

## Enhancing Rural Youth Participation in Commercial Fish Farming for Food Security in Taraba State, Nigeria

<sup>1</sup>Tsojon, J. D., <sup>2</sup>Gidado, I. & <sup>3</sup>Asogwa, V. C.

<sup>1&2</sup>*Department of Agricultural Education, College of Education, Zing, Taraba State*

<sup>2</sup>*Department of Agricultural/Home Economics Education*

*Michael Okpara University of Agriculture, Umodike, Abia State*

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### Abstract

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The purpose of the study was to determine various methods to enhance rural youth participation in commercial fish farming for food security in Taraba State, Nigeria. The study adopted the survey research design. Four research questions answered by the study. The area of the study was Taraba State, Nigeria. The population of the study was three hundred and two registered fish farmers with the Ministry of Agriculture in the state. The sample of the study was one hundred and eighty four, determined using Taro Yamane formula. The instrument for data collection was a structured questionnaire named "fish farming youth participation enhancement questionnaire" (FFYPEQ). The instrument was validated by three experts. One hundred and seventy eight four copies of the questionnaire were administered on the respondents but one hundred and seventy eight were retrieved for analysis. The data collected were analyzed using mean and standard deviation to answer the four research questions. The analyses of data showed that the respondents were aware and have knowledge on commercial fish farming but have negative attitude towards the occupation. The study also revealed that the rural youth in the study area could be motivated to enhance their participation in commercial fish farming. The study recommends that the government, State and Federal, should come up with strategies to change the negative attitudes of the rural youth on commercial fish farming as they are aware have some knowledge on the occupation. Also, it was recommended that training and re-training should be organized often for the rural youth on the occupation to combat hunger and boost food security in the State and the nation at large.

**Keywords:** *Rural youth, Fish farming, Food security, Attitude, Awareness*

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*Corresponding Author:* Tsojon, J. D.

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### **Background to the Study**

Aquaculture provides a substantial supply of edible fish. Fish is a cold blooded aquatic animal that provide 55% of animal proteins required by humans for food (Daramola, 2008 & Adewuyi, Philip, Ayinde & Akelere, 2010). Fish is also known to contain iron, zinc, magnesium, phosphorus, calcium, vitamin A and C (Asogwa, Onu & Egbo, 2013) that are beneficial to human beings. The authors added that usefulness of fish includes the following.

- i. Leather and polishing material are obtainable for skins of some cart fish.
- ii. Substances from fish when coated are used as grass beads.
- iii. Some species of fishes are used to beautify aquarium.
- iv. Fish oil is used for human consumption and manufacture of soap.
- v. Fishes are used for educational and research purposes, among others.

Aquaculture in Nigeria has grown to achieve double digits of 14.1% in 2010, generating employment, creating wealth and contributing to food security of Nigeria (Ifejika, Uzokwe & Oladosu, 2013). The authors maintained that fish production growth tripled to 14.5% from 4.6% and established that by this growth Nigeria is the fastest and highest aquaculture producing country in sub-Sahara Africa and second to Egypt in Africa. Hempel (2010) found out that Nigerian catfish produced and sold by farmers stood at \$75m from production level of about 30,000 tons of fish per year.

The increase in the need for fish led to the practice of fish farming. Fish farming is the process of growing fish in an enclosure or tanks for human consumption and/or also for food and commercial purposes Stephannie (2011) and Oluwatomi (2012). Kimathi, Ibuathu and Guyo (2013) reiterated that fish farming implies some form of intervention in the rearing process to enhance production, such as regular stocking, feeding and protection from predators among other interventions. This has revealed that fish farming is a way of producing high quality food either for families or for the market and a way of earning extra income. It is also evident that fisheries sector contributes significantly to the national economy through employment creation and jobs foreign exchange earnings, poverty reduction and food security support (Kumar, 2010, Kimathi, Ibuathu & Guyo, 2013, Ifejika, Uzokwe & Oladosu, 2013 & Fiorella, et al, 2014,).

World Bank (1986) had defined food security as access by all people to food of adequate quantity and quality constant with decent existence at all times. Food security means that all people at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and preferences for an active healthy life (FAO, 1996, World Bank, 1996, Secretariat of the Pacific Community, 2008). In the view of Maharjan and Chhetri (2006) food security is access to by all people at all times to enough food for an active life while food insecurity is the inability of a household or individual to meet the required consumption levels in the face of fluctuating production, price and income. Idrisa, Gwary and Shehu (2008) reiterated that food security in a broad sense consist of having at all times an adequate level of basic products (food) to meet increasing consumption demand and mitigate fluctuations in output and prices. USAID (1995) in River & Qamar, 2003) maintained that food security is defined in terms of food availability,

food access and food utilization. Food is available when sufficient quantities of food are constantly available to all individuals within the country. Food access is achieved when all individuals and communities have enough money to buy appropriate foods that meet their balance diet. Food utilization means proper use of food that provides the requisite energy and essential nutrients in any given diet for the communities. Food security therefore can be said to having at all times adequate food (fish) to meet the feeding requirement of the community for active life. Making fish available for the community can be achieved involving the youth since they are the strength of the community.

