



Socio-economic Characteristics of Catfish Producers in Benue State, Nigeria

Ogidi, Armstrong Emmanuel (PhD Student)

Department of Agribusiness & Management

Michael Okpara University of Agriculture, Umudike, P.M.B. 7267, Umuahia, Abia State, Nigeria

| Email: armstrongogidi@gmail.com | Phone: 08036228671; 07057240174

Abstract: *The risk involved in fish farming is solely borne by the catfish farmer. Most lands in the rural areas, especially, are inherited lands, making it difficult to rent such lands. The objective of this study was to examine the socio-economic characteristics of catfish producers in Benue State, Nigeria. Findings of the study implied that the men are more likely involved in catfish farming in Benue State, than their female counterpart. The catfish business in the study area compliments other sources of income, and contributes to the protein requirements of the family. Most catfish farmers in Benue State prefer earthen fish ponds. Earthen fish ponds are economical to construct and the loamy-clay soil in Benue State holds water for a long time. Improvement in the years of experience in catfish production business could be achieved if catfish managers attend trainings or demonstration farms at least once every year. Catfish producers should be taught modern methods of fish production such as the use of tarpaulins and plastic containers by NGOs, and co-operatives. In order for catfish producers to operate at full time, Government and financial institutions should make it possible for farmers to have easy access to finance.*

Key words: *Benue State, socio-economic characteristics, catfish producers, finance*

1. Introduction

The emphasis on demographic and socio-economic inefficiency studies (Lawal, 2002; Ugwumba and Nmabuike, 2008 and Okwu and Acheneje, 2011) on fish production alone is not enough to reduce business risk in Nigeria. This trend has led many farmers to give up fish farming, while others left their ponds idle because of losses from high mortality and rising costs. Those who remained in business are presumably the farmers with superior managerial ability and access to low-cost credit and other sources of investment funds or those with diversified operations that could spread the risk. Farmers try to avoid risk of low yields of catfish by engaging in other enterprises like snail farming in Benue State. The risk experienced by many catfish entrepreneurs is as a result of inexperience in management techniques, diversification of resources in other agricultural ventures, inappropriate use of resources to reduce costs and

inaccessibility to improved breed of fingerlings (Ogidi *et al.* 2013). Catfish production is unquestionably laborious (Ogidi and Umeh, 2015). The present day method of production require the performance of a very large number of tasks from the business environment (i.e. water supply, building(s) set ups, pond construction, oxygen supply, feeding, fish hauling, pipe drainage, transportation, fuel, electricity, preservation facilities, harvesting, chemicals and medication (drugs), telephone services).

The supply of food fish has been on the decline. This is due to consistent declines from the country's major source of artisanal fisheries, from 90% in 1990 down to 40% in 2006 resulting to about 300,000 metric tones (Tobor, 1990). Recently, artisanal fisheries rate declined from an average of 12.2% in 2012 to 8.6% in 2013 (UNDP, 2014). Inadequate supplies from the local catfish farmers due to the use of poor quality catfish fingerlings, inadequate information, high cost of feeds, use of traditional techniques, small size of holdings, poor infrastructural facilities and low capital investment contribute to poor yield (Ugwumba *et al.* 2006).

Lawal (2002) made use of demographic variables as technical inefficiency items (i.e. age, gender, educational background, experience), while Okwu and Acheneje (2011) studied the effect of socio-economic variables on fish production in Benue State. The study concentrated on both fishermen who fish in the wild and those who own ponds and operate a business in Benue State. In contrast, this study is aimed at modeling business environment factors (i.e. social, physical and institutional factors) as input variables in addition to catfish resources (i.e. fingerlings, feeds, labor and pond size) in Benue State, to help reduce the risk associated with production. Ugwumba and Nmabuife (2008) concentrated on the utilization of commercial feed and home-made feed in catfish production. However, the study took into consideration the demography of the study area as items in the study's inefficiency model; it did not take into consideration the influence of the environment of business.

