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FINANCIAL RETURNS IN CONTRACT FISHING IN AKWA IBOM STATE, NIGERIA

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Abstract

The recent resurgence of contracting in fisheries suggests a positive balance in the investment returns of contract fishers. Data were collected from 232 artisanal fishers (contracts, former and those that have never been in contract) for analysis. Results show that the fishermen differed in their investment layout with outboard engine taking highest investment capital of 57.9%, 59.8% and 49.9% for contract, former and non-contract fishers respectively. Variable costs of inputs of the fishers were ₦5929.13, ₦5488.4 and ₦4869.7 for former, contract and non-contract fishers respectively. Analysis of financial performance models of investment used showed that contract fishers had higher Return on Investment (ROI) (43.57%), Return on Assets (ROA) (22%), and Gross Margin (₦4,345:00) than the former and those that have never been in contract before. However, Operating Profit Margin (OPM) was higher for former contract fishers (64.58%) seconded by non-contract fisher (60.84%) and tailed by contract fishers (56.89%). The study concluded that contract fishing gives higher returns compared to its best alternative.

Keywords: Contract Fishing, Artisanal Fish production, Financial returns, Akwa-Ibom, Nigeria

Introduction

Extant literature put Nigerian fish production-demand gap at between 70000 – 90000 metric tons annually. This translates to over \$400 million cost per year. The situation, according to Federal Department of Fisheries Report (2005) has compelled the federal government to put in place policies, programmes, and other institutional reforms to reverse the trend. One of such efforts is the New Agricultural Policy of 2001 which replaces the 1988-2000 agricultural policy. The document assigned supportive roles to the government while investments in this sub-sector are prerogative of the private sector (Ovie and Raji, 2006). The private sector has responded to the call to invest in the fishery sector in many ways. One of such is what we; in this paper refer to as

“contract fishing”. Though, the concept of contract fishing is still in its infancy, value chain analysis of artisanal fisheries shows that it has the merits in addressing several issues related to the missing or imperfect market facing the artisanal fishermen. It is known to result in channelling financial needs to the artisanal fishing sector. Carnaje (2007), argues that through this approach, capital required for expensive fishing gears and equipment are acquired by resource-poor fishers. Until recently, contract in agriculture was seen as benefiting only the financiers. It was thought that it enables them to obtain cheap labour, product and to transfer risks. It was also assumed that the true cost of credit was difficult for farmers to ascertain, with discounted prices, delayed payments and other mechanisms that the credit providers utilized in addition to, interest charges. Thus, the common epithet used in describing it was “exploitation”. However, more recent evidence indicates that contract with linked input credit services represents a mutual relationship of a pareto economics. Thus, the basic tenet in the discussion of contract of recent is that contractual relationships could be sustainable if partners perceive that they are better off by engaging in it. Both have to see the partnership as a source of gains (financial or otherwise) - that could not be matched in the next best alternative. The corollary of this proposition is that agricultural contract will fail if partners do not develop mutual trust and reciprocal dependency rooted in the systems principle of synergy (Carlos da Silva, 2005).

In addition to the above, there are some basic investments principles which parties engaged in contract are expected to adhere to. The rule of thumb is that investible funds should only be channelled to projects with higher yield returns than the minimum acceptable hurdle rate and the choice of the financial mix should minimize the hurdle rate and match the assets financed (Domodaram, 2008). Economic logic suggests that rational financiers of contract would not voluntarily go into any contract unless they will be benefit from it. In the same vein, the rational fishermen, though capital-trapped would not equally go into contract unless the benefit outweighs the costs. This is because rural household design livelihood strategies to suit their asset endowments which must account for the constraints imposed by state, market failures, social norm and uninsured risks (Ben-Yami, 2000). It is believed that the fishermen reason along this line when they partner in contract with the fish vendors. Thus, the bottom line is that every party enter into contractual agreement for financial profitability.

Objectives

The objective of this paper was to assess and compare the investment returns of fishers who participate in contract (contract fishers), those who participated and latter discontinued (former contract fishers) and non-contract fishermen. The specific objectives were: (i) Compare the investment layout of contract, former contract and non-contract fishermen (ii) compare the variable cost of inputs of contract, former contract and non-contract fishermen (iii) analyse in comparison the investment returns of contract, former contract and non-contract fishermen and (iv) draw conclusions on the potential investment impacts of contract, former contract and non-contract fishermen.