Youth refers to that time in one's life when one is young. That is the period between childhood and maturity. Ehiemere (2006) established that youth is that period of life of an individual when most vital decisions for future life is made such as choice of occupation and education and the age limit is between 10 and 30 years. The youth is the back bone of every community in Nigeria as a whole and in Taraba state in particular. Taraba state being the "nature's gift" to the nation is endowed with many rivers among which are river Benue, river Taraba, river Donga to mention but a few. The availability of these major rivers provides opportunity for large population of the state to engage in fishing as an occupation apart from other occupations they are involved.

In Nigeria, most of the youth are unemployed and underemployed which have kept them in economic frustration (Obiyai, Osinem & Agbulu, 2011). Adeniyi, Folorunsho and Owoto (2014) revealed that there is a huge gap between demand and production of fish in Nigeria as in 2010 alone Nigeria's fish demand stood at 2.66 million metric tones and that the country had spent ₦100b on fish importation annually. This shows that fish farming is a vocation that could be depended upon for family and national sustainability. The rural youth, both educated and uneducated, can engage in commercial fish farming considering the demand (2.66 million metric tones) for fish as it provides the cheapest animal protein requirement in our diet to ensure food security in Taraba state and Nigeria as a nation hence the necessity to conduct this study to motivate the rural youth in Taraba state to engage in commercial fish farming.

### **Objectives of the Study**

The main objective of the study is to determine ways of enhancing rural youth participation in commercial fish farming for food security in Taraba state, Nigeria. Specifically the study intends to:

- i. Identify the level of awareness of the rural youth on commercial fish farming;
- ii. Determine the attitude of rural youth to commercial fish farming;
- iii. Establish the ability of the rural youth to mobilize financial resources for commercial fish farming; and
- iv. Explore ways to mobilize rural youth to engage in commercial fish farming.

### **Research Questions**

The following research questions were answered by the study:

- i. What is the level of awareness of rural youth to commercial fish farming?
- ii. What is the attitude of the rural youth to commercial fish farming?

- iii. What is the ability of the rural youth to mobilize resources for commercial fish farming?
- iv. What are the ways to mobilize rural youth to engage in commercial fish farming?

### **Methodology**

The study adopted the survey research design. This is a design in which a group of items or people is studied after collecting and analyzing data from the representative of the active group (Tsojon, Ochu & Asogwa, 2016). The area of the study was Taraba state, Nigeria. The study area has three major rivers namely; River Benue, Taraba and Donga. River Benue traverses the major parts of Taraba. The presence of these rivers in the study area provided a favourable environment for fish farming. The population of the study constituted 342 registered fish farmers in the study area with the state ministry of Agriculture. The sample for the study was 184 determined using Taro Yamane formula (Yamane, 1967; Mora, & Klort, 2010; and Emaikwu, 2011).

$$n = \frac{N}{1 + Ne^2}$$

Where: n = Sample size, N = Population of the study, 1= a Constant, e = Level of significance.

The instrument for data collection was a structured questionnaire named “fish farming youth participation enhancement questionnaire” (FFYPEQ). The questionnaire was divided into four parts based on the specific objectives. The items in all the sections of the questionnaire were based on a 4-pont rating scale. Three experts validated the instrument (FFYPEQ), two from College of Education, Zing and one from College of Agriculture, Jalingo. Three briefed research assistants administered the questionnaire on the sampled fish farmers. One hundred and eighty four (184) copies of the questionnaire were administered to the respondents but one hundred and seventy eight (178) was retrieved, representing 97% retrieval. The data collected was analyzed using descriptive statistical tool such as mean score and standard deviation. Real limit of numbers such as highly aware/high ability/strongly agree = 3.50 - 4.00, moderately aware/moderate ability/agree = 2.50 - 3.49, slightly aware/low ability/disagree = 1.50 - 2.49, not aware/no ability/strongly disagree = 1.00 - 1.49, were applied for decision making based on the response options.

### **Results**

The results of the study were obtained from the data calculated and analyzed as shown in Tables 1 to 4.

