

## **PROBLEMS OF SMALL-SCALE CATFISH (*Clarias gariepinus*) FARMING IN BENIN METROPOLIS OF EDO STATE, NIGERIA**

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### **ABSTRACT**

*The study examined the problems of small-scale catfish farmers in Benin metropolis, Edo state, Nigeria. Random sampling and snow-balling techniques were adopted to select 90 respondents from selected locations in the study area. Well-structured questionnaire and interview schedules were used to gather primary data from the respondents. The data were analyzed using simple descriptive statistics such as frequency counts, tables, means and graphs. The results showed that small-scale catfish farming in Benin metropolis is predominantly a male activity with mean age of 54 years. Majority (86.20%) of the respondents were married and had over 10 years of catfish farming experience. A good number (75%) of the small-scale fish farmers in the study area utilized concrete tanks as their production units and sourced fingerlings from other farms. Majority (60%) of the fish farmers stocked between 1000 and 2000 fingerlings. The predominant problem they encountered in the process of production include lack of capital, scarcity of brooding stock, high cost of feeding, inadequate water supply, high mortality rate, epileptic power supply and theft. It was therefore recommended that younger folks who are more energetic should be encouraged to go into catfish farming and should also be encouraged to form cooperative societies so as to tackle the problem associated with capital and high cost of feed and other inputs.*

**KEYWORDS:** *Catfish, Problems and small-scale*

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### **INTRODUCTION**

Aquaculture is the rearing of fish and other aquatic organisms in man-made ponds, reservoirs, cages, tanks or other enclosures in lakes and coastal waters (Essien, 1981). This practice allows feeding, breeding, growing and harvesting of fish in a well-planned manner. The contribution of aquaculture to meet the much needed

fish for domestic production and export to the overall animal protein supply of the country sustainably cannot be over-emphasized. For example, Ugumba and Chukwuji (2010) reported that awareness on the potential of aquaculture to contribute to domestic fish production has continued to increase in the country. Therefore, the importance of the fishing industry to the

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development of the fish industry will increase local production of fish and save much of the foreign exchange being used for fish importation. Specifically, it has a special role of ensuring food security, alleviating poverty and provision of animal protein. It is therefore pertinent to assess the problems and prospects of the small-scale catfish sub-sector. The objectives of this study were to describe the socio-economic characteristics of the small-scale catfish farmers in the study area, investigate the inputs employed by the small-scale catfish farmers in the study area and identify the problems militating against small-scale catfish farming in the study area.

## **RESEARCH METHODOLOGY**

### ***Area of the Study***

The study was conducted in Benin metropolis, Edo-state, Nigeria. The State has a land mass of 19,794 km<sup>2</sup>. Its

geographical coordinates are latitudes 5° 44' North and 7° 34' North of the Equator and longitudes 5° 4' East and 6° 45' East of the Greenwich Meridian. It is bounded in the South by Delta State, in the West by Ondo State, in the North by Kogi State and in the East by Kogi and Anambra States. Edo state has eighteen Local Government Areas with Benin City as the major metropolitan centre in the state. Three local government areas namely: Ikpoba-Okha, Oredo and Egor local government areas are represented in Benin City. Agriculture is one of the predominant occupation of the people in Edo State with catfish farming gaining wide recognition. The major cash crops produced in the state are rubber, cocoa and oil palm. Other crops grown by the State include yams, cassava, rice, plantains, guinea-corn, and various types of fruits and vegetables such as mango, banana, orange and pineapple.

