RUFUS GIWA POLYTECHNIC OWO

Evaluation of Feed-Type Choices and Performance of Fish Farming in Akure South Local Government Area of Ondo State, Nigeria

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Introduction

❖ **Background Information**

➢ Economic Importance of Fisheries and Aquaculture in Nigeria.

  ➢ Protein Requirement, Job Creation, Income Generation, Adding to GDP

➢ Demand-Supply gap

  ➢ DD (1.5mMT); SS (0.51mMT); IMP (0.7mMT @ USD400m) –Vincent-Akpu (2013)

➢ World's fastest growing food production sector

❖ **Problem Statement**

➢ Potential to Increase fish Production

➢ Low production level

➢ Huge amount is spent in importing feeds

➢ Fish farmers could not afford imported feeds
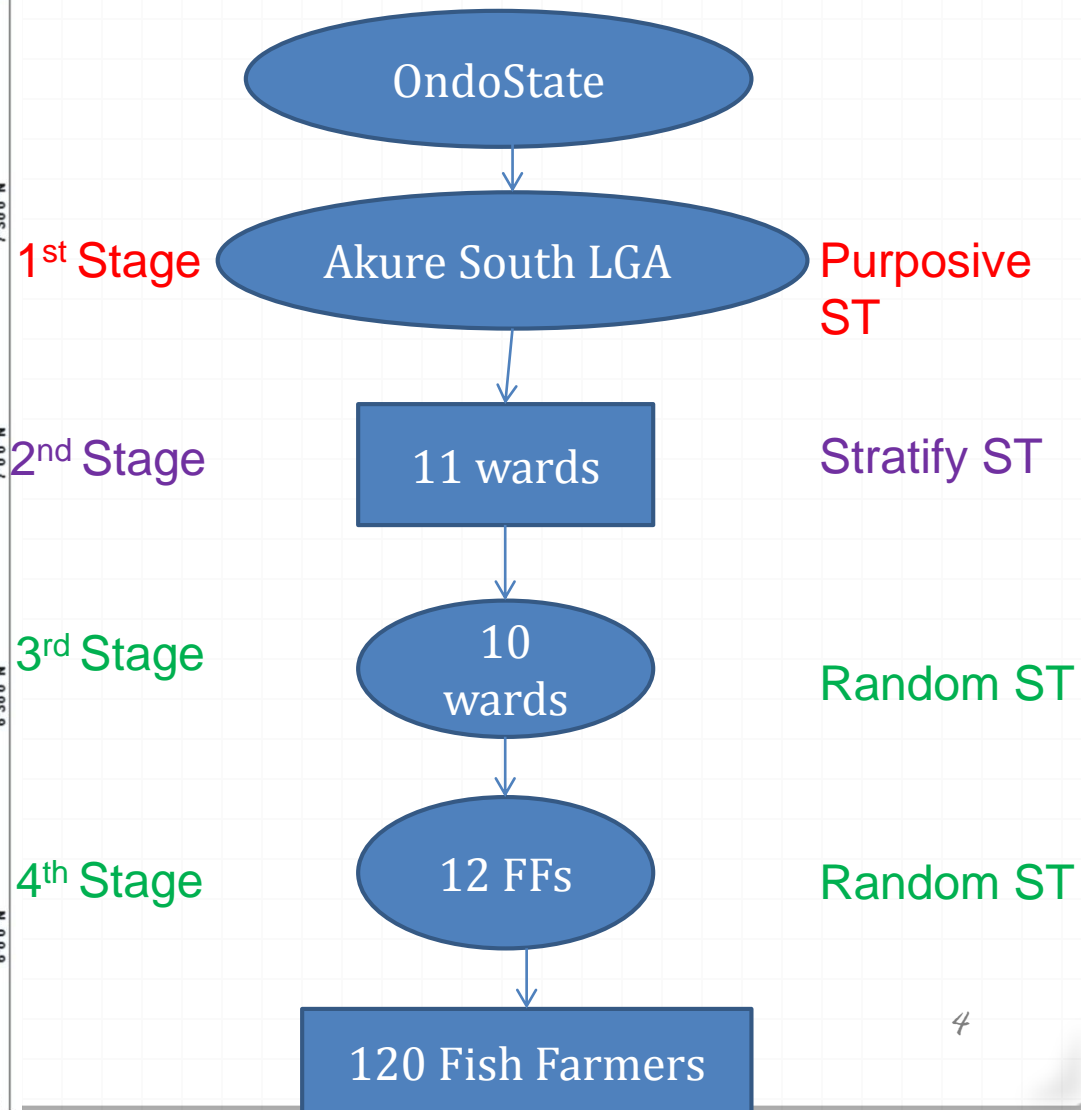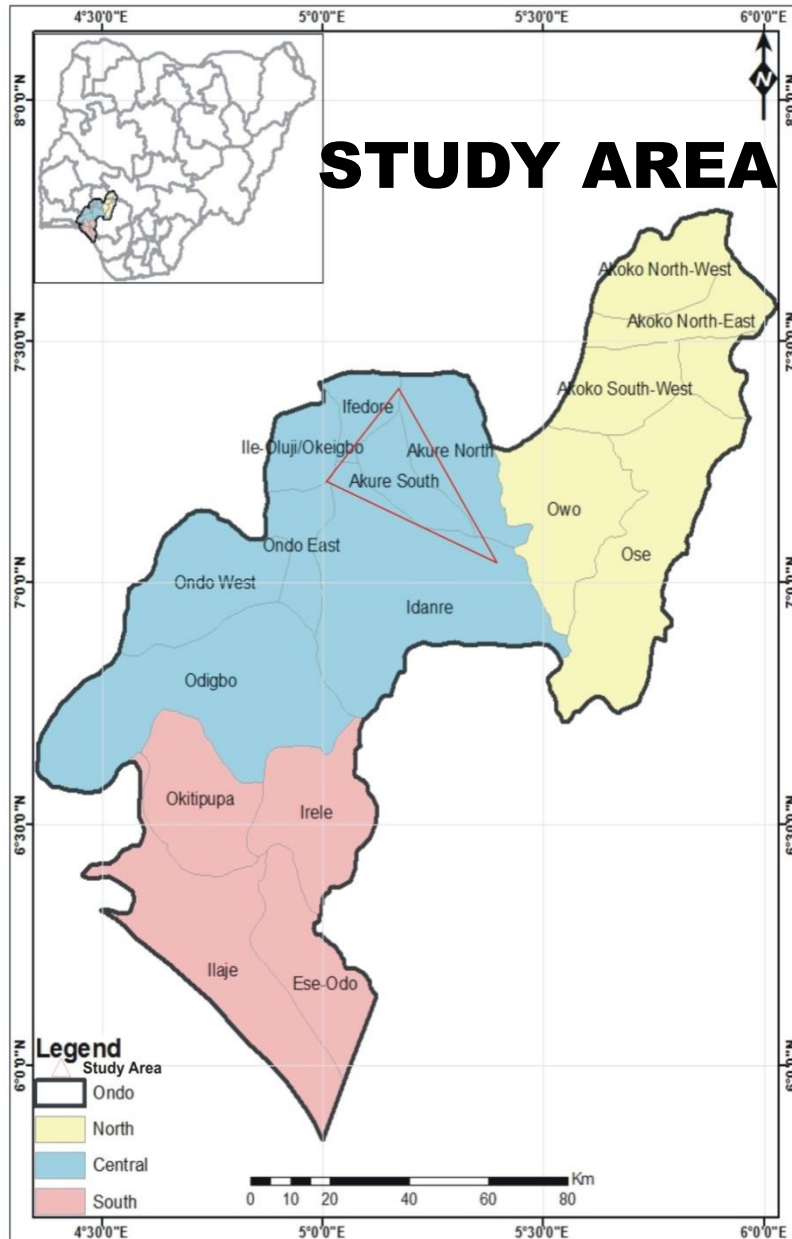
➢ Let make use of our resource! – cassava, groundnut,

