

AN ECONOMIC OVERVIEW OF THE FISH AND SHRIMP PRODUCTION OF THE NIGERIA FISH TRAWLING INDUSTRY UNDER THE STRUCTURAL ADJUSTMENT PROGRAMME.

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ABSTRACT

Over the years, this country have witnessed different government with different policy measures. Against the negative consequences of the past policies, the structural Adjustment was initiated in 1986. Its aims is to effectively altar and restructure the consumption patterns of the economy as well as to eliminate price distortions and heavy dependence on the oil and the imports of consumer goods and services. The major insturment used include the adoption of a realistic exchange rate for the Naira and adoption of appropriate pricing policies in all sectors with greater reliance on market forces.

Within the period of implementation, there has been a decreasing trend in yearly fish catch landings and sizes but the reverse in shrimping. There is also a gradual shift from fishing to shrimping, from the vessels purchased with 83.3% increase of shrimpers from 1985 to 1989. Decreasing fish catch sizes and quantity aggravated by the present high cost of fishing coupled with the favourable export market for Nigeria shrimp tend to influence the sift. This economic situation is the result of the supply measures of SAP through the devaluation of the Naira.

There is also overconcentration of vessels on the inshore waters as majority of the vessels are old and low powers hence incapable of fishing on the deep sea. Rotterdam price being paid for Automotive Gas Oil (AGO) by fishing industries is observed to be discriminating and unhealthy to the growth of the industry as it is exceedingly high and unstable thus affecting planning for fishing operation. Fuel alone takes 43% of the total cost of operation. The overall consequences is that fishing days are loss and therefore higher overhead cost.

It was concluded that for a healthy growth and sustainable resources of our marine fishery under the Structural Adjustment Programme licensing of new fishing vessels should be stopped immediately and the demand side of SAP should be employed by subsidizing high powered fishing vessels which can operate effectively on the deep sea. Also market forces alone should not be allowed to determine the Rotterdam price of AGO as this industry is firstly agricultural and more important, it is just like any Nigeria land based industry except that it is floating.

INTRODUCTION

Over the years, this country have witnessed different government with different policy measures. Interest rate was the most important monetary policy measure adopted to boost

fish production, marketing and distribution during the pre-SAP era. During this period the interest rate structure was used mainly to direct "cheap" credit to the productive sectors including fishery. To further accelerate capital flow of industrial fishery under the Agricultural Guaranteed Credit Scheme, loans with 3 - 5 percent interest were given. The scheme allowed individual to borrow up to N50,000 while corporate bodies were entitled to a loan up to N1 million. In addition, 100 percent tax exemption was granted on interest on loans with a grace period of seven years taken by investors in fish and shrimp trawling operations. Fiscal policy measures used included a 50 percent subsidy on fishing inputs including trawlers procured by fishermen's cooperative societies for the industrial fishery and the abolition of import duties on fishing vessels and equipments.

Between 1982 and early 1986, new policy measures were taken to intensify payment and trade controls. These policy measures led to a situation of drastic short-supply of individual inputs, plant closures, price inflation and increased external debt through indiscriminate recourse to external borrowing and accumulated unpaid trade bