



Skill Improvement Needs of Poultry Farmers in Duck Production in Enugu State, Nigeria

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Abstract: *The paper sort to identify the skill improvement needs of poultry farmers in duck production in Enugu State, Nigeria using survey research design. The population of the study is 288 made up of 170 poultry farmers and 118 agricultural extension agents in the State. The total population was used because of the manageable size therefore there was no sampling. The instrument used for data collection was a structured questionnaire containing 57 items. The questionnaire was divided into two response categories of "need" and "performance". The performance category was scaled in four point rating scale of high performance H.P-4points, average performance A.P-3points, low performance L.P- 2points and no performance N.P-1point. While the needed category had a four point rating scale of highly needed H.N-4points, averagely needed A.V-3points, slightly needed S.N-2points and not needed N.N-1point. The instrument was validated by 3 experts in Agricultural Education of Michael Okpara University of Agriculture, Umudike. The reliability of the instrument was established using Cronbach alpha reliability and a reliability of 0.85 was obtained. Data was collected by the researcher with the help of 4 research assistance that was duly instructed by him. 269 copies of the instrument were retrieved and analyzed using mean and improvement need index (INI) for research questions. The performance mean was represented with Xp while the need mean was represented with Xp. It was found from the result of the analyses that poultry farmers need skill improvement in duck production in: 11 skills in planning, 10 skills in site selection, 26 skills in breeding and management and 10 skills in marketing. It was further recommended among others that regular workshop training should be organized by government through farmers' cooperatives for farmers to update themselves with latest duck production skills identified, Farmers should put more interest and resources in duck production as their demands are becoming very high in order to improve their living and sustain the economy significantly.*

Key words: *Farmer, Skill, Poultry and Duck production*

INTRODUCTION

A farmer is a person who owns, works on or operates an agricultural enterprise, either commercially or to sustain himself and his family. According to Nweze (2007), a farmer is an individual whose primary job and function involves livestock and/or crop production. Farming in the view of Dyer (2007) is the process of engaging in agriculture, raising living organisms for food materials. Farmers are those who undertake the purposeful activity of raising and reproducing animals. In the context of this study, farmer is somebody who owes and possesses the skills to operate a poultry farm with the primary aim of making money.

Skill is a testable ability of performing a task. Wombo, Igbabaka and Shimave (2017) defined skill as an ability that is acquired or developed from training or experience by an individual to do an activity or job well. In the opinion of Asogwa, Odo and Obetta (2015), skills are well established habit of performing task in a manner that is acceptable by workers in the profession. It is the ability to carry out activities relating to trade, industry or

agricultural production.

Skill is the ability to efficiently demonstrate the knowledge of something practically. Elmer (2006) defined Skill as a well-established habit of doing. From the psychological point of view, skill is defined as rapid and precision usually of muscular action (Okorie, 2000). The author further maintained that skill is expertness, practiced ability, proficiency executed and usually displaying a flexible but systematic temporal patterning. Hull in Okorie (2001) defined skill as manual dexterity through repetitive performance of an operation. It involves the acquisition of performance capabilities (Onuoha, 2010). In the context of this study, skill can be defined as the ability possessed by poultry farmers to carry out all the operations or tasks required in duck production very well.

Poultry is a general term encompassing the raising and processing of different kinds domestic birds such as chicken, quail, duck etc for meats or egg consumption or sold to sustain the economy. The increasing demand for meat especially poultry products is a call for a better approach towards improving their system of production. Poultry as used in agricultural business generally refers to all domesticated birds kept for the purpose of egg and or meat production which includes chickens, fowls, turkeys, ducks, etc.

Duck (*Anas platyrhynchos*) domesticated today originated from the muscovy ducks at Southern and Central America in early 1870s. Oluwayelu, Emikpe, Oladele, Ohere and Fagbohun (2007). Duck production is a simple, interesting and lucrative venture. Central Poultry Development Organization (2014) reported that, the domestic ducks are water-fowls. They are raised majorly in region of high rainfall, deltas, riverine areas and coastal districts of the tropics. A number of advanced countries in temperate climates also keep ducks in commercial quantities for meat, eggs and other products (Agbo & Nongugwa, 2015). Meat and eggs of duck (waterfowl) have high nutritional value as human food (animal protein). People eat meat of ducks not only because they like the taste, but also for its high nutritional value in terms of optimal composition of essential amino acids as well as favourable composition of fatty acids, with a high percentage of polyunsaturated fatty acids and a favourable ratio of omega 6 to omega 3-fatty acids (Pingel & Germany, 2011). Duck meat has a unique flavour and a delicious taste. It is economical, quick and easy to prepare and serve.

