

Gender and Poverty Issues among Catfish Farmers in Ibadan Metropolis of Oyo State, Nigeria

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Abstract

This study aimed at finding the analysis of gender and poverty status among catfish farming households in the Ibadan Metropolis of Oyo State. The study was carried out in all eleven local government areas in the State. Six wards were randomly selected from each of the local government Areas from which two farming households were randomly selected based on probability proportionate to the population of farming households in each ward. Primary data were collected from farming households. The data generated were subjected to descriptive analysis on household socioeconomic characteristics and production system, Foster, Greek and Thorbecke weighted poverty indices alongside the Probit regression model. From the survey data, the value of the poverty line computed was N51150.57. Thus, the farming household that earns less than the value of the poverty line was considered poor which is about 66.4% of the sampled households, while those that earn greater than equal to the value of the poverty line were considered to be non-poor which is 33.6% of the sampled households. This implies that the majority of the respondents live below the average income in the study area. Probit regression model result indicates the marital status of the household, farming experience, access to remittances, and the pond size (if large) are the four factors that affect the farmers significantly at 5%, 10%, 1% and 10% respectively. Premised on the findings, it was recommended among others that the gender gap between the male and female gender in terms of production should be bridged and there is an urgent need to encourage human capacity development among respondents since the study revealed that education of both males and females reduces poverty.

Keywords: *gender, poverty, catfish farming*

1. Introduction

Farming is the backbone of the Nigerian economy providing the food need of the crowded

population and employing up to 75% of the people who are mostly rural dwellers (National Bureau of Statistics [NBS](#), 2005). Fisheries constitute an important sector in Nigerian agriculture, providing

valuable food and employment to millions and also serving as a source of livelihood mainly for women in coastal communities. Nigeria has a coastline of 3,122km ([Earth trends](#), 2003) shared by 8 states (Lagos, Ogun, Ondo, Delta, Bayelsa, Rivers, Akwa-Ibom and Cross River) out of a total of 36 states in the country. Coastal fisheries are important and contributed at least 40 per cent of fish production from all sources in Nigeria between 1995 and 2008 (FAO, 2010).

The fisheries sector accounts for about 25% of the national GDP, and 40% of the animal protein intake and renders employment opportunities to people especially rural dwellers; the sector is a primary source of livelihood for less than 3 million people in Nigeria (Ekunwe & Emokaro, 2009). Recently, the role of the fisheries sector in meeting the protein need of man and animals for the building and repairs of tissues has been widely recognized. Increasing the total dietary intake of animal protein by man has been a great concern to both government and international bodies, especially in developing countries where there is a wide gap between food production and the human population. In fact, among all the fish species, catfish farming has a great demand in Nigeria. It is now being practiced in both developed and developing countries with ease and no stress at all.

Gender is now being regarded as an essential concept for the analysis and eradication of poverty. While traditional conceptualizations consistently failed to delineate poverty's gender dimensions, resulting in policies and Programmes which failed to improve the lives of poor women and their families ([Beneria](#) & Bismath as cited in Adeniyi 2021), it is now recognized that women are disproportionately represented among poor households and that poverty is being increasingly feminized ([Ijaiya](#), 2000). Therefore, the gender dimension needs to be addressed in development planning with a view to eradicating poverty. To Mamdani (2010), the incidence of poverty is more rampant among female-gender than males in Africa because of discrimination. In general, catfish farming is the king of aquaculture because of the cash and the value added. Most rural women now engage in catfish production to equate the gender role possibility of not doing anything to the fact that they can help to play a supportive role in society. In many cases, women are the primary sources of family income, and several countries report that women are engaging in all types of activities. It is generally accepted that women participate actively in the rural economy due to their social and economic roles while the males play a dominant role in engaging in several other things like farming, services, and fishing to supplement each other. According to [Ani](#)

(2004), women are the backbone of the agricultural labor force producing 40% of the gross domestic product (GDP) and over 50% of food in developing nations. Homestead fish farming is the most suitable option for women to be involved in, since it does not require them to be away from

2.0 Literature Review

Poverty is a global phenomenon that can affect continents, nations and people differently in various depths and levels at different times and phases of existence. The World Bank (2007) defines extreme poverty as living on less than \$1.25 (N193.75) per day, and moderate poverty as less than \$2 (N310) a day. It estimates that in 2001, 1.1 billion people had consumption levels below \$1(N155) a day and 2.7 billion lived on less than \$2 (N310) a day. The situation in sub-Saharan Africa is that rural poverty accounts for 65-90% of overall poverty (khan, 2000). Research has also shown that over 70% of the Nigerian population lives in rural areas where poverty is high (Geller, R: McConnell and Osemeobo, 2006). Omonona *et al* (2006) observed that poverty in Nigeria is an overwhelmingly grave problem and has been on the increase for many decades, being endemic to rural areas where the main occupation is farming. Poverty is especially severe in rural areas, where social services and infrastructures are limited or non-existent (Adekoya, 2008). The great

their homes for long periods which might force them to neglect their household or domestic responsibilities (FAO 1985) in which the men can go as far to earn a living for them and their family.

majorities of those who live in rural areas are poor and depend on agriculture for food and income. Women play a major role in the production, processing, and marketing of food crops. The poorest groups eke out a subsistence living but often go short of food, particularly during the pre-harvest period (IFAD, 2007). Poverty is a condition of having insufficient resources or income and can also be defined as the state of one who lacks a certain amount of material possessions or money (Encarta 2009). People can be said to be in poverty when they are deprived of income and other resources needed to obtain the conditions of life—the diets, material goods, amenities, standards and services—that enable them to play the roles, meet the obligations and participate in the relationships and customs of their society (Townsend, 2006).

Gender is the social difference between men and women which differs from place to place and may change with time (Deustch, 2007). Gender is a socioeconomic variable used to analyze the roles, responsibilities, constraints, opportunities and needs of men and women (Oladosu *et al*, 2005).

The concept of gender also includes the expectations held about the characteristics, aptitudes and likely behaviours of both women and men. Systems of social differentiation such as political status, class, ethnicity, physical and mental disability, age and more, modify gender roles. It is vital when applied to social analysis because it reveals how women's subordination (or men's domination) is socially constructed. As such, the subordination can be changed which is not biologically predetermined nor is it fixed forever.

