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CAPACITY BUILDING NEEDS OF POULTRY FARMERS FOR QUAIL PRODUCTION IN KWARA STATE, NIGERIA

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Abstract: This paper investigated the capacity building needs of poultry farmers for quail production in Kwara State, Nigeria. A questionnaire was used to elicit information from 80 randomly sampled poultry farmers from the Poultry Association of Nigeria, Kwara State Chapter. The findings revealed that the majority (70.0%) of the poultry farmers were male with a mean age of 44 years, married (75.0%) and formally educated (98.75%). The poultry farmers were mostly (78.75%) small-scale producers rearing less than or equal to 500 birds on their farms. Capacity building was highly needed for quail husbandry and management practices, feeding and nutrition, housing and equipment, processing and marketing of products, among others. Seven challenges were identified by the poultry farmers as severe challenges militating against the diversification of their poultry enterprise to include quail production. Chi-square analysis revealed a significant relationship between the poultry farmers' capacity building needs for quail production and their age ($X^2 = 5.545$), educational level ($X^2 = 11.859$) and years of farming experience ($X^2 = 9.604$). It was recommended that extension agencies should package a robust training programme for poultry farmers on the areas of capacity deficiencies indicated for quail production.

Key words: capacity building needs, poultry farmers, quail production, Kwara State, Nigeria.

Introduction

Animal protein is essential in human nutrition because of its biological significance and the poultry sub-sector is vital to its provision to the Nigerian populace. The poultry industry in Nigeria has hitherto been dominated by rearing of domestic chickens. However, in recent times there have been new entrants into

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the sector. One of the poultry species slowly gaining prominence is the Japanese quail (*Coturnix coturnix japonica*) which is suited for commercial rearing, meat and egg production under intensive management (Egbeyale et al., 2013). Quails have a lower feed requirement compared to the chicken and also require minimal space for rearing (Ijaiya et al., 2013). They thrive well in small cages and can be reared at a cheaper cost within a relative short time (Ojo et al., 2011). Quails require less vaccine per shot because of their resistance to most poultry diseases and they have a high rate of egg production ranging between 200 and 300 eggs during the period of up to 360 days.

Hemid et al. (2010) reported that quails have a short generation interval, high rate of lay and much lower feed and space requirements than the domestic fowl. Quail eggs are very rich in vitamin D, antioxidants which according to Sahin et al. (2008) improve the quality of food from animal origin in terms of colour, oxidative stability, tenderness and storage properties. They have a highly positive effect on people with stress problems, hypertension, digestive disturbance, gastric ulcer, liver problems, bronchitis illness, depression, panic and anxiety illness. The nutritional value of quail eggs is 3–4 times greater than the nutritional value of chicken eggs (Tunsaringkarn et al., 2013). Quail eggs are also known to increase sexual appetite, stimulate brain functions which improve intelligence quotient and generally rejuvenate the body (Onyewuchi et al., 2013). There are also some claims that consumption of quail eggs fortifies the woman's body during pre- and post-natal periods as well as after surgery and radiotherapy (Onyewuchi et al., 2013). Quail meat is tastier than chicken and has less fat content (Igado and Aina, 2010). Generally, products from quail birds are known for their high quality protein, high biological value and low caloric content, making it a choice product for a hypertensive patient (Sahin et al., 2008).

Protein nutritional insecurity is still prominent in most developing countries (including Nigeria). Protein intake has been on a decline due to the ever increasing population (Etim et al., 2008) and this level of animal intake has a direct effect on the health and general well-being of the teeming Nigerian populace (Bamgbose et al., 2002). Chicken meat and egg which have been a major source of animal protein have been unable to meet the demands for protein (Igado and Aina, 2010) and quail seems to offer a much better prospect in this respect. In spite of the profitability potentials and health benefits of quail birds and their products, a lot of poultry farmers are yet to spring up with intensified husbandry. This might be a result of their lack of the detailed knowledge and capacity for the profitable production of both meat and eggs from quail birds. Therefore, there is the need to fill this lacuna and widen the scope of poultry meat and egg by focusing more attention on the relatively underutilized poultry species called quails which have great potentials to supply the additional needed meat and eggs to feed the teeming population in Nigeria.

This is why this study in a bid to enhance provision of the desired food and nutritional security for the people and to enhance additional income from quail production for poultry farmers intends to focus on capacity building needs of poultry farmers for quail production in Kwara State, Nigeria. Specifically, the study sought to:

- describe the socio-economic characteristics of poultry farmers in the study area;
- determine the areas of capacity building needs of the poultry farmers for quail production;
- identify the challenges militating against diversification into quail poultry production in the study area.