In Enugu state and Nigeria in general, local ducks are mostly raised on free range alongside with the domestic chickens. Although ducks are hardier and more resistant to diseases and environmental hazards, they are fewer than the chickens basically due to cultural beliefs which tend to portray duck as mystique bird (Agbo & Nongugwa, 2017). Ducks does not require elaborate house for their production, they are comparable in meat qualities to chickens and are able to digest fibre protein food relatively more efficiently than chickens (Central Poultry Development Organization, 2014). This is an advantage considering recent emphasis on non-conventional feedstuffs to bring down cost of feed inputs in duck production thereby encouraging farmer's participation in the production.

Production according to Hornby (2006) is the process of purposefully breeding animals such as birds and caring for them as they grow. It is the scientific practice of raising young animals for the purpose of sustaining the economy. In this study, production is the process of caring for ducklings and growing them to market size. Production is an essential aspect of poultry which involves all activities, resources and efforts geared towards raising ducklings to a table sized animal for either personal consumption or marketing for economic

sustainability.

Sustainability is a term referring to the achievements that stands the test of time. Yusuf and Soyemi (2012) perceived sustainability as the continuous satisfaction of present and future needs through a well-balanced interplay between the required activities and the host environment. Mintzer (1992) defined sustainability as maintaining a delicate balance between the human need to improve lifestyle and feeling of wellbeing on one hand and preserving natural resources on which we and future generations depends. Sustainability is the process of satisfying immediate need without compromising the ability for future satisfaction. It deals with a continuous conducive interplay between an activity and the host environment. Sustainable economy is an economic growth that aims at satisfying the needs of humans but in a manner that sustains the natural resources and environment for future generation. Sustainable economy in this study is therefore the production of duck in a manner that grows the local, state or national economy without compromising the natural resources that future generation depends on. Sustainable economy can be achieved if the present statues of duck production by poultry farmers can be improved. The need for improved method of duck production became pertinent in the world of today due to the gap between the demand for the meats and the supply. This gap results from the fact that poultry farmers concentrate on chicken paying less attention to duck production and therefore not updated to the current standard practices needed to produce ducks in a manner that can sustain the economy. Farmers still rely on free range and extensive system of duck production while chicken production is highly improving though they are of comparable value in several aspects. Duck farmers therefore need an overhaul improvement in their production skills for sustainable economic growth of the State and Country. Such areas of skill improvement needs may include according to Asian Development Bank ADB (2016), duck shelter and equipment, rearing ducks, breeding ducks, processing ducks and marketing ducks. Duck production skills in this study shall be classified into Production planning, site preparation, housing, breeding, general management from duckling to table or market sized ducks and marketing.

Banga and Shama (2012) saw planning as an activity that deals with what has to be done tomorrow to be ready today. It is the process of articulating and arranging in order all activities involved in achieving a goal. In the view of Nwobasi (2012), planning is a mental process requiring the use of intellectual faculties, imagination, foresight and sound judgment to decide in advance as to what is to be done, how and where it is to be done, who will do it and how the results are to be evaluated. Planning deals with thinking before doing. Planning could also mean accessing the future and making provisions for it (Banga & Shama, 2012). Planning in any agricultural production business is necessary for utilization of available resources, such as men, materials, time, money, machines, equipment's, tools, implements, inputs, etc. for the purpose of achieving the objectives of the enterprise or production business. In the context of this study, planning is the process of articulating all the activities and resources required in duck production before venturing into the practice. This according to ADB (2016) include setting enterprise objectives, defining target customers, preparing production budget etc. in the same line, Adieza (2017) found that planning of duck production business connotes identification of capital source, manpower, tools and facilities for the production, suitable site for the production business etc. The author further stated that upon successful planning of duck production enterprise, the

entrepreneur proceed to actual implementation of his plan starting from selected site's preparation and house construction.