Objectives:

- To ascertain socio-economic charateristics of the respondents
- To determine costs and returns of the fish farming
- To identify actual choice of feed-type employed by the farmers
- To determine factors that influence choice of feed-type employed by the respondents

MATERIALS AND METHODS

STUDY AREA

SAMPLING TECHNIQUE & DATA COLLECTION

Stage		Technique
	OndoState	
1st Stage	Akure South LGA	Purposive ST
2nd Stage	11 wards	Stratify ST
3rd Stage	10 wards	Random ST
4th Stage	12 FFs	Random ST
	120 Fish Farmers	

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Analytical Tools

0 Descriptive Statistics (such as frequency, %, table)

0 Budgetary Analysis and Profitability Indicator Measures

0 Multinomial Logit (MNL) Regression model

0 Model Specification

$$Y_i = f(X_i) \qquad\qquad (1)$$

$$Prob\left(Y_i = \frac{j}{x_i}\right) = \frac{e^{\beta_j x_i}}{1 + \sum_{k=1}^{J} e^{\beta_k x_i}} , j = 0, 2 \ldots J, \beta_0 = 0$$

$$(2)$$

$$\delta_j = \frac{\delta P_j}{\delta x_i} = P_j\left[\beta_j - \sum_{k=0}^{J} P_k \beta_k\right] = P_j\left(\beta_j - \bar{\beta}\right) \qquad (3)$$

Where:

Y_i = IFT (1); CLIFT (2); & LFT (3)

X_i = Age, marital status, income, education, experience, household size, pond size, fish price, cost of feeds & access to credit

RESULTS & DISCUSSION
Socio-economic Characteristics of the Fish Farmers

Variables	Majority (%)	Mean	Standard deviation
Age	41 – 50 (46.9)	47.31	18.27
Gender	Male (75.8)	-	-
Household size	6 – 10 (48.3)	8.12	5.69
Marital status	Married (74.2)	-	-
Fish farming experience	≤ 5 (45.0)	4.90	14.38
Educational level	Tertiary (35.8)	-	-

Socio-economic Charateristics Cont'd

Variables	Majority (%)
Type of fish cultured	Juveniles (57.5)
Water source	Stream/rivers (87.5)
Pond type	Earthen (85.8)
No. of ponds	4 – 6 ponds (45.0)
Source of credit	Personal savings (60.0)
Source of labour	Family (56.7)

Costs and Returns Analysis

Variables/annum	Mean value in ₦ (%)
Total variable cost	280,304.31 (66.69)
Total fixed cost	140,018.21 (33.31)
Total cost of fish production	420,322.52 (100.00)
Total Revenue	812,112.67

