

1 Analysis of Fresh Catfish Marketing among Natural Fishpond Users in Ogbaru Local 2 Government Area of Anambra State, Nigeria

3

4 **ABSTRACT**

5 The study analyzed fresh catfish marketing among natural fishpond users in Ogbaru Local
6 Government Area of Anambra State, Nigeria. A structured questionnaire was used to collect
7 data from a sample size of 120 respondents and analyzed using mean score, frequency,
8 percentage and enterprise budgeting. The result indicated that 49.2% of the respondents fell
9 between the age of 25 and 40 years, 65.0% were females while more than half (63.3%) of the
10 respondents were married. The mean household size of the respondents was 6.15 persons
11 while 57.5% of them had household size of between 6 and 10 persons. Majority (67.5%) of the
12 respondents had secondary school education while the majority (50.8%) of the marketers had
13 11–20 years of marketing experience. More so, majority (75.8%) of the marketers financed their
14 business with their personal savings. On the costs and return analysis, the total revenue
15 realized by the marketers was ₦3,998,200 while net return on investment was 1.3. Majority
16 (75.8%) of the marketers identified that the major distribution channel for fresh catfish in the
17 area was from the suppliers to the retailers and then to the consumers. The marketers identified
18 inadequate credit facility (\bar{x} =3.00), inadequate fishpond (\bar{x} =2.86), high cost of fish due to high
19 cost of feed (\bar{x} =2.81), unorganized market (\bar{x} =2.75) and price instability (\bar{x} =2.69) as the major
20 constraints. Based on the findings, it was recommended that the government should make
21 provisions for agricultural incentives such as short and long-term loans, with a single digit
22 interest rate for the marketers.

23 **Keywords:** *Fresh catfish, Marketing, Natural fishpond users*

24 **INTRODUCTION**

25 Agriculture has severally been described as the natural engine room for economic development and a
26 reliable key to industrialization for most developing countries such as Nigeria [1]. In Nigeria, the fishery
27 subsector occupies a unique position in the agricultural sector and has recorded the fastest growth rate in
28 agriculture in terms of Gross Domestic Product (GDP) [2]. The availability of large coastal area and
29 continental shelf made diverse species of fish available in different localities and affordable as well [3].
30 Fishes and fishery products are of great importance to the diet of people and the wide acceptability of it
31 by all has made it an important aspect of human nutrition. It has little or no taboo attached to its
32 production, marketing and consumption, which is not the case with some other livestock's.

33 Similarly, strong evidence underlines how consumption of fish and in particular oily fish, lowers the risk of
34 Coronary Heart Disease (CHD) mortality. It is estimated that fish consumption reduces the risk of dying of
35 coronary heart diseases by up to 36 per cent due to the long-chain omega3 fatty acids found in fish and
36 fishery products [4]. Trials have shown that fish oil supplementation is effective in the treatment of many
37 disorders including rheumatoid, arthritis, diabetes, ulcerative colitis and Reynard's disease [2]. Fish and

38 fishery products are highly nutritious and marketing of such products has served as source of income and
39 employment to many Nigerians that produce them. It is pertinent to note at this point that among other
40 livestock products, fish and fishery products are very common, affordable and most preferred by many,
41 especially those living in rural areas [5].

42 Fresh catfish rearing and aquaculture involves constructing of ponds, reservoirs, lakes and dams in which
43 fish is reared for consumption [6]. Fresh catfish and its products get to the consumers through the
44 process of marketing. Whereas, marketing is the process of exchanging goods and services from one
45 person to another with reference to price or all the processes involved from the production of a
46 commodity until it gets to the final consumer. Fish marketing essentially consists of all the activities
47 involved in delivering fish from the producer to the consumer, while distribution provides channels that link
48 the producers to the market [7]. Some processes involved in marketing of fresh catfish include, sorting,
49 dressing, packaging, storage, grading and freezing. According to Olubunmi and Bankole [8], as the fish,
50 like any other production moves closer and closer to the ultimate consumer, the selling price increases
51 since the margins of the various intermediaries and functionaries are added to it. These market
52 intermediaries are the whole sellers and retailers and both play important role in the marketing system.