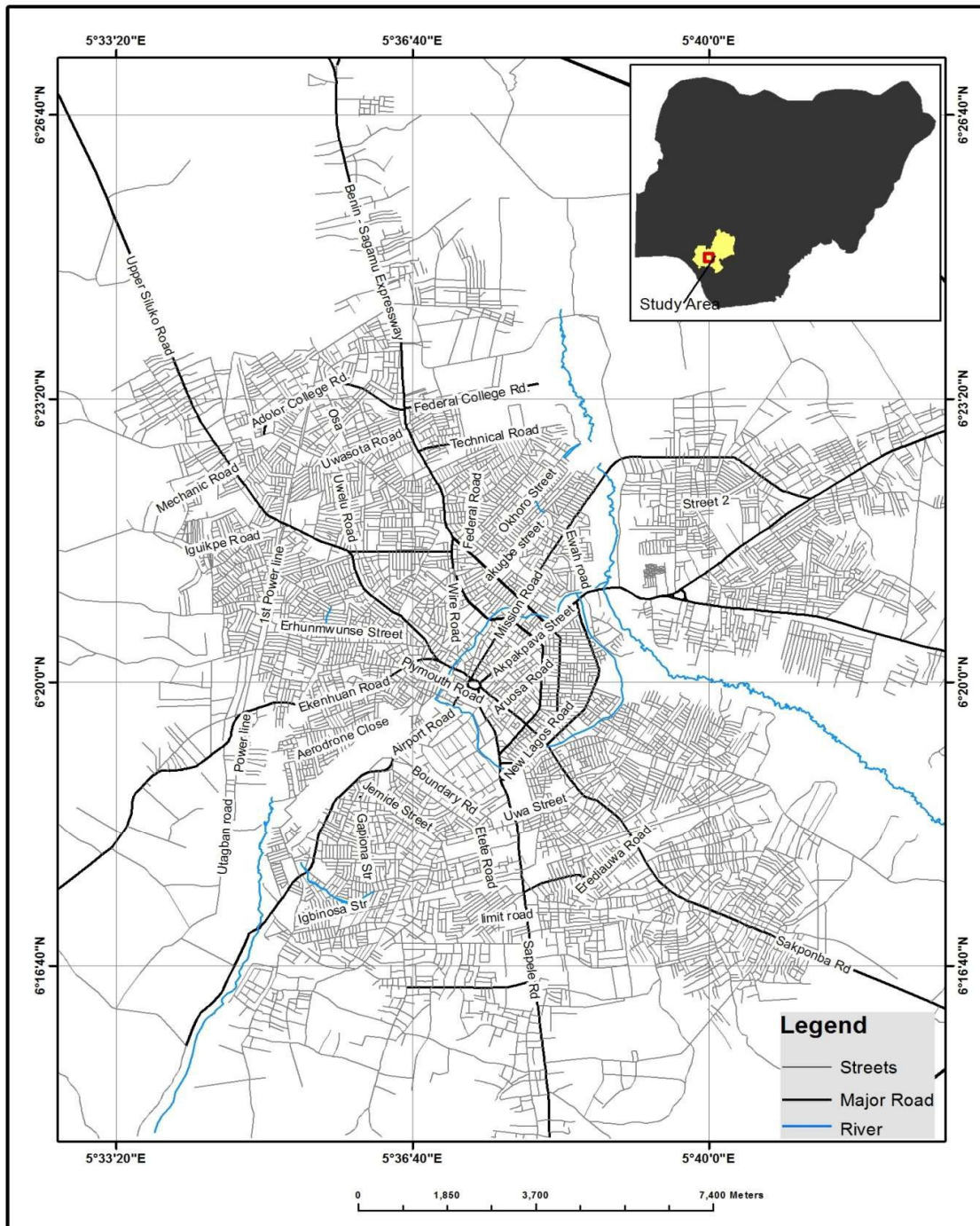


Fig. 1: Map of Benin Metropolis  
Source: Floyd *et al*, 2016

**Sample Size and Sampling Technique**

The sample for the study was obtained using a simple multi-stage

random sampling technique. Three locations were randomly selected from each of the three Local Government

Areas (Ikpoba-Okha, Oredo and Egor) that make up Benin metropolis which gave a total of nine locations selected for the study. The locations were Idogbo, Ugbekun, Aduwawa, New Benin., Ogbe, Oliha, Uwelu, Uselu and Evbareke. Ten small-scale catfish farmers were selected using the simple random sampling technique and the snow-balling approach from each of the nine locations. This gave a total of 90 respondents that were carefully chosen and used for the study. The instrument used for data collection was the questionnaire and interview schedules. However, only 80 copies of the questionnaire were found valid and useful for analysis.

