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STRATEGIES FOR EFFECTIVE CAT FISH PRODUCTION REQUIRED BY YOUTHS FOR ENHANCED AGRICULTURAL PRODUCTIVITY, YOUTH EMPOWERMENT AND ECONOMIC RECOVERY IN EBONYI STATE NIGERIA

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Abstract: The study aimed at identifying strategies for effective cat fish production required by youths for sustainable agriculture and youth empowerment in Ebonyi State Nigeria. Four specific purposes and research questions guided the study. The study was carried out in Ebonyi State Nigeria. The study adopted survey research design. The population for the study was 215 comprising 127 registered youth catfish farmers and 87 extension agents. All were involved in the study because of the manageable size. A 36-skill item questionnaire tagged: Strategies for Effective Catfish Production Required by Youths for Sustainable Agriculture and Youth Empowerment Questionnaire (SECPYSA YEQ) was developed by the researcher and used to elicit data. Three experts validated the instrument. Cronbach alpha reliability method was used to determine the internal consistence of the instrument and a reliability coefficient of 0.8] was obtained. Two hundred and fifteen (215) copies of SECPYSAYEQ were administered on the respondents and two hundred and twelve (212) duly completed copies were recovered and analyzed using mean and standard deviation to answer the research questions. The result of the study identified 8 strategies in planning, 14 strategies in stocking, 7 strategies in management and 7 strategies in marketing of cat fish required by youths for sustainable agriculture and youth empowerment in Ebonyi State Nigeria. Based on the above findings, the study therefore recommended that the identified strategies should be inculcated into the skill acquisition programmes for youths, workshops should be organized for the youths with financial incentives to embark on catfish production enterprise, youths should fall back to farm and take the advantage of their mental and physical prowess and make exploits in catfish production sub-sector, especially now that white collar jobs are not easy to come by and cat fish is in a high demand, government should encourage more people especially the youths by providing soft loans with low interest rate to the youths who are interested in catfish production but, are financially incapacitated.

Keywords: Strategies, Effective, Cat Fish Production, Agricultural Productivity, Youth Empowerment, Economic Recovery

Background of the Study

Youths unemployment has long been plaguing Nigeria in general and Ebonyi State in particular. This could be linked to little or no attention given to blue collar jobs which could have arrested the problem of unemployment staring on the faces of our teeming youths today. The accelerated emphasis on white collar jobs which in recent time are in great decline compared to ever rising population of the country has been accused as the major cause of this acute unemployment and restiveness seen among youths in our society today.

Youth refers to that time in one's life when one is young. According to Ehiemene (2006) youth is the period of life of an individual when most decisions for future life are

made such as choice of occupation and education and the age limit is between 10 and 30 years. While, Dorcas and Moses (2016) saw youths as a stage of life very crucial in determining young peoples paths of achieving productive employment and decent work. From the above definitions, youth is a period when one is neither a child nor adult but rather between the two stages. Youths in the view of(Dumbiri, 2011) are young people of 15-25 years bracket. It is time to go out and secure the future and make meaningful contributions to the welfare of their families communities and of course any society they may find themselves.

It then implies that youths are people who are looking for jobs (after their graduation from secondary and post-secondary schools). Whereas, these jobs in question are nowhere to be found by the teeming youths who litter the street in search of the perceived jobs. The crux of the matter remains that most of the youths are not even employable. This implies that, there is a wide gap between the employers' need and employees' skills. And this had kept most of these youths in abject poverty especially in this period of economic crunch.

Nevertheless, the only way out of this menace which has left the country in a precarious situation in almost all the sectors is to empower the youths. By this, they will bring the long-expected development in several sectors of the economy. Youths empowerment according to Jimah (2006), involves various ways the youths can be facilitated cause changes in their life style. He stressed that youths' empowerment is a way of inculcating into the youths the spirit of transformation of ideas in creativeness. This encompasses the various way of exposing them into different trades that may pave way for them to engage in sustainable paid and self-employment. It is in line with the above that the government of the Federal Republic of Nigeria has initiated some youth empowerment programmes such as Youth Enterprise with Innovation in Nigeria (YouWin), Subsidy Reinvestment and Empowerment Programme (SURE-P). Youth Initiative for Sustainable Agriculture (YISA), N-power Empowerment Programme among others. As highlighted above, the youths need to be empowered for sustainable agriculture. That was why the Youth Initiative for Sustainable Agriculture (Y1SA). was formed with special target of collaborating with all relevant stakeholders to transform the agricultural sector in the eyes of the youths, making it attractive, viable and real opportunities for ever teeming Nigerian youths by carrying out programmes that will change attitudes, direct, educate, motivate and inspire the youths to go into agriculture which holds the key to our national wealth.