53 However, fish being a perishable product has been facing lots of marketing challenges in the developing
54 countries. According to Afolabi [9], despite the popularity of fresh catfish marketing in Nigeria, fish
55 marketing is best described as being at the infant stage when compared to the larger market potential for
56 its production and marketing. As such, it is justifiable to say that fresh catfish marketing in Nigeria is an
57 untapped goldmine based on the fact that there is an ever increasing need for fish as the best alternative
58 to meet the protein needs of the people. Similarly, Folayan *et al*, [2], noted that the inadequacies in the
59 supply of animal protein in the diet of Nigerians have resulted in massive importation of frozen meat, fish
60 and chicken with the consequent loss of scarce foreign exchange. Oyinbo and Rekwot, [10] noted that
61 demand for fish globally and particularly in Nigeria has been on the increase with supplies not meeting up
62 the demand and in addition, marketing problems such as high cost of transportation, insufficient funds,
63 poor storage facilities, limited markets, and large number of intermediaries were recorded as major
64 factors militating against fresh catfish marketing (Njoku and Offor, [3]; Akinkali and Jamabo, [11]; Madugu
65 and Edward, [12]; Ugwumba and Obiekie, [13]). Thus, there is need for a suitable agricultural system to
66 meet the increasing demand for food, and maximize the utilization of the available limited resources
67 without much wastage. In view of the foregoing, the study was conducted to assess the viability of fresh
68 catfish marketing among natural fishpond users in Ogbaru Local Government Area of Anambra State,
69 Nigeria. Specifically, the study

- 70 i. described the socioeconomic characteristics of the fresh catfish marketers;
- 71 ii. examined the costs and return in fresh catfish marketing in the study area;
- 72 iii. described the marketing channels in the study area; and
- 73 iv. identified the constraints to fresh catfish marketing in the study area

74 **METHODOLOGY**

75 The study was conducted in Ogbaru Local Government Area of Anambra State. Ogbaru is one of the twenty-one
76 (21) Local Government Areas that make up the State and the area is surrounded by the River Niger in
77 such a way that most of the communities are located at the bank of the River. The towns that make up
78 the study area includes Atani, Akili-Ogidi, Akili-Ozizor, Amiyi, Mputu, Obaogwe, Ohita, Odekpe,
79 Ogbakugba, Ochucho Umuodu, Ossomala, Ogwu-aniocha, Umunankwo, Umuzu, Okpoko, and
80 Ogwulkepele with Atani as the headquarters. To the north, the study area is bounded by Onitsha South
81 and Idemili LGAs in Anambra state, to the south it is bounded by Imo and Rivers States, to the east it is
82 bounded by Ekwusogo and Ihiala LGAs in Anambra and to the west, it is bounded by River Niger and
83 Delta State.

84 Population of the study comprised all fresh catfish marketers in Ogbaru Local Government Area of
85 Anambra State, Nigeria. Simple random sampling technique was used to select 120 respondents that
86 was used for the study. Five communities, namely, Atani, Mputu, Ogbakugba, Ogwulkepele and Umuzu
87 were purposively selected because of the large number of fresh catfish marketers and other fish
88 economic activities prevalent in the area. The selected communities also witness the buying and selling of
89 fresh-catfish on daily basis by marketers and consumers who either live within or visit the area from time
90 to time from other places in order to transact business. Twenty-four (24) fresh-catfish marketers (retailers)
91 were selected randomly from each of the selected communities, which gave a sample size of 120
92 respondents that was used for the study. Data for the study were obtained from primary source through
93 the use of structured questionnaire and were analyzed using frequency counts, percentages, mean
94 scores and gross margin analysis.