The site for duck production is first cleared of existing vegetation then followed by proper farm layout. Agbo and Nongugwa (2017) noted that a duck house should be built to ensure adequate ventilation and that constant water is necessary for the ducks to mate and produce fertile eggs. In their study, Rom and Geraldine (2009) found that poultry farmers need to regularly update themselves with duck production best practices such as environmental requirements including per bird space and feeding provisions within the house. The authors further recommended that the pen be provided with 6 inches liter depth for easy egg laying and that each duck be allowed 2-3 square feet flooring space. Furthermore, Agbo and Nongugwa (2017) identified that duck breeding and management is a paramount aspect of duck production that poultry farmers require need capacity building to update themselves. Breeds according to Nweze (2007) are animals with a common origin and characteristics like appearance, size etc. which makes them look different from others within the same species. Breeding means the act of mating and reproduction in poultry. Breeding can as well be extended to mean the act or process by which ducklings are kept and cared for, providing them with all the necessities for proper growth for the purpose of procreation. Breeding as regards to this study is the reproduction, keeping and caring of ducks for the purpose of selling them to make money by the youths in Ebonyi state. Adele (2013) in his study, identified duck breeding and management skills to include selection of young healthy birds, maintaining a male to female ratio of 1:6, mating collection of eggs after two weeks of mating, turning the eggs daily to avoid the membrane from sticking together, storing the eggs for 7-10 days before incubating, checking the fertility of the eggs by means of candling etc. Oluwayelu *et al*, (2007) noted that proper disease and pest control is a needful skill in duck production and pointed that farmers can curb poultry infectious diseases by maintaining a healthy and clean pen environment, isolation of sick birds and regular routine health check by veterinary personnel. In their study, Agbo and Nongugwa (2017) found that poultry farmers need capacity building in duck management and feeding such as regular provision of clean water in the dinking and swimming pond, feeding with roughages and concentrate feeds, keeping regular record of farm activities and weighing of birds to determine those that have attained market size. Upon maturity of birds for market or table size, farmers need to make preparations for marketing in line with his marketing strategies as contained in his initial business plan.

Marketing as opined by Alabar (2007) is a human activity directed at satisfying consumers' needs and wants through exchange transaction in a market. Whalley (2010) maintained that, marketing is the management process responsible for identifying, anticipating and satisfying customer requirements profitably. It comprises of activities directed at ensuring the flow of goods and services from producer to consumer or user. Marketing in this study, is ensuring that duck products reach the users in the right proportions, safe condition and at the right time. This can be done by the farmers at the farm gate or can be taken to a particular place for marketing. It was observed by Agbo and Nongugwa (2017) that, in spite of the ease in the rearing of duck, many farmers do not adopt suitable strategies in the marketing. Farmers need updated information on the best measures to adopt in selling their ducks for increased profit. The authors further found that farmers need skill improvement in customer identification and relation, choice of suitable

duck marketing route, advertisement, sales record, negotiation and price fixing and so on. Adieza (2017) noted that the best way to market ducks is through on farm or farm gate sales and contract sales which reduce the amount spent on taxation and open market sales registration.

From the forgone literature, it can be deduced that poultry farmers are in urgent need to improve on their duck production skills. These needs can only be met when farmers are exposed to the standard or improved skills needed for duck rearing by the extension agents who are better informed on the best practices of duck production. The rate at which farmers need skill improvement in duck production skills can only be determined through need gap analyses. Need gap analyses according to David (2017) is the computation of the weighed mean of a group's performance in an activity compared to the weighed mean of a stated standard. Olaitan and Ndomi (2004) In Isiwu and Asogwa (2017) described need gap analyses as the weighed mean of performance of an activity of a group of respondents taken from a similar computation of the weighed mean of the needed standard rating to give the performance gap value. This means that for one to determine the skill improvement needed by poultry farmers in duck production in Enugu State Nigeria, the mean of their possessed skill in duck production will be compared to the mean of the standards required to proficiently produce duck. Agbo and Nongugwa (2017) pointed that the level of skills possessed by farmers can be measured only when matched with the standards at which the skills are needed.

