

Determination of Skills Required in Duck Production for Self-Reliance Among Youths of South-South, Nigeria

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Abstract

The study determined the skills required in duck production for self-reliance among youths in south-south, Nigeria. Questionnaire Survey research design was used for the study. Three objectives, three research questions and two hypotheses were used for the study. The population for the study was 6,594 comprises of 6,347 poultry farmers and 247 extension agents. The sample size for the study was 377 which was determine using Taro Yamane Formula. The instrument for data collection was a structured questionnaire title: Duck Production Skills for Self-Reliance Questionnaire (DPSSRQ). The instrument was face and content validated by five (5) experts, two experts from Agricultural Education, one expert in poultry production-Department of Animal Production and another in Test Measurement and Evaluation all from Joseph Sarwuan Tarka University. To ensure the reliability of the instrument it was trial test on 30 respondents comprising 25 poultry farmers and 5 agricultural extension agents from Vandeikya Local Government Area of Benue state. Data collected and analysed using Cronbach alpha which a reliability index of 0.83 indicating that the instruments were reliable. A total of 377 copies of the questionnaire was administered to the subjects were administered to the respondents with the help of five trained research assistant but only 358 were retrieved which was used for data analysis. The questionnaire was on 4-point response options of Highly Required (HR=4), Moderately Required (MR=3), Slightly Required (SR=2) and Not Required (NR=1). Mean and standard deviation was used to answer research questions while t-test was used to test the null hypotheses at .05 level of significance. In answering the research questions, a score of 2.50 and above was regarded as required while less than 2.50 below was regarded as not required. On the other hand, in testing the hypotheses where the p-value of 0.05 was equal or less than the alpha value, the null hypothesis was rejected otherwise accepted. Based on the finding of the study it was concluded that that it was concluded that youths in South-South Nigeria require 97 skills for self-reliance in duck production. They are skills in planning (12 items) and (9 items), skills in breeding. The study also proved that for self-reliance in duck production, youths in South-South required necessary skills as identified in the study. It was therefore recommended that youths should seek for re-training on the planning skills identified in this study for better preparation of duck production.

Keywords: Youth, Skills, Duck production, Planning skills, Self-reliance

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INTRODUCTION

The population of any nation of the world is comprised of people of different ages including the youths. A youth is viewed as one who has transited from the childhood to adult stage. The United Nations, in Obiora (2020) opined that youth is a transitional period from childhood dependence to adulthood independence and awareness of our interdependence as members of a community. The Commonwealth and African Charter see youth as people who are within the age bracket of 18-29 years. In Nigeria, a youth is any young male or female who falls within the active age bracket of 18-35 years (Islamic Development Bank- IDB, 2019). There is no universally accepted definition of youth in terms of age as it may vary from one country to another. Youths are very important to any nation because they form the greater part of labour force. The youths are however confronted with many challenges including limited access to employment and sources of income generation.

The lack of viable means of income generation among many youths in the country has made them vulnerable to social vices such as political thuggery, arm robbery, kidnapping, cybercrime among others just but a way of finding succor to their financial problems. No nation can develop when her youths are without sustainable sources of livelihood (Iwena, 2015). There is no doubt that the youths have formed the greater part of the unemployed population in the country. The youths continue to roam the streets in search of jobs and when not found, they become frustrated and might resort to illicit means of survival which has stained the image of the nation negatively. Wombo, Igbabaka and shimave (2017) noted that as long as the youths have not found meaningful jobs or businesses that can occupy their time and in turn generate income in order to contribute to national development, the youths will continue to involve in unwholesome activities. There is need therefore to evolve meaningful means of providing the youths with viable sources of income generation other than depending on government paid job to be self-reliant. This can be achieved through agriculture because it provides excellent opportunities for youths in Nigeria to embrace. This opportunity can be found in duck production which is practiced under different systems.