Poverty analyses and studies in Nigeria reveal those men, women, boys and girl experience poverty in similar yet different ways. The circumstances surrounding the poverty experienced by men and women can be different and their capacities to escape poverty and their vulnerability are often different. In order to reduce poverty, the specific needs of poor women and poor men have to be addressed. An estimated 70 per cent of Nigerians are said to live below the poverty line compared with 27.2 per cent in 1980, 43.6 per cent in 1985 and 42.8 per cent in 1992. Agriculture has the highest poverty incidence rate (62.7 per cent) among all occupational groups considered in the [NLSS](#) (2004). A high proportion (48.3 per cent) of the Nigerian active population is involved in agriculture. This group of households also has the highest poverty depth (26.1 per cent)

and severity (10.7 per cent) among all occupational groups; when compared to a cross-group averages there are 17.5 per cent and 6.9 per cent for depth and severity, respectively. The reasons for poverty among agricultural workers are numerous: low productivity; poor agricultural produce prices, hence poor farm income; inadequate infrastructure; and limited access to credit and improved farm inputs (Ode Ojowu et al., 2007).

Poverty is not gender neutral. Research has demonstrated the disparities between men and women in access to and control of land, credit facilities, technology, education and health. In Nigeria, women's vulnerability to poverty stems from customs, beliefs and attitudes that confine women mostly to the domestic sphere. This is evident considering the non-recognition of the economic activities of women in the informal sector in the computation of the gross national product (GNP).

The study of gender and poverty is the *sine qua non* in view of the fact that catfish production is one of the main occupations for rural dwellers. Poverty has been the blight of most Nigeria rural communities. There are lots of challenges facing these communities; from lack of basic amenities to utter neglect by most successive government agencies in charge of rural development. [IFAD](#) (2007) reported that most of the poor people in

rural areas are farmers. Agricultural production by these subsistence farmers in the country relies more on family labor and a small percentage of hired labor supplied by both genders. To this end, it then becomes imperative to study the influence of gender and poverty among catfish farmers because if effective policies aiming at rural farming household poverty reduction are to be formulated and implemented successfully, more knowledge about the link between gender and poverty at all times becomes relevant (Wodon and Blackden, 2006). Various pieces of research have been conducted on poverty and gender issues with most placing their focus on the farming system, few have been conducted on the poverty gender gap and ethnicity. In fact, Adeyonu, et al (2012) examined the poverty level among farmers in rural areas of Oyo State, Nigeria. A multi-stage sampling technique was used in collecting data from 180 farming households during the rainy and dry seasons. Their analysis revealed an incidence of poverty of 32.7% and 40.6% during the rainy and dry seasons respectively. They also showed that the poverty rate was higher among older farmers with a low level of education who are subsistence farmers with large members and who had no access to food preparation and modern farming technology. Poverty indices are higher during the dry season than during the rainy season.

In a more recent study on poverty and income inequality among rural households in Nigeria by Okunmadewa et al. (2010) discovered that the key socio-economic determinants of rural poverty in Nigeria include human capital variables household's characteristics, the economic activity of the household head and the spatial locations of the households. Despite the importance of poverty reduction among fish farming in Nigeria, little is known about their poverty profile and the determinant of poverty. Therefore, this study is justified as it will provide insight into the catfish production, poverty level and gender equality of fish farm production in Nigeria using the Ibadan metropolis as the study area. If their poverty situation is known, the causes and the gender gap among them, then the appropriate policy can be put in place to either reduce or completely eradicate poverty; this can engender an increase in catfish production to the level of self-sufficiency and export.

In Africa, the fish sector provides income for over 10 million people engaged in fish production, processing and trade (New Partnership for African Development, 2005). In Nigeria, aquaculture is predominantly an extensive land-based system, practiced at subsistence levels in fresh waters (Anyawu-Akeredolu, 2005). Commercial farming has yet to become widespread (Fagbenro, 2005). At present, most fish farmers operate small-scale

farms ranging from homestead concrete ponds (25 – 40 meters) to small earthen ponds (0.02 - 0.2 hectares). Nigeria is a large importer of fish with endorsed records indicating 681,000 metric tons while export in 2008 was 0.065 million metric tons and valued at US\$40.5 million (N155 per dollar) (Olapade, and Adeokun, 2005). The local supply consists of productions from the artisanal (89.5% -85.5%), industrial (5% -2.5%), and aquaculture (5.5% -12.0%) sub-sectors (FDF, 2009). However, it has been shown that Nigeria can substitute fish importation with domestic production to create jobs, reduce poverty in rural and peri-urban areas where 70% of the population live and ease the balance of payment deficits (Areola, 2007; FDF, 2005, 2009; Olaoye, 2010).

It has been perceived that despite the availability of plentiful natural, physical and human resources that God has blessed Nigeria with, there is still a high rate of poverty in Nigeria, especially in the rural areas. Despite all the efforts and hard work put into farming and artisanal fishing in the economy of the state, most of these rural people still remain poor which shows the derivative state of the economy. Women's access to needed farm resources has been assessed to be very low due to marital and religious reasons, lack of awareness caused by low literacy, lack of ownership and control, lack of sufficient and substantive collateral, and inadequate knowledge and training

in the use of improved technologies (Hassan et al, 2002). The men can easily have access to some of the resources which makes them of superior value. The policy relevance of the findings is that there exist ample opportunities for improving the present level of catfish production in the study area given the wide variations among and between farms by refining production techniques, organizing efficient marketing strategies, giving subsidies to farmers, creating rural employment opportunities to absorb more of increasing labor force, land tenure, improving agricultural research and extension. Since their level of experience and technical know-how bore a relationship with the level of production, government policy should be directed at addressing ways to encourage catfish farmers to take to the venture on a full-time basis to eradicate and reduce poverty among the farmers. At present, most Nigeria rural areas lack the economic capacity to pay for the upfront cost, such as capital costs of alternative energy technologies and connection costs of grid-supplied electricity. However, research has shown that the largest segment of the world's poor is the women, children and men who live in rural environments. Women in most developing countries experience poverty differently and more severely than men therefore access to energy is gendered. It has been reported that because of overworking and long distances, women do not

have enough time to cook for their children at least three times a day, even when food is available (Mongela,1991). Due to the studies and research made, there is a dearth of information on the prevalence of poverty in Oyo state over the years which, perhaps explains the dearth of realistic works on poverty with detailed allusion to Oyo state. This has also made it difficult for successive governments to embark on people-oriented poverty alleviation programs, and where they do the results have left little or nothing to desire. It was further observed that systematic research aimed at understanding factors influencing the poverty status of the people in the society, especially among catfish farmers through participation in state development projects seemed to be lacking. These communities need improvement in the quality of their living standards. This, therefore, was of great concern, hence the decision to investigate the status of the communities through their participation in community development projects. The gap is also gendered with women in most developing countries experiencing poverty differently and more severely than men. For this reason, this research is being proposed to address the following research questions:

- What are the socioeconomic characteristics of fish farmers?