Material and Methods

The study was carried out in Kwara State, Nigeria. The state is geographically located between latitude $7^{\circ}20'$ and $11^{\circ}05'$ north of the equator, longitude $2^{\circ}5'$ and $6^{\circ}45'$ east of the prime meridian (Wikipedia, 2014). It is located in the North Central Nigeria and it has a population of about 2,365,353 (NPC, 2006). The State is divided into 3 senatorial districts which are Kwara South, Kwara Central and Kwara North and it has 16 local government areas. The state provides food crops such as maize, cassava, banana, cocoyam, onion, fruits, sweet potatoes, vegetables and livestock such as goat, cattle, sheep, fish, pig and poultry.

The population for this study was the total number of poultry farmers in Kwara State, Nigeria. A structured questionnaire was used to elicit information from eighty (80) randomly selected poultry farmers who are members of the Poultry Farmers Association of Nigeria, Kwara State Chapter. This constituted about eighty percent of the one hundred and four registered members across the State.

Data were collected on the socio-economic characteristics of the poultry farmers, challenges to quail poultry production, while the dependent variable was the poultry farmers' capacity building needs for quail production. These variables were measured as follows:

Capacity building needs of the respondents were measured using a 3-point Likert-type scale of highly needed (3), moderately needed (2), and not needed (1);

Challenges to quail farming: Eleven (11) items were presented to the respondents and they were asked to rate these items as challenges based on their level of severity on a 5-point Likert-type scale of very severe (5), severe (4), somewhat severe (3), a little severe (2), and not severe (1).

Data analysis was carried out using descriptive statistics such as frequency counts, percentages, mean scores, and ranks while chi-square analysis was used as an inferential statistics to test the proposed hypothesis in the study.

Results and Discussion

Results from Table 1 revealed that 7.5% of the poultry farmers were less than or equal to 30 years old while just about a handful (5.0%) of the respondents were found to be older than 60 years of age. The mean age of the respondents was 44 years. Consequently, the poultry farmers are generally in their economically active years indicating their high degree of prospect to be more receptive to new ideas and innovations. This agrees with Adebayo and Adeola (2005), who reported that poultry farmers are more active in poultry farming operations and more innovative in the economically active years.

The results obtained indicated that there were more males (70.0%) involved in poultry farming than females (30.0%). This result is in consonance with Matanmi et al. (2012) who reported that the majority of poultry farmers in Kwara State were males. This finding agrees with Alimi et al. (2006), who reported that there were more males involved in poultry farming than females. This could be because the male poultry farmers are more positioned and privileged to access capital for establishing their poultry enterprises than their female counterparts.

Table 1 reveals that the majority (75.0%) of the respondents were married while the remaining 25.0% were single (22.5%) or widowed (2.5%). This implies that most of the poultry farmers have family dependents that will require more financial commitment which may serve as an impetus for them to diversify their production by venturing into quail production which seems to have more prospects and income potentials than the conventional chicken production which most poultry farmers are currently involved in.

An overwhelming majority (98.75%) of the respondents were literate while only just a handful (1.25%) had no formal education. This result agrees with Adebayo and Adeola (2005) who reported that poultry farmers generally are educated. Being literate is expected to influence the innovativeness of the farmers and their ability to make decisions on various aspects of poultry production that can improve their farm income.

The majority (61.25%) of the respondents had more than 5 years of experience in poultry farming while the remaining (38.75%) had 5 years or less of poultry farming experience. On the average, the poultry farmers have been into poultry farming for 7 years. The implication is that the poultry farmers are experienced enough to understand the rudiments of poultry farming and to diversify into any aspect of poultry production. This corroborates the findings of Matanmi et al. (2012) that poultry farmers in Kwara State are well experienced in poultry farming.

A large number (78.75%) of the respondents had a stock size of less than or equal to 500 birds, while only a few (21.25%) kept more than 500 poultry birds on their farms. This finding agrees with Onyewuchi et al. (2013) who reported that the majority of poultry farmers were small-scale and medium-scale producers. This is

not a good trend for the economy considering the shortfall in animal protein supply of which poultry production plays an important role. This is a pointer to the need for farmers to expand and diversify their production into much more buoyant aspects of poultry production like quail farming in order to ameliorate the protein nutritional insecurity in Nigeria.

Table 1. Socio-economic characteristics of the respondents.

Variables	Frequency	Percentage	Mean
Age			
< 30	6	7.50	
31–40	31	38.75	
41–50	24	30.00	44 years
51–60	15	18.75	
60 and above	4	5.00	
Gender			
Male	56	70.00	
Female	24	30.00	
Marital status			
Single	18	22.50	
Married	60	75.00	
Widowed	2	2.50	
Educational level			
No formal education	1	1.25	
Primary education	2	2.50	
Secondary education	5	6.25	
Tertiary education	70	90.00	
Years of experience			
< 5	31	38.75	
6–10	22	27.50	
11–15	18	22.50	7 years
16–20	5	6.25	
> 20	4	5.00	
Other occupation			
Farming	10	12.50	
Trading/Personal business	42	52.50	
Civil service	21	26.25	
Art and craft	5	6.25	
Politician	2	2.50	
Number of poultry birds kept			
≤ 250			
251–500	39	48.75	
501–750	24	30.00	
751–1000	7	8.75	
> 1000	5	6.25	
	5	6.25	

Source: Field Survey, 2014. N = 80.