STATEMENT OF THE PROBLEM

The recent increase in the demand and consumption of poultry products such as chicken, turkey and duck in Enugu State calls for urgent intervention by researchers in the field of agriculture. But poultry producers seem to focus intension to only chicken which is no longer serving the teaming demand. This disregard for duck as a good source of poultry meat may be attributed to the mischievous believe of Christians that duck is a dirty animal, mystic bird and should be avoided. This situation has neglected duck production since long, making poultry farmers pay less or no attention to improving duck production as chicken even when they are of comparable value in meat and egg supply. Poultry farmers who attempt to produce ducks do so in a free range and local methods which cannot lead to increased output to sustain the economy of the State. However, the rise in cost of other source of meat has made consumers begin to look out to many animals that have been long looked down thus paving way for increased demand for duck meet and egg. Unfortunately, poultry farmers has not been cognizance with the recent and updated skills in duck production thus limiting their ability to utilize this trending opportunity of high demand for duck meet and egg to better their lives and significantly sustain the economy of the State and country at large. Owing to this fact, poultry farmers, need to be made known to those skills they do not possess in order to improve on their production to meet with the global trends and increase their profit for sustainable economic development. There seems to be a gap between poultry farmers and the standard or current practices in duck production in Enugu State. This study therefore tends to close this gap by identifying the skill improvement needs of poultry farmers in duck production for sustainable economy in Enugu state, Nigeria.

PURPOSE OF STUDY

The major purpose of the study is to identify the skill improvement needs of poultry farmers in duck production for sustainable economy in Enugu State. Specifically, the study tends to identify the skill improvement needs of poultry farmers in:

1. Planning for duck production in Enugu State.
2. Site preparation and housing for duck production in Enugu State.
3. Breeding and management for duck production in Enugu State.
4. Marketing of produced table size ducks in Enugu State.

RESEARCH QUESTIONS

The following research questions were asked and answered for the study

1. What are the skill improvement needs of poultry farmers in planning for duck production in Enugu State?
2. What are the skill improvement needs of poultry farmers in Site preparation and housing for duck production in Enugu State?
3. What are the skill improvement needs of poultry farmers in Breeding and management for duck production in Enugu State?
4. What are the skill improvement needs of poultry farmers in Marketing of produced table size ducks in Enugu State?

RESEARCH METHOD

The study adopted survey research design. The area of the study is Enugu State, Nigeria. The population of the study is 288 consisting of 170 poultry farmers and 118 agricultural extension agents in the State. There was no sampling because all the population is manageable. The study therefore adopted census technique. The instrument for data collection is a structured questionnaire containing 57 items. The instrument was titled farmers duck production skill improvement need questionnaire (FDPSINQ). The questionnaire had two response categories which are needed category responded to extension agents and performance category responded to by poultry farmers. The performance category was scaled in four point rating scale of high performance H.P-4points, average performance A.P-3points, low performance L.P- 2points and no performance N.P-1point. Also the needed category had a four point rating scale of highly needed H.N-4points, averagely needed A.V-3points, slightly needed S.N-2points and not needed N.N-1point. The instrument was validated by 3 experts in Agricultural Education of Michael Okpara University of Agriculture, Umudike. The reliability of the instrument was established using Cronbach alpha reliability. 25 copies of the instrument was administered to the same type of respondents in Abia State and their result tested to yield a reliability of 0.85. Data was collected by the researcher with the help of 4 research assistance that was duly instructed by him. 269 copies of the instrument were retrieved and analyses using improvement need index (INI) for research questions. The performance item was represented with Xp while the need item was represented with Xn. The performance gap PG was obtained by subtracting Xn from Xp. This could yield zero, negative or positive result. A zero result means that the extent at which the item is performed is same as the extent to which they are needed which proves that no improvement is needed. A negative result means that the extent to which the item is performed is higher than they are needed proving that no improvement is

needed while a positive result means that the extent to which the item is performed is below the extent to which they are needed implying that improvement is needed in such item.

RESULTS AND FINDINGS

RESEARCH QUESTION 1: What are the skill improvement needs of poultry farmers in planning for duck production in Enugu State?