- What are the different production systems employed by the farmers?
- What are the effects of socioeconomic characteristics, production characteristics and Gender status of respondents on their poverty status?

Based on the previous discussion, the general objective of this study is to carry out a gender analysis of Catfish farming in relation to poverty in Oyo State Nigeria. The specific objectives are to:

- To identify and describe the socio-economic variables of respondents
- To describe the production system of the respondent
- To profile respondents by their poverty status
- To determine the effects of socioeconomic characteristics, production characteristics and gender status of respondents on their poverty status.

3.0 Methodology

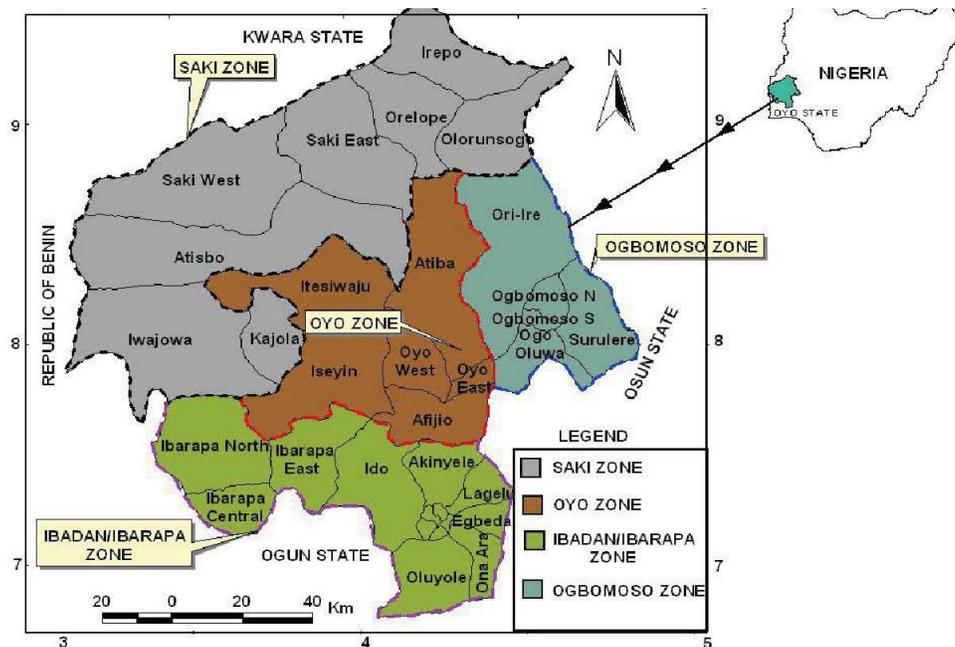
The study was carried out in Ibadan, Oyo State, Nigeria. Ibadan is the largest city in West Africa and the second largest in Africa, with land size covering an area of 240 km². The city is located on a geographic grid reference longitude 3° 5E, latitude 7° 20N. Ibadan is situated at an average height of 200m above sea level, drained by three

major river basins namely: Ogunpa, Ona and Ogbera; and surrounded by the secondary rainforest as well as a savannah with no planned sewerage system. Spatially, it sprawls over a radius of 12-15 km and experiences a mainly tropical climate with an estimated annual rainfall of about 1250 mm. Agriculture is the main occupation of the people of Oyo state. The climate in the state favors the cultivation of crops like maize, yam, cassava, millet, rice, plantains, cocoa, palm produce, cashew, etc. However, this study covered all the 11 local governments in Ibadan, namely: Egbeda, Ibadan North, Ibadan North-East, Ibadan North West, Ibadan South East, Ibadan South West, Akinyele, Ido, Ona ara, Oluyole, and Lagelu Local Government.

To extract the required information needed to meet the objectives of the study, primary data were employed in the study: data on socio-

economic characteristics (age, gender, etc.), and income-related data (amount gotten from the farm and off-farm activities, etc.). The primary data were collected from the catfish farmers via the administration of a structured questionnaire. Information gathered from the fish farmers included pond sizes, input use, management techniques, catfish species, durable goods, occupational status and income of working members of households. Information was also collected on the monthly expenditure of households, basic needs, farming (including animal husbandry) production value, household production investment, labor inputs on aquaculture production, labor inputs for other sources of income, farmland area and aquaculture area.

Figure 1: Map of Oyo State ADP Zones & Blocks showing the study location



Source: Field Survey, 2011

This study adopted a descriptive survey research design, which is “ex-post facto” in nature. The sampling technique was a multi-staged sampling. The first stage was the use of all eleven Local Government Areas (LGA) that were in Ibadan. The second stage was the selection of households according to the number of wards in each local government. There was a random selection of 6 wards from each of the local governments to give a total of 66. The list of the catfish farming households from the wards selected was obtained from the local government’ Agricultural Development Projects (ADPs). The final stage was the random selection of representative farming households using probability proportionate to size

from each of the sixty-six wards selected. 2 households were sampled randomly in each of the wards in the local government to make a total of 132 respondents. The questionnaires were self-administered. In a case where the respondent was illiterate, the researcher filled out the questionnaire based on the responses of the respondent.

Different analytical techniques used include descriptive statistics, [Foster](#) Greek Thorbecke, incidence, depth and poverty line and probit regression model. Descriptive statistics were used to analyses, summaries, and describe the production system of households and the socio-economic characteristics of the respondents. The

Poverty Line Estimation was used to describe the level of welfare of respondents which distinguishes poor households from non-poor households as well as the poverty line was used to predetermine the standard of income or value of consumption of respondents. Forster Greek Thorbecke Model and Probit regression model were used to measure the poverty gap, squared poverty gap, socio-economic characteristics, production characteristics and gender status of respondents on their poverty status.

4.0 Discussion and Findings

4.1.1 Socio-economic Characteristics of the Catfish Farmers

The socio-economic characteristics were defined in terms of gender, age, marital status, household size, years of formal education, farming experiences, contact with extension services, most important sources of income, total monthly income, total income from catfish farming and non-farming activities, monthly expenditure on food items, clothing, rent, health, education, fuel, transportation, remittances, appliances, cooperative and finally expenditure on family upkeep.

4.1.2 Gender of the Catfish Farmers' Head

The finding shows that about 75% of the farming household sampled are male-headed while 25% are female-headed. This may be due to the fact that males have better access to agricultural land than females by inheritance or otherwise. Also, agriculture entailed more difficult tasks that are undertaken by males than females.

