouring States of Enugu and Plateau for her egg needs [14, 15]. This huge market has been left for entrepreneurs from other States. This is what can be explored by intending poultry farmers/entrepreneurs in Benue State.

Based on this background, the study examined specifically the following objectives:

- (i) Describe the socio-economic characteristics of poultry farmers.
- (ii) Examine the perceived benefits to increased poultry production among farmers.
- (iii) Examine constraints to increased poultry production in the study area.

## 2. Materials and Methods

### 2.1. Study Area

The study was carried out on poultry farms located in Makurdi. Makurdi is the capital city of Benue State, Nigeria. Nigeria is a sub-Saharan African country and is located in the western part of the continent. It is the most populous country in Africa and the most populated black nation on earth [16]. Benue State is one of the 36 States in Nigeria. It is located in North Central Nigeria (figure 1) and has a tropical climate with two distinct seasons: rainy and dry seasons. Makurdi is a lowland area in the Guinea savannah vegetational zone of Nigeria and is located on longitude 08°31' and latitude 07°14' [17]. The rainy season starts in May and ends in October, while the dry season starts in November and ends in April. The annual rainfall ranges from 1270mm to 1397mm and the average annual temperature ranges from 22.43°C to 33.41°C [17]. During the dry season between the months of February and March, temperatures may reach 35°C to 40°C in Makurdi town. The relative humidity ranges between 47% to 85% [18].

According to the 2006 census, Benue State is estimated to have a population of about 4,253,641 inhabitants and a land size of about 33,955km<sup>2</sup> [19]. The average population density is 99 persons per km<sup>2</sup>, which makes Benue State the 9<sup>th</sup> most populous State in Nigeria. Population distribution between male and females in Benue State is almost equal (with 50.4% male and 49.6% female) [20]. Makurdi, the State capital has a population density of over 380 person per km<sup>2</sup>. Agriculture is the backbone of Benue State's economy, and the State is the primary source of food in Nigeria acclaiming the slogan 'the Food Basket of the Nation.' Benue State is endowed with fertile arable land and abundant raw materials and human resources with about 80% of the population directly involved in agriculture [19]. Important cash crops include soybeans, rice, peanuts, mango varieties, citrus, etc. Other cash crops include palm oil, melon, African pear, chili, cassava, sweet potato, beans, maize, millet, guinea corn, vegetables etc. There is very little irrigation agriculture and techniques. Livestock species include pigs, small ruminants, cattle and poultry [21].

Figure-1. Map of Nigeria showing the location of Benue State

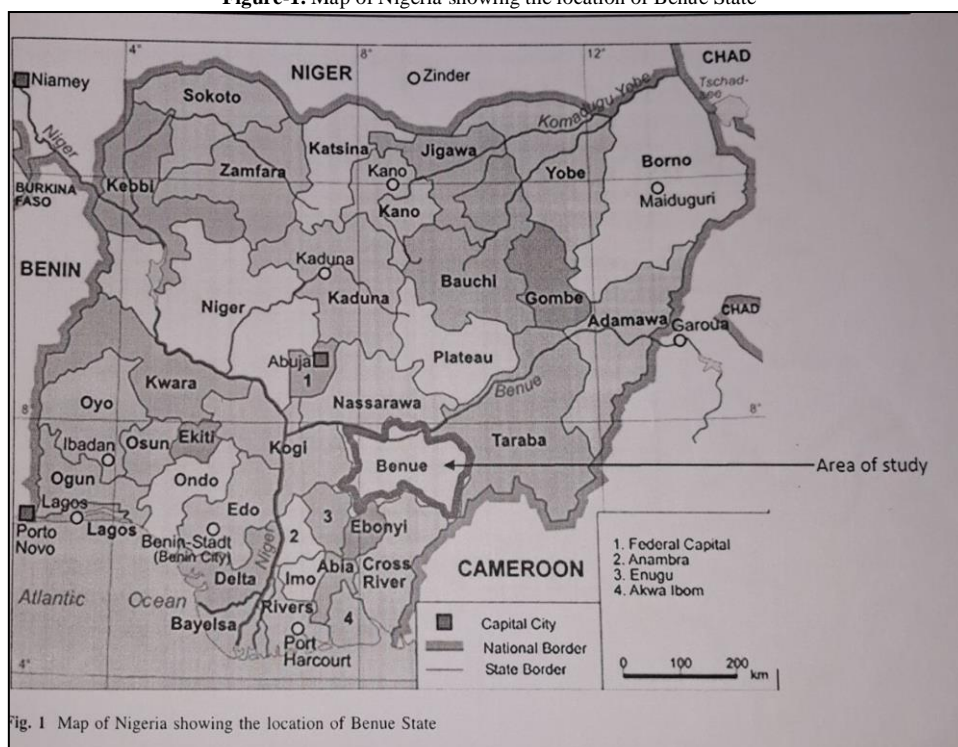


Fig. 1 Map of Nigeria showing the location of Benue State

## 2.2. Study Design and Data Collection

Fifty poultry farms were randomly selected for the study based on the presence of birds in their farms during the period of the study. Data were collected with the aid of structured questionnaire which were administered to the producers (Managers) of the enterprise. Visits to the farm facilities for direct observations were undertaken for the data collection according to the methods described by [22]. Each farm was visited twice to first distribute the data collection instruments and make observations and secondly retrieve the completed instruments.