Data used to answer this research question are presented in Table 1 above

TABLE 1: Performance gap analyses of the mean ratings of the improvement needed by poultry farmers in planning for duck production

| S/N | ITEM STATEMENT | Xn | Xp | Xn-Xp (PG) | REMARK |
|-----|---|------|------|---------------|--------|
| | Ability to: | | | | |
| 1 | Set goal for the duck production business | 3.58 | 1.91 | 1.67 | IN |
| 2 | Revise the goals regularly | 3.61 | 2.03 | 1.58 | IN |
| 3 | Identify source of financing the production | 3.78 | 2.10 | 1.68 | IN |
| 4 | Identify suitable site for the duck farm | 3.55 | 1.93 | 1.62 | IN |
| 5 | Identify source of suitable equipment, tools and materials for the production | 3.61 | 1.72 | 1.89 | IN |
| 6 | Identify source of manpower needed | 3.48 | 2.04 | 1.44 | IN |
| 7 | Identify the type of breed to produce, considering the breed requirements | 3.77 | 2.10 | 1.67 | IN |
| 8 | Prepare a budget for the first production cycle | 3.83 | 2.20 | 1.63 | IN |
| 9 | Contract veterinary personnel for regular inspection | 3.39 | 1.62 | 1.77 | IN |
| 10 | Draw timetable of activities to guide the farm work for easy flow. | 3.46 | 1.61 | 1.85 | IN |
| 11 | Register the farm business with necessary associations or government board. | 3.55 | 1.93 | 1.62 | IN |

N= 269, Xn- mean for need, Xp- mean for performance, PG- performance gap, IN- improvement needed

The result of table 1 above shows that the performance gap for all the items above ranges from 1.44-1.89 and were all positive, this proves poultry farmers need improvement in all the items for duck production. This implies that poultry farmers need skill improvement in planning for duck production in Enugu state

RESEARCH QUESTION 2: What are the skill improvement needs of poultry farmers in Site preparation and housing for duck production in Enugu State?

TABLE 2: Performance gap analyses of the mean ratings of the improvement needed by poultry farmers in site preparation and housing for duck production in Enugu State.

| S/N | ITEM STATEMENT | Xn | Xp | Xn-Xp (PG) | REMARK |
|-------------|--|------|------|---------------|--------|
| Ability to: | | | | | |
| 1 | survey the land for proper farm layout | 3.53 | 1.82 | 1.71 | IN |
| 2 | get the site clearing tools such as cutlass, shovels, hoe etc ready. | 3.42 | 1.79 | 1.63 | IN |
| 3 | Clear the site of existing vegetation properly | 3.55 | 1.65 | 1.90 | IN |
| 4 | Get the necessary materials for constructing the house | 3.44 | 2.21 | 1.23 | IN |
| 5 | Construct the house making the entrance door high and the wall low since ducks does not climb | 3.48 | 2.13 | 1.35 | IN |
| 6 | Make provision for adequate ventilation | 3.61 | 2.54 | 1.07 | IN |
| 7 | Make provision for constant water in the in the pen for drinking and swimming because ducks survive better in aquatic environment. | 3.32 | 1.83 | 1.49 | IN |
| 8 | Provide 6inches depth liter in the house for the ducks to lay eggs comfortably | 3.37 | 2.16 | 1.21 | IN |
| 9 | Make provision for 2-3 square feet flooring space in the pen | 3.54 | 1.88 | 1.66 | IN |
| 10 | Fumigate or treat the house accordingly before introducing the birds. | 3.12 | 1.61 | 1.51 | IN |

N= 269, Xn- mean for need, Xp- mean for performance, PG- performance gap, IN- improvement needed

The result of the data presented in table 2 above shows that the performance gap for all the items ranges from 1.21-1.90 and were all positive, this proves poultry farmers need improvement in all the items for duck production. The implication is that poultry farmers need skill improvement in site selection and planning for duck production in Enugu state.

RESEARCH QUESTION 3: What are the skill improvement needs of poultry farmers in breeding and management for duck production in Enugu State?

