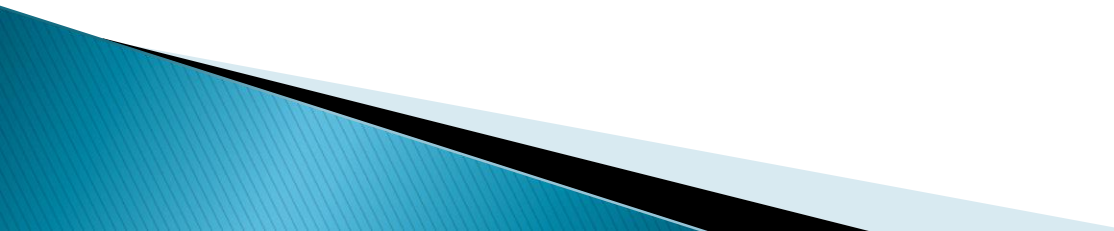# ECONOMICS OF FISH HARVESTING IN NIGERIA: A CASE STUDY OF YOLA NORTH LOCAL GOVERNMENT AREA OF ADAMAWA STATE

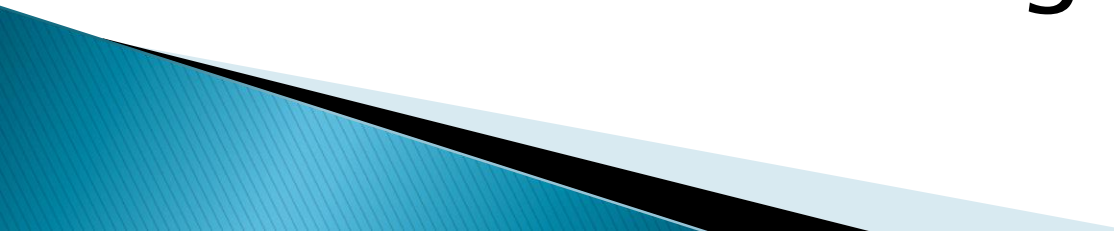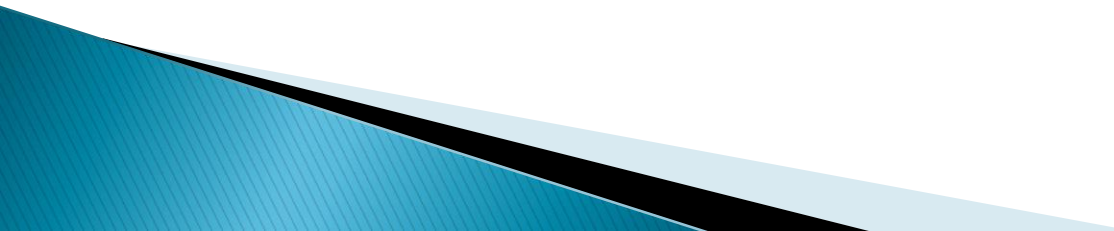## E.F. ADEBAYO , S.O. ANYANWU
N. IKENWACHUKWU & L.U. ONYIA

INTRODUCTION
Importance of fisheries in Nigerian economy

▶ Employment and income

▶ 80% of animal protein

▶ Vital to food security

▶ Raw materials

▶ Foreign exchange earner

Importance of fisheries

- Fish accounts for 35-50% of animal protein consumption in Nigeria
- Domestic production far below the huge demand
- Leading to importation of over 60% of fish being consumed

Importance of fisheries

- Over N97billion is being spent annually.
- Long run solution is to boost domestic production through artisanal improvement
- Nigeria is blessed with numerous water bodies

Nigerian Fisheries Resources

- Inland water bodies of 14m hectares
- A coastal line of about 900km
- A continental shelf area of 37,934km^2
- An exclusive economic zone area of 210,900km^2