Ducks belong to the family *Anatidae* within the order *Anseriformes*, depending on the specific species. Ducks are believed to have evolved from ancient waterfowl ancestors during the late cretaceous period. Ducks are characterized by webbed feet and streamlined bodies adapted for swimming and diving. The evolution of specialized anatomical features, such as waterproof plumage and oil glands, enable ducks to thrive even in aquatic habitats.

Ducks encompass a diverse range of genera and species, each with its own unique scientific classification. The common domestic duck is scientifically called *Anas platyrhynchos*, it is one of the most well-known species within the duck family. This scientific name refers specifically to the Mallard duck, which is widely distributed and has contributed genetically to many domestic duck breeds through hybridization and selective breeding (Schiavone *et al*, 2017). Other duck species have different scientific names based on their genus and species classification. For example, northern pintail *Anas acuta*, wood duck *Aix sponsa*, mandarin duck *Aix galericulata*, and muscovy duck *Cairina moschata*. Duck production can be practiced under different systems of animal production depending on the availability of capital or the individual's level of wealth. Intensive system of duck production is capital intensive and entails that housing, feeds, medication and other management practices are put in place for the birds. Adeosun and Owoade (2020) opined that intensive system of duck production is both capital and labour intensive. Another system of duck production is the extensive system. It is one where the ducks are allowed to roam about in search of feeds and water. There is relatively low capital investment with very high returns on investment. The system also has some of its shortcomings as there is low productivity and the birds could be lost to theft and predators. Semi-intensive system of poultry management is mid-way intensive and extensive systems. The youths of the South- South region can prosper in the duck production as a source of income if only they possess the required skills.

Skills are the abilities and expertise that enable individuals to perform specific tasks effectively (Armstrong, 2021). Duck production requires a combination of technical and managerial skills to ensure efficient farming operations. Adeola and Ojo (2019), listed requisite skills for duck production to include knowledge of selecting high-quality breeds for better productivity and disease resistance. Skills are also required for feeding and to meet the dietary needs of ducks to ensure optimal growth and egg production (Smith and Jones, 2020). Housing and farm management skills to construct proper housing to protect ducks from harsh weather and predators are (Food Agricultural Organisation, 2021). These skills are not limited to the

above but also encompass health and marketing in identifying and treating common duck diseases to prevent outbreaks and have an understanding of market trends and pricing strategies to maximize profitability (Nguyen & Tran, 2018; Rahman *et al*, 2022). It is important that youths who desire to embrace duck farming acquire the requisite skills such as planning, preplanning, production, marketing and so on. These skills can be gotten from poultry farmers who specialize in poultry production. These skills can also be acquired from agricultural extension agents who work with farmers to improve their knowledge and to embrace innovative farming methods for higher productivity. Farmers who are already into the duck farming venture and have acquired vast knowledge that can be useful to youths wishing to venture into duck farming. When the skills are learnt from experienced farmers and extension agents, it will tremendously help them to successfully go into duck farming in order to generate income for self-reliance.

Self-reliance is one's ability to do certain things by his or herself without recourse to others. (Ngbongha, Benson & Gbeyongu, 2025). Such a person does not have to solely rely or depend on other people. This explanation does dispute the fact that an individual who is self-reliant does not seek assistance or help from others but the explanation seeks to establish that, a self-reliant individual is one who has a viable means or source of livelihood that can guarantee economic security or financial security. According to Wombo, Igbabaka and Shimave (2017) lack of self-reliance or sufficiency leave many youths without an option but to depend or rely almost solely on either their parents or relatives for their basic needs. Therefore, if the youths in South-South would venturing into duck production it will reduce the rate of unemployment in the area.