TABLE 3: Performance gap analyses of the mean ratings of the improvement needed by poultry farmers in breeding and management for duck production in Enugu State.

| S/N | ITEM STATEMENT | Xn | Xp | Xn-Xp | REMARK |
|-----|----------------|----|----|-------|--------|
|-----|----------------|----|----|-------|--------|

| Ability to: | | (PG) | | | |
|-------------|--|------|------|------|----|
| 1 | Get material resources for duck breeding such as incubators ready | 3.57 | 2.36 | 1.21 | IN |
| 2 | Select quality young birds for rearing | 3.55 | 1.65 | 1.90 | IN |
| 3 | Maintain a male to female ration of 1:6 | 3.12 | 1.61 | 1.51 | IN |
| 4 | Mate the ducks when they show signs of mating behavior such as neck biting, pecking, head bobbing etc. | 3.57 | 2.36 | 1.21 | IN |
| 5 | Collect the eggs at least two weeks after mating | 2.99 | 1.72 | 1.27 | IN |
| 6 | Turn the eggs ones every day to avoid the membrane from sticking to their shell | 3.48 | 1.90 | 1.58 | IN |
| 7 | Store the eggs for 7-10 days before incubation | 3.52 | 1.63 | 1.89 | IN |
| 8 | Set up incubating machines to 99.5 degree and a humidity of 86 percent | 3.51 | 1.85 | 1.66 | IN |
| 9 | Turn the eggs an uneven number of times in the incubator if the incubator does not turn them automatically | 3.60 | 2.31 | 1.29 | |
| 10 | Check the fertility of the s eggs after one week by candling technique | 3.42 | 2.37 | 1.05 | IN |
| 11 | Remove infertile eggs | 3.30 | 2.82 | 0.48 | IN |
| 12 | Repeat candling per week | 3.31 | 2.77 | 0.54 | IN |
| 13 | Hatch after an average of 28 days of incubation | 2.86 | 1.31 | 1.55 | IN |
| 14 | Keep the duckling for 12 hours in the incubator after hatching to enable them dry out fully and allow time for other eggs to hatch | 3.57 | 2.23 | 1.34 | IN |
| 15 | Move the ducklings to the brooder after hatching using a plastic container with a small enclosure | 3.38 | 2.82 | 0.56 | IN |
| 16 | Ensure the supply of clean water regularly | 3.12 | 3.02 | 0.10 | IN |
| 17 | Apply regular routine maintain practice in the pen | 3.62 | 2.77 | 0.85 | IN |
| 18 | Regulate the pen temperature | 3.57 | 1.96 | 1.61 | IN |
| 19 | Ensure adequate supply of litter | 3.31 | 2.83 | 0.48 | IN |
| 20 | Inspect the pen and the birds for disease symptoms or signs | 3.48 | 1.77 | 1.71 | IN |

| | | | | | |
|----|---|------|------|------|----|
| 21 | Keep adequate farm record | 3.71 | 1.93 | 1.78 | IN |
| 22 | Isolate seek birds | 3.28 | 2.51 | 0.77 | IN |
| 23 | Treat sick birds accordingly | 3.21 | 2.88 | 0.33 | IN |
| 24 | Keep mortality record of birds | 3.21 | 2.28 | 0.33 | IN |
| 25 | Dispose dead birds properly | 3.43 | 1.85 | 1.58 | IN |
| 26 | Feed birds with appropriate feed such as small fresh eggs, warms, mollusk, frogs, salamander seeds, grains, fruits etc. | 3.61 | 2.54 | 1.07 | IN |

N= 269, Xn- mean for need, Xp- mean for performance, PG- performance gap, IN- improvement needed

Table 3 above shows that the performance gap for all the items above ranges from 0.10-1.90 and were all positive, this proves poultry farmers need improvement in all the items for duck production. This implies that poultry farmers need skill improvement in breeding and management for duck production in Enugu state.

RESEARCH QUESTION 4: What are the skill improvement needs of poultry farmers in marketing of prepared table size duck in Enugu State?

TABLE 4: Performance gap analyses of the mean ratings of the improvement needed by poultry farmers in marketing of produced table size ducks in Enugu State.

| S/N | ITEM STATEMENT | Xn | Xp | Xn-Xp (PG) | REMARK |
|-----|--|------|------|---------------|--------|
| 1 | Choose suitable route for sale ducks | 3.73 | 2.21 | 1.52 | IN |
| 2 | Carry out market survey | 3.73 | 2.21 | 1.52 | IN |
| 3 | Advertise matured birds for sale | 3.61 | 1.92 | 1.69 | IN |
| 4 | Select only matured birds for sale | 3.39 | 1.62 | 1.77 | IN |
| 5 | Fix price according to size and result of market survey | 3.55 | 1.88 | 1.67 | IN |
| 6 | Contact regular customers or hospitality centers that utilize duck meat and eggs | 3.34 | 2.06 | 1.28 | IN |
| 7 | Transport birds to the selling point or adopt on- farm sale to reduce taxation. | 3.11 | 3.10 | 0.01 | IN |
| 8 | Negotiate with custimers | 3.63 | 1.82 | 1.80 | IN |
| 9 | Sale birds to customers based on agreed price | 3.51 | 1.77 | 1.74 | IN |
| 10 | Keep proper sales record | 3.51 | 1.85 | 1.66 | IN |