**Methods of Data Collection**

The data for the study was collected from primary source. The primary source includes information generated

from the administration of questionnaire in addition to scheduled interviews. Ninety questionnaire were circulated to the respondents.

**Method of Data Analysis**

Descriptive statistics such as frequency counts, percentages, means and were used to describe the socio-economic characteristics of the small-scale catfish farmers as well as the problems they encountered in the process of production.

**RESULTS AND DISCUSSION**

***Socioeconomic Characteristics of Small-Scale Catfish Farmers in the Study Area***

The result of the socio-economic characteristics of the small scale catfish farmers in the study area is presented in Table 1.

Table 1: Socioeconomic Characteristics of Small-Scale Catfish Farmers in the study area

<b>Variables</b>	<b>Description</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Age	18 – 25	6	7.50
	26 – 45	10	12.50
	46 – 65	49	61.30
	66 – 85	15	18.70
	Total	80	100.00
	Mean	54	
Gender	Male	62	77.50
	Female	18	22.50
	Total	80	100.00
Marital Status	Married	69	86.20
	Single	8	10.00
	Divorced	1	1.30
	Widowed	2	2.50
	Total	80	100.00
Educational Level	Primary School	3	3.75
	Secondary School	14	17.5
	Tertiary Education	63	78.75
	Total	80	100.00

Farming Experience	1 – 2years	19	23.75
	3 – 5 years	16	20.00
	6 – 10 years	22	27.50
	>10 years	23	28.75
	Total	80	100.00
	Mean	6	

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The results in Table 1 indicates that most of the small-scale catfish farmers (61.3%) are within the age bracket of 46 to 65 years old with a mean of 54 years. This shows that catfish farming in the study area is relatively dominated by fairly old people. This may not be unconnected with the drudgery associated with agriculture requiring more energetic folks to be involved in it. The implication of this is that smaller fish tanks may be utilized as they may be less energetic. Research have shown that ageing farmers are less energetic to work (Ajibefun & Aderinola, 2004 and Anyaegbunam *et al.*, 2006. As shown by the survey result in Table 1, 77.5% of the farmers were males as compared to just 22.5% of their female counterparts involved in catfish farming in the study area. This agrees with the works of Oladejo, (2010) who reported similar results for small scale catfish farmers in Ido local government area of Oyo state, Nigeria. In terms of marital status, result indicates that about 86.2% of the small-scale catfish farmers in the study area were married (Table 1). This could be responsible for the additional labour supply to complement farmers' personal efforts. Education is vital in achieving high level of management

capabilities. Findings indicate that a good number of the small-scale fish farmers in the study area (78.75%) have tertiary education training. This implies that the use of technological information that will enhance productivity may be embraced readily. This findings is in line with the works of Sadiq and Kolo 2015 who reported a high level of education (secondary-tertiary level, 95.4%) among small-scale catfish farmers in Minna agricultural zone of Niger state, Nigeria. With regards to catfish farming experience, results indicate that majority (28.75%) of the farmers have more than ten years of catfish farming. This shows that they are experienced in catfish farming which may translate to productivity. Again, this could show an index of efficiency in farming (Ogunniyi *et al.*, 2015).

#### ***Inputs Employed in Fsmall-scale Fish Farming in the Study Area***

As indicated by Figure 2, majority (75%) of the small-scale fish farmers in the study area utilized concrete tanks as their production units, 18.75% of them produced in movable structures like plastic tanks while only 6.25% used a combination of both the concrete and movable tanks.