Statement of the problem

Youths are group of young people who are filled with energy or vitality, they are industrious, adventurous and ambitious. They like to try their hands on anything around them hence they are quick to copy each other. In Nigeria today, youths are confronted with many challenges including unemployment and economic dependency which have affected the youths in South-South Nigeria. Despite successive governments frantic attempts to ameliorate the plight of the youths by establishing Youth Ministry, and putting in place Social Intervention Programmes (SIP) like Sure-P under President Goodluck Jonathan's administration and N-power, by the Mohamadu Buhari led civilian administration and the region's rich agricultural resources but to no avail. Duck production presents a viable opportunity for self-reliance, given its economic benefits, nutritional value, and adaptability to various environmental conditions. However, many youths lack the necessary technical skills required for successful duck farming, leading to limited participation. A major barrier to youth engagement in duck production is the lack of access to information on essential skills such as housing, management practices, feeding, disease management, processing, preservation, and marketing of duck products for income generation. Without these skills, youth farmers struggle with inefficiencies, losses due to high mortality, and poor market access, making duck farming less attractive as a means of sustainable livelihood. The few available studies on duck production emphasize its economic potential but do not comprehensively address the specific skills required for youth participation and self-reliance in South-South Nigeria. In an interaction with youths in the region, many would have loved to engage duck farming but are reluctant due to lack of skills which is crucial for duck farming. They indicated positive interest of embracing duck farming should they be equipped with the competencies that would make them successful. Understanding the skill gaps and identifying the essential competencies needed for successful duck farming is the motivation for this study.

Purpose of the study

The main purpose of this study is to determine the skills required in duck production for self-reliance among youths in South-South States, Nigeria. Specifically, the study sought to determine:

1. the skills in planning duck production for self-reliance among youths in South-South, Nigeria,
2. the skills in duck housing for self-reliance among the youths in South-south, Nigeria,
3. the skills in duck breeding for self-reliance among youths in South-South, Nigeria.

Research Questions

1. What are the skills in planning duck production for self-reliant by the youths of South-South, Nigeria?
2. What are the skills in housing duck for self-reliance by the youths of South-south, Nigeria?
3. What are the skills in duck breeding for self-reliance among youths in South-South, Nigeria?

Hypotheses

The following null hypotheses were tested at 0.05 level of significance.

- H01:** There is no significant difference between the mean responses of farmers and agricultural extension agents on the skills in planning duck production for self-reliance among youths in South-South, Nigeria.
- H02:** There is no significant difference between the mean responses of farmers and agricultural extension agents on the skills in housing duck for self-reliance among youths of South-South, Nigeria.

METHODOLOGY

The study adopted a descriptive survey research design. The population for the study is 6,594 consisting of 6,347 poultry farmers and 247 Agricultural extension agents in the area. The sample size for the study was 377 drawn using Taro Yamane Formula for sample size determination made up of 300 registered poultry farmers and 77 Agricultural extension agents. Proportionate sampling technique in the ratio of 1:2 was also use to obtain the sample size across the six geo-political zone. The instrument for data collection is a self-structured questionnaire titled Duck Production Skills for Self-Reliance Questionnaire-DPSSRQ. The DPSSRQ is subdivided into three (3) clusters with a total of thirty five (35) items anchored on 4-point response options of Highly Required (HR=4), Moderately Required (MR=3), Slightly Required (SR=2) and Not Required (NR=1). The instrument for data collection was face and content validated by four (4) experts, two experts from Agricultural Education, one expert in poultry production- Department of Animal Production, and another in Test Measurement and Evaluation, all from Joseph Sarwuan Tarka University, Makurdi. The instrument was trial tested on 30 respondents comprising 25 poultry farmers and 5 agricultural extension agents from Vandeikya Local Government Area of Benue state. The collected was analysed using Cronbach alpha method with a reliability of 0.83 showing that the instrument were reliable. Data for the study was collected by the researcher with the assistance of five research assistants. A total of 377 copies of questionnaire was administered to the subjects but only 358 copies

(285 from farmers and 73 from extension agents) were retrieved which was used for data analyses. Data were analysed using means and standard deviation to answer research questions, while t-test was used to test the null hypotheses at 0.05 level of significance. The decision rule was that item that scored 2.50 and above was regarded as required and below 2.50 was regarded as not required. For hypotheses, where the p-value of 0.05 was equal or less than the alpha value, the null hypothesis was rejected otherwise accepted.