95 **RESULTS AND DISCUSSION**

96 **Socioeconomic Characteristics of the Respondents**

97 The distribution of the respondents according to their age as shown in Table 1 indicated that 49.2% of the
98 respondents fell between the ages of 25 and 40 years while 30.8% were between the ages of 41 and 56
99 years. From the result, it can be deduced that a pooled percentage (80%) of the total respondents fell
100 between the active economic age range of 25 and 56 years and this implies that the respondents were
101 still in their productive age and can withstand any stress arising from fresh catfish marketing. This agrees
102 with the findings of Olubunmi and Bankole, [8] who stated that more than half of the fish marketers in the
103 socioeconomic characteristics of fish marketers in Ibarapa were between the ages of 41 and 50 years.
104 The result further indicated that 65.0%, which is more than half of the total respondents were females
105 while 35.0% were males. Thus, the female counterparts dominated fresh catfish marketing enterprise in
106 the study area. Female dominance and involvement in the enterprise may be attributed to the fact that
107 women play major roles when it comes to improving the economic conditions of their households and that
108 of the nation at large.

109 More so, a greater percentage (63.3%) of the total respondents were married, 20.0% were single and
110 15.0% were widowed while the remaining 1.7% were divorced. From the result, there was obvious
111 dominance of married people and as such, it is expected that these set of fresh catfish marketers were
112 into the business because of their marital responsibilities conferred unto them by marriage. These
113 responsibilities includes catering for immediate and extended family needs such as provision of school
114 fees for their children, shelter, food and clothing, which are the most basic needs of every man for
115 survival. This finding is in agreement with Njoku and Offor [3] who were of the view that majority of the
116 catfish marketers were married. According to the result (Table 1), the mean household size of the
117 respondents was 6.15 persons while a greater proportion (57.7%) of the respondents had household size
118 of between 6 – 10 persons. However, 54.0% of the marketers had 1 – 5 household size. It is pertinent to
119 note that household size of the respondents **is** of great value as it influences the amount of labour
120 available for the supplies and marketing activities of the fresh catfish. As indicated in the study, it is
121 assumed that the marketers **have** more available hands to help them in their fresh catfish marketing
122 activities and as such, labour cost will be minimized.

123 The result (Table 1) further revealed that 81 fresh catfish marketers, which accounts for 67.5% of the total
124 respondents had secondary school education, 15.0% had primary school education, 6.7% had tertiary
125 education and 10.8% had no formal education. This **implies** that majority (89.2%) of the total respondents'
126 attained one form of formal education or the other. The result **is** an indication of high educational level
127 attainment among the marketers and this will subsequently **assisted** the marketers in understanding and
128 adoption of modern technologies that will enhance their marketing skills. The result further **implies** that
129 they are in a better position to enhance their capacity and productivity. This is in line with the finding of
130 Esiobu and Onubuofu [14] who revealed that majority of the fish marketers, had secondary
131 education.

132 The result showed that majority (50.8%) of the fresh catfish marketers had between 11 and 20 years of
133 marketing experience, 26.7% had between 1 and 10 years and the remaining 22.5% had between 21 and
134 30 years. This **indicates** that greater percentage of the marketers have been into the business for a long
135 time and as such, must have gathered significant years of experience in marketing of fresh catfish.
136 Hence, they can identify possible problems and are likely to proffer solutions towards the sustainability of
137 the enterprise in the area. As such, it **is** expected that a high level of marketing experience should have a
138 positive correlation with the marketers' efficiency and profitability. This result **corroborates** the findings of
139 Babalola, Bajimi and Isitor [15], who revealed that majority of the respondents in his study had
140 greater than 10 years of marketing experience. On the distribution of the respondents according to
141 sources of fund available to them in the study area (Table 1), the result indicated that majority (75.8%) of
142 the marketers sourced and financed their fresh catfish marketing enterprise with their personal savings,
143 14.2% were able to source fund through their friends, families and relative while the remaining 10.0%
144 sourced loan from co-operative societies. This result **agrees** with the finding of Ayanboye, Oluwafemi and

145 Rafiu [16], who indicated that majority of the respondents financed their business through their personal
 146 savings.