Research Methodology

Study Area

This study was carried out in Akwa Ibom State, Nigeria. The State is located at latitude 4°33 and 5°33 North and longitude 7°35 and 8°25 East. By land mass, it is the tenth largest State in Nigeria with an area of 8,412 square kilometres. It has a population of 3.92 million (National Population Commission, 2006) with an average population density of 350 people per square kilometre. The State is one of the core States in the Niger Delta and has the longest coastland in Nigeria which spans over 129km (IFAD-CBNRMP, 2005). The Akwa Ibom coastline is dotted with many fishing communities. Within this fishing communities are some coastal settlements (*ine*) with a significant concentration of multi-lingual artisanal fisher folks.

Sampling Techniques

Multi-stage sampling technique was used in selecting samples for the study. First, six coastal Local Government Areas (LGAs) were purposively selected. The selection was based on the commercial fishing status of the LGAs and the intensity of fishing activities. Information on the fishing intensity in the Local Government Areas (LGAs) was obtained from Moses, (1990), FAO, (2005) and reconnaissance survey. The Local Government Areas are; Ibeno, Ikot Abasi, Itu, Mbo, Oron and Uruan. Secondly, sample frame of fishing settlements in each selected LGA was collected from the Fishery Department of Akwa Ibom State Ministry of Agriculture. From the sample frame, five (5) fishing settlements were randomly selected from each Local Government Area. The last stage of sampling was the random selection of four fishermen from the selected fishing settlements. This gave a sample size of two hundred and forty (240). A set of structured questionnaires were administered on the selected fishers. A total 232 of the questionnaires with useful information were retrieved (response rate of 97%). The 232 were used for the analysis.

Data Analysis:

(i) The investment layout and variable costs of respondents: These were analysed using descriptive statistic. These included mean, proportions and percentages. Investment returns were analysed using the financial performance model. These included Return on Investment (ROI), Return on Assets (ROA), Operating Profit Margin (OPM) and Gross Margin (GM).

(ii) Financial Performance Measures: This is measured as:

(a) Return on Investment (ROI): Return on Investment (ROI) analysis is one of several commonly used approaches for evaluating the financial consequences of business investments, decisions, or actions. The Estimated Equation is as shown:

$$\text{Return on Investment (ROI)} = \frac{\text{Total Inflow} - \text{Total Outflow}}{\text{Total Outflow}}$$

(b) Return on Assets (ROA): The return on assets (ROA) formula looks at the ability of a company to utilize its assets to gain a net profit.

$$\text{Return on Assets (ROA)} = \frac{\text{Annual Net income}}{\text{Total Business Assets.}}$$

(c) Operating Profit Margin (OPM): The operating profit margin (OPM) ratio indicates how much profit a company makes after paying for variable costs of production. It shows how much cash is thrown off after most of the expenses are met. It is expressed as a percentage of sales and shows the efficiency of a company controlling the costs and expenses associated with business operations. It is the return achieved from standard operations and does not include unique or one time transactions.

$$\text{Operating Profit Margin (OPM)} = \frac{\text{Net Cash Income}}{\text{Gross Revenue.}}$$

(d) Gross Margin (GM): Gross margin is the value by which profits exceed production costs. It is measure of how well a company controls its costs.

$$\text{Gross Margin (GM)} = \text{Selling Price} - \text{Buying Price.}$$

Results and Discussion

Results of investment layout considered in the study are presented in the Table 1. It reveals that outboard engine accounted for 57.9%, 59.8% and 49.9% of fixed cost investment for contract, former contract and non contract fishers respectively. Washer net accounted for 20.6%, 20.7% and 13.1% while canoe accounted for 15.6%, 13.2% and 16.8% of contract, former contract and non contract fisher's investment respectively. Paddle took 1.6%, 1.8% and 2.1% while line/hooks took 1.3%, 0.8% and 5.4% of contract, former contract and non contract fisher's investment respectively. Fishing baskets accounted for 0.8%, 1.5% and 5.8% while cast net accounted for 0.9%, 0.4% and 4.6% of contract, former contract and non-contract fisher's investment respectively. Lanterns and torch lights accounted for 0.5%, 0.5% and 0.6% while floats and twines accounted for 0.8%, 1.0% and 0.5% of contract, former contract and non-contract fisher's investment respectively. In summary, the analysis reveals a total investment layout of ₦388, 280.00, ₦437, 666.00 and ₦280, 053.50 for contract, former contract and non-contract fishermen respectively. Former contract fishermen investment was higher than that of contract and that of contract fishers was higher than that of non-contract fishers. This result suggest that former contract fishers, having benefitted from the contract fishing and graduated there-from, can afford to bear the cost of fixed assets than others who are either currently participants in contract or are not participating. Given the percentage of the fixed cost taken up by outboard engine and canoe respectively, it can be reasoned that artisanal fishers who operate at small scale would require such financial leverage as provide by contracting to grow beyond small scale.