RESULTS

Research question 1: What are the skills required in planning duck production for self-reliant by youths of South-South, Nigeria?

Table 1: Mean and Standard Deviation Ratings of the Respondents on the Skills Required in Planning Duck Production for Self-Reliant by the Youths of South-South, Nigeria

S/N	Item Statement	\bar{X}_1	S_1	\bar{X}_2	S_2	RMK
	Ability to:					
1	set goal for the duck production business	3.44	.53	3.54	.62	R
2	revise the goals regularly	3.45	.51	3.53	.50	R
3	identify source of financing the production	3.60	.49	3.58	.49	R
4	identify suitable site for the duck farm	3.58	.49	3.57	.49	R
5	identify source of suitable equipment, tools or materials for the production for all the production activity	3.58	.53	3.50	.58	R
6	identify source of manpower needed	3.49	.57	3.46	.64	R
7	identify the type of breed to produce, considering the breed requirements	3.58	.49	3.63	.48	R
8	prepare a budget for the first production cycle	3.46	.60	3.35	.73	R
9	contract veterinary personnel for regular inspection	3.34	.66	3.26	.74	R
10	draw timetable of activities to guide the farm work for easy flow	3.41	.61	3.26	.68	R
11	register the farm business with necessary associations or government board.	3.49	.56	3.41	.68	R
12	identify records to be kept	3.39	.63	3.34	.74	R

Keys: X_1 - mean of farmers, S_1 - standard deviation of farmers, X_2 - mean of extension agents, S_2 -standard deviation of extension agents, R-Required

Data presented in Table 1 shows that all the items had their mean ranging from 3.34 to 3.60 for farmers and 3.26 to 3.63 for extension agents. these are all above the cut off mean of 2.50, proving that all the items are the skills required in duck production planning for Self-Reliant by the youths of South-South, Nigeria. The standard deviation ranged from 0.49 to 0.66 for farmers and 0.48 to 0.74 for extension agents thus, they are close to each other and not far from the mean, implying that the responses of the respondents are not far from each other.

Hypothesis 1

There is no significant difference between the mean response of farmers and agricultural extension agents on the skills required in planning duck production for self-reliance among youths in South-South, Nigeria.

Table 2: t-Test Results of the Respondents on the Skills Required in Planning Duck Production for Self-reliance among Youths in South-South, Nigeria

STATUS	N	Mean	Std. Deviation	Std. Error Mean	Df	Sig	t-cal	Alpha value	Remarks
		3.4886	0.5616	.13765					
Farmers	285	3.4886	0.5616	.13765	356	.211	1.254	.05	NS
Ext. Agents	73	3.4566	0.6195	.27732					

Keys: N= Number of respondents, Std = Standard deviation, df = degree of freedom, Sig. = P-value; t-cal = t-calculated value; NS = No Significant.

Table 2 presents the t-test result of the respondents on the skills required in planning duck production for self-reliance among youths in South-South, Nigeria. The result shows that the p-value (sig) is .211 (at 356 degree of freedom) which is higher than the alpha value of .05, indicating that the test is not statistically significant. The null hypothesis is therefore accepted. This means that there is no significant difference between the mean response of duck farmers and agricultural extension agents on the skills required in planning duck production for self-reliance among youths in South-South, Nigeria.

Research question 2

What are the skills required in duck housing for self-reliance among the youths of South-South, Nigeria?

