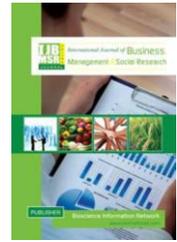




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## Training skill needs of secondary school agricultural science graduate in fish farming in Ebonyi state, Nigeria

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### ABSTRACT

*The study identified training skill needs of Secondary School Agricultural Science Graduates in Fish farming in Ebonyi State. The secondary school graduate was on increase yearly and yet unemployed, but without employable training skills, to reduce unemployment in Ebonyi State. The study was carried out in three agricultural zone, in Ebonyi State. Descriptive survey research design was adopted for the study. The population for the study was (185) made up of 150 agricultural science teachers, 25 fish farmers in the 3 agricultural zones and 10 extension agents. There is no sampling because of its manageable population. Four research questions was formulated to guided the study. The instrument used in data collection was structured questionnaire developed by the researcher. The instrument was validated by 3 experts, one in measurement and evaluation, in Science Education Department and two in Technology and Vocational Education Department, Agricultural Education unit in the sane faculty and university. Cronbach alpha reliability coefficient was used to test for the internal consistency of the instrument, which yielded 0.79. The instrument was administered to the respondents with the help of three research assistants, one in each agricultural zone. The data collected were analyzed using mean score and standard deviations. The results in table 1, 2, 3 all the items were needed with mean score of 2.50 and above while in table 4, two item 6 and 7 statement scored below 2.50, which was not needed, as training skills. Among the recommendations made was that government should use the identified training skills in training unemployed youth in fish farming in three agricultural zones in Ebonyi state.*

**Key Words:** Training skills, Secondary school, Agricultural graduate and Fish farming

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### I. Introduction

In Nigeria, fishery are raised on ponds, tanks, ranch, cage cultures, among others for meat, oil, bone meal and fish meals. Fishes are cultivated or raised using different designated areas of land and water, which is called fish culture, fish farming or fish pond management, the practice requires a knowledge,

skills, training, ideas, attitude and different species of fishes, their growth requirement and condition; under which optimal production of fishes can be achieved. In the same vein, [Abu bakar \(2013\)](#) is of the view that fishes are the main sources of animal farming, which is an importance aspect of agriculture in our country, Nigeria, including Ebonyi State. He outlined the importance of fish farming as an avenue for providing employment to youth and adult in the nation. As a sources of foreign exchange earning through fish exportation, fishes as a source of vitamin, rich oil, calcium and phosphorous, in form of bone meals and fish meals for livestock. The importance of fishes and its role, its scarcity, in relation to its demand in industrial uses and for livestock feed, employment opportunities, has created gap. The gap in these areas mentioned need to be addressed to meet the employment opportunity of secondary school agricultural science graduates and increase fish supply to individuals consumers. Therefore, there is need to identify the training skill need of the secondary school agricultural science graduates who are still strong and energetic to produce more fishes to meet the increased demand and get self employed in fish farming in Ebonyi State. Training is to give teaching and practical knowledge to a child or youth in order to bring them to a desired standard of behavior, efficiency or physical condition required for expertness in certain production. Training in this study is teaching and learning of the process of fish farming in a way it will increase maximum production to meet the demand of fishes individually in Ebonyi state and Nigeria in general. In the same development, [Nwite \(2014\)](#) stress that training in agricultural production strengthen, the efficiency and effectiveness in improving receptive to new ideas and the willingness to facilitate it to productivity skill while is the ability to do something expertly well, skill in the study is the ability to exhibits expertly the process of fish farming in away it will give much yield, to meet the consumers demand in Ebonyi State. In the view of [Adebauyo \(2014\)](#), who maintain that the importance of skills in any enterprises is to remain functional in the art of doing the job. He stress that fish farming requires skills of selection, skills of establishment, skills of feeding fishes, skills-of determining its maturity period, skills of harvesting and skills of marketing fishes, [Oliatan \(1996\)](#) linked the inability of secondary school graduates to pass through the secondary school curriculum without acquiring the appropriate skills in school is the nature of the secondary level curriculum. He maintains that the curriculum does not have specific skills to be acquired yet broad in nature. Fish farming is the practice of producing fishes developed out a human desire to control with ease, the amount and availability of fish at a given period in time. Depending on the Environment under which the fish production is desired.