Variable Cost of Inputs of the Fishermen:

The average of variable inputs cost used for fishing (Table 2) shows that, labour constitutes the highest percentage of the variable inputs. For contract, former contract and non contract fishers, the percentage value of labour were 34.6%, 41.6% and 51.9% respectively. Value of petrol accounted for 27.4%, 24.8% and 31.3% while kerosene accounted for 28.8%, 28.8% and 3.9% respectively. Value of Battery and oil accounted for 4.8% and 4.4%, 4.9% and 7.9% and, 4.9% and 8.0% for contract fishers, former contract fishers and non-contract fishers respectively. The former contract fishers were found to be spending more per fishing trip than their contract and non-contract counterparts. This may not be unconnected with the age of most of the outboard engines utilised by them as evidence from field observation.

Return on Investment (ROI):

Investopedia defines return on investment (ROI) as; "a performance measure used to evaluate the efficiency of an investment". The result of ROI from Table 3, shows that contract, former and non-contract fishers have ROI of 43.54%, 31.89% and 17.59% respectively. This is indicative of the fact that contract fishers are more efficient in their investment than former and non-contract fishers. Analysis of return on investment (ROI) reveals a higher ROI for contract fishers than for former or non-contract fishers. This implies that the investment gains from contract fishing compete favourably with its investment costs. The contract fishers got an investment gain of 43.54% from their investment costs; the former fishers got an investment gain of 31.89% while the investment gain from non-contract fishers was 17.59%. This might have been possible through contracting as returns in most prudently managed investment is directly proportional to investment costs. It is concluded that participation in contract fishing yielded higher return on investment (ROI) than its counterfactual which is non-contract.

Return on Assets (ROA):

ROA is a financial ratio that shows the percentage of profit a firm earns in relation to its overall resources. The ROA of contract, former contract and non-contract fishers as presented in table 3 are 2.00%, 1.4% and 1.8% respectively. This shows that, the contract fishers and non-contract fishers have higher return from their productive assets than the former-contract fishers. The evaluation of the artisanal fishermen's profit relative to their assets by the use of return on asset (ROA) reveals that contract fisher's assets gave better return than both former and non-contract fisher's. Return on Asset (ROA) of the contract fishermen, despite the "perceived exploitation" by higher interest/mark ups and influence on fish pricing, yielded higher return on assets than its counterfactual which is non-contract fishing. It implies that the profit turned in by contract fishers relative to their assets was higher than that of former and non-contract fishers. As already stated, the resultant effect is from participation in contract fishing.

Operating Profit Margin (OPM):

The operating profit margin (OPM), which is an indication of how much profit a firm makes after paying for variable costs of production, is expressed as a percentage of sales and shows the efficiency of a firm controlling the costs and expenses associated with business operations. According to Gittinger (1982), it is the return achieved from standard operations. The OPM of contract, former and never fishers from Table 3, are 56.89%, 64.58% and 60.84% respectively. This shows that, the former-contract fishers and non- contract fishers make more profit after paying for variables cost than the contract fishers. Two possible explanations may be advanced for this result. The first explanation is that the contract fishers were still repaying the input loan and have not had full benefit so as to manifest in the OPM computation. For instance, the gross revenue was used for the computation even when the contract fishers were still paying their input debt. Perhaps, if net revenue was used, the value could have been higher. The second is that, advanced by Peavler, (2011), he opined that as the firm grows and sales revenue grows, overhead or fixed costs, become a smaller and smaller percentage of total costs and the operating profit margin should increase. The former contract fishers and the non-contract fishers have been in the fishing business for a longer time than the contract fishers. Field survey gave the years of experience of former contract fishers and non-contract fishers to be 15 and 17 respectively as against 12 for the contract fishers. It is expected that their experiences should help to bring down their overhead or fixed costs and this should aid the increase of their operating profit margin (OPM). Either of this could be responsible for the result on operating profit margin as computed by the study. However, this may not be true if the portion of the profit used for loan repayment by the contract fishers were added to their profit. With the later proposition, the corollary is that contract fishers will make higher OPM than both the former and non-contract fishers.

Gross Margin (GM):

One other financial measure of performance employed in this study is the Gross Margin (GM). Gross Margin is the different by which profits exceed production costs. Gross margin represents the difference of total sales revenue that the fishers retain after deducting the direct costs associated with producing the goods. The higher the percentage the more the fishers retain the naira of sales to service its other costs and obligations. The gross margin of contract, former contract and non-contract fishers are ₦4, 345:00, ₦3, 420:00 and ₦2, 830:00 respectively. This shows that, the contract fishers and former-contract fishers made more profit than the non-contract fishers. Gross margin (GM) for the contract fishers is higher than that of the former and that of the non-contract fishers. It represents the total sales revenue that the fisherman retains after incurring the direct costs associated with fishing and its services. It implies that contract fishers in the study area retained higher revenue after paying for direct fishing and associated services (Gross margin) than their counterpart that never got engaged in contract fishing. This is in line with Olomola (2010), who reported of higher gross margin for rice, ginger and tobacco contract farmers in Nigeria.