Table 3: Mean Rating and Standard Deviation of the Respondents on the Skills Required in Housing Duck for Self-reliance among Youths in South-South, Nigeria

S/N	Item Statement	\bar{X}_1	S_1	\bar{X}_2	S_2	RMK
Ability to:						
1	select a suitable site for the building of the duck house	3.44	.53	3.57	.55	R
2	develop building plan	3.47	.54	3.58	.49	R
3	construct the building based on the plan	3.26	.47	3.34	.47	R
4	gather material for the building	3.25	.49	3.13	.34	R
5	prepare the tethering peg	3.38	.52	3.31	.52	R
6	lay out brick block dwarf wall	3.36	.52	3.26	.50	R
7	use wire gauze at the half up of the wall to permit ventilation	3.40	.53	3.41	.54	R
8	roof open end at the top to avoid accumulation of ammonium	3.47	.54	3.39	.54	R
9	construct duck pen with adequate ventilation to prevent respiratory infections.	3.48	.53	3.49	.55	R
10	construct footbath at the entrance of the building	3.42	.54	3.42	.55	R
11	use rice husks, straw, or sawdust for bedding materials to maintain warmth.	3.37	.57	3.49	.55	R
12	disinfect or fumigate pen or equipment to kill germs such as bacteria or virus	3.39	.53	3.45	.55	R
13	make space to stock 4 - 6 ducks per square meter to ensure optimal growth.	3.38	.52	3.28	.48	R
14	fence the building to avoid unwanted access	3.29	.58	3.34	.50	R

Keys: X_1 - mean of farmers, S_1 - standard deviation of farmers, X_2 - mean of extension agents, S_2 -standard deviation of extension agents, R-Required

Data presented in Table 3 shows that all the items had their mean ranging from 3.25 to 3.48 for farmers and 3.13 to 3.58 for extension agents. These are all above the cut off mean of 2.50, proving that all the items are the skills required in duck housing for Self-Reliant by the youths of South-South, Nigeria. The standard deviation ranged from 0.52 to 0.58 for farmers and 0.34 to 0.55 for extension agents thus, they are close to each other and not far from the mean, implying that the responses of the respondents are not far from each other.

Hypothesis 2

There is no significant difference between the mean response of farmers and agricultural extension agents on the skills required in duck housing for self-reliance among youths in South-South, Nigeria.

Table4: t-Test Result of the Respondents on the Skills Required in Duck Housing for Self-reliance among Youths in South-South, Nigeria

STATUS	N	Std.		Std. Error Mean	Df	Sig	t-cal	Alpha value	Remarks
		Mean	Deviation						
Farmers	285	3.8822	0.53521	.18573	356	.833	-.211	.05	NS
Ext. Agents	73	3.3944	0.51408	.34129					

Keys: N= Number of respondents, Std = Standard deviation, df = degree of freedom, Sig. = P-value; t-cal = t-calculated value; NS = No Significant.

Table.4 presents the t-test result of the respondents on the skills required in duck housing for self-reliance among youths in South-South, Nigeria. The result shows that the p-value (sig) is .833 (at 356 degree of freedom) which is higher than the alpha value of .05, indicating that the test is not statistically significant. The null hypothesis is therefore accepted. This means that there is no significant difference between the mean responses of duck farmers and agricultural extension agents on the skills required in duck housing for self-reliance among youths in South-South, Nigeria.

Research question 3

What are the skills in duck breeding for self-reliance among the youths in South-South, Nigeria?

Table.5: Mean Rating and Standard Deviation of the Respondents on the Skills Required in Duck Breeding for Self-reliance among Youths in South-South, Nigeria

S/N	Item Statement	\bar{X}_1	S_1	\bar{X}_2	S_2	RMK
1	provide concentrate feeds to duck in the morning before allowing them out and in the evening before allowing them in	3.25	.49	3.13	.34	R
2	construct a swimming pool for duck	3.38	.52	3.31	.52	R
3	provide clean water for drinking and bathing duck regularly	3.36	.52	3.26	.50	R
4	provide for duck roughages like Napier and carpet grass	3.40	.53	3.41	.54	R
5	clean the feeding troughs regularly with disinfectants	3.47	.54	3.39	.54	R
6	refill the swimming pool with water for drinking and bathing	3.48	.53	3.49	.55	R
7	provide vitamins to boost their appetite for food	3.42	.54	3.42	.55	R
8	keep duckling indoors to provide feeds and water in other to avoid loss	3.37	.57	3.49	.55	R
9	feed birds with appropriate feed such as small fresh eggs, warms, mollusk, frogs, salamander seeds, grains, fruits	3.39	.53	3.45	.55	R