More than half (52.5%) of the respondents were involved in Trading/Personal business as other occupation aside poultry farming while the remaining 26.25%, 12.5%, 6.25% and 2.5% of the poultry farmers indicated Civil service, Farming, Arts and crafts and Politician as other occupation they are involved in aside from poultry farming. This reveals that a lot of poultry farmers are able to combine other sources of income generating activities with their poultry enterprise.

Capacity building needs of poultry farmers for quail production

As indicated in Table 2, there was a high need for capacity building for 'Quail husbandry and management practices' (MS = 2.90), 'Feeding and nutrition' (MS = 2.80), 'Housing and equipment' (MS = 2.75), 'Processing and marketing of products' (MS = 2.68), 'Nutritional and health benefits derivable from quail products' (MS = 2.63), and 'Diseases prevention and control' (MS = 2.56) as they ranked 1st, 2nd, 3rd, 4th, 5th, and 6th respectively. Table 2 further showed that the other areas of capacity building were moderately needed by the respondents.

Table 2. Poultry farmers' capacity building needs for quail farming.

Capacity building needs	Highly needed	Moderately needed	Not needed	Mean score	Rank
Feeding and nutrition	68 (85.0)	8 (10.0)	4 (5.0)	2.80	2 nd
Disease prevention and control	50 (62.5)	25 (31.3)	5 (6.3)	2.56	6 th
Processing and marketing of products	60 (75.0)	14 (17.5)	6 (7.5)	2.68	4 th
Sex determination of birds	14 (17.5)	48 (60.0)	18 (22.5)	1.95	9 th
Brooding and hatching of fertile eggs	20 (25.0)	50 (62.5)	10 (12.5)	2.13	7 th
Pre-incubation egg care management	16 (20.0)	55 (68.8)	9 (11.3)	2.09	8 th
Record keeping	8 (10.0)	14 (17.5)	48 (60.0)	1.25	10 th
Housing and equipment	65 (81.3)	10 (12.5)	5 (6.3)	2.75	3 rd
Training on nutritional and health benefits derivable from quail products	58 (72.5)	14 (17.5)	8 (10.0)	2.63	5 th
Quail husbandry and management practices	72 (90.0)	8 (10.0)	0 (0.0)	2.90	1 st

MS derived from Highly needed = 3, Moderately needed = 2, and Not needed = 1. N = 80.

Note: The values in parentheses represent the percentage while the values outside represent the frequency. Source: Field Survey, 2014.

The implication of this is that the poultry farmers in the study area have an urgent need to have their competence in quail production enhanced in the areas indicated for training. Okwu and Ejembi (2005) pointed out that capacity building helps farmers acquire necessary skills to upgrade and diversify their production practices with the positive implication on the efficiency of their production. Therefore, government, extension agencies and other stakeholders in the poultry sector should focus more attention on educating and enlightening the poultry

farmers on these areas where they need training on quail production in order to increase the animal protein availability in the country which will thus translate into improved nutritional security for the populace and better income and livelihood for the poultry farmers.

Challenges militating against diversification into quail farming

Table 3 reveals the challenges identified by the poultry farmers militating against their efficient and profitable involvement and diversification into quail farming.

Table 3. Challenges militating against diversification into quail farming.

Challenges	Mean Score	Rank
Inadequate capital and access to credit facilities	4.32	3 rd
High cost of feeds and other inputs	4.18	5 th
Inadequate water supply	2.74	10 th
Problem of pest and diseases	3.12	9 th
Inadequate marketing channels	3.62	7 th
Insufficient labour supply	2.51	11 th
Adverse weather conditions	3.42	8 th
Inadequate veterinary services	3.93	6 th
Poor extension and capacity building services	4.48	1 st
Weak consumer knowledge about quail products	4.42	2 nd
Lack of technical know-how	4.20	4 th

MS derived from Very severe = 5, Severe = 4, Somewhat severe = 3, A little severe = 2 and Not severe = 1. N = 80. Source: Field Survey, 2014.