Profitability measures

Gross margin (GM) = TR – TVC = ₦531,808.36/annum

Profit(Π) = TR – TC = ₦391,790.15/annum

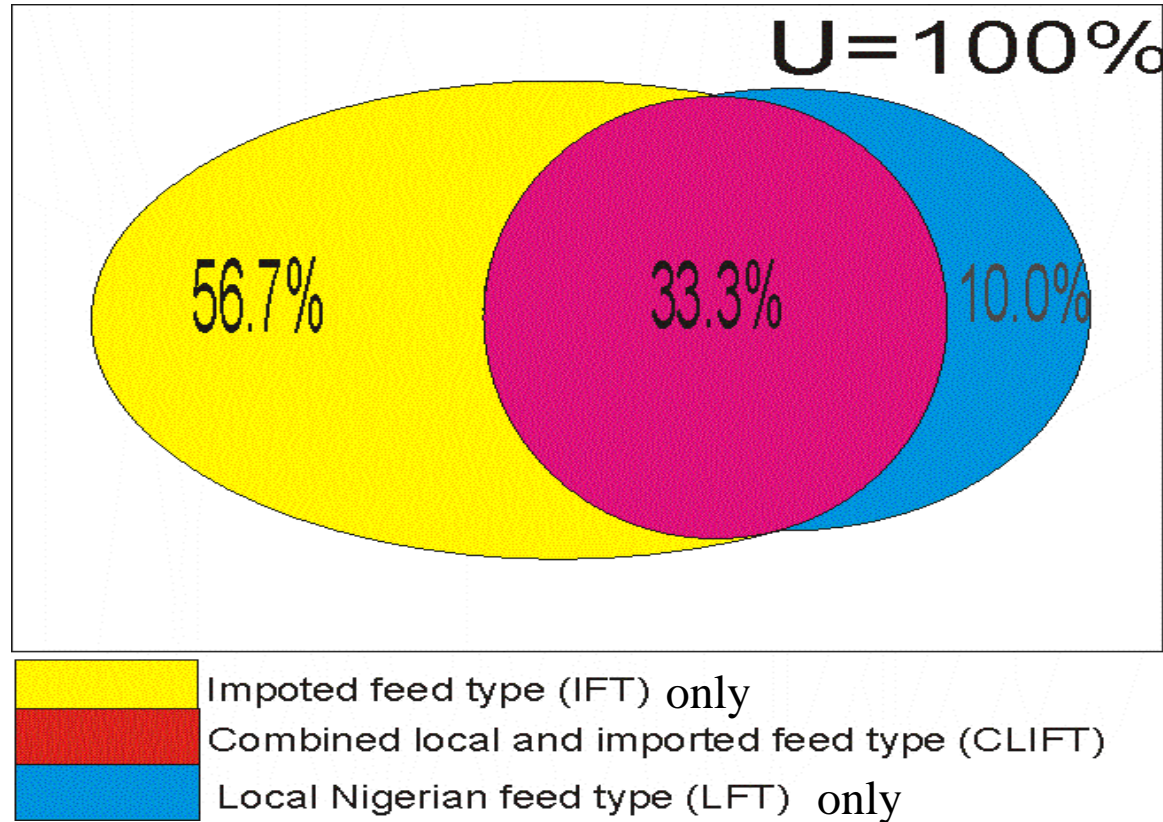Benefit-cost-ratio (BCR) = TR/TC = 1.93

Expense structure ratio (ESR) = FC/VC = 0.50

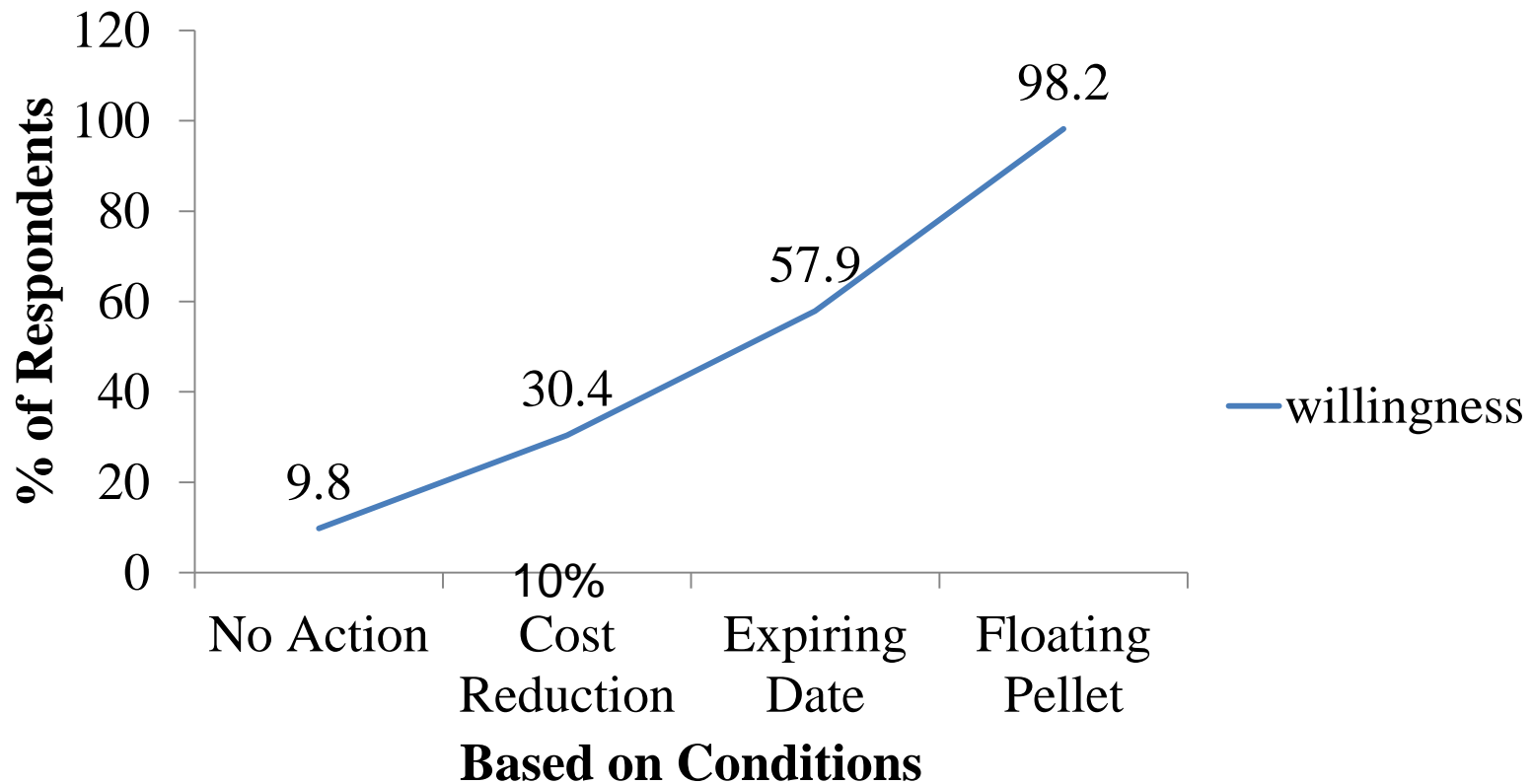% profit = Π/TC x100 = 93%

Note: ₦163 is equivalent to 1USD

IMPORTED FEEDS

LOCAL NIG. FEEDS

Fish Farmers' Preference for Feed Utilization

U=100%

56.7%   33.3%   10.0%

- Imputed feed type (IFT) only
- Combined local and imported feed type (CLIFT)
- Local Nigerian feed type (LFT) only

Reasons:
✓Imported feed makes fishes grow rapidly and faster
✓Floating pelletized feeds
✓Rate of consumption and level of satisfaction
✓Yield prediction
✓Preservation/Expiring date
✓High cost of feeds

Willingness to utilize Local Nigerian Feed Only

Results of marginal effects of the MNL model that determine the preference for feed types

Explanatory variables	Imported feed type (IFT)		Combined local and imported feed type (CLIFT)	
	Coefficient (P-value)	Marginal effects	Coefficient (P-value)	Marginal effects
Age	-4.012 (0.123)	0.202	5.123 (0.101)	0.910
Marital status	-0.183 (0.611)	-0.001	-0.231 (0.711)	-0.001
Household income (₦)	**6.23E-3* (0.049)**	6.231	1.981 (0.101)	0.049
Education	**0.028* (0.010)**	**0.002**	**0.024** (0.002)**	**0.003**
Experience	**0.588*(0.012)**	**0.043**	**0.036** (0.001)**	**0.007**
Household size	-0.026 (0.020)	-0.002	2.211 (0.101)	1.101