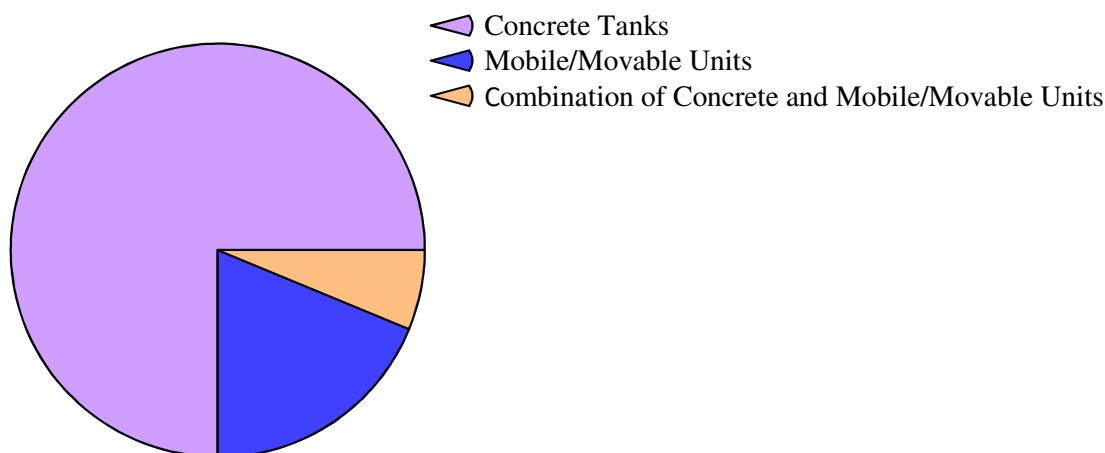


Fig. 2: Type of Production Unit

The type of labour employed is presented in Table 2. Results indicate that majority (37.5%) of the small-scale catfish farmers in the study area utilized personal labour. This means that they were practically involved in the day-to-day running of the farm themselves. This obviously was done to minimize

the overall cost of production and gain hands-on-deck experience. Those who employed the services of hired labour were only 21.25% of the small-scale catfish farmers. However, 25% of the farmers engaged a combination of personal, family and hired labour in their production.

Table 2: Type of labour employed by respondents

Type of Labour	No. of respondents	Percentage Response (%)
Personal labour	30	37.5
Hired labour	17	21.25
Personal and Hired labour	13	16.25
Personal, Family and Hired labour	20	25
<b>Total</b>	<b>80</b>	<b>100</b>

Figure 3 presents the source of fingerlings of the small-scale fish farmers in the study area. Majority (75%) of the farmers got fingerlings from other farm's hatchery while only 25% could hatch their own fingerlings. This result shows that most of the farmers probably lacked the technical know-how, competence and facility for a hatchery.

The stocking rate of the small-scale fish farmers in the study area is presented Figure 4. Stocking density is one of the main factors determining the growth (Engle and Valderrama, 2001; Rahman *et al.*, 2005) and the final biomass harvested (Boujard *et al.*, 2002). Results indicate that majority (60%) of the small-scale fish farmers in the study area stocked between 1000

and 2000 fingerlings. this is similar to the finds of Oladejo (2010) who reported that 60% of small-scale fish

farmers in Ido local government area of Oyo state, Nigeria stocked 1,000 – 2,000 fingerlings.