Fish farming in this study is the art of producing fishes, and making them available, for supply in the market for consumers and industrialist to buy at affordable prices and create job opportunity to thousands of unemployed youth in Ebonyi state and Nigeria in general. According to [Ezike \(2013\)](#) who stress that fish farming have different types and methods depending on location and environments, individual desire, type of fishes, sizes of farm or waters type and its harvesting. He stress that fish rearing requires skill training for effectiveness and efficiency in productivities in different types of fishes selection, establishment, feeding, harvesting and supply in the market for individual buyers for consumption. According to [Ohaniy \(2004\)](#) who maintains that fishes are one of the major ingredient in the diet of the people of Ebonyi state. He stress that fishes are consumed in large number and he stress that fish supply, have reduced in number, in streams and ponds, traditionally, due to human activities, such as using chemicals to kill fishes massively. He maintains that the situation, have made it difficult to catch fishes traditionally, without rearing fishes in tanks, ponds, using ranch and cage cultures.

However, to multiply fishes using tanks and ponds requires breeding fryers, which will be used for rearing. According to [Ugwu \(1991\)](#) who maintain that fryers are selected for production must have good quality. He stress that criteria for site selection of fishes must include type of soil, type and density of vegetation, in each pond topography and elevation. The success in rearing fishes depends on training skills acquired, and expertness. In another development [Mohamed \(2014\)](#) stated that fishes need good feed to enhance its growth, productivities, and good health. He maintains that attractiveness of fish feed is very important in nutrition. He stress that appetizing feeding stimulate fishes to eat a lot and grow very fast and indicate the quality of feed given depend on the stage of fish development. In the view of [Fayede \(2013\)](#) who maintains that establishment and maintainene of fish ponds or tanks has factors considered in site selection, taken into account the size of ponds or tanks, the farmer can afford, and manage, preceding the construction, survey of the land, and determine location of slope, (2.5%). He maintains that slope is ideal for fish tank) or pond, while the dept of the

tank or pond depends on the purpose, and the growth of fish. He stress that Nursery pond for fryers is usually shallow about 0.5m deep. While pond for adult fish is usually between 1.5-2 meter deep for pond and should not be too deep to allow adequate light penetration for plank ton growth and easy harvesting. He maintain that wall location are marked out on the site excavation and construction to the light of 30cm-50cm higher then the water level, to be maintained.

Ogba (2012) who maintains that skills of placing a layer of lime at the rate of 114 kg/ha at the bottom about 2weeks, before the pond or tank is filled with water, help to fertilize the pond or tank and control acid in the soil, which may harm the fishes. He stress that pond is allowed to settle for few days before tested for quality. He maintains that pond water is tested for temperature, oxygen content, Ph, hardness, and alkalinity for productive pond. Temperature range 20°C-35°C because at high temperate, fishes do not feed, and move slowly, resulting poor growth. He maintains that Ph of 6.5-9.0 favour fish growth; fishes requires oxygen supply for respiration and maintained by stirring the water, occasionally or adding fresh water. Stocking usually 10,000-20,000 carps, per-hectures or 20,000 tilapia par hectare is considered adequate for monoculture of species. Nwabueze (2013) is of the view that problem of inadequate skills in daily routine in fish farming lead to excessive feeding which is injurious to the fish and left over feed, tie up pond oxygen on decay, oxidation. He stress that 5% of fish body weight should be fed daily for six days, a week, checking the pond for leaks, watching fish behaviour near the feeding area to determine stress. On how oxygenation of pond water, watching for predators such as snakes, all these need good skills training for expertise.

In another development, Federal Republic of Nigeria (FRN, 2009) explained secondary school graduates as people who have successfully completed their six years secondary school. In the contest of this study secondary school graduates refers to the people who have successful completed. Six years of secondary education but have not been employed by any employer of labour or adinited to any higher institution for further studies. These groups of people are roaming the streets, prostitution, gambling, stealing or involved in another criminal activities. These graduates have increased in thousands in Ebonyi state, without employable skills. The employers of labours are handicapped and cannot employ secondary school graduate. It is against this background that this study was set out to identify training skills need in fishing, since the demand of fishes for human consumption individuals, and for industrial use will create jobs for the enteir unemployed secondary school agricultural graduate in the state. Therefore, the worries of the researcher is to identify training skill needs of secondary school agricultural science graduate in fish farming, with the hope that the result of the study will be utilized by the government as training skill programme for the unemployed secondary school agricultural science graduate in fish farming in Ebonyi state. The purpose of this study is to identify the training skills need of secondary school agricultural science graduate in fish farming in Ebonyi State specifically the study tend to identify site selection training skills in fish farming, identify establishment and maintainence training skills in fish farming, identify feed and feeding training skills in fish farming and to identify harvesting and marketing training skills in fish farming.