4.1.3 Age of the Catfish Farmers Head

Age shows a direct link with years of experience in the study area. The ability of a farmer to do a tedious job is a function of age, nutritional and health status of farmers among other things. The analysis reveals that 11.1 per cent of males and 21.1 per cent of females were below 30 years, while 14.2 per cent and 3.1 per cent of females respectively were 61 years or older. About 74.7 per cent of males and 75.8 per cent of females are between the ages of 31 and 60 years. The mean age of the males was 46.6 ± 12.5 years while it was 41.9 ± 9.7 years for females which follows that males are relatively older than females in the study area. The farmers' maximum and minimum ages for males are 23 and 75 respectively and for females 22 and 62 respectively. The implication of this is that the respondents (males and females) are still within the very active productive age groups.

4.1.4 Marital Status of the Catfish Farmers Head

The result from the analysis shows that the majority of the farmers, 74.7 per cent and 57.6 per cent of males and females respectively are married but only 14.1 per cent and 27.3 per cent respectively are single. This implies that the majority of the respondent is married. This is because most of the married farmers relied more on family labor while single farmers relied more on hired labor. The need for married farmers to complement their source of income calls for more involvement in agricultural activities.

4.1.5 Household Size of the Catfish Farmers

Findings reveal that about 60.6 per cent of the respondent have a family size of below 5 members per household, 36.4 per cent have 6-10 members and 2.3 per cent of farming households have 11-15 members. About 0.8 per cent of farming households have more than 20 members. The average household size is 5.0. This showed that respondents in the study area kept the large family size

4.1.6 Years of Formal Education of Catfish Farmers

Findings revealed that 23.2 per cent and 39.4 per cent of males and females respectively have no

formal education, 33.3 per cent and 45.5 per cent, 52.2 per cent and 42.4 per cent, 14.2 per cent and 12.1 per cent respectively spent a minimum of 12 years, 13-17 years and more than 17 years respectively at school. The mean of years of schooling stood at 14.6 for males and 14.4 for females. The analysis shows that males are more educated than females in the study area. This calls for concern if the country must achieve Millennium Development Goal 3 (MDG3). The findings are in line with the earlier submission (NBS, 2005) that males in the country are more educated than females. This indicates that a large number of the respondents had formal education which is expected to impact their production and standard of living which may affect the poverty level of the household.

4.1.7 Farming Experience of Catfish Farming Head

Findings revealed that 87.9 per cent and 100 per cent, 11.1 per cent and 0.0 per cent, 1.0 per cent and 0.0 per cent respectively have experience in catfish farming for a minimum of 20 years, 21-40 years and more than 41 years respectively. The mean of years of experience stood at for 11.0 males and 6.7 for females. The level of experience that an individual acquires will help boost production.

4.1.8 Contact with Extension Service of Catfish Farmers

Access to extension services is among the important variables that affect household farming. A household member with more extension service will know more and transmit knowledge to farmers about the use of new input facilities, methods, and systems with a view to improving farm productivity and farm income as well as the totality of the welfare of the farmer and farming population. Descriptive Statistics presented in the table show that about 59.6 per cent of males and 54.5 per cent of females have exposure to extension services and 40.4 per cent of males and 45.5 per cent of females do not have exposure to extension services. Since most respondents are exposed to extension services, then there is a tendency of interviewed farmers to have an improvement in their productivity.

4.1.9 Most Important Sources of Income for Catfish Farmers

Findings revealed that 32% of males and 18.2% of females had most of their income from agricultural wages, 11% of males and 4% of females from non-agricultural income, 17.2% of males and 42.4% of females from self-employed from own business, 1.0% males and 0% female

from remittance income and 38.4% males and 27.3% females from other income sources. Findings revealed that most of the respondents especially females are engaged in other businesses apart from catfish farming to supplement their personal income.

4.1.10 Total Monthly Income of Catfish Farmers

Findings revealed that 32% of males and 18.2% of females had most of their income from agricultural wages, 11% of males and 4% of females from non-agricultural income, 17.2% of males and 42.4% of females from self-employed from own business, 1.0% males and 0% female from remittance income and 38.4% males and 27.3% females from other income sources. Findings revealed that most of the respondents especially females are engaged in other businesses apart from catfish farming to supplement their personal income.

4.1.11 Total Income of Catfish Farmers

Findings revealed that 58.6% of males and 72.7% of females earned below ₦100000 in a month. About 38.4% of males and 27.4% females of the respondents earned between 100001-500000 in a month, 1% of males earned between 500001-1000000 in a month, 1% of males earned between 1000001-2000000 in a month and 1% of the respondents earned above 2000000 in a month.

The monthly income category of the respondents shows that their income is low when compared with the household size and monthly expenditure. This may explain the reason why some of them might be poor.

4.1.12 Total Income from Catfish Farming Activities

Findings revealed that 81.6% of males and 90.9% of females earn less than N100000 from catfish farming activities, 16.2% of males and 9.1% females of the respondents earned between 100001-500000 from farming activities, 1% of the respondents earned between 500001-1000000 from farming activities and 1% of the respondents earned more than 1000000. The mean income is $N88598.5 \pm 197566.6$. This implies that the majority of fish farmers earned most of their income from practicing aquaculture.

4.1.13 Total Income from Non-farming Activities

Findings revealed that 77.8% of males and 97.0% of females earn less than N100000 from catfish farming activities, 20.2% of males and 3.0% females of the respondents earned between 100001-500000 from farming activities, and 2% of the respondents earned above 500000 from farming activities. The mean income is $N90891.1 \pm 154514.4$. This implies that more of the fish

farmers' respondents earned most of their income from non-farming activities.

4.1.14 Monthly Expenditure on Food Items

Results from the analysis show the distribution of monthly income allocated to food items by households. Findings revealed that 29.3% of males and 48.5% of females spend less than N10000 on buying food monthly, 35.3% of males and 36.4% females of the respondents spend between 10001-20000, 26.3% of males and 9.1% females of the respondents spend between 20001-40000, 7.1% males and 3.0% females spend between 40001-60000 while 2.0% males and 3.0% females spend above 60000 on their monthly food expenditure per month.

4.1.15 Monthly Expenditure on Rent

Findings revealed that 70.8% of males and 78.8% of females' monthly expenditure on rent is less than 10000, 19.2% of males and 15.2% of females spend between 10000 and 50000 on rent, 1.0% of males and 6.0% of females spend greater than 50000 on rent monthly. This shows that most of the respondents have a personal dwelling to themselves / live in a rural area which requires a low amount of money as rent to be paid.