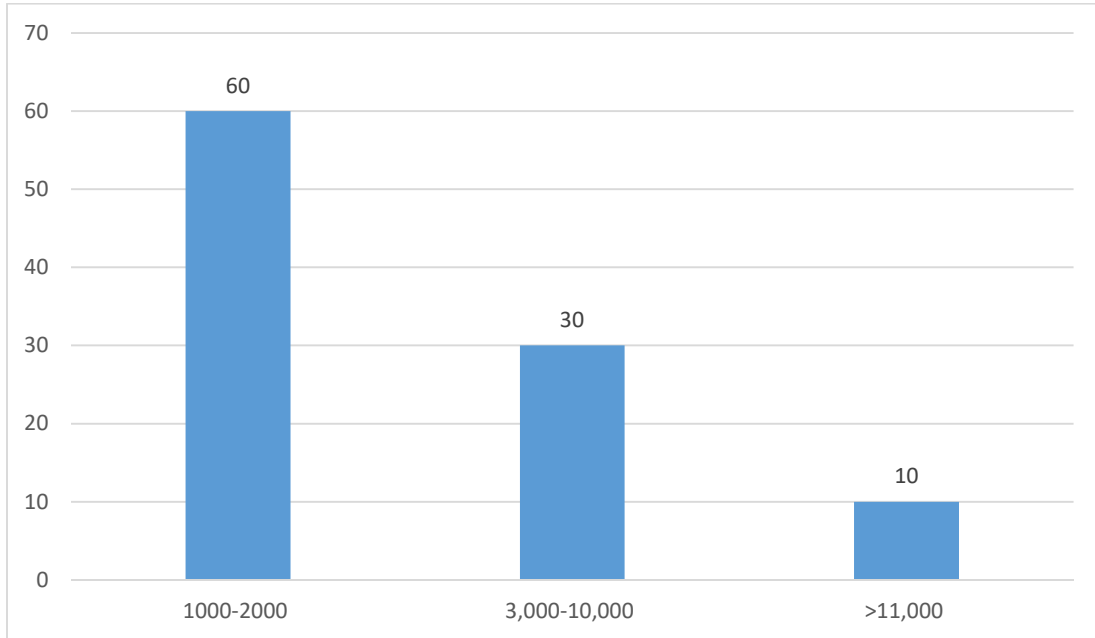


Fig. 4: Stocking rate

Table 3: Type of Fertilizer Used

Fertilizer Used	Frequency	Percentage
Poultry droppings	70	87.5
Cow dung	6	7.5
NPK	4	5
<b>Total</b>	<b>80</b>	<b>100</b>

The type of fertilizer used by the small-scale fish farmers in the study area is presented in the Table 3. Results show that most of the farmers used poultry droppings as fertilizer in the production season. This findings is similar to the work of Oladejo (2010) who reported that 86% of small-scale fish farmers in Ido local government area of Oyo state, Nigeria used poultry droppings as fertilizer source. This may be due to the fact that it is readily available and relatively cheap to access. Only 5% of the farmers utilized NPK fertilizer.

***Problems Faced by the Small-scale Fish Farmers in the Study Area***

The problems encountered by the small-scale fish farmers in the study area is presented in Table 4. Problems are difficulties that need attention and concern. They reveal the factors affecting the level of production. Small-scale fish farmers in the study area were faced with a myriad of problems in the path of the production process. These problems ranges from capital, scarcity of brooding stocks, high cost of feeds, inadequate water supply, high mortality

rate, epileptic power supply, and theft. Fish farming is capital intensive and requires enormous capital investment for substantial profit to be realized. Result as indicated in Table 5 shows that capital was the major problem encountered by the small-scale farmers in the study area. This accounted for 22.22% of the entire problems encountered in the course of production. This findings is similar to the works of Kudi *et al.* (2006) who reported that capital was the major constraint encountered by small-scale fish farmers in Kaduna state, Nigeria. Following this problem is the problem of scarcity of brooding stock accounting for about 21% of the problems they encountered. This problem is explained by their

dependence on other farms for fingerlings. High cost of feeds (19.35%) is the third problem faced by the small-scale fish farmers in the study area. This finding is corroborated by Sadiq and Kolo (2015) who reported that the cost of feed is the third most serious problem encountered by small-scale fish farmers in Minna agricultural zone of Niger state, Nigeria. Probably, the importation of most fish feed into the country, rigid government fiscal policies on importation, high cost of raw materials and dispersal could be responsible for the rise in feed prices. The least problem encountered by the small-scale fish farmers was theft which accounted for only 4.31% of the entire problems.

Table 4: Problems faced by the small-scale catfish farmers in the study area

<b>Problems</b>	<b>*Frequency</b>	<b>Percentage</b>
Lack of capital	62	22.22
Scarcity of brooding stock	58	20.79
High cost of feeding	54	19.35
Inadequate water supply	52	18.64
High mortality rate	25	8.96
Epileptic power supply	16	5.73
Theft	12	4.31
<b>Total</b>	<b>279</b>	<b>100</b>

\*Multiple Responses

## CONCLUSION

Small-scale catfish farming in the study area is carried out by fairly old people and the problems encountered arranged in descending order of its severity were lack of capital, scarcity of brooding stock, high cost of feeding, inadequate supply, high mortality rate, epileptic power supply and theft.

## RECOMMENDATIONS

It is recommended that younger folks who are more energetic should be encouraged to go into fish farming and

policies should be directed to provide credit facilities, modern hatcheries, subsidize the cost of feed and carry out routine training for the farmers.

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