Sustainable agriculture on other describes farming systems that are "capable of maintaining their productivity and usefulness to society indefinitely. Such systems must be resource conserving, socially supportive, commercially competitive, and environmentally The word "sustain." from the Latin sustainer (sus-, from below and tenere, to hold), to keep in existence or maintain, implies long-term support or permanence to " Under Food, Agriculture, Conservation, and Trade Act of 1990 (FACTA, Washington, DC,), "the term sustainable agriculture means an integrated system of plant and animal production practices having a site specific application that will, over the long term:

• satisfy human food and fiber needs;
• enhance environmental quality and the natural resource base upon which the agricultural economy depends;
• make the most efficient use of non-renewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls;
• sustain the economic viability of farm operations; and
• enhance the quality of life for farmers and society as a whole."

In the light of the above, sustainable agriculture involves those approaches to food production and livestock rearing that ensure constant increases in productivity without compromising the chances of future generations to provide for themselves. Sustainable agriculture must be

all encompassing. It must embrace all the branches of agriculture like agronomy, forestry, horticulture, engineering, soil science, animal science, fisheries and many more. For agriculture to become sustainable, each sector has to adopt appropriate strategies

Strategy is a way of describing how someone would get something done. Strategy is the basic directional decision, that is to purposes and missions (Steiner, 1979). According to him. strategy consists of important actions necessary to realize set goals. By implication, it answers the questions: What are the ends an organization seeks and how should they be achieved. This means that in agriculture especially fish farming (catfish production) meaningful strategies for sustainable agriculture and youth empowerment should be embraced.

Fish. an aquatic animal is called “Pisces” in Latin, “Poisson” in French,”Pescado” in Spanish, “Pisce in Italian. Fish are jawed (Gnathostomata) and jawless (Agnatha), aquatic (fresh and saline). poikilothermic (cold-blooded), oviparous or ovoviviparous (producing eggs that develop and hatch outside or develop within and hatch within or immediately after extrusion from the parent), streamlined vertebrates with gills for respiration and fins for locomotion. They depend solely on water for survival. They also exhibit enormous diversity in terms of size, number, habitat morphology, behaviour, biology and so on (Gupta and Gupta,2006).

Furthermore, fish are reared for: (1) Protein for man. According to Food for Agricultural Organization (FAO, 2014), fish protein is a crucial nutritional component in some densely populated countries where total protein intake may be very low; (2) Medicinal values like Cod liver oil for sight problems and Omega-3 fatty acid content; (3) Leather and oil for industrial raw materials; (4) Educational and research purposes (5) Aesthetic reasons e.g., aquarium. (6) Gene4ration of income and employment pportunities, among others. To achieve all these benefits in fish, the source which is fish production has to be strategized. Nigerians are large consumers of fish and it remains one of the main products consumed in terms of animal protein. Adeola in Adegbesin (2011), reported that the fisheries sector contributes 3.5% of Nigeria’s GDP and provides direct and indirect employment to over six million people. Nutritionally, fish is preferred to other kinds of meat and this is evident in the ever increasing demand for it. The benefits accruing from fish thus, necessitate its production.

Production, in the view of Iwena (2008) refers to all the activities which results in the creation of goods and services. Production is used in this study to mean the various activities involved in the creation of fish (especially catfish) as output by youths for sustainable agriculture and youth empowerment in Ebonyi State, Nigeria. Fish production is the process of growing fish in an enclosure for human consumption and commercial purposes

Stephannie (2011) and Oluwatomi (2012). Kimathi, Ibuathu and Guyo ((2013). buttressed further that fish production means some form of intervention in the rearing process to ihance production, such as regular stocking, feeding and protection from predators and among other interventions. From the ongoing it is clear that fish production is a channel of producing high quality food either for the immediate family consumption or for sale and a a of earning a livelihood

In Nigeria, various fish species grown include: Tilapias (Hemichromis/Oreochromis), Moonfish (Citharinus Spp), African carps (Cyprinidae), Bony tongue fishes (Heterotis Spp), Nile / Tiger perch (Lates niloticus), Bagrid catfishes (Auchenoglanis occidentalis),Torpedoshaped catfishes (Clarias lazera), African catfish (Clarias gariepinus), among others. Although, commercial fish production began 40 years ago in Nigeria, (Ekwegh, 2005), meeting the protein demand of the current population of over one hundred and fifty (150) million people in Nigeria may require over 1.5 million metric tons of fish. The consumption of nearly 19.38/ outputl day is low and far

below FAQ's recommendation of 65 gms / output/day (Adewuyi, 2010).

African catfish is commonly reared in Ebonyi State because of its possession of the following characteristics over other fish like tilapia in the country. The characteristics include: I. It grows fast and feeds on a large variety of agricultural by-products; 2. It is hardy and tolerates adverse water quality conditions; 3. It can be raised on high densities, giving rise to high net yields; 4. It can be sold live at the market; 5. It matures and relatively easily reproduces in captivity; 6. It requires less space, time, money and has a higher feed conserving rate; and among others.