Nigerian Fisheries Resources

- The fisheries industries in Nigeria divided into 3 sectors:
- Artisanal, industrial & aquaculture
- Sectoral % contribution shows that
- capture fishery provides the bulk of fish supply in Nigeria (Fig. 1)
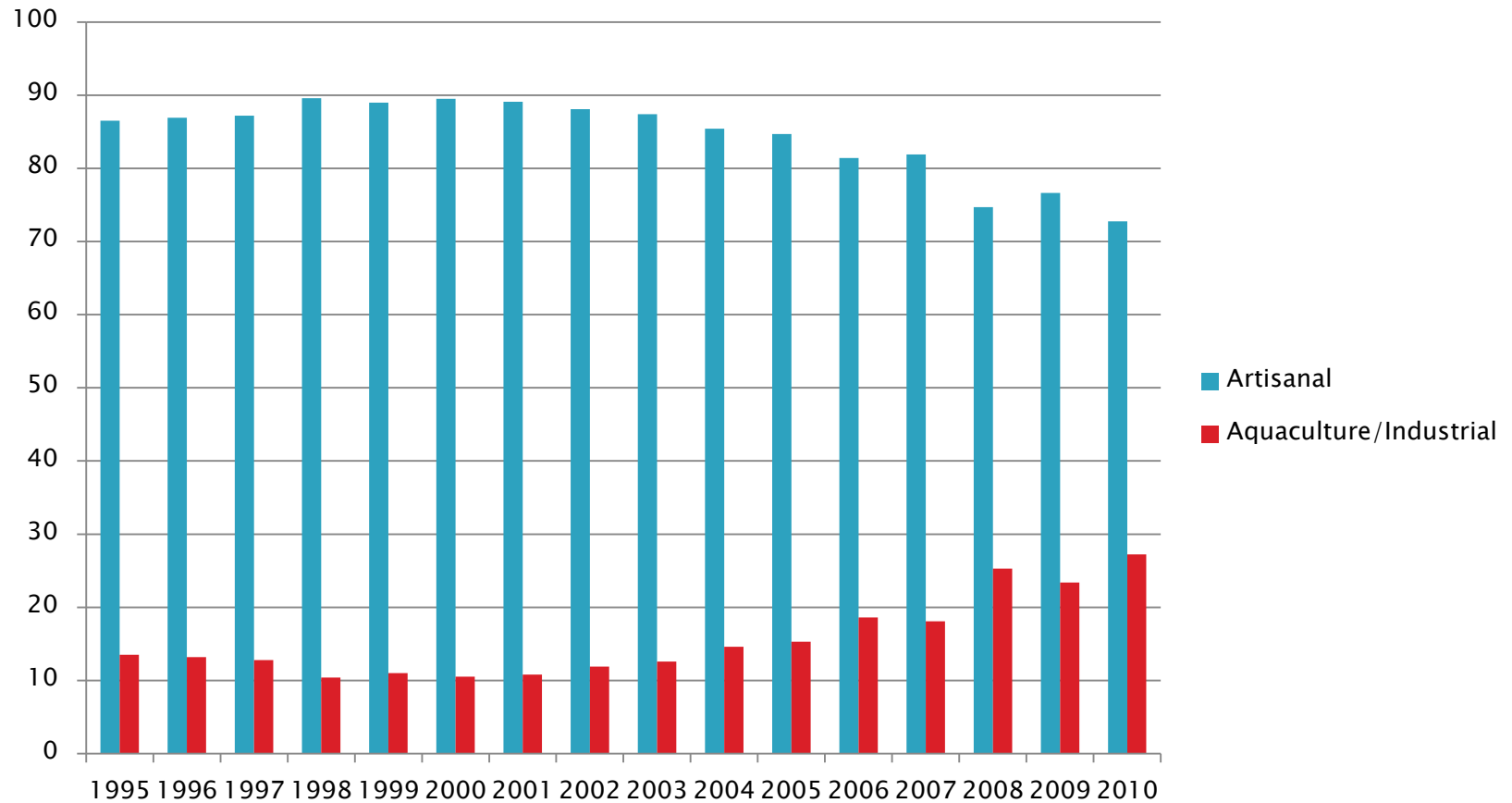
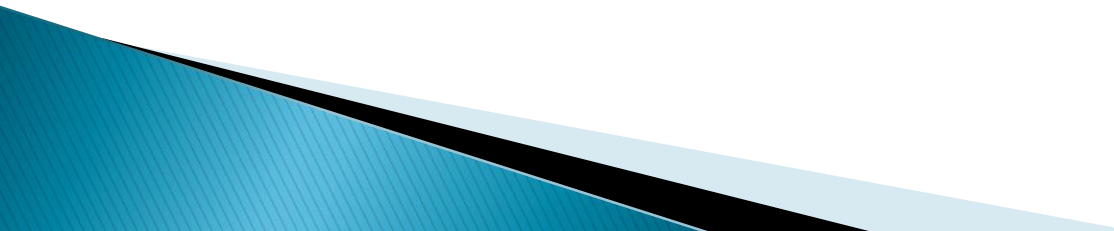Fig. 1: Fishery Sub-sectoral percentage contribution in Nigeria (1995-2010)
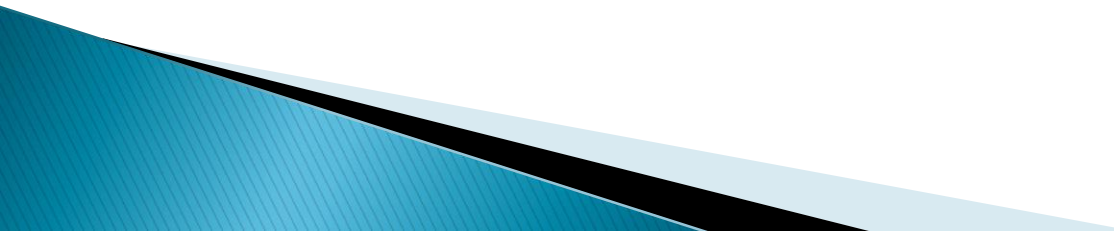
Problems of capture fishery