Sikiru *et al.* (2009) carried out a socio-economic analysis of the productivity of Clarias (Catfish) through a random selection of 50 catfish farmers in Ijebu-Ode, Ogun State during 2005/2006 production season. The analysis of the economics of catfish farming was carried out by using two-stage least square regression model, descriptive statistics, Friedman chi-square and Analysis of Variance (ANOVA). The stocking capacity and rate of water change were discovered to be the most significant factors at 5 and 10% levels of significance respectively. Organic fertilizer was less effective compared to inorganic fertilizer in the study area, though inorganic fertilizer was more expensive. The productivity of the fertilizer types were 2.753 kg/m² and 0.655 kg/stock (for organic fertilizer); 6.397 kg/m² and 1.269 kg/stock (for inorganic fertilizer). The problems of catfish production included high cost of inorganic fertilizer and unavailability of credit facilities. It is recommended that farmers should embark on practices like formation of cooperatives that would enhance procurement of credit facilities and inorganic fertilizers and other essential inputs.

2. Methodology

2.1. Population and Sampling Procedure

The sampled population of the study is basically of catfish farmers in Benue State. A first attempt at a comprehensive, nationwide inventory of inland water resources was made by the Aquaculture and Inland Fisheries Project (AIFP) of the National Special Program for Food

Security (NSPFS). According to this inventory, Benue State has 198 Catfish farms – the highest compared to other Northern States in Nigeria (FAO, 2007b). Since the population of catfish farmers in Benue State is not more than 198, the study deemed it adequate to use the population as the sample size. Therefore, the sample size for this study remains 198 catfish farmers. The list of catfish farmers in Benue State obtained from FAO (2007b) and Benue State Ministry of Agriculture was distributed across the zones as follows: 36 catfish farmers from Zone A, 119 catfish farmers from Zone B, and 43 catfish farmers from Zone C.

2.2. Data Collection Techniques

Primary data were utilized in this study, through the use of structured questionnaire. The primary data used in this study come from a questionnaire survey of 198 catfish producers in Benue State for the production year 2013/2014. The questionnaire set was carefully structured by taking into consideration factors critical to the quality of instrument developed. Secondary data from literature (e.g. FAO, 2007b) were used to determine the population size for this study. The spread of 198 catfish farmers across Benue State is indicated in Table 1 below.

Table 1: Questionnaire Distribution

Agricultural Zones in Benue State	Number of Questionnaire Administered
A	36
B	119
C	43
TOTAL	198

Source: The Study, 2014

3. Results and Discussion

3.1. Socio-economic Characteristics of Catfish Farmers

3.1.1. Type of Ownership

Personal owned farms constituted 76.4 percent of the study. Catfish farms that practiced partnership made up 23.6 percent. This indicates that the risk involved in fish farming is solely borne by the catfish farmer.

3.1.2. Land Ownership

Cat fish farmers who rent land for their production constitutes only 20.1 percent. However, majority (79.9 percent) of the catfish farmers owe the land used for their catfish production. It is difficult to obtain land for production due to the cost of renting land in Benue State. Most lands in the rural areas, most especially, are inherited lands making it difficult to rent such

lands.

3.1.3. Age of Respondents

Majority (40.2 percent) of the respondents fell between the ages of 34-41. An appreciable percentage (32.2) of the catfish producers fell between the ages of 42-49. Catfish farmers between the ages of 26-33 years of age constituted 14.4 percent of the respondents. Adult catfish farmers that were 50 years and above constituted 10.09 percent of the respondents. Lastly, the least age groups were those between the ages of 18-25 years and represented 2.3 percent of the catfish farmers for the study.

3.1.4. Gender

The male population was the largest because they represented 79.3 percent for the whole study. The female gender on the other hand constituted the remaining 20.7 percent of the catfish farmers in the study area. The ratio showing the dominance of the male to female however is 4:1. This implies that catfish farmers in the study areas make up one quarter of the study. It also implies that the men are more likely involved in catfish farming in Benue State, than their female counterpart.