In the light of the above, sustainable agriculture involves those approaches to food production and livestock rearing that ensure constant increases in productivity without compromising the chances of future generations to provide for themselves. Sustainable agriculture must be all encompassing. It must embrace all the branches of agriculture like agronomy, forestry, horticulture, engineering, soil science, animal science, fisheries and many more. For agriculture to become sustainable, each sector has to adopt appropriate strategies.

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Moreover, commercia fish production in Nigeria began 40 years ago (Ekwegh, 2005). However, meeting the protein demand of the current population of over one hundred and fifty (150) million people in Nigeria may require over 1.5 million metric tons of fish. Production is currently only 500,000 metric tons (Obiyai and Ekubo 2011). The consumption of nearly 19.38/ output! day is low and far below FAO's recommendation of 65 gms / output/day (Nwaobasi, 2013). African catfish is commonly reared in Ebonyi State because of its possession of the following characteristics over other fish like tilapia in the country. The characteristics include: 1. It grows fast and feeds on a large variety of agricultural byproducts; 2. It is hardy and tolerates adverse water quality conditions; 3. It can be raised on high densities, giving rise to high net yields; 4. It can be sold live at the market; 5. It matures and relatively easily reproduces in captivity; 6. It requires less space, time, money and has a higher feed conserving rate; and among others.

Various culture systems exist, depending on the available fund, land, technical know-how, among other factors. These systems are intensive, semi-intensive and extensive. The intensive system of catfish production is the system whereby feeding is at maximum. This is to enhance optimum growth. Insufficient feeding can limit the growth potential of fish and decrease conversion ratio (Bureau et al., 2006). In the semi-intensive system, the fishes are fed with supplementary feed in support of the natural fish food supply. The production cost is moderate. This is the most commonly practised in Ebonyi state. While, in the extensive system. feeding is based on the natural fish food such as phytoplanktons and zooplanktons. The system has low yield and long production circle due to low stocking density and poor feeding strategy .To boost the production of catfish certain strategies are required in order to raise it from fry stage to table size.

The strategies for effective catfish production include: Technical know-how, planning, stocking, management and marketing. Planning is the act of thinking out and organizing in advance series of activities which are needed to accomplish a set goal. Nwobasi (2013), put that planning is a mental process that requires the use of intellectual faculties, imaginations, foresight, sound judgement and so on, to decide in advance as to what is to be done, how and where it is to be done, and how the result is to be evaluated. In this study, planning involves gaining knowledge and skills about the location! site, features of the location, water source, quality of the water, carrying out financial analysis (feasibility study), deciding on the management to adopt and marketing strategy. In addition to that, source of medication and vaccination should be taken cognizance of (Asogwa, 2013).

Site selection should be done taking cognizance of regular source of water supply, topography with gentle slope of 1:3 is ideal, soil with good proportion of clay. In the same vein, the site should be free from uncontrolled

domestic water waste and must be accessible. After choosing a suitable site, a good size of the pond should be chosen preferably smaller ponds (0.1-0.5 ha). These are easier to construct, maintain and harvest, though more expensive. Omitoyin (2008) outlined the steps in pond construction as follows:

*Clear the proposed pond area;

*Mark out the area for exaction with stakes;

*Demarcate the base of the pond;

*Mark out the water outlet and inlet among other things.

Pond management for catfish production involves pond preparation, liming of the pond bottom for example the application of calcium carbonate at the rate of 500-2,270kg!ha or quick lime at the rate of 200kg/ha. Filling of the pond should be done as well and should be broken into smaller droplets to maximize the total surface area available for diffusion of oxygen from the atmosphere. Perforated pipes can help here. Fertilization of the pond follows after impoundment. Organic fertilizers such as poultry dropping, cow dung, and pig manure can be utilized at the rate of 200kg-300kgIha. However in ease of inorganic fertilizers like single and double super phosphate and NPK and apply at the rate of 25kg-SOkg/ha and l2Okg-l3Okg /ha. However, if earthen pond, pour the fertilizer into the water or put it a basin and leave for three days and pour it into the pond. But if concrete pond, suspend it in a bag inside the water and after three days, squeeze it into the water or if dry, grind and sprinkle on the water surface (Asogwa, 2013).

Stocking implies the release of adequate number of fish seeds into the pond. In catfish production, the pond should be stocked a week after fertilization of the pond. For effective production, the stocking density should be 1 -450,000 fish /ha depending on the method of culture. Whatever system, catfish fingerlings (about 5 cm) or juvenile (7-12cm) of the same size should be stocked (Smaliholder Foundation, 2013).Nevertheless, before stocking, acclimatization should be carried out for easy and quicker adaptation to the new environment by the fish seeds. However, catfish can withstand a 5°C change in temperature without severe stress and a 10°C if the water is tampered over a period of 30 minutes. Insufficient acclimatization can lead to mortality of fish seeds or retard fish performance. Good stocking density strategy, by youths of Ebonyi State will achieve effectiveness in catfish production.

The aim of feeding fish is to provide the nutritional requirements for good health, optimum growth, optimum yield and minimum waste within reasonable cost so as to optimize profits (Schmittou et al., 1998). Every catfish farmer should be particular about the quality of feed fed to the fish because it is the feed that determines the: (i) Nutrient loading (and ultimately carrying capacity) in the pond, hence water quality within the culture system (ii) Fish growth rate, (iii) Economic viability of the enterprise. 60-70% of variable production costs in a normal production cycle is the function of the feed.(iv) Health status of the fish. The quality of feed means the nutritional as well as the physical characteristics of the feed that allow it to be consumed and digested by the fish. The feed should contain all the nutrients required by the fish, in the right proportions for good performance (growth and health). The specific nutrient requirements for fish differ in fish's size and reproductive state. The table below presents the nutritional requirements of catfish.

The nutrients within the feed should also be easily accessible to the fish and be digestible. The physical qualities of the feed determine the degree to which the feed affects water quality and the consuming rates by the fish. The physical qualities of a good feed, therefore, include the under listed: I .The ingredients used in the feed of catfish should be finely ground. The pellets will have uniform colour. 2. The feed must be without fines or dust. This is because too many fines in the feed, leads to much waste in the form of a powder that floats on the water surface. 3. The pellet should be firm with a water stability of at least 30 minutes. The pellet's water stability

refers to the time it takes for the pellet to completely fall apart in 'water. 4. The pellets should be of uniform size and of correct size so the fish can swallow them. A size of about ¼ the gap of the mouth is advised. 5. The feed should be palatable to the fish with a good taste, smell and feel. Fish will spit out or only slowly consume feed that is not palatable.

Catfish should be fed with the quality, quantity and size of for optimum growth. They should be fed 2-3 times daily at regular intervals. The feeding rate should be 3-7.5% of the body weight (Omitoyin, 2007). Similarly, Smallholder Foundation (2013) submitted that fish need supply of feed equivalent to 3-5% of their body.

The sole target of every business is to maximize profit and minimize cost for onward sustainability of the business venture. McCaarthy Perreault in Alawa and Udida(2015) described marketing as a process which involves buying and selling. Such activities like identification of buyers, grading, transportation, storage, risk management record keeping among other things are essential in every enterprise. In this case, advertisement of produce, harvesting of fish based on maturity, fixing of prices, good packaging, good record keeping, sale of fish and expansion of the production enterprise among other things are good marketing strategies in catfish production. Buttressing the point further, Ogieva(2003), outlined the activities involved in marketing of agricultural produce as assembling, canning, advertising, fixing prices, keeping records and many more.

Ebonyi State is a state in the eastern part of Nigeria with highly increasing population growth and unemployment rate especially among the youths. It has an approximate population of 2,176,949 (2006 census) with a population growth rate of 3.5% annually. Meanwhile, Odo (2016), opined that the human development report of 2013 by the United Nation development programme shows that the unemployment rate in Ebonyi State is very high when compared with other states in the country of which agriculture is the mainstream of the people with over 78% of the total population engaged in low income farming and related activities as a means of livelihood. This report could be summarized to mean that a very high percentage of the youths are still not employed in either white collar or blue collar job like farming. This problem however, could be attributed to the general poverty of the state which him. strategy consists of important actions necessary to realize set goals. By implication, it answers the questions: What are the ends an organization seeks and how should they be achieved. This means that in agriculture especially fish farming (catfish production) meaningful strategies for sustainable agriculture and youth empowerment should be adopted.

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fçed that allow it to be consumed and digested by the fish. The feed should contain all the nutrients required by the fish, in the right proportions for good performance (growth and health). The specific nutrient requirements for fish differ in fish's size and reproductive state. The table below presents the nutritional requirements of catfish.

The nutrients within the feed should also be easily accessible to the fish and be digestible. The physical qualities of the feed determine the degree to which the feed affects water quality and the consuming rates by the fish. The physical qualities of a good feed, therefore, include the under listed: 1 .The ingredients used in the feed of catfish should be finely ground. The pellets will have uniform colour. 2. The feed must be without fines or dust. This is because many fines in the feed, leads to much waste in the form of a powder that floats on the water surface. 3. The pellet should be firm with a water stability of at least 30 minutes. The pellets water stability refers to the time it takes for the pellet to completely fall apart in l4ater. 4. The pellets should be of uniform size and of correct size so the fish can swallow them. A size of about ¼ the gap of the mouth is advised. 5. The feed should be palatable to the fish with a good taste, smell and feel. Fish will spit out or only slowly consume feed that is not palatable.

Catfish should be fed with the quality, quantity and size of for optimum growth. They should be fed 2-3 times daily at regular intervals. The feeding rate should be 3-7.5% of the body weight (Omitoyin, 2007). Similarly, Smaliholder Foundation (2013) submitted that fish need supply of feed equivalent to 3-5% of their body.