4.1.16 Monthly Expenditure on Health

Findings revealed that 99% of males and 100 % of females spend less than 100 on health monthly and between N5000 – 10000, only about 1% of males spend their income on rent. This means that most farming households in the study area will definitely not be able to afford to seek healthcare services from private hospitals. They will not be able to make just a trip per month to government hospitals in which they seek healthcare services from a traditional healer that at present do not enjoy recognition among modern healthcare practitioners or consult patient medicine that in most cases in rural areas are not certified by the appropriate authorities to operate because they do not have the required skills.

4.1.17 Monthly Expenditure on Education

Findings revealed that 60.0% of males and 57.6% of females spend less than N10000 on their children’s education monthly, 16.2% of males and 33.3% of females spend between 10000 – N50000 monthly, 17.2% of males and 3.0% of females spend between N50000-N1000000 monthly on education and 6.0% males and 6.1% females spend more than N1000000 on their children education monthly.

4.1.18 Monthly Expenditure on Fuel

Findings revealed that 83.8% of males and 93.9% of females spend less than N10000 on fuel

monthly, 15.2% of males spend between N10000 – 20000 monthly and 1% of males and 6.1% of females spend between 20000 – 30000 monthly on fuel. This means that both respondents do not have enough money to spend on buying kerosene for cooking, gas and even petrol for a generator/car. They spend more on buying candles, coal charcoal and so on to save their money.

4.1.19 Monthly Expenditure on Remittance

Findings revealed that 82.8% of males and 93.1% of females spend less than N10000 monthly on Remittances, 13.1% of males and 6.1% of females spend between N10000 –N20000, 2% of males spend between N20000 - N50000 and 2% males spend more than N80000 monthly on remittances. They receive an average of N10000 monthly from their relatives to complement their monthly income.

4.1.20 Expenditure on Appliances

The table below shows us that about 92.9% of males and 97% of females spend less than N10000 monthly on Appliances, 6.1% of males and 3.0% of females spend between N10000-N20000 monthly and just about 1.0% of males spend more than N20000 monthly on the appliance. This means that the respondent prefers to spend money on other businesses and save the amount they would

rather spend on appliances to beautify his/her home. It shows the poverty level of the respondent to the extent that he/she tries to manage the little money he sees from his production and other petty jobs.

4.1.21 Expenditure on Cooperative

The result shows that about 90.9% of males and 100% of females spend less than N10000 on cooperatives, 8.1% of males spend between 10000 – 20000 monthly, and 1.0% of males spend less than N20000 on cooperatives monthly. This means that the average that can be contributed to their society is N10000 because most of the respondents is depending on their production level which might fluctuate for some time.

4.2.0 Production Systems Employed by Catfish Farmers

Table 1: Production system of Catfish Farmers

Variable	Total		Males		Female	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Artificial earthen pond	50	37.9	38	38.4	12	36.4
Concrete tank fishing	57	43.2	41	41.4	16	48.5

4.1.22 Expenditure on Family Upkeep

Findings revealed that about 85.9% of males and 87.9% of females spend less than N10000 on their family upkeep in a month, 12.1% of males and 12.1% of females spend between N10000-N20000 in a month and 2.0% of males spend above N20000 for family upkeep. This implies that the respondent both males and females do not have enough money to spend on their family members due to the economic situation of the country and production level. They prefer to manage the little amount they receive to take care of themselves and their children.

Water circulating system	13	9.8	12	12.1	1	3.0
Others	12	9.1	8	8.1	4	12.1
Total	132	100.0	99	100.0	33	100.0

Source; Field survey, December 2014

Findings revealed that 38.4% of males and 36.4% of females make use of the artificial earthen pond for their production system, 41.4% of males and 48.5% of females use the concrete tank fishing pond for their production system, 12.1% of males and 3% of females make use of water circulating system and 8.1% males and 12.1% females make use of other means for their production system. This implies that most of the respondents make use of the earthen pond and concrete tank pond which is the easiest for them to locate and use. Their financial standing hinders them from using the water circulating system because of its cost and most money realized from the farming system was used for the upkeep of the fish and family members. In terms of holding/rearing structure, the majority (37.9%) of the respondents used earthen ponds only, 43.2 %of the respondents used concrete tank ponds only, and 9.8% used water circulating systems for their production.

4.2.1 Ownership of Farmland

Findings revealed that about 29.3% of males and 24.2% of females make use of lands that are inherited from their parents for their production, 19.1% of males and 12.1 % of females rent their lands for a period of time for production due to inadequate fund to purchase their own lands, 16.2% males and 18.2% females lease their own land, 29.3% males and 45.5% females purchase the land with their own money, showing here that females tend to have more money to purchase the farmlands than the males and 6.1% males have their land through gifts from friends, relatives in which the females do not have the opportunity for that. Land acquisition through purchase or lease is a disincentive to production and could actually aggravate the poverty acquisition of a fish farming household through its negative effect on household income.

4.2.2 Fish Pond Size

Findings revealed that 29.3% of males and 30.0% of females have small size fish pond size which

means that about 29.5% of the respondent have small size ponds. Its due to the small percentage that could not get help from their relatives, friends, or colleagues and could not borrow from them due to lack of collateral securities, 56.6% of males and 51.5% of females have medium size pond due to their social status and ability to interact with people and their environment, 14.1% males and 18.2% females have large pond size. This implies that only a few of them live comfortably and are happy. The size of the pond is also directly proportional to the cost of construction of the pond

4.2.3 Number of Ponds

The result shows that 30.3% of males and 42.4% of females have ponds between 1-2, 40.4% of males and 42.4% of females have ponds between 3-4, 22.2% of males and 12.1% of females have ponds between 5-6, 7.1% males and 3.1% females have ponds above 6. This implies that most of the respondent has an average of 3-4 ponds showing their productivity level.

4.2.4 Labor employed by Catfish Farmers

Findings revealed that 54.5% of males and 69.7% of females are engaged in family labor and 45.5% of males and 30.3% of females are engaged in hired labor. Labor is usually measured in men/days. For an adult male to work continually

on the farm for 8 hours is said to put 1 man per day and a female that works 8 hours per day is said to work 0.75-man day. Family labor is usually carried out by members of the family, especially in rural areas where no cost is attached to it and cannot be quantified. Hired labor is usually carried out by engaging laborer's to be paid for which involves cost.