### Research questions

- What are the training skills need of secondary school agricultural science graduate in site selection for fish farming.
- What are the training skill needs of secondary school agricultural science graduate in fish establishment and maintainer in fish farming
- What are the training skills needs of secondary school agricultural science graduate in feeds and feeding in fish farming.
- What are the training skills need of secondary school agricultural science graduate in harvesting and marketing in fish farming.

## II. Materials and Methods

Area of the study is Ebonyi State of Nigeria. The design of the study is descriptive survey. The population for the study was one hundred and eighty five (185) comprises of 150 secondary school agricultural science teachers, 10 extension agents and 15 fish farmers. There is no sampling, because of its small sample size. Three research questions was formulated by the researcher to guide the study.

The instrument used in data collection was structured questionnaire developed by the researcher. The instrument was validated by 3 experts one in measurement and evaluation in science education, Department. Two, in agricultural education unit, in Department of Technology and Vocational Education, in the same Ebonyi State University Abakaliki. Cronback alpha reliability coefficient was used to test the internal consistences of the item statement, which yielded 0.79 the instrument was administered to the respondents with the help of 3 research assistants one in each agricultural zone. The data collected was analyzed using mean and standard deviation, any mean score between 2.50 and above were regarded as needed while mean score below 2.50 were regarded as not needed, training skills, in fish farming.

### III. Results

**Research question 01.** What are the training skills needs of secondary school agricultural science graduate in site selection for fish farming?

**Table 01. Site selection training skill needs for fish farming response of respondents**

S/N	Item statements	X	SD	Decision
1	Environmental training skill needs in quality water supply.	3.61	0.66	Needed
2	Environmental training skill need in quantity of water supply.	3.66	0.55	Needed
3	Training skills needs in soil test (structure)	3.33	0.84	Needed
4	Training skill needs in soil type (texture)	3.06	0.97	Needed
5	Training skill needs in density of vegetation	3.26	0.82	Needed
6	Training skill needs in topography and ground elevation of the soil.	3.13	0.77	Needed

In [Table 01](#) all the item statement were needed training skills for site selection in fish farming.

**Research Question 02.** What are training skill needs of secondary school agricultural science graduate in establishment and maintainence of fish farming.

**Table 02. Establishment and maintainence, training skill needs for fish farming responses of respondents**

S/N	Item statements	X	SD	Decision
1	Training skill in size of pond to afford and manage	3.36	0.84	Needed
2	Training skills need in construction of pond	3.17	0.99	Needed
3	Training skills need in marking out site aid excavation.	3.06	0.97	Needed
4	Training skill in determing dept for (fryers) 0.5 indept.	3.61	0.66	Needed
5	Training skills needs for pond dept of mature fishes	3.60	0.59	Needed
6	training skills needs for preventing water leaking	3.20	0.70	Needed
7	Training skills needs in placing layer of lime in completed pond before filling water	3.22	1.04	Needed
8	Training skill needs in testing water to determine temperature, oxygen, ph, hardness and alkaline for productivity	2.90	1.35	Needed
9	Training skills needs to faster fish growth by determing Ph.6.5 and 9.0 and maintainence it	3.30	0.63	Needed
10	Training skills needs for oxygen provision by stirring for aeration and putting fresh water.	3.49	0.48	Needed

In [table 02](#) all the item statement were needed training skills for establishment and maintainence in fish farming.

**Research Question 03.** What are the training skills need of secondary school agricultural science in feeding fishes in the farm.