The sole target of every business is to maximize profit and minimize cost for onward sustainability of the business venture. McCaarthy Perreault in Alawa and Udida(20 15) described marketing as a process which involves buying and selling. Such activities like identification of buyers, grading, transportation, storage, risk management record keeping among other things are essential in every enterprise. In this case, advertisement of produce, harvesting of fish based on maturity, fixing of prices, good packaging, good record keeping, sale of fish and expansion of the production enterprise among other things are good marketing strategies in catfish production. Buttressing the point further, Ogieva(2003), outlined the activities involved in marketing of agricultural produce as assembling, canning, advertising, fixing prices, keeping records and many more.

Ebonyi State is a state in the eastern part of Nigeria with highly increasing population growth and unemployment rate especially among the youths. It has an approximate population of 2,176,949 (2006 census) with a population growth rate of 3.5% annually. Meanwhile, Odo (2016), opined that the human development report of 2013 by the United Nation development programme shows that the unemployment rate in Ebonyi State is very high when compared with other states in the country of which agriculture is the mainstream of the people with over 78% of the total population engaged in low income farming and related activities as a means of livelihood. This report could be summarized to mean that a very high percentage of the youths are still not employed in either white collar or blue collar job like farming. This problem however, could be attributed to the general poverty of the state which hampers youths from securing capital for farming and lack of required acumen needed to embark on productive agriculture like cat fish production in this study.

STATEMENT OF THE PROBLEM

Cat fish production has been on a low pace in Ebonyi State and Nigeria at large. Meanwhile, catfish has been perceived to be economically viable in the state under discourse. Yet. the demand outweighs supply. This is traceable to the fact that, the youths involved in catfish farming, out of ignorance or financial incapacitation, prefer growing their fish without adequate planning, stocking, managerial and marketing strategies put in place by consulting expert(s) in the field for optimum

productivity and profit maximization in the enterprise. This has led to the failure of most catfish farms or rather, the production being at a very lo level. This implies that most youths who are involved in catfish production do not make pamper consultations for proper guidance on the better strategies to adopt for effective catfish production before venturing into the business. Hence, these young entrepreneurs still practise the old method of catfish culture of free range in which fish is cultured in structures like artificial lake, stream or river with dyke to prevent escape of fish into the wild. Moreover, the pond is usually the earthen type.

Conversely, structures like wooden vat, tank, bath trough concrete tanks, plastic and fiber tanks, tarpaulin among others are currently operational (in use) elsewhere for young catfish farmers who are / or may not be financially buoyant to engage in the super intensive culture system (a highly mechanised and expensive system). Unfortunately, youths of Ebonyi State have little or no orientation about this low capital consuming but high profit yielding strategies of producing catfish. The situation is relatively to the contrary in some other places where, technological and scientific knowledge have equipped their contemporaries with the modem requisite information and management practices to boost with minimal expenditure. It is against this backdrop that the researcher decided to undertake this research exercise. Thus, the underlying problem of this research, put in a question form is, what are the effective strategies for catfish production by youths for sustainable agriculture and youth empowerment in Ebonyi State?

PURPOSE OF THE STUDY

The major purpose of this study was to find out the strategies for effective catfish production by youths for sustainable agriculture and youths empowerment in Ebonyi State. The study specifically tended to:

I. identify the planning strategies for effective catfish production by youth in Ebonyi State.

2. identify the stocking strategies for effective catfish production by youth in Ebonyi State.

3. identify the management strategies for effective catfish production by youth in Ebonyi State.

4. identify the marketing strategies for effective catfish production by youths in Ebonyi State.

RESEARCH QUESTIONS

The following research questions guided the study:

1. what are the planning strategies for effective catfish production by youths in Ebonyi State?

2. what are the stocking strategies for effective catfish production by youths in Ebonyi State?

3. what are the management strategies for effective catfish production by youths in Ebonyi State?

4. hat are the marketing strategies for effective catfish production by youth in Ebonyi State

RESEARCH METHOD

The study adopted the survey research design. According to Au (2006), survey research design is a descriptive study which uses a sample of a definite population of an investigation to document, describe and explain what is existent or the present status of phenomena investigated. Survey research design was viewed appropriate for this study because it guides in the process of collecting, analysing and interpreting observations in a known population. The study was carried out in Ebonyi State of Nigeria. The state has three (Ebonyi North. Ebonyi South and Ebonyi Central) agricultural zones. The population for the study was 215:

comprising 128 registered youth cat fish farmers and 87 extension agents from the three agricultural zones obtained from the state ministry of agriculture. The entire population was used in the study because it was manageable by the researcher. A 36-strategy item questionnaire tagged: strategies for effective catfish production by youths for sustainable agriculture and youth empowerment questionnaire (SECPYSAYEQ) was developed by the researcher from literature reviewed and was used for data collection. A four point scale of Very