The challenges encountered according to their order of severity as indicated by the respondents are, 'Poor extension and capacity building services' (MS = 4.48), 'Weak consumer knowledge about quail products' (MS = 4.42), 'Inadequate capital and access to credit facilities' (MS = 4.32), 'Lack of technical know-how' (MS = 4.20), 'High cost of feeds and inputs' (MS = 4.18), 'Inadequate veterinary services' (MS = 3.93), and 'Inadequate marketing channels' (MS = 3.62) as they ranked 1st, 2nd, 3rd, 4th, 5th, 6th, and 7th respectively. Table 3 further shows that the other listed challenges whose mean score were below 3.5 were of lesser severity to the poultry farmers in the study area. This is in consonance with Olaniyi et al. (2008) who also pointed out that poor extension contact and inadequate access to finance were major severe constraints faced by poultry farmers. These imply that the poultry farmers in the study area need an urgent intervention from government and stakeholders on these severe challenges militating against poultry farmers. This will enhance their efficiency and diversification into quail production thus increasing the income and nutritional security.

The relationship between selected socio-economic characteristics of the respondents and their capacity building needs

Table 4 shows that there is a significant relationship between the poultry farmers' capacity building needs for quail production and their age ($X^2 = 5.545$), educational level ($X^2 = 11.859$) and years of farming experience ($X^2 = 9.604$), thus the null hypothesis was rejected. Table 4 further reveals that there is no significant relationship between respondents' capacity building needs for quail birds and their gender, marital status, other occupation and number of birds kept, thus the null hypothesis was accepted.

Table 4. The relationship between selected socio-economic characteristics of respondents and their capacity building needs for quail production.

Variables	df	X^2	Significance	Decision
Age	4	5.545	0.014	Reject Ho
Gender	1	3.824	0.494	Accept Ho
Marital status	2	1.907	0.438	Accept Ho
Educational level	3	11.859	0.001	Reject Ho
Years of experience	4	9.604	0.037	Reject Ho
Other occupation	4	2.109	0.285	Accept Ho
Number of birds kept	4	3.824	0.782	Accept Ho

Source: Field Survey, 2014. Significant level = 0.05.

This result was in consonance with the findings of Oladipo (2006) who found a significant relationship between some selected socio-economic characteristics (education, cosmopolitaness, etc.) and the adoption of new technologies. The implication of this result is that respondents' capacity building needs for quail production are most likely to be influenced by their age, educational level and years of experience while poultry farmers' gender, marital status, other occupation and number of birds kept may not have any significant influence on their capacity building needs for quail production.

Conclusion

Based on the findings of the study, the need for capacity building of the poultry farmers in several areas of quail production coupled with the severe challenges identified seem to account for the low involvement and diversification of the poultry farmers into quail farming.

The study therefore recommended an urgent need to package a robust training programme and advisory services by extension and other stakeholders for poultry farmers on areas of capacity deficiencies indicated for quail production.

Also, setting up of well-structured credit schemes, policies to ameliorate high input prices, access to veterinary services and proper marketing channels need to

be facilitated by government, NGOs and other stakeholders so as to encourage diversification of the poultry farmers into this subsector, thus, tapping into the potential that quail farming offers in terms of health benefits, food and nutritional security for the populace and improved livelihood for the farmers.

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POTREBE UZGAJIVAČA ŽIVINE ZA JAČANJEM KAPACITETA ZA PROIZVODNJU PREPELICA U DRŽAVI KVARA U NIGERIJU

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R e z i m e

Ovaj rad se bavio istraživanjem potreba uzgajivača živine za jačanjem kapaciteta za proizvodnju prepelica u državi Kvara u Nigeriji. Korišćen je upitnik za pribavljanje informacija od 80 slučajno uzorkovanih uzgajivača živine iz Živinarskog društva nigerijskog ogranka u državi Kvara. Rezultati su pokazali da većinu (70,0%) uzgajivača živine čine muškarci srednje starosne dobi od 44 godine, oženjeni (75,0%) i formalno obrazovani (98,75%). Uzgajivači živine su uglavnom (78,75%) mali proizvođači koji uzgajaju manje od 500 ili 500 ptica na svojim gazdinstvima. Jačanje kapaciteta je veoma potrebno radi uzgajanja prepelica i postupaka upravljanja, hranjenja i ishrane, smeštaja i opreme, prerade i prodaje proizvoda, između ostalog. Uzgajivači živine su prepoznali sedam ozbiljnih izazova koji spečavaju diverzifikaciju njihovog živinarskog preduzeća da uključi proizvodnju prepelica. Analiza hi-kvadrata je pokazala značajnu vezu između potreba uzgajivača živine za jačanjem kapaciteta za proizvodnju prepelica i njihove starosne dobi ($X^2 = 5,545$), obrazovnog nivoa ($X^2 = 11,859$) i godina iskustva u poljoprivredi ($X^2 = 9,604$). Preporučeno je da bi savetodavne agencije trebalo da ponude snažan program obuke za uzgajivače živine o oblastima nedostatka kapaciteta navedenih za proizvodnju prepelica.

Ključne reči: potrebe za jačanjem kapaciteta, uzgajivači živine, proizvodnja prepelica, država Kvara, Nigerija.

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