Conclusion and Recommendations

Analysis of the results show that the fishermen differed significantly in their investment layout with outboard engine taking highest investment capital of 57.9%, 59.8% and 49.9% for contract, former and non-contract fishers respectively. It was seconded by washer net at 20.6%, 20.7% and 13.1% respectively and canoe took the third place in terms in their budget. On the whole, the former contract fishers had higher total investment of ₦437, 666.00, contract and non-contract had ₦388, 280.00 and ₦280, 053.50 respectively. Variable costs of inputs of the fishers were ₦5929.13, ₦5488.4 and ₦4869.7 for former, contract and non-contract fishers respectively. Labour got the highest expenditure of 34.6%, 41.6% and 51.9% for contract, former and non-contract fishers respectively. Kerosene got the next highest expenditure of 28.8%, 28.8% for contract and former fishers respectively and petrol took the next highest expenditure of 27.4%, 24.8% and 31.3% for contract, former and non-contract fishers respectively.

Financial performance evaluation models of investment used revealed that contract fishing potentially yielded higher investment returns. The high gross margin (GM), ROI and ROA of the contract fishers, points to the potentials of contract fishing in the State. However, the lower OPM observed in contract fishing implies lower efforts from fishermen. Financiers would normally finance fixed costs items which the resource-poor fishers hardly can obtain in sufficient quantity. For both the financier (principal) and the contract fishers (agent) to benefit maximally from contract fishing, the fishers need to redouble efforts in their operations so as to raise the OPM. Cost-intensive items such as labour require some adjustment in order to reduce operational cost. Alternatively, labour substituting technology can be obtained in order to reduce operational cost. Furthermore, it is recommended that a framework be put in place to regulate contract fishing as evidence during field work tend to show that this business model has come to stay and is catering for the need of fishers in remote settlement that formal financial sector cannot reach (the remote and “hard to reach” and those unable to meet formal financial institutions conditionalities). The operational framework should regulate the interest rate and other conditionality for such loans. However, such conditions should be reviewed from time to time for a better working of the scheme.

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Table 1: Investment layout of fishermen in the study area

Fixed Inputs	Fishing Contract		Former		Non contract	
	fishers (N)	%	contract (N)	%	(N)	%
Canoe	60,621.74	15.6	57,820.0	13.2	47,000.0	16.8
Engine	224,684.80	57.9	261918.0	59.8	139,687.50	49.9
Paddle	6,316.30	1.6	7,936.0	1.8	5,868.75	2.1
Washer Net	80,097.82	20.6	90,361.0	20.7	36,662.50	13.1
Lines/Hooks	4,944.57	1.3	3,313.0	0.8	15,054.38	5.4
Twines	801.63	0.2	2,092.0	0.5	557.5	0.2
Fishing Basket	2,978.26	0.8	6,572.0	1.5	16,126.25	5.8
Float	2,248.91	0.6	2,131.0	0.5	716.0	0.3
Trap	65.22	0.0	-	0.0	3,750.0	1.3
Cast Net	3,608.70	0.9	1,818.0	0.4	12,787.50	4.6
Lantern	1,094.57	0.3	1,097.0	0.3	1,200.63	0.4
Torches	817.51	0.2	911.0	0.2	642.50	0.2
Spear	-	0.0	836.0	0.2	-	0.0
Total	388,280.00	100	437,666.00	100	280,053.50	100

Table 2: Variable cost of production by the Fishermen

Variable inputs	Contract(₦)	%	Former contract(₦)	%	Non-contract (₦)	%
Labour	1,897.21	34.6	2465.24	41.6	2,529.35	51.9
Petrol	1504.11	27.4	1468.31	24.8	1524.29	31.3
Kerosene	1582.42	28.8	1704.92	28.8	190.13	3.9
Battery	265.05	4.8	290.66	4.9	236.88	4.9
Oil	239.56	4.4	461.80	7.9	389	8.0
Total	5,488.35	100	5,929.13	100	4,869.65	100

Table 3: Financial ratios of the artisanal fishermen in the study area

Financial measurement	Contract fishers	Former fishers	Non fishers
Return on Investment (ROI) %	43.54	31.89	17.59
Return on Asset (ROA) %	2.00	1.446	1.834
Operating Profit Margin (OPM) %	56.89	64.58	60.84
Gross Margin (Naira)	4,345.00	3,420.00	2,830.00