Resource use Efficiency among Catfish processors in Oyo state, Nigeria.

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Introduction

○ Fish processing is the mechanism used in increasing its shelf life of the fish. Catfich (Clarias gariepinus) is highly susceptible to deterioration after harvest.

○ Smoke drying is one of the most baffordable and widely used catfish preservation technique in Nigeria.

○ In Catfish processing activities, certain factors of production (resources) are needed, they include; fresh catfish, smoking klin, water, source of heat such as charcoal, sa;t, labour, skills (techical know-how), time and security among others.

○ Studies have been conducted on the resource use efficiency of catfish production. But there is a dearth of information towards the resource use efficiency of catfish processing. The research aimed at analyzing the resource use efficiency among catfish processors in Oyo State, Nigeria.

Methodology

○ The study was carried out in Ido and Oluyole local government areas of Oyo State, Nigeria.

○ A multistage random sampling technique was adopted for the study and the final respondents were drawn from the list of catfish processors in the study areas.

○ Data collected were analyzed using Stochastic Frontier analysis (SFA) and Resource Use Efficiency (RUE) ratios.

○ The estimation of resource use efficiency parameter was done using Cobb-Douglas production function, and is defined as follows:

$$lnY_i = \beta_0 + \beta_1 lnX_1 + \beta_2 lnX_2 + \beta_3 lnX_3 + \beta_4 lnX_4 + \beta_n lnX_n + v_i - u_i \quad (1)$$

$$r = {MVP}/{MFC} \quad (2)$$

$$MVP = MPPxi . Py \quad (3)$$

$$MPP = \left(\beta i * \frac{Yi}{Xi}\right) * Py \quad (4)$$

Results and Discussion

○ The cost of fresh catfish, fuel and packaging materials are the major determinants of smoked-dried catfish production.

○ The first two exert a negative influence on the Gross Margin of the processors.

○ This contradicts the a prior expectation and implies that increasing these variables would decrease the level of smoke-dried catfish production.

Table 1: Estimated Cobb-Douglas Production Function for Catfish Processors

Parameter	Coefficient	Standard error	Z	P › |z|
Fresh catfish	-1.579	0.3	-5.26	0.000***
Labour	-0.037	0.023	-1.61	0.106
Charcoal	-0.073	0.038	-1.93	0.054**
Packaging Materials	2.668	0.307	8.68	0.000***
Transportation	-0.003	0.003	-1.07	0.286
Constant	5.88	0.716	8.21	0
Variance parameters				
Sigma (σv)	0.0665438	0.0110116		
Sigma (σμ)	0.0409085	0.0474273		
Sigma² (σ²)	0.0061016	0.0025768		
Lambda (λ)	0.6147606	0.0578003		

○ Resource use efficiency analysis was used to ascertain efficient utilization of resources.

○ The efficiency ratio, r represents the relationship between the actual input used and the optimal input required to achieve a desired output level.

○ The efficiency ratios revealed that all variables were over-utilized among the processors.

This is not surprising since the scales of production are not similar among the processors and there is an absence of standardization among the processors in the state.

Table 2: Resource Use Efficiency among Catfish Processors

Inputs	MPP	MVP	MFC	r = (MVP/MFC)	Decision
Fresh catfish	-1.58	-2.73	270.42	-0.01	Over-utilization
Labour	-0.04	-0.07	22.38	0	Over-utilization
Charcoal	-0.07	-0.12	28.21	0	Over-utilization
Packaging material	2.67	4.62	6.7	0.67	Over-utilization

Conclusion

○ There is a high level of inefficiency with the resources used among catfish processors.

○ These resources are not well combined among catfish processors to achieve optimal efficiencies in their production process.

○ The study concludes that there is a need for standardization in the processing of catfish to enhance resource use efficiency.

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