147

148 **Table 1: Distribution of the respondents according to socio-economic characteristics (n=120)**

Socio-economic characteristics	Frequency	Percentage (%)	Mean (\bar{x})
Age			
25 – 40	59	49.2	43.4 years
41 – 56	37	30.8	
57 – 72	14	11.7	
73 – 88	10	8.3	
Gender			
Male	42	35.0	
Female	78	65.0	
Marital status			
Single	24	20.0	
Married	76	63.3	
Widowed	18	15.0	
Divorced	2	1.7	
Household size			
1 – 5	45	54.0	6.15 persons
6 – 10	69	57.5	
11 – 15	6	5.0	
Education level			
No formal education	13	10.8	
Primary education	18	15.0	
Secondary education	81	67.5	
Tertiary	8	6.7	
Marketing experience			
1 – 10	32	26.7	
11 – 20	61	50.8	
21 – 30	27	22.5	
Sources of fund			
Personal savings	91	75.8	
Friends, families and relatives	17	14.2	
Co-operative societies	12	10.0	

149

150 **Costs and return analysis of fresh catfish marketing**

151 The result as presented in Table 2 indicated that the total revenue realized by the marketers was
 152 ₦3,998,200. The total variable cost constitute the major portion (64.5%) of the total cost of marketing
 153 fresh catfish in the study area, with cost of purchases (33.4%) as the major variable cost of the total cost.
 154 The result further shows that the marketers released gross margin of ₦2,883,800, net marketing income
 155 of ₦2,269,230 and net return on investment of 1.3. The value of the net return on investment value of 1.3
 156 implies a return of ₦1.30 kobo for every 100 kobo invested in the business by the fresh catfish marketer.
 157 Hence, by this result, fresh catfish marketing in the study area was profitable.

158 **Table 2: Estimated cost and return for Fresh-Catfish marketing in the study area (n=120)**

Variables	Amount (N)	Percentage %
Total revenue	₦3,998,200	
Variable costs (VC)		
Purchases	₦577,900	33.4
Transportation	₦241,100	13.9
Loading/offloading	₦189,400	10.9
Associations' due	₦57,000	3.4
Security levy	₦49,000	2.8
Total Variable Cost (TVC)	₦1,114,400	64.5
Fixed Costs (FC)		
Machete	₦19,800	1.14
Wheelbarrow	₦36,800	2.1
Metal/plastic table	₦75,500	4.4
Wooden table	₦39,700	2.3
Interest on loan	₦250,770	14.5
L.G rate	₦32,000	1.9
Monthly store rent	₦160,000	9.3
Total Fixed Cost (TFC)	₦614,570	35.5
Total cost (TVC + TFC)	₦1,728,970	
Gross margin (TR - TVC)	₦2,883,800	
Net Marketing Income (TR - TC)	₦2,269,230	
Mean Net Marketing Income (NMI/n)	₦18,910.25	
Net Return on Investment (NMI/TC)	1.3	

159

160 **Fresh Catfish marketing Channels in the Study Area**

161 From the result of the analysis, a significant proportion (75.8%) of the marketers identified “supplier -
 162 retailers – consumers” distribution channel as the major distribution channel for fresh catfish marketing in
 163 the study area. About 10% of the marketers were of the view that the suppliers, sells directly to the
 164 consumer, 9.2% indicated “supplier – wholesaler – retailers – consumer” marketing channel, whereas, the
 165 remaining 5% were of the view that suppliers sells to the wholesalers and then, the wholesalers to the
 166 consumers. Thus, from the finding, it implies that the major distribution channel for fresh catfish marketing
 167 in the area was “supplier - retailers – consumers” and as such, one can say that fresh catfish has shorter
 168 distribution channel unlike every other livestock product and this may be attributed to its perishable

169 nature. According to Ayanboye *et al* [16], minor intermediaries operate between producers and final
 170 consumers and this aligns with the finding in Table 3 of the study.