**Table 1: Mean rating of respondents on the level of awareness on commercial fish farming**

S/N	Items	M	SD	Remark
i.	Fish farming is commercial these days.	3.96	0.31	Aware
ii.	Youth have knowledge of commercial farming.	2.72	0.92	Aware
iii.	Commercial farming is a source of income.	3.78	0.84	Aware
iv.	Youth require formal training for commercial fish farming.	2.96	1.01	Aware
v.	Commercial fish farmers require services of extension workers.	2.98	0.86	Aware
vi.	Commercial fish farming increases local production of fish.	3.01	1.02	Aware
vii.	Commercial fish farming saves foreign exchange.	2.87	0.45	Aware
viii.	Commercial fish farming ensures food security.	3.82	0.24	Aware
ix.	Commercial fish farming provides animal protein.	2.81	1.11	Aware
x.	Commercial fish farming generates employment.	2.69	0.62	Aware
xi.	Commercial fish farming improves livelihood fish farmers.	2.76	1.02	Aware
xii.	Commercial fish farming improves diet of the populace.	2.68	0.62	Aware

Highly aware (HA) = 3.50 – 4.00, averagely aware (AA) = 2.50 - 3.49, slightly aware (SA) = 1.50 - 2.49, not aware (NA) = 1.00 – 1.49;

Table 1 revealed that the mean responses of the respondents on all the 12 items ranged from 2.68 to 3.6 which were within the real limit of 3.50 and 4.00. This indicated that all the respondents in the study have awareness on all the 12 items on commercial fish farming. The implication is that the respondents in the study area are aware and have some knowledge of commercial fish farming.

**Table 2: Mean rating of respondents on the attitude of rural youth to commercial fish farming.**

S/N	Items	M	SD	Remark
i.	I do not like commercial fish farming.	2.89	0.42	Agree
ii.	I have lost interest in commercial fish farming.	2.62	1.21	Agree
iii.	Commercial fish farming is not important to me.	2.81	0.56	Agree
iv.	Commercial fish farming is a difficult occupation.	3.11	0.78	Agree
v.	I am upset anytime I hear about fish farming.	2.61	1.34	Agree
vi.	I have decided not to venture into fish farming in life.	2.72	1.82	Agree
vii.	I am not motivated by entrepreneurship staffers in fish farming.	2.64	0.67	Agree
viii.	I do not have skills in commercial fish farming.	2.61	1.40	Agree
ix.	I cannot carry out feasibility study on commercial fish farming.	2.68	0.51	Agree

Strongly agree (SA) = 3.50 – 4.00, agree (A) = 2.50 - 3.49, disagree (D) = 1.50 - 2.49, strongly disagree (SD) = 1.00 – 1.49;

Data in Table 2 showed that all the nine items presented were rated agree with mean rating ranging from 2.61 to 3.11 and were within the real limit of 2.50 and 3.49. This indicated that the rural youth in the study area responded agree to all the nine items. This implies that the respondents have negative attitudes towards commercial fish farming.

**Table 3: Mean rating of respondents on their ability to mobilize financial resources for commercial fish farming.**

S/N	Items on sources	M	SD	Remark
i.	Personal saving.	2.58	0.78	MA
ii.	Relatives.	2.62	0.46	MA
iii.	Cooperative society.	2.59	1.22	MA
iv.	Commercial bank.	1.82	1.49	LA
v.	Local money lenders.	2.51	0.85	MA
vi.	Agricultural bank.	1.39	1.32	NA
vii.	Friends.	2.50	0.27	MA
viii.	Other sources.	1.27	0.82	NA

Highly ability (HA) = 3.50 - 4.00, moderate ability (MA) = 2.50 - 3.49, low ability (LA) = 1.50 - 2.49, no ability (NI) = 1.00 - 1.49;

Table 3 revealed that out of the eight items presented five were rated have ability with mean rating between 2.50 and 2.62 and were within the real limit of 2.50 and 3.49. The remaining three items were rated no ability with mean rating between 1.27 and 1.82 within the real limit of 1.00 and 1.49. This indicated that the rural youth have ability on only five items and have no ability on the remaining three items. This implication is that majority of the respondents have the ability to mobilize funds for commercial fish farming.

**Table 4: Mean rating of respondents on mobilizing rural youth to engage in commercial fish farming.**

S/N	Items	M	SD	Remark
i.	Stimulate the interest of rural youth through specific programmes in fish farming.	3.42	0.18	Agree
ii.	Arranging instruction by fieldtrip to fish farmers.	3.78	0.11	Agree
iii.	Organizing guest lectures on opportunities in fish farming.	3.24	0.82	Agree
iv.	Teach rural youth to be dependable and responsible through fish farming.	3.01	0.09	Agree
v.	Provision of fishing gear at a subsidized rate.	2.99	0.28	Agree
vi.	Skills development for the rural youth in commercial fish farming.	2.81	1.01	Agree
vii.	Educating rural youth on how commercial fish farming can be used to combat hunger and food insecurity.	2.63	0.41	Agree
viii.	Educating the rural youth on how commercial fish farming can serve as a source of income.	2.71	0.72	Agree
ix.	Provision of storage facility such as cold room for storing fresh fish.	2.59	1.00	Agree
x.	Educating rural youth that commercial fish farming is a lucrative occupation.	2.76	0.52	Agree
xi.	Formation of commercial fish farmers association.	3.02	0.16	Agree