Keys: X_1 - mean of farmers, S_1 - standard deviation of farmers, X_2 - mean of extension agents, S_2 -standard deviation of extension agents, R-Required

Data presented in Table 5 shows that all the items had their mean ranging from 3.25 to 3.48 for farmers and 3.26 to 3.49 for extension agents. These are all above the cut off mean of 2.50, proving that all the items are the skills required in duck feeding for Self-Reliant among the youths of South-South, Nigeria. The standard deviation ranged from 0.34 to 0.57 for

farmers and 0.34 to 0.55 for extension agents thus, they are close to each other and not far from the mean, implying that the responses of the respondents are not far from each other.

Discussion of Findings

The result of the study in research question 1 revealed that there are 12 skills required in duck production planning for self-reliance among youths. This finding is in keeping with Ezaka (2021) who found that farmers need competency in planning duck production, such as ability to register with the duck marketer's association to access a wider market, survey the market for the duck to determine the market value and demand, set clear objectives for the production, identify sources of financing the business and identifying suitable site for the production. More so, Eje (2018) found in line with the findings of these study that the skills needed in planning duck production include setting production goal, identifying source of all the production tools, accessing fund for the enterprise. The findings of the study in hypothesis 1 is also in line with Agbida (2020) who found that there is no significant difference in the mean response of farmers and extension agents on the skill improvement needs of retirees for self-employment in duck production in Nasarawa State.

The findings of the study in research question 2 revealed that there are 14 skills required in duck housing for self-reliance among youths in South-South, Nigeria. The finding agrees with Agbo and Nongugwa (2017) who noted that skills required in housing for duck production include ability to build the house to ensure adequate ventilation and that constant water is necessary for the ducks to mate and produce fertile eggs. The finding is also in line with Adebayo and Ajayi (2018) who found that skills in duck housing include use of rice husks, straw, or sawdust for bedding materials to maintain warmth and disinfecting or fumigating pen or equipment to kill germs such as bacteria or virus. The finding of the study in hypothesis 2 is in keeping with Agbida (2020) who found that there is no significant difference between the mean response of farmers and extension agents on the skill improvement needs of retirees for self-employment in duck production.

The findings of the study in research question 4 revealed that there are 9 skills required in duck breeding for self-reliance among youths in South-South, Nigeria. This finding agrees with Scanes and Baughman, (2015) who outlined the skills in duck breeding to include breed identification and genetic selection, identifying sexual maturity ages which is generally 20–24 weeks for laying breeds, checking laying patterns and fertility rates. Moreso, the finding is in keeping with Rahman (2017) who found that farmers need breeding skills such as selecting quality suitable young birds for rearing depending on purpose such as meat, egg or others, maintaining a male to female ration of 1:6 and mating the ducks when they show signs of mating behavior such as neck biting, pecking, head, bobbing. The finding of the study in hypothesis 2 agrees with Eleyi (2019) who found that there is no significant difference in the mean response of farmers and extension agents on the capacity building needs of youths in poultry production for sustainable employment.

CONCLUSION

Based on the result of the data collected and analyzed, it was concluded that youths in South-South Nigeria require 35 skills for self-reliance in duck production such as planning (12) Housing (14) and Breeding (9), skills. The study also proved that for self-reliance in duck production, youths in South-South required necessary skills as identified in the study.

RECOMMENDATIONS

Based on the findings of the study the following recommendations were made:

1. Youths should seek re-training on the planning skills identified in this study.
2. Youths should form cooperatives and organize retraining programme.
3. Government through the extension agents can organize retraining programmes for the youths in the feeding skills in order for them to become self-reliance in the occupation.

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