3.1.5. Family Size

Majority (37.4 percent) of the respondents have a family size of persons below and up to 5 in number. Next in line are respondents – 35.6 percent – with family size of between 5-10 people. About 20.1 percent of the respondents have family size of between 11-15 people. Lastly, 6.9 percent of the respondents have family size from 16 people and above.

3.1.6. Number of Persons in the Family Assisting in the Fish Farming

Majority (92.0 percent) of the respondents have below and up to 5 family members involved in the fish farming business. Next in line are respondents – 10.3 percent – with 11-15 family members involved in the catfish business. About 8.0 percent of the respondents have between 5-10 people involved in helping with the catfish enterprise. Lastly, 2.3 percent of the respondents have family size from 16 people and above who help with the catfish business.

3.1.7. Mode of Operation

Most (94.8 percent) of the respondents operate their fish ponds on a part time basis. However, minority of the respondents constituting 5.2 percent operate their catfish businesses on a full time basis. This implies that the catfish business in the study area is mostly operated to compliment other sources of income, and also to contribute to the protein requirements of the family.

3.1.8. Type of Pond Operated

Majority (58.6 percent) of the respondent operated earthen catfish ponds. A considerable number of respondents constituting 35.1 percent operated concrete catfish ponds. A small number of respondents constituting about 4.0 percent used tarpaulin; while an abysmal number of the respondents 2.3 percent used plastic containers. This implies that most catfish farmers in Benue State prefer earthen fish ponds. Earthen fish ponds are economical to construct and the loamy-clay soil in Benue State holds water for a long time.

Table 2: Demographics of Respondents (n=174)

Personal Data	Frequency	Percentage
Type of Ownership		
Personal	133	76.4
Partnership	41	23.6
Total	174	100.0
Land Ownership		
Rented	35	20.1
Owned	139	79.9
Total	174	100.0
Age of Respondents		
18-25	4	2.3
26-33	25	14.4
34-41	70	40.2
42-49	56	32.2
≥50	19	10.9
Total	174	100.0
Gender		
Male	138	79.3
Female	36	20.7
Total	174	100.0
Family Size		
<5	65	37.4
5-10	62	35.6
11-15	35	20.1
≥16	12	6.9

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Total	174	100.0
Number of Persons in the Family Assisting in the Fish Business		
<5	60	92.0
5-10	55	8.0
11-15	18	10.3
≥16	4	2.3
Total	137	100.0
Mode of Operation		
Full Time	9	5.2
Part Time	165	94.8
Total	174	100.0
Type of Pond Operated		
Earthen	102	58.6
Concrete	61	35.1
Tarpaulin	7	4.0
Plastic containers	4	2.3
Total	174	100.0

Source: Field Study, 2014

4. Conclusion and Recommendations

4.1. Conclusion

The risk involved in fish farming is solely borne by the catfish farmer. Most lands in the rural areas, especially, are inherited lands, making it difficult to rent such lands. The objective of this study was to examine the socio-economic characteristics of catfish producers in Benue State, Nigeria. Findings of the study imply that the men are more likely involved in catfish farming in Benue State, than their female counterpart. The catfish business in the study area compliments other sources of income, and contributes to the protein requirements of the family. Most catfish farmers in Benue State prefer earthen fish ponds. Earthen fish ponds are economical to construct and the loamy-clay soil in Benue State holds water for a long time

4.2 Recommendations

Based on the findings of this study, the following recommendations are appropriate:

- i. In order to have effective control over the inputs resources within the catfish business environment, efforts should be made by academics and managers to identify other environmental factors such as government/political/legal, economic, natural, suppliers, etc, that could pose serious threats.
- ii. Improvement in the years of experience in catfish production business could be achieved if catfish managers attend trainings or demonstration farms at least once every year.
- iii. Catfish producers should be taught modern methods of fish production such as the use of tarpaulins and plastic containers by NGOs, and co-operatives.
- iv. In order for catfish producers to operate at full time, Government and financial institutions should make it possible for farmers to have easy access to finance

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