- Seasonal nature of the rivers and pools leading to low catch
- Poor water bodies management
- Lack of access road in most fishing communities
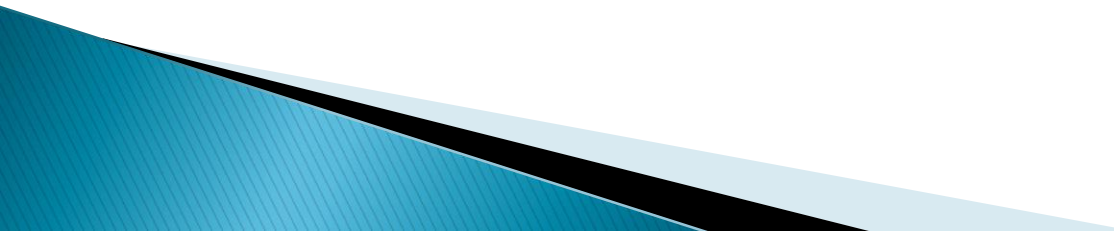
Problems of capture fishery

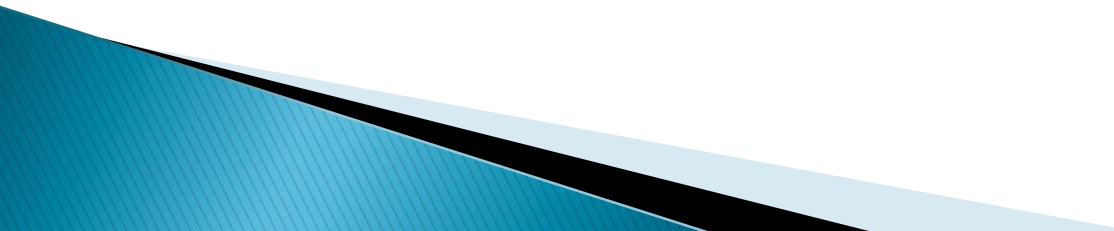- High cost of fishing inputs

- Climate change

- Post harvest loses

Objectives of the study

- To examine the socio-economic status of fish harvesters in the study area

- To identify the determinants of fish output

- To identify the problems of harvesting in the study area

Study Area
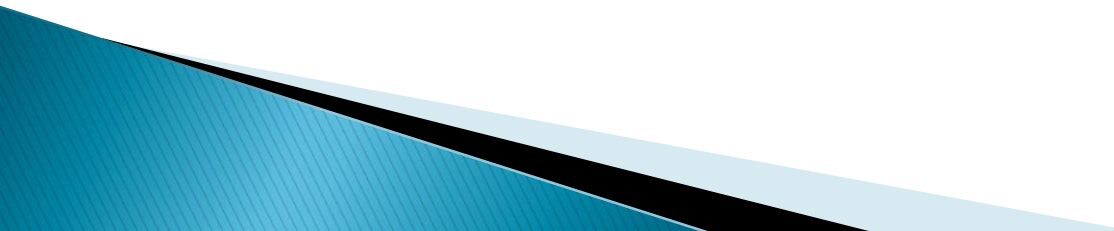
- The study area is Yola North Local Government Area (LGA) of Adamawa State, Nigeria.
- Located at southern bank of river Benue.
- In the northern guinea savannah zone of Nigeria
- With distinct dry and wet seasons.

Study Area
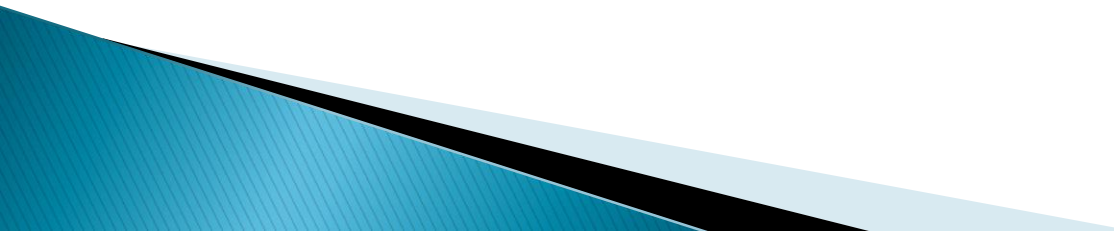
- The area has a mean annual rainfall of 960mm and
- Maximum temperature range 30–40^{0}C.
- Fishing is common along the rivers Benue, Chouchi and in Lake Gerio

Data Collection and Analysis

- Primary data were collected with the aid of questionnaire
- From 40 fishers selected from two fishing communities

- Data were subjected to descriptive, gross margin and Multiple regression analysis

Data Analysis

- Four functional forms were tried, these include linear, semi log, exponential and double log functions.
- The functions are as follows:

Data Analysis

- Linear function:
- $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + U_i$
- Semi log function:
- $Y = \beta_0 + \beta_1 LX_1 + \beta_2 LX_2 + \beta 3 LX_3 + \beta_4 LX_4 + \beta_5 LX_5 + \beta L_6 X_6 + \beta L_7 X_7 + U_i$
- Exponential function:
- $LY = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + U_i$
-
- Double log function:
- $LY = \beta_0 + \beta_1 LX_1 + \beta_2 LX_2 + \beta_3 LX_3 + \beta 4 LX_4 + \beta_5 LX_5 + \beta_6 LX_{6+} \beta_7 LX_7 + U_i$

Data Analysis

- Where:
- Y =Total fish harvested in Kg
- X_1 =Cost of fishing gear in Naira
- X_2 =Amount spent on trap food
- X_3 = Labour use in man days
- X_4 = Cost of transportation
- X_5 = Age of fishermen
- X_6 = Experience of the fishermen in years
- X_7 =Household size
- U_i =Error term
- B_0 = Constant
- $\beta_1 - \beta_7$ =Coefficients of independent variables

RESULTS AND DISCUSSION

- The socio economic characteristics of the respondents are shown in Tables 1a–c

Table 1 (a) Age of respondents

Age group	Number	Percent
20–29	27	67.5
30–39	11	27.5
>39	02	05.0
Total	40	100
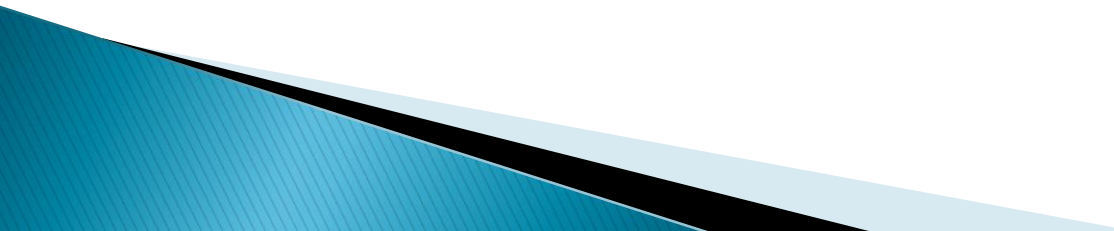
Table 1 (b) Educational level