Pond size	**0.790* (0.041)**	0.117	**-0.567* (0.010)**	**-0.006**
Cost of feeds	3.412 (0.099)	0.071	**-1.357* (0.037)**	**-0.009**
Fish price(₦/kg)	0.044 (0.660)	0.003	**1.193**(0.007)**	**0.006**
Access to credit	**0.490* (0.031)**	0.036	0.274 (0.144)	0.047

Note: **significant at 1%, *significant at 5%; No.of observation = 120; LR chi-square (78) = 134.21**;
Log Likelihood = - 192.93; Pseudo- R^2 = 0.271
IFT= Imported feed type; CLIFT= Combine local and imported feed type; LFT = Local Nigerian feed type
Base category = LFT

CONCLUSION

- Men & Youth Involvement ⬆ Women PPT ⬇

- Credit Source = Personal Savings

- Based on the value of profitability measures, It re-established the fact that Fish Farming is a lucrative venture that contributes to food security, poverty alleviation and the Nigerian economy.

- IFT was utilized mostly by the Fish Farmers

- Majority are "WILLING TO GO FOR LFT" & This is capable of creating more employment, augmenting income and improving the standard of living of the people.
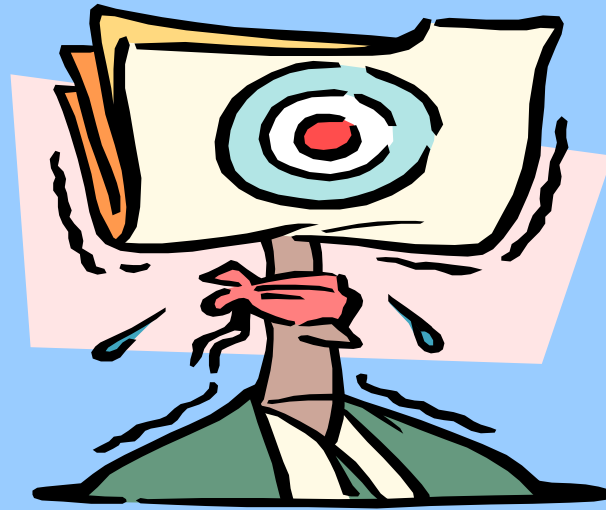
- MNL Results: Edu., Expr. Incom.,PondSiz.,Credit ...

RECOMMENDATIONS

❖Females need to be encouraged to participate in fish farming in the area as a means of augmenting their income and improve their standard of living.

❖Making Credit Available, Affordable & Accessible

❖Effort should be made to bring down the cost of feeds by exploring Local Nigerian feeds through well-funded researches.

Thanks for your attention

Comments ??

Questions??