**Table 03. Training skills needs in feeding fishes in the farm**

S/N	Item statement	X	SD	Decision
1	Training skill needs in selecting fish feed for each stage of fish life	3.49	0.78	Needed
2	Training skills needs of feeding fishes with natural feeds like groundnut cake, silkworm, pupae, fish pellet, potatoes,	3.56	0.65	Needed
3	Training skill needs in fertilization of pond with NPK fertilizers to promote plankton growth for feeding in fishes	3.29	0.85	Needed
4	Training skill need in proving the amount of feed fishes can finish at a time	3.35	0.85	Needed
5	Training skill needs in removing excessive feed which may be injurious to fishes.	3.05	1.07	Needed
6	Training skill needs in feeding fishes with finishers feed	2.68	1.08	Needed

In [table 03](#), item 1-6 were needed training skill, since, each score 2.50 and above.

**Research Question 04.** What are the training skill needs of secondary school agricultural science graduate in fish harvesting and marketing

**Table 04. Harvesting and marketing training skill needs for fish farming responses of respondents**

S/N	Item statements	X	SD	Decision
1	Training skills needs in dictating mature fishes for harvesting	3.09	0.89	Needed
2	Training skill need for using harvesting tools and equipment	3.47	0.64	Needed
3	Training skill needs for scaling fishes for determining price	3.43	0.56	Needed
4	Training skills needs for dictating market for sales of fishes	2.26	0.83	Needed
5	Training skills needs for fating fishes for sales	3.30	0.63	Needed
6	Training skill needs for using hand to harvest fishes,	2.20	0.65	Not needed
7	Training skill need for sale fish fast.	2.000	0.75	Not needed

In [Table 04](#), item 1-5 statement were needed training skills in harvesting and marketing in fish farming. While items 6 and 7 secured below 2.50 which is not needed training skill in fish farming.

### Key findings

- That all the item statement in [table 01](#) were needed training skills for site selection in fish farming for secondary school Agricultural science graduate.
- That all the item statement in [table 02](#) were needed for establishment and maintenances in fish farming for secondary school Agricultural science graduate.
- That all the item statement in [table 03](#) were needed for feeds and feeding in fish farming for secondary school Agricultural science graduate.
- That item 1-5 statement were needed for harvesting and marketing in fish farming for secondary school Agricultural science graduate.

### IV. Discussion

The findings of the study in [table 01](#), reveals that secondary school agricultural science graduate needs training skill in all the item statements in site selection for fish farming, while [table 02](#) reveals, that all the 13 item statements were needed as training skill needs for establishment and maintenance of fish farming. This study is inline with the study of [Adebauyo \(2014\)](#) who viewed establishment and maintenance training skills need as paramount in fish farming as dictated in his study, that functionality in the art of doing something expertly, in establishment and maintenance is the key to the success. In production process especially in fish rearing. He maintains that site selection required training skill for better performance of the animal. In [table 03](#), the study reveals that six item statement in fish feed training skills were needed in fish farming. This study is in live with the study of [Mohamed \(2014\)](#) who maintains that good feeds enhances growth of fishes, productivities, and good health. He maintains that training skills in appetizing feed stimulate fish fast growth for harvesting and utilization. [Table 04](#), reveals that 1-5 item statements were needed training skill, while, item 6 and 7 were not needed training skill. This study is in line with the study of [Ezike \(2013\)](#) and [Adebauyo](#)

(2014) who maintains that skills in harvesting and marketing fishes are appropriate skills for farmers to achieve their objectives for maximizing their products. It need to identify skills required for better production.

## V. Conclusion and Recommendations

Ebonyi state have many secondary school agricultural science graduate, which increases in thousands yearly without employment, yet without training skills for self employment, Government employment, or private job-among others. This motivated the study for identifying the training skills needs in fish farming. Since, the demand for fish consummation was in increase on daily bases, there by creating job opportunity for the unemployed, unskilled, untrained secondary school agricultural science graduate in fish faming for reducing fish scarcity and availability in the market.

The following recommendations should be followed:

- That the identified training skills need in the study be incorporated into the programme of skills acquisition centers for training and reframing secondary school graduates for fish farming.
- That the identified training skills need in the study be made available to the unemployed secondary school graduate, through Government Extension Ageists in workshop and seminars.
- That the identified training skills need in fish farming in the study be incorporated into the senior secondary school Agricultural science curriculum in Ebonyi state.

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