171

172 **Table 3: Distribution of the respondents according to marketing channels (n = 120)**

Marketing channels	Frequency	Percentage
Supplier – consumer	12	10
Supplier – retailer – consumer	91	75.8
Supplier – wholesaler – consumer	6	5
Supplier – wholesaler - retailer – consumer	11	9.2

173

174 **Constraints to Fresh Catfish Marketing in the Study Area**

175 The result (Table 4) revealed that inadequate credit facility ($\bar{x} = 3.00$, 1st), inadequate fishpond ($\bar{x} = 2.86$,
 176 2nd), high cost of fish due to high cost of feed ($\bar{x} = 2.81$, 3rd), unorganized market ($\bar{x} = 2.75$, 4th), price
 177 instability ($\bar{x} = 2.69$, 5th), flooding ($\bar{x} = 2.63$, 6th), high cost of stall rents ($\bar{x} = 2.56$, 7th), high cost of
 178 transportation ($\bar{x} = 2.49$, 8th), poor storage facilities ($\bar{x} = 2.28$, 9th), labour intensive ($\bar{x} = 2.13$, 10th) and
 179 high cost of labour ($\bar{x} = 2.13$, 11th) were the major constraints identified by the marketers. Whereas, some
 180 of the constraints such as inadequate standard measuring instrument (1.91, 12th), unfavorable weather
 181 condition (1.86, 13th) and poor sales (1.68, 14th); were not identified as the major constraints by the
 182 marketers.

183 **Table 4: Constraints militating against fresh catfish marketing in the study area (n = 120)**

Constraints	Means score (\bar{x})	Rank
Inadequate credit facility	3.00	1 st
Inadequate fishpond	2.86	2 nd
High cost of fish due to high cost of feed	2.81	3 rd
Unorganized market	2.75	4 th
Price instability	2.69	5 th
Flooding	2.63	6 th
High cost of stall rents	2.56	7 th
High cost of transportation	2.49	8 th
Poor storage facilities	2.28	9 th
Labour intensive	2.13	10 th
High cost of labour	2.08	11 th
Inadequate standard measuring instrument	1.91	12 th
Unfavorable weather condition	1.86	13 th
Poor sales	1.68	14 th

184

185 CONCLUSION AND RECOMMENDATION

186 Fresh catfish marketing in Ogbaru Local Government Area of Anambra State, Nigeria was profitable
187 having obtained a positive value of net return on investment of 1.3 from the enterprise budgeting analysis.
188 This implies a return of ₦1.30 kobo for every 100 kobo invested into the fresh catfish marketing business.
189 However, if accurate measures are put in place in tackling the few identified constraints, militating against
190 fresh catfish marketing in the area, the marketers are bound to make more profit. Based on the findings of
191 the study, the government should make provisions for agricultural incentives such as short and long-term
192 loans, with a single digit interest rate for the marketers in order to solve the problem of inadequate credit
193 facility. More so, efforts should be intensified towards making fresh catfish marketing more viable and
194 lucrative in the study area through the provision of organized markets, seed capital for the marketers and
195 provision of subsidized fingerlings by the government.