## 2.3. Data Processing

Information obtained were analyzed and processed in descriptive statistical analysis. Descriptive analysis involved the use of statistical tool [23] to generate frequency distribution and percentage.

## 3. Results and Discussion

### 3.1. Socio-Economic Characteristics of Respondents

Table 1 indicates that most (62%) of the respondents were between the ages of 21 – 40 years while 20.0% are between the ages of 41 – 50. This implies that poultry farming is common among younger farmers. Aromolaran et al. [24] reported similar results from Ibadan, Oyo State in Western Nigeria. The age range of 21 to 40 years indicates that majority of the respondents were within the economically active age category and this is in line with [25] who observed that this age bracket contains the innovative, motivated and adaptable individuals. Table 1 shows that 56.0% of the respondents were married while 44.0% are single. Most (68.0%) of the respondents had higher education which could probably have encouraged them to choose poultry farming, not regarding the technicality involved in it.

Table 1 also shows the level of experience of the respondents; 52% of the respondents had less than 5 years experience, 28% had 5 – 10 years experience while 20% had more than 10 years experience in poultry farming. The knowledge on management which is a key to profitability in poultry farming is gained through years of experience [26]. Onyebunama [27], reported that previous experience in farm business management enable farmers to set realistic time and cost targets, allocate, combine and utilise resources efficiently and identify production risks. Majority of the respondents (66.0%) were raising 1000 birds and below. This shows that a typical poultry enterprise in the study area is of low to medium scale class. There were more broiler farmers (66.0%) than layer farmers (34.0%). The implication is that the farmers are likely not able to meet the egg needs of the inhabitants of the State. This could partly explain the reason for importation of eggs from other states to complement that produced within Benue State. The result supports the findings of Mere, et al. [28]. This classification of low to medium followed that of [29, 30] who concluded that a farmer who maintains at least 5000 birds is classified a large scale producer and farmers with between 500 and 4999 birds are medium scale producers, while those with less than 500 birds are said to be small scale producers.

Table-1. Socio-economic characteristics of respondents

Variables	Frequencies	Percentage
Gender		
Male	35	70.0
Female	15	30.0
Age (Year)		
21-30	15	30.0
31-40	16	32.0
41-50	10	20.0
Above 50	9	18.0
Marital Status		
Single	28	14.0
Married	22	56.0
Widowed	0	0
Level of Education		
Secondary School	9	18.0
ND/NCE	7	14.0
Higher Education (HND, PGD, BSc, Masters' Degree)	34	68.0
Occupation		
Farmer (poultry production as primary occupation)	24	48.0
Businessman/woman	13	26.0
Civil/Public Servant	10	20.0
Retiree	3	6.0
Year of Experience		
Less than 5 years	26	52.0
5-10 years	14	28.0
Above 10 years	10	20.0
Flock size (No of birds)		

≤ 1000	33	66.0
1001 and above	17	34.0
Type of poultry (chicken)		
Broilers	33	66.0
Layers	17	34.0
System of Management		
Extensive	0	0
Intensive	47	94.0
Semi-intensive	3	6.0
Source (Pattern of purchase of birds (chicks))		
Vendors	50	100.0
Source of Labour		
Family and friends	35	70.0
Hired	15	30.0
Source of Funds		
Bank	0	0
Self	36	72.0
Family and Friends	14	28.0
Source of Feed		
Commercial	45	90.0
Self-compounded	5	10.0

Table 1 show that 94.0% of the respondents practice intensive poultry management while only 6.0% practiced semi-intensive. The pattern at which the respondents practiced poultry keeping were similar to the findings of Adedeji, *et al.* [31]. The result on occupational status showed that 48.0% of the respondents were engaged in poultry farming as their primary occupation while 52.0% practised poultry farming as a secondary occupation implying that they had alternative means of income. Fund source data collected indicates that 72.0% of the respondents used their personal savings while others got their funds from family and friends. None of the farmers got funding from the bank or any other agency. Lack of access to low cost, long-tenured finance has been identified as an important constraints to poultry production in Nigeria [3, 4].