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highly required (VHR)Highly required (HR), Slightly required (SR) and Not required NR) with numerical values of 4, 3, 2, and I respectively was used for data collection. Three experts from the College of Education, Michael Okpara University of Agriculture, Umudike a1idated the instrument. Their corrections were used to develop the final copies which have to parts: the first part containing the respondent's personal details while the second segment sought the actual answers to the level of agreement or disagreement of the respondents on questionnaire items. Cronbach alpha reliability was used to determine the internal consistence of the questionnaire and a coefficient of 0.81 was obtained. Two hundred and fifteen (215) copies of the questionnaire were administered on the respondents with the help of three research assistants who were familiar with the three agricultural zones of Ebonyi State. Two hundred and twelve (212) copies of the SECPYSAYEQ were retrieved and analyzed using mean, and standard deviation from SPSS to answer the research questions. For the research questions, a cut-off point of 2.50 was used. Any item with a standard deviation of 1.96 or below indicated that the respondents were close and therefore, the item was valid while any item with a standard deviation above 1.96 indicated that the respondents were not close to the mean and therefore, the item was not valid.

RESULTS AND FINDINGS

RESEARCH QUESTION 1:

'What are the planning strategies required for effective catfish production by youths for szainab1e agriculture and youth empowerment in Ebonyi State?

Table 1: Mean Rating Scores and Results of Respondents on the Planning Strategies Required by Youths for Effective Cat fish Production for Sustainable Agriculture and Youth Empowerment in Ebonyi State.

S/N	Item Description	Registered cat fish farmers X_1	Extension Agent SD_1	X_2	SD_2	Remark
1	Set goals for fish production enterprise	3.70	0.70	3.68	0.60	R
2	Review set goals regularly	2.64	0.31	2.58	0.40	R
3	Identify major activists to be carried out	2.67	0.31	2.59	3	R
4	Identify suitable location for the enterprise	3.08	0.30	3.03	0.34	R
5	Identify sources of finance	3.21	0.31	3.11	0.32	R
6	Identify personnel for the enterprise	3.10	0.32	2.97	0.39	R
7	Identify appropriate equipment for use	3.13	0.33	3.09	0.35	R
8	Budget accordingly for the enterprises	3.06	0.42	3.06	0.40	R

Kev:N_1 = 125; N287,X1= mean of cat fish fanners, X2 agents ,SD1standard deviation of cat fish farmers, SD2standard deviation of extension agents, R =Required

The findings from table I above reveals that all the eight (8) items have mean value ranged from 2.75 to 3.73 and were above the cut off point of 2.50 on four point scale. The standard deviations of the 8 planning strategies ranged from 0.30 to 0.66 and were less than 1 96 (95%) confidence limit). This indicated that respondents were not far from each other in their responses. It then follows that all the items are the planning strategies for cat fish

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production by youths for sustainable agriculture and youth empowerment in Ebonyi State.

RESEARCH QUESTION 2:

What are the stocking strategies required for effective catfish production by youths for sustainable agriculture and youth empowerment in Ebonyi State?

Table 2: Mean Rating Scores and Results of Respondents on the stocking Strategies Required by Youths for Effective Catfish Production for Sustainable Agriculture and Youth Empowerment in Ebonyi State .

S/N	Item Description	Registered cat fish farmers X_1	SD_1	Extension Agent X_2	SD_2	Remark
1	Determine the pond type to be used for the enterprise	3.11	0.41	3.08	0.52	R
2	Construct pond to specification	3.16	0.53	3.06	0.38	R
3	Pound the pond with clean water	2.98	0.62	2.81	0.43	
4	Check the Ph value of the water	3.16	0.51	3.02	0.43	R
5	Identify the cat fish species with good qualities	3006	0.63	3.01	0.48	R
6	Identify reputable cat fish breeders	3.22	0.54	3.16	0.68	R
7	Procure fingerlings from recognized breeders	3.11	0.53	3.08	0.53	R
8	Transport fingerlings to the pond in good condition	3.12	0.44	3.03	0.61	R
9	Supply fingerlings to pond in good conditions	2.78	00.4	2.63	0.46	R
10	Supply initial fish feeds regularly in the pond	3.30	1.41	3.28	0.52	R
11	Give initial medication to the fish (to specification)	3.10	0.56	3.04	0.47	
12	Provide shade for the pond	2.71	0.52	2.66	063	R
13	Identify pests and diseases and isolate one if any	3.44	0.49	3.38	0.55	R
14	Keep record appropriately about the enterprise	2.63	0.67	2.67	0.59	R

Key:N1 =125; N2.87,X1= mean of cat fish farmers, X2 mean of extension agents, deviation of cat fish farmers, SD2standard deviation of extension agents, R= required . NR =not required.

The findings from table 2 above reveals that all the fourteen (14) items have mean value ranged from 2.82 to 3.45 and were above the cut off point of 2.50 on four point scale. This implies that determination of pond type, construction of pond to specification, filling of water to pond, checking for acidity, identification of fish species and reputable breeders and transportation of fingerlings among others are stocking strategies required by youths for effective cat fish production for sustainable agriculture and youth empowerment in Ebonyi State. The standard deviations of the 14 stocking strategies ranged from 0.38 to 0.63 and were less than 1.96 (95%) confidence limit). This indicated that respondents were not far from each other in their responses.