196 REFERENCES

- 197 1. Iheke, O.R. & Nwagbara, C. (2014). Profitability and viability of catfish enterprises in Abia state of
198 Nigeria. *Journal of Agriculture and Social Research*, 14(1), 31 – 36
- 199 2. Folayan, J.A. & Folayan, O.F. (2017). Socioeconomic and profitability analysis of catfish
200 production in Akure north local government Area of Ondo state, Nigeria. *Journal of Applied*
201 *Science and Technology*, 23(6), 1 – 8
- 202 3. Njoku, M.E. & Offor, E.I. (2016). Cost and returns analysis of catfish marketing in Aba South
203 local government area of Abia state, Nigeria. *Journal of Tropical Agriculture, Food, Environment*
204 *and Extension*, 15(2), 9 – 14
- 205 4. Food and Agriculture Organization (FAO) (2019). Analysis and information on world fish day.
206 Retrieved from [http://www.fao.org/in-action/globefish/fishery-information/resource-](http://www.fao.org/in-action/globefish/fishery-information/resource-detail/en/c/338772/)
207 [detail/en/c/338772/](http://www.fao.org/in-action/globefish/fishery-information/resource-detail/en/c/338772/)
- 208 5. Adeniyi, O.R., Omitoyin, S.A. & Ojo, O.O. (2012). Socioeconomic determinants of consumption
209 pattern of fish among households in Ibadan North local government area of Oyo state, Nigeria. *African*
210 *Journal of Food, Agriculture, Nutritional Development*, 12(5), 6537 – 6552
- 211 6. Ugwumba, C.O.A & Okoh, R.N. (2010). Price spread and the determinants of Live-catfish
212 marketing income in Anambra State, *Journal of Agriculture and Social Science*, 6(4) 73-78.
- 213 7. Nwabunike, M.O (2015). The Socio-economic characteristics of fish marketers in Abakiliki
214 metropolis of Ebonyi State. *International Journal of Animal Health and Livestock*
215 *Production Research vol 1(1), 28-36.*
- 216 8. Olubunmi, A. & Bankole, A.F. (2012). Determinants of income from fish marketing in Ibarapa
217 area of Oyo state, Nigeria. *Science Journal of Agricultural Research and Management*, 12(1), 1
218 – 6. Doi:10.7237/sjarm/ 135
- 219 9. Afolabi, M.O., (2013). Effect of financial reporting on investment decision making of manufacturing
220 firms in Nigeria. *European journal of Humanities and social sciences*. 22 (1).
- 221 10. Oyinbo and Reckwot (2013) .Marketing analysis of smoke-dried fish in Etsako East Government
222 Area of Edo State, Nigeria. *Local Net Journal of Agricultural Science 2(3)*, 104 – 106

- 223 11. Akinkali, J.A. & Jamabo, N.A. (2011). A review of some factor militating against sustainable
224 artisanal fisheries development in Niger delta Nigeria. *Asian Journal of Agricultural Sciences*,
225 3(5), 369 – 377
- 226 12. Madugu, A.J. & Edward, A. (2011). Marketing and distribution channel of processed fish in
227 Adamawa state, Nigeria. *Global Journal of Management and Business research*, 11(4), 21 - 26
- 228 13. Ugwumba, C.O.A. & Obiekezie, A.A (2008). Impediments to the development of Live-cattfish
229 retail markets in Anambra State, Nigeria. *Nigerian Journal of Research and Production*, 13(1),
230 173 - 178.
- 231 14. Esiobu N.S & Onubuogu .G.C, (2014). Socio-economic analysis of Frozen Fish Marketing in
232 Owerri Municipal Council Area, Imo State, Nigeria: An Economic model approach. *Scholarly*
233 *Journal of Agricultural Science*, 4(8), 449 - 459.
- 234 15. Babalola, D.A., Bajimi, O. & Isitor, S.U. (2015). Economic potentials of fish marketing and
235 women empowerment in Nigeria: Evidence from Ogun State, Nigeria. *African Journal of Food,*
236 *Agriculture, Nutrition and Development*. 15(2), 9922 – 9934
- 237 16. Ayanboye, A.O., Oluwafemi, Z.O. & Rafiu, R.A. (2015). Fresh fish (*Clarias gariepinus*)
238 marketing system in major towns of Ibarapa zone, Oyo state, Nigeria. *International Journal of*
239 *Applied Agricultural and Apicultural Research*, 11(1&2), 162 – 171s

UNDER PEER REVIEW