Strongly agree (SA) = 3.50 - 4.00, agree (A) = 2.50 - 3.49, disagree (DA) = 1.50 - 2.49, strongly disagree (NI) = 1.00 - 1.49;

Data in Table 4 showed that all the eleven items presented were rated agree with mean rating ranging from 2.59 to 3.78 within the real limit of 2.50 and 3.49. The rural youth responded agree to all the 11 items on their motivation to engage in commercial fish farming. The implication is that the respondents could be motivated to enhance their participation in commercial fish farming in the study area.

### **Discussion of Finding**

In Table 1, it was found from the study that all the respondents in the study area were aware and have knowledge of commercial fish farming. The item responded to include; I am aware of commercial fish farming, I have knowledge of commercial fish farming, I am aware that commercial fish farming is a source of income, I am aware that commercial fish farming ensures food security, I know that commercial fish farming provide animal protein and generate employment, among others. This finding is in consonance with the findings of Adewuji, Philip, Ayinde and Akerele (2010), EJF (2012), Ifejika, Uzokwe and Oladosu (2013), Kamathi, Ibuathu and Guyo (2013), Adeniyi, Folorunsho and Olooto (2014), Fiorella, et al (2014) and Issa, Abdulazeez, Kezi, Dare and Umar (2014) who indicated that commercial fish farming contribute to domestic food and nutrition security, creating wealth generating employment and jobs.

The result in Table 2 showed that the respondents in the study area have negative attitude towards commercial fish farming. Items responded to include: I don't like commercial fish farming, commercial fish farming is not important to me, I do not want to venture into commercial fish farming, I am upset anytime I hear about commercial fish farming, among others. This finding is in agreement with the finding of Olaoye, Fakoya and Adelaja (2013) who found out in their study that very few young people are involved in fish farming as a result of their negative attitude to the occupation.

In Table 3, it was found that majority of the respondents in the study area have the ability to mobilize money for commercial fish farming. The respondents could source money from personal savings, relatives, and cooperative societies, among others. This finding is consistent with those of Adewuyi, Philip, Ayinde and Akerele (2010), Olaoye, Fakoya and Adelaja (2013) and Issa, Abdulazeez, Kezi, Dare and Umar (2014) who indicated in their separate studies that the sources of capital for fish farming include among others; cooperatives societies, local money lenders, agricultural banks, commercial banks and personal savings.

The result in Table 4 found that the respondents in the study area could be mobilized to engage in commercial fish farming. The strategies to enhance the participation of the respondents (rural youth) include: Stimulating the interest of the respondents in commercial fish farming, Engaging the respondents in field trips to well established fish farms, Provision of fishing gear at subsidized rate to the respondents, Educating the respondents on how commercial fish farming can be a source of income and food, Adequate training in fish farming, Formation of fish farmers association, among others. This finding is in conformity with the studies of Adewuyi, Philip, Ayinde and Akerele (2010), Erina, (2010), Ifejika, Uzokwe and Oladosu (2013), Kimathi, Ibuathu and Guyo

(2013), Adeniyi, Folorunsho and Olooto (2014); and Ajani, Mgbanka and Onah (2015) who found in their various researches among others to include: long term education, short training, awards and recognition, financial support and subsidies, networking, agricultural production loan scheme and entrepreneurship.

### **Conclusion and Recommendations**

Enhancing rural youth participation in commercial fish farming for food security in Taraba state, Nigeria cannot be overlooked considering its importance to the development of the state in particular and the nation at large. The findings of this study revealed that the youth in Taraba state can be motivated to enhance their participation in commercial fish farming using identified strategies, such as stimulating their interest, taking them out on field trips, provision of fishing gears at affordable rate, giving them adequate training on fish farming, among others. It can also be concluded that rural youth in the study area have negative attitude towards commercial fish farming. The study therefore recommends that:

1. the Government, State and Federal, are to come out with diverse strategies to change the negative attitude of the youth on commercial fish farming as they are aware and have some knowledge on the occupation;
2. government and private sectors should make funds available to the youth as loans, as their sources of funding for the occupation is limited;
3. training should be organized often to equip the rural youth on the occupation to combat hunger and boost food security in the State and the nation at large;
4. rural youth should be encouraged to form cooperative societies to enable them pool their resources together to engage in commercial fish farming; and
5. skill acquisition organizations should from time to time organize capacity building programmes for re-training of those rural youth that are already in the occupation.

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