4.2.5 Operational Practices

Findings revealed that 21.2% of males and 33.3% of females practice extensive farming, 45.5% of males and 45.5% of females practice semi-intensive farming while 33.3% of males and 21.2% of females practice intensive farming. This implies that more of the respondent practice semi-intensive farming than others.

4.2.6 Cultural System

Findings revealed that 62.6% of males and 60.6% of females make use of the monoculture system for production, 22.2% of males and 18.2% of females use polyculture and 15.2% of males and 21.2% of females make use of both mono and poly cultural system. This implies that most of the respondents were involved in just one system not combining two systems together. A fish farmer in the study area preferred monoculture to a polyculture system. This may be a result of the poor market price for another type of fish. The

majority (62.1%) of fish farmers adopt the monoculture of African Catfish. This was also supported by Rundquist (1984) who observed that fish grow better when cultured individually under the monoculture system and also help the specie to grow to their biggest size.

4.3.0 Profile of Farming Households Poverty and its Determinant by Gender

4.3.1 Poverty Line

The poverty line is described as a borderline that distinguishes poor from non-poor households in terms of their level of welfare. Since there is no clear consensus in the literature about when a household or an individual should be defined as poor (Adewunmi *et al*, 2011), Lipton (1983), Levy (1991) and Oluwatayo (2008) used the income-expenditure approach method. Therefore, this study employed the income approach method as a yardstick to set the poverty line based on the total income of the households. From the survey data, the value of the poverty line computed was N51150.57. thus, the farming household that earns less than the value of the poverty line was considered poor which is about 66.4% of the sampled households, while those that earn greater than equal to the value of the poverty line were considered to be non-poor which is 33.6% of the sampled households. This implies that the

majority of the respondents live below the average income in the study area.

4.3.2 Poverty Status of the Farming Households

The FGT poverty index was used to depict the extent of poverty among the farming households in the study area. The poverty aversion parameters employed were p_0 , p_1 and p_2 which mean poverty incidence (headcount), gap (depth) and severity respectively. The incidence of poverty (p_0) in this study was 0.3409 indicating that 34.1% of the sampled farming households were actually poor based on the poverty line. The value of p_1 (poverty depth) among the farming household was 0.1234, implying that average poor farming households would require 12.34% of the poverty line to get out of poverty. The value p_2 (poverty severity) among the sampled farming households was 0.0645, indicating that the poverty severity of poor farming households was 6.45%. This implies that to escape poverty the average poor has to mobilize financial resources up to 12 per cent of N51150.57 household expenditure per month for each household member and the core poor has to mobilize financial resources of 6 per cent more of N51150.57 household expenditure per month for each household member than is required for the averagely poor. The result was lower than what was found in their study carried out among rural farm households in Yewa Division of Ogun State,

Nigeria (Adewunmi *et al*, 2011). From the rural farming households in the study area and it existence of their findings, it could be referred is high time we proffered adequate measures to that the existence of poverty abounds among the alleviate poverty in the location.

Table 2: Poverty Profile of the Respondents according to Gender

Poverty indices	Total	Male	Female
Incidence	0.34	0.29	0.48
Depth	0.12	0.11	0.16
Severity	0.06	0.06	0.08

Source; Field survey, December 2014

The poverty status of households was further disaggregated by sex, Age, Marital Status, Family size, Years of education, Farming Experience, Exposure to Extension Services, Access to Remittances, Fish Pond Size, Operational practices, Cultural System, Production System, Sources of Finance, as follows:

Table 3: Poverty profile by some selected socio-economic variable

Variable	Males			Female		
	Depth	Incidence	Severity	Depth	Incidence	Severity
AGE (Years)						
<30	0.5455	0.2599	0.1492	0.4286	0.1506	0.0761
31-60	0.3243	0.1147	0.0606	0.2000	0.0912	0.0441
>61	0.1429	0.0713	0.0362	0.0000	0.0000	0.0000
MARITAL STATUS						
Married	0.2838	0.1061	0.0573	0.1579	0.0766	0.0400
Single	0.5714	0.2333	0.1229	0.4444	0.1591	0.0750
Widowed	0.5000	0.3589	0.2576	0.2500	0.1119	0.0501
Divorced	0.2222	0.0563	0.0173	0.0000	0.0000	0.0000
FAMILY SIZE						
<5	0.3750	0.1409	0.0714	0.2500	0.0954	0.0435
6-10	0.2564	0.0997	0.0595	0.2222	0.1162	0.0658
11-15	0.3333	0.1877	0.1056	0.0000	0.0000	0.0000
YEARS OF EDUCATION						
<12	0.4545	0.1742	0.0915	0.3200	0.1045	0.0109
13-17	0.2500	0.1042	0.0600	0.1200	0.0000	0.0000
>18	0.2857	0.0841	0.0355	0.1830	0.0000	0.0000
FARMING EXPERIENCE						
<20	0.3448	0.1331	0.0716	0.2424	0.1011	0.0496

21-40	0.1818	0.0693	0.0366	0.0000	0.0000	0.0000
EXPOSURE TO EXTENSION SERVICES						
Yes	0.3559	0.1396	0.0754	0.2222	0.0865	0.0418
No	0.2750	0.1027	0.0546	0.6667	0.1185	0.0589
FINANCE SOURCE						
Bank loan	0.3167	0.1264	0.0700	0.2353	0.0728	0.0263
No Bank Loan	0.3333	0.1220	0.0623	0.2500	0.1311	0.0743
CULTURAL TYPE						
Non-Monoculture	0.3243	0.1306	0.0746	0.3077	0.1410	0.0695
Monoculture	0.3225	0.1211	0.0625	0.2000	0.0751	0.0367
PRODUCTION PRACTICES						
Earthen pond	0.3158	0.1358	0.0859	0.3333	0.1440	0.0822
Non-Earthen pond	0.3279	0.1177	0.0553	0.1905	0.0765	0.0309
POND SIZE						
Small size	0.2143	0.1382	0.1040	0.0000	0.0000	0.0000
Others	0.3412	0.1225	0.0609	0.2963	0.1235	0.0606
OPERATIONAL PRACTICES						
Extensive	0.3810	0.1577	0.0968	0.6364	0.2625	0.1305
Semi intensive	0.2444	0.0763	0.0337	0.0000	0.0000	0.0000
Intensive	0.3939	0.1697	0.0935	0.1429	0.0640	0.0286
ACCESS TO REMITTANCES						
No Access to Rem.	0.4706	0.2210	0.1308	0.4000	0.1523	0.0693
Access to Rem.	0.2462	0.0743	0.0336	0.1111	0.0584	0.0331

Source; Field Survey, December 2014

The distributions by marital status revealed that households with married heads were not as poor as those with single heads and others. This could be attributed to the fact that married household heads are likely to have larger household sizes when compared to single household heads. The poverty depth of 0.28 for males and 0.15 for females means that married household heads on average would require N14322.16 for males and N7672.59 for females to get to the level of the

poverty line. The poverty severity index of 0.16 also reveals a higher level of inequality in expenditure distribution among male-headed households than female-headed households in the study area. This result though contrary to the general view agreed with the study (Ayinde, 2003). The reason for the above is that the majority of female-headed households are engaged in a secondary occupation such as trading

which tends to generate additional income for the household's consumption expenditure.