RESEACH QUESTION 3

What are the management strategies required for effective catfish production by youths for sustainable agriculture and youth empowerment in Ebonyi State?

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TABLE 3: mean rating scores and results of respondents on the management strategies required by youths for effective cat fish production for sustainable agriculture and youth empowerment in Ebonyi state.

S/N	Item Description	Registered cat fish farmers X_1	SD_1	Extension Agent X_2	SD_2	Remark
1	Supply fish feed at regular interval	2.21	0.51	3.28	0.41	R
2	Change the pond water at regular interval	3.46	0.58	3.42	0.46	R
3	Fertilize the pond with appropriate organic manure	3.18	0.61	3.06	0.52	R
4	Identify diseases conditions of fish in the pond	3.12	0.48	3.04	0.56	R
5	Provide appropriate medication for the fish	3.28	0.46	3.16	0.47	R
6	Provide adequate sanitation in the pond environment	3.49	062	2.38	0.39	R
7	Adjust fish feed based on tehri ages	2.92	0.43	2.88	0.62	R

Key: N =125; N2=87,X1= mean of cat fish farmers, X2 mean of extension agents ,SD1=standard deviation of cat fish farmers, SD2=standard deviation of extension agents, R=required ,NR=not required.

The findings from table 3 above reveals that all the seven (7) items have mean value ranged from 2.96 to 3.56 and were above the cutoff point of 2.50 on four-point scale. This implies that supplying of feeds regularly, change of water, fertilization of pond with appropriate sources, medication, sanitation and feeding adjustment according to age of fish are management strategies required by youths for effective cat fish production for sustainable agriculture and youth empowerment in Ebonyi State. Meanwhile, the standard deviations of the 7 management strategies ranged from 0.53 to 0.76 and were less than 1.96 (95%) confidence limit. This implied that the respondents were not far from each other in their responses.

RESEARCH QUESTION 4

Table 4: Mean Rating Scores and Results of Respondents on the Marketing Strategies Required by Youths for Effective Catfish Production for Sustainable Agriculture and Youth Empowerment in Ebonyi State.

S/N	Item Description	Registered cat fish farmers X_1	SD_1	Extension Agent X_2	SD_2	Remark
1	Advertise product using correct media	2.88	0.51	2.72	0.46	R
2	Harvest fish according to maturity and size	2.62	0.53	2.58	0.41	R
3	Fix prices for fish according to size	3.08	0.48	3.02	0.52	R
4	Sale fish to identified customers	3.12	0.61	3.06	0.42	R

5	Keep sales record of the enterprise	3.45	0.43	3.32	0.61	R
6	Prepare profit and loss account for the enterprise	3.20	0.42	3.12	0.47	R
7	Expand fish production enterprises base profit	3.10	0.60	3.03	0.56	R

Key: N1 =125; N287,X1= mean of cat fish farmers, X2 =mean of extension agents ,SD1=standard deviation of cat fish farmers, SD2=standard deviation of extension agents, R=required ,NR=not required.

The data in the above table revealed that the seven (7) items had mean values that ranged from 2.78 to 3.42 and were clearly above the cutoff point of 2.50 on a four-point scale. This indicated that advertisement of produce, harvesting of fish based on maturity, fixing of prices. sale of fish, keeping of records, preparation of profit and loss account and expansion of fish production enterprise based on farm profit are marketing strategies for effective cat fish production by youths in fish for sustainable agriculture and youth empowerment in Ebonyi State. Besides, the standard deviations of the 7 management strategies ranged from 0.43 to 0.71 and were less than 1.96 (95%) confidence limit. This indicated that respondents were not far from each other in their responses.

FINDINGS

The study found that the strategies for effective cat fish production by youths for sustainable agriculture and youth empowerment in Ebonyi State are planning, stocking, management and marketing of the fish produced.

The planning strategies required were discovered to include the ability to: set goals for the production business; review set goals regularly; identify major activities to be carried out:

identify suitable location for the enterprise; conduct farm survey and layout; identify sources of finance; make appropriate budget for the enterprise; choose the system to be adopted:

source labour for cat fish production; choose breed to produce; source veterinary services:

source feed for feeding the fish among others.

Moreover, the stocking strategies were found to include the ability to: determine the pond type to be used for the enterprise; construct pond to specification; pound the pond with clean water to required level; check the pH value of the water; identify cat fish species with good qualities; identify reputable cat fish breeders; identify catfish seeds (fingerlings) from recognized breeder; transport fingerlings to the pond in good condition; supply fingerlings to the pond in good condition; supply initial fish feeds at regular interval and many more.

Furthermore, the management strategies were also found to include the ability to: supply fish feed at regular interval; change pond water at regular interval; fertilize the pond with the right manure; identify disease conditions of fish in the pond; provide adequate sanitization in the pond area: provide appropriate medication for the fish; adjust fish feed based on fish age among others. In the case of marketing strategies, the following were discovered. The ability to advertise the produce using the correct media; harvest fish according to maturity and size:

Fix Price for fish based on size; sell fish to identified customers; keep sales record of the enterprise prepare profit and loss account for the enterprise among others.