N= 269, Xn- mean for need, Xp- mean for performance, PG- performance gap, IN- improvement needed

The result of table 4 above shows that the performance gap for all the items above ranges from 0.01-1.80 and were all positive, this means that poultry farmers need improvement in all the items for duck production. This implies that poultry farmers need skill improvement in marketing of produced table sized duck in Enugu state.

DISCUSSION OF THE FINDINGS

The result of the study in Table 1(skill improvement needs of poultry farmers in planning for Duck production) is in keeping with ADB (2016) who found that the skills needed by poultry farmers in duck production planning include setting enterprise objectives, defining target customers, preparing production budget etc. In the same line, Adieza (2017) found that planning of duck production business connotes identification of capital source, manpower, tools and facilities for the production, suitable site for the production business etc.

The result of the study in Table 2 (skill improvement needs of poultry farmers in site selection and housing) is in line with Agbo and Nongugwa (2015) who found that a duck house should be built to ensure adequate ventilation and that constant water is necessary for the ducks to mate and produce fertile eggs. In line with the study also, Rom and Geraldine (2009) found that poultry farmers need to regularly update themselves with duck production best practices such as environmental requirements including per bird space and feeding provisions within the house. The authors further recommended in line with the findings of this study that the pen be provided with 6 inches liter depth for easy egg laying and that each duck be allowed 2-3 square feet flooring space.

The findings of the study in Table 3 (skill improvement needs of poultry farmers in breeding and management for duck production in Enugu State) are in line with Adele (2013) who identified duck breeding and management skills to include selection of young healthy birds, maintaining a male to female ratio of 1:6, mating collection of eggs after two weeks of mating, turning the eggs daily to avoid the membrane from sticking together, storing the eggs for 7-10 days before incubating, cheking the fertility of the eggs by means of candling etc. In line with the study also, Oluwayelu, Emikpe, Oladele, Ohore and Fagbohun (2007) noted that proper disease and pest control is a needful skill in duck production and pointed that farmers can curb poultry infectious diseases by maintaining a healthy and clean pen environment, isolation of sick birds and regular routine health check by veterinary personnel. In accordance with the study, Agbo and Nongugwa (2017) found that poultry farmers need capacity building in duck management and feeding such as regular provision of clean water in the dinking and swimming pond, feeding with roughages and concentrate feeds, keeping regular record of farm activities and weighing of birds to determine those that have attained market size.

The findings of the study in Table 4 (skill improvement needs of poultry farmers in marketing of produced table size ducks) are in keeping with Agbo and Nongugwa (2017) who found that farmers need updated information on the best measures to adopt in selling their ducks for increased profit, that farmers need skill improvement in customer identification and relation, choice of suitable duck marketing route, advertisement, sales record, negotiation and price fixing and so on. More so, Adieza (2017) noted that the best

way to market ducks is through on farm or farm gate sales and contract sales which reduce the amount spent on taxation and open market sales registration.

RECOMMENEDATIONS

Based on the result of the analyses and the findings made so far, the study made the following recommendations.

1. Regular workshop training should be organized by government through farmers' cooperatives for farmers to update themselves with latest duck production skill as identified above.
2. Farmers should put more interest and resources in duck production as their demands are becoming very high in order to make improve their living and sustain the economy significantly.
3. Government through the ministry of poverty alleviation and human empowerment should provide financial and other resources to further assist farmers improve on their duck production skill.

CONCLUSION

Based on the findings of the study, the study concluded that poultry famers in Enugu State need skill improvement in 57 items for duck production as can be seen in the Table above. These areas of skill improvement are:

1. 11 skills in planning
2. 10 skills in site selection
3. 26 skills in breeding and management and
4. 10 skills in marketing

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