The disintegration by the age of the respondents revealed that Contrary to *a priori* expectations, households whose heads were less than 30 for both males and females had the highest incidence, depth and severity of 0.5454, 0.2599 and 0.1492 respectively for males and 0.4286, 0.1506 and 0.0761 respectively for females which means the majority of our youths are unemployed. Household heads within this age group are in their economically active age and are consequently expected to be less poor than those in other age groups. However, a likely reason for the high incidence of poverty incidence within this age group is that they are largely dependent on their family since they do not have jobs to supplement. On the other hand, households whose heads were aged 61 years and above had the lowest poverty indices of 0.1429 depth, 0.0713 incidences and 0.0362 severity for males and 0.000 for females. This could be a result of the fact that these households are small-sized and depend mainly on remittances for their upkeep. This result corroborates the findings of (Adekunle *et al*, 2012) on rural financial services and poverty alleviation in rural Nigeria carried out in Oyo State.

The disaggregation by household size revealed a positive relationship between household size and poverty status. In other words, poverty status

increased as household size increased. While households with less than or equal to five members had the lowest incidence (0.37), depth (0.14) for males, (0.27) incidence (0.09) depth for females and severity of poverty status (0.07 males) (0.04 for females), households with less than or equal to sixteen members had the highest incidence (0.73), depth (0.40) and severity of poverty (0.28) respectively followed by households with between 11 and 15 members. The impact of large family size is such that it reduces the per-capita expenditure of the family thereby aggravating the poverty status in that household while those with less than 5 family sizes have no helping hand to assist them on the farm. This result is in line with the findings of Babatunde *et al.*, (2007) and Omonona and Agoi (2007) which revealed that the incidence of poverty status increased with an increase in household size.

The educational status profile showed that households whose heads had less than 12 years of education had the highest poverty incidence and depth of 0.45 and 0.17 for males, 1.0 and 0.10 for females respectively. However, households whose heads had between 13-17 years of education had the lowest incidence (0.25 male) and depth of poverty (0.10). The poverty severity index also revealed the highest and lowest level of inequality in expenditure distribution among households whose heads had no formal education and tertiary

education respectively. This result agrees with the findings of Riber and Hamrick (2003) in which household heads with tertiary education were the most not really poor.

Disaggregation of the farming experience showed that households with less than 20 years of experience have the highest poverty index with respect to males of 0.3448, 0.1331 and 0.0716 depth, incidence and severity respectively while that of the females is 0.2424, 0.1011 and 0.0496 of depth, incidence and severity. The poverty severity index revealed that females that fall between 21-40 of farming experience have no poverty incidence. It is imperative that a farmer acquires enough experience to enable them to succeed in farming because experience has shown that the longer one stays in an occupation, the higher the skills derived. Household heads' farming experience reduced the level of household poverty while it increases the possibility of poor households sinking deeper into poverty and reducing the possibility of a poor household escaping from poverty.

Highlights of the pond size distributions indicate that 0.2143 males at the depth level and 0.000 females of the small-sized farm are not as poor as the otherwise non-small of 0.3412 and 0.2963 males and females respectively. The farmers with small-sized ponds will be easily managed because they will have the time to feed well which will lead

to high productivity in return creating more income. The pond size still confirms the peasant nature of the study area where the majority of the respondent farmed on small pond size and implies more requirements in terms of time on the farm, which has to be supplied by the respondents if hired labor is not available. This is in agreement with Rahji (1991) who revealed that farm size indirectly determines the non-farm activities of the respondent and because income increases, the farmer will be encouraged to work more so as to earn more.

The production practice of the respondent shows that the respondent making use of the artificial earthen pond of 0.3158 and the non-earthen pond of 0.3279 for the males are poor at the same level. And those using the earthen pond of 0.3333 and non-earthen pond of 0.1905 for females are poorer than those using the earthen pond. In summary, it then appears that the farmers are using more of the earthen pond than the male with a poverty depth of 33% showing the poverty level of the farmers in Oyo State.

The cultural practice of the respondent shows that 0.3240 and 0.3077 poverty depth for both males and females using the monoculture system of production will be well able to manage it well as compared to those practicing the non-monoculture system whose depth for males and females are 0.3220 and 0.3000 respectively.

4.4.0 Probit Regression on the Effects of Socioeconomic Characteristics, Production Characteristics and Gender Status of Respondents on their Poverty Status

4.4.1 Factors that determine poverty status among the farming households

The table below presents the estimate of the determinants of a poverty regression model.

Table 4: Probit Estimates of the Determinants of Poverty Regression Analysis

Variable	Total		Males		Females	
	/z/	Marginal Effects	Marginal Effects	/z/	Marginal Effects	/z/
Age	-0.61	-0.0034 (0.0056)	-0.0058 (0.0057)	-1.03	-0.0320 (0.0265)	-1.21
If Married	1.87	-0.2546*** (0.1359)	0.1425*** (0.1516)	0.94	0.0413 (0.4678)	0.09
HH SIZE	0.55	0.0127 (0.0232)	0.0160 (0.0240)	0.67	0.2652*** (0.1584)	1.67
Yrs. Edu	0.69	0.0075 (0.0110)	0.0196 (0.0118)	1.66	-0.0972** (0.0504)	-1.93
Coop-Member	0.40	0.0429 (0.1084)	0.0742 (0.1096)	0.68	-0.0973 (0.2993)	-0.33
Yrs.-Experience	1.67	0.0122*** (0.0073)	0.0112*** (0.0068)	1.64	0.2228* (.0925)	2.41
Exposure	0.96	0.0956 (0.0992)	0.0930 (0.1079)	0.86	0.8374*** (0.4567)	1.83
Access to Rem	2.97	0.2924* (0.0985)	0.1832*** (0.1129)	1.62	0.6328* (0.2384)	2.65
If large pond	2.48	0.2376** (0.0958)	0.2288* (0.0867)	2.64	0.1588 (0.3484)	0.46
If intensive	-0.67	-0.0718 (0.3005)	-0.0953 (0.1175)	-0.81	0.0000	
Govt. assist	1.43	0.1538 (0.3135)	0.1944*** (0.1092)	1.78	-0.2837 (0.3925)	
Number of obs.		132	99		33	
Constant	-1.40	-2.0293 (1.446)	-3.6263* (1.565)		-2.3981*** (4.0514)	
Sigma		0.7060	0.7632		0.6699	
Prob>chi2		0.0089	0.0979		0.0032	
Pseudo R2		0.2096	0.2108		0.5787	
Log-likelihood		-66.4106	-46.5341		-9.6315	