### 3.2. Constraints Faced by Poultry Farmers

Table-2. Constraints/Challenges faced by poultry farmers in Makurdi

Constraints	Frequency	Percentage
Difficulty in credit and loan procurement processes	41	82.0
Adverse weather condition (Heat Stress)	50	100.0
High feed cost	31	62.0
Marketing/Price fluctuation	13	26.0

Table 2 shows the constraints faced by poultry farmers in Makurdi, Benue State. Most (82.0%) of the respondents were faced with uneasy access to loan and credit procurement. This was in line with reports of [4, 32, 33] and Central Bank of Nigeria CBN [4] who found inadequate finance as one of the major constraints to poultry production, hence poultry production in the study area is still operated on small and medium scale levels. Environmental constraints identified are adverse weather condition resulting in heat stress (100.0%) and disease outbreaks (62.0%). The hottest months in the study area are February to April and temperatures may reach 35<sup>o</sup>c to 40<sup>o</sup>c [17, 34]. During the periods of heat stress, most of the productive energy is diverted to thermoregulatory adaptations which results in oxidative stress induced immunosuppression, predisposing birds to various infectious diseases and high mortality. In broilers and laying hens, heat stress suppresses body weight, egg production, egg weight; shell quality and is generally accompanied by suppression of feed intake [35].

Major poultry diseases in Nigeria that have been identified in commercial poultry include Newcastle disease, infections bursal disease (Gumboro), Marek disease, Fowl typhoid, fowl cholera. Mycoplasmosis and coccidiosis [9]. Mirski, *et al.* [36], established that there is an association between outbreak of infectious diseases and climate change and variation in climatic factors like temperature, rainfall and humidity.

High cost of feed and drugs/vaccines are also major constraints as 90% of the respondents depend largely on commercially poultry feeds. Feeding alone represents more that 70% of the total cost of production in intensive poultry production [37]. The quality of commercially available feeds cannot be guaranteed [38]. Low quality feeds undoubtedly contribute to low performance of poultry stock which in turn is a factor in the high cost of poultry products. Increasing cost of feeds and drugs/vaccines reduce the producer's profit and discourages investment in the enterprise [28]. Constraints relating to marketing are instability in prices of live chickens and seasonal egg glut. The price of live chickens are affected by seasonal supply and demand especially during celebrations of Christmas, Easter and Muslem fasting months. 26.0% of the farmers complained of poor market for their broilers.

### 3.3. Prospects of Poultry Farming

**Table-3.** Prospects of Poultry Production in Makurdi, Benue State

Prospects	Frequency	Percentage
Job creation	48	96.0
Additional income	47	94.0
Family consumption (Source of protein)	24	48.0
Source of livelihood	40	80.0
Poverty alleviation	24	48.0

Table 3 show prospects of poultry production in Makurdi, Benue State. Most (96.0%) of the respondents strongly agreed that it is a means of job creation. They also agreed that poultry production will improve the well-being of the farmers' household and also play a very important role in the livelihoods of those people keeping them. 48.0% of the respondents agreed that poultry keeping will improve the protein consumption rate and poverty alleviation in the economy. According to Gueye [39], poultry production is a very important source of livelihood; provides ready cash for emergency needs; supplies the fast growing human population with high quality protein; contributes significantly to food security; poverty alleviation and ecologically sound management of natural resources.

### 4. Conclusion and Recommendations

Challenges facing the poultry industry in Makurdi, Benue State impede the growth of the industry and hinder it from realising its potential. Constraints have been identified in the areas of feeding and health, availability of inputs, adverse weather condition and availability of credit. Despite these challenges, the poultry industry has a lot of prospects for the future and hence adequate measures must be put in place to harness these prospects/potentials of the industry by farmers themselves and the government.

Based on the research findings, the following are recommended for the expansion of the poultry industry in the study area:

- i) Formation of a viable farmers association would help address most of the challenges faced by poultry farmers.
- ii) Subsidies should be available for poultry equipments and drugs.
- iii) Funds in forms of loans at single digit interest should be made available and accessible to poultry farmers by commercial banks and other financial bodies.
- iv) Maize and soy beans farmers in the state must be given necessary attention by the government since their productivity levels have a direct relation with the poultry industry.
- v) Stakeholders in the industry should establish feed mills in the study area bearing in mind the availability of maize and soy beans in the state, Benue State being the "Food Basket of the Nation."
- vi) Capacity training of poultry farmers to enable them cope with the challenges of modern poultry farming and creating awareness on the importance of biosecurity in poultry farms to keep out infections cannot be overemphasized.
- vii) In order to minimize the adverse weather condition in the study area, there is great need for improvement in the areas of stock density, orientation of poultry buildings, space between buildings, roof design and biosecurity.

### Competing Interests

Authors have declared that no competing interests exist.

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