DISCUSSION OF THE FINDINGS

The result of the study in table one shows that the 8 items which include setting of goals. revision of goals set, identification of suitable location, sourcing for funds, identification of personnel and appropriate equipment and budgeting are planning strategies required by youths for effective cat fish production for sustainable agriculture and youth empowerment in Ebonyi State. The result on planning strategies agrees with Obi (2002) who described

planning as a decision on what to be done on strategies to accomplish it. The author identified strategies such as goal setting, selection of suitable location, arrangement for regular supplies and selection of appropriate facilities, identification of customers as strategies in planning for cat fish production. The result is in tandem with the view of Obiya and Ekubo (2011) who said that farm business registration, defining target customers among others are strategies for effective catfish productions. The findings also agree with Obiyai et al., (2011), who developed entrepreneurial strategies training module on fish breeding and hatching occupations and pin pointed planning strategies such as setting of goals, identification of major activities of the enterprise, selection of culturable species, sources of finance, selection of personnel, and budgeting.

Table 2 reveals that all the fourteen items among which are determination of pond type, construction of pond to specification, filling of water to pond, checking for acidity, identification of fish species and reputable breeders and transportation of fingerlings, supply of fingerlings in the pond, among others are stocking strategies required by youths for effective catfish production for sustainable agriculture and youth empowerment in Ebonyi State. The finding agrees with Smaliholder Foundation's (2013) submission that stocking activities in fish production should address pond type, neutralization of pond by applying agricultural lime, fertilization with fertilizers or manure to keep phytoplanktons and zooplanktons to grow in the pond and regulation of water volume.

The result of the findings in table 3 shows that the seven items among which are regular supply of feeds, change of water at regular interval, fertilization of pond with appropriate fertilizer, medication, sanitation, feeding adjustment according to age of fish and so on are management strategies required by youths for effective cat fish production for sustainable agriculture and youth empowerment in Ebonyi State. The result is in keeping with Food and Agricultural Organization (2005), that identified pond preparation and management, liming, feeding, water quality maintenance, control of stocking rate, aquatic weeds and predators as good management operations in fish farming. In the same vein, Smallholder Foundation (2013), submitted that fish needs supply of feeds equivalent to 3-5% of their body weight. change of polluted water regularly with fresh water and regular medication.

The result of findings of table 4 finally showed that advertisement of produce, harvesting of fish based on maturity, fixing of prices, sale of fish, keeping of records, preparation of profit and loss account and expansion of fish production enterprise based on farm profit are marketing strategies required by youths for effective cat fish production for sustainable agriculture and youth empowerment in Ebonyi State. The result agrees with Ehiametalor in Obiyai and Ekubo (2011), who opined that producers should fix moderate prices on their produce, embark on intensive sales promotion and maintain quality control mechanism to guarantee greater patronage. Concurring to that, McCarthy and Perreault in Alawa and Udida (201 5),described marketing as a process involving buying and selling and identified activities like identification of buyers, grading, transportation, storage, risk management, records keeping among others to be essential in every enterprise. Meanwhile, Ogieva in 2003 had, outlined the activities involved in marketing of agricultural produce as assembling, canning, advertising, fixing of prices, keeping of records among others.

CONCLUSION

The issue of youth unemployment, restiveness and its attendant consequence has become a recurring decimal in Ebonyi State in particular and in Nigeria in general. Youths get themselves involved in various nefarious acts as a result of lack of viable alternatives. These boiled down to low economic development in Ebonyi State in particular hence, the need to effectively engage these youths in productive venture like cat fish farming which

would go a long way to reduce the menace of youths unemployment and the concomitant social vices it hatches and breeds. Therefore, the findings overleaf from the study are the strategies for effective cat fish production by youths for sustainable agriculture and youth empowerment in Ebonyi State. If the youths can adopt and utilize the strategies as articulated from planning to marketing stage above, which formed the crux of this study, would in no small measure nib in the bud the issue of youth unemployment and restiveness. Besides, sustainable agriculture would be achieved. In this case, the financial burden on the government in a bid to take care of the jobless and frustrated youths will be ameliorated. Thus, boosting the economic development of Ebonyi State, in particular and Nigeria in general.

RECOMMENDATIONS

Following the background and findings of the study, the researcher thus, recommends that:

1. The identified strategies should be included as content areas into the skill acquisition programmes for youths.
2. Youths should be trained via workshops using the strategies identified with financial incentives given, to embark on cat fish production enterprise.
3. The youths should fall back to farm and take the advantage of their mental and physical prowess and make exploits in cat fish production sub-sector, especially now that white collar jobs are not easy to come by and cat fish is in a high demand.
4. Government should encourage more people especially the youths by providing soft loans with low interest rate to the youths who are interested in cat fish production but, are financially incapacitated.

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