Notes: Marginal effects (rather than coefficients) showed in the table. The marginal effects are computed at the mean of regressors, for dummy variables it is given for a discrete change from 0 to 1. *** Significant at 10%, ** at 5% and * at 1%. The figures in parentheses are the standard error of the mean.

Source: Field Survey, 2009.

Probit regression model was carried out to determine the socioeconomic, and production factors that affect the poverty status of the catfish farming household. The model has a good fit going by the value of the chi-square which is greater than the tabulated value. Additional insight was also provided by analyzing the marginal effects which were calculated as the partial derivative of the nonlinear probability function evaluated at each variable sample mean.

The log-likelihood of -46.5341 and -9.6315, the pseudo-R² of 0.2108 and 0.5797 (suggests that about 21% and 58% of the log-likelihood is explained by all the parameter models), the LR (Chi-square) of 0.0979 and 0.0032 for males and females respectively implies that the overall model is fitted and the explanatory variables used in the model were collectively able to explain the correlates of poverty among the catfish farming household in Nigeria. The constant term is -2.029254 meaning that if all the predictors are evaluated at zero, the predicted probability will be extremely low.

The result indicates the marital status of the household, farming experience, access to remittances, and the pond size (if large) are the four factors that affect the farmers significantly at 5%, 10%, 1% and 10% respectively. Household

head marital statuses, farming experience, access to remittances and size of the pond have both positive and negative relationships at various significance levels.

The marginal effect revealed that a unit increase in the number of catfish farmers that are married will lead to an increase in the probability of being poor by 0.2546. The elasticity of a married household is 0.1425 which is significant for males and 0.0413 for females. The value of male's elasticity of married households means that if the male status that is married is increased by 100 per cent, the likelihood of household poverty will increase by 14% indicating a rather low response for the males. Being married compared with single is inversely proportional to productivity meaning that married individuals are less poor than the non-married individual implying that an educated married farming household that had access to agricultural credit vis-à-vis increase in farm income may likely be non-poor in the study area. This finding is in line with the findings of Olayemi (1998).

The absolute values for the coefficient for female household size and years of education elasticity of household poverty are 0.2652 and -0.0972 respectively showing the elastic response. This means that if there is an increase in the household

size by 100%, the likelihood of household poverty will increase by 27% and reduce by 10%. This has to do with the fact that the size of a household greatly affects poverty status because the amount of income consumed will be high and if more females then go to school, the poverty status will reduce because the level of technical know-how will also be high for productivity.

Also, the marginal effect revealed that a unit increase in the years of experience of the respondent will lead to the increase in the probability of being poor by 0.0122 which on disaggregation accounts for 11.2% males and 22.3% females. On the other hand, the access of farmers to remittance had negative coefficients and significantly affects the level of poverty in the study area. A unit increase in the access of farmers to remittances will lead to an increase in the probability of not being poor by 0.2924 which on disaggregation 56.39% males and 63.28% females, and also the marginal effect also revealed that a unit increase in the size of the pond if large of the respondent will lead to a unit increase in the probability of not been poor by 0.2377 which on disaggregation 22.88% males which are significant and 15.88% females.

5.0 Conclusion and Recommendations

This study has so far examined an analysis of poverty in Ibadan Metropolis Oyo state, according to gender among catfish farmers in which land used for production is majorly by purchase, an incentive to produce and could actually aggravate the poverty level of a fish farming household through its negative effect on household income. The production system used by most of the respondents is the artificial earthen pond (37.9%) and concrete tank pond (43.2%) which is the easiest for them to locate and use due to their financial standing in which their source of finance is diverse. Based on the results, poverty in Oyo state is a more serious issue if we consider the fact that about 66.4 per cent of catfish farming households are poor and 33.6 per cent are non-poor. However, this great number could cause a great deal of trouble to society and should be considered. Remember, "Poverty anywhere is a problem everywhere". The study also showed that the average poor have to mobilize financial resources up to 12 per cent of N51150.57 household per capita expenditure per month to escape poverty while the core poor have to mobilize an additional 6 per cent of N51150.57 household per capita expenditure financial resources to achieve the same feat. I further showed that poverty in Oyo state using Ibadan Metropolis as a case study is a gender, occupational and rural-urban issue and is mostly

determined by the household size, years of schooling/ farming experience, marital status, exposure to extension services, and per capita expenditure on food and non-food items. However, the results also indicated that the marital status of the household, farming experience, access to remittances and pond size are the four factors that affect the farmers showing both positive and negative relationships at various significance levels.

More so, the policy implication of the findings is that there exist ample opportunities for improving the present level of catfish production in the study area given the wide variations among and between farms. Since their level of experience and technical know-how bore a relationship with the level of production, government policy should be directed at addressing ways to encourage catfish farmers to take to the venture on a full-time basis to eradicate and reduce poverty among the farmers. Experience is often said to be the best teacher and what can compensate for this for very young, inexperienced farmers is increased extension contact directed at building their capacity, especially in issues critical for improved production. Inputs need to be within easy reach of farmers and credit is very critical in accessing inputs.

Based on the foregoing the following recommendations are made:

- Gender gap between the male and female gender in terms of production should be bridged.
- There is a need to encourage human capacity development among respondents since the study revealed that education of both males and females reduces poverty.
- Since most of the respondents were their active working age, educated, and married with an average household size of 7 members, sensitization and awareness on production and technical knowledge should be extended to them through extension agents.
- To ensure sustainability in homestead fish production and provide substantial income for both men and women, there may be the need to develop an extension system. This can be achieved if the level of household's involvement in homestead fish production in Nigeria is determined and in addition if the constraints they face and their training needs are

identified. If the identified needs of people involved in homestead fish production are used in the design of the training content, then the training becomes more effective in enhancing the skills and competence of the people.

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