Educational Level	Number	Percent
No formal Education	14	35
Primary Education	5	12.5
Secondary Education	20	50
Tertiary Education	1	2.5
Total	40	100
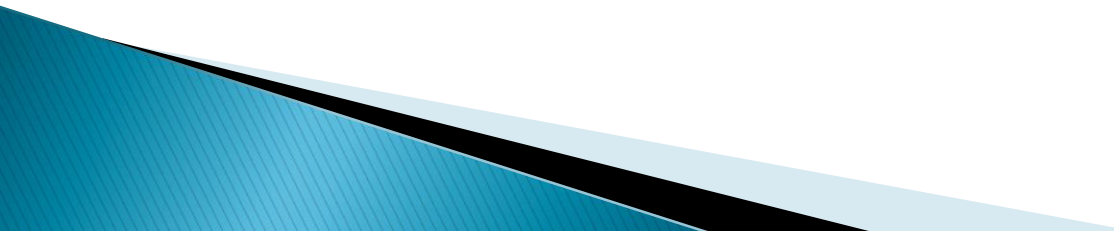
Table 1 (c)Types of fishing gear

Fishing gear	Number	Percent
Gill net	36	90
Hook	03	7.5
Cast Net	10	2.5
Total	40	100

Results and Discussion

- The gross margin (GM) is the difference between the gross income and the total variable cost of an enterprise.

- For the fishermen, there is an average GM of N27, 434 and a net income of about N22, 367

Results and Discussion

- Double log gave the best fit
- Three variables were significant:
- cost of the fishing gear (X_1),
- labour use in man days (X_3)
- age of the fishers (X_5).

Results and Discussion

$LY = 0.525 + 0.016X_1 - 0.004X_2 + 0.314X_3 - 0.007X_4 - 0.81X_5 - 0.02X_6 - 0.03X_7$

       **   ***   ***
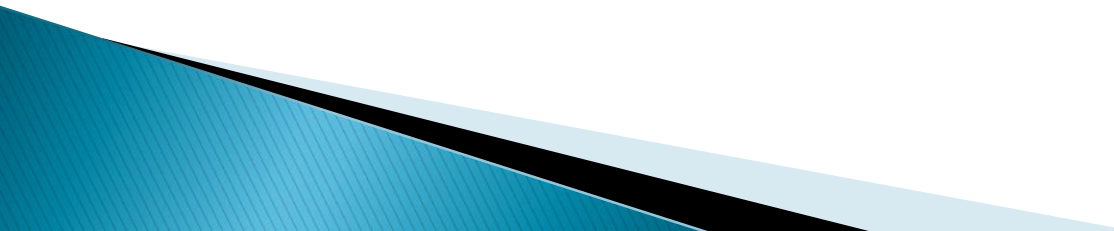
      (2.35) (−0.45) (4.43) (0.85) (3.68) (0.29) (0.49)

$R_2 = 42\%$

$F = 33.10$

- The R^2 indicates that 42% of the variability in fish output was accounted for by the variables included in the model.

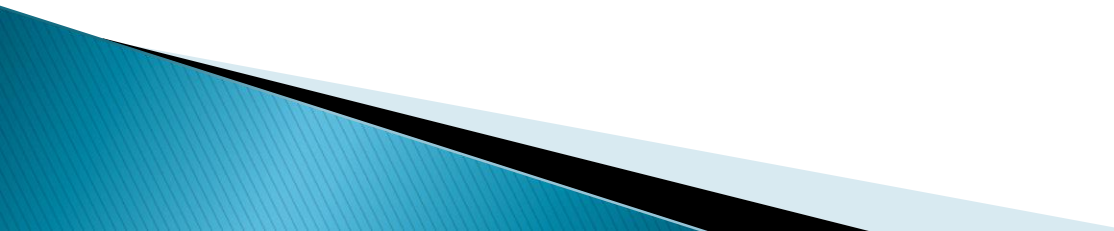- The magnitude of the F statistics shows that the R^2 is significant and the function is in good fit.

Results and Discussion

- Problems of fish harvesting in the study area:
- Lack of capital
- Tear and wear of the fishing gears
- Flooding & uncertainties
- High cost of fishing gears

RECOMENDATIONS

- Soft loans to fishers to purchase quality fishing gears

- Law to regulate catches and offenders should be dealt with appropriately.

Recommendations

- Lower tariff on nets to make them affordable to fishers
- Artisanal fishers to form cooperatives
- To access credits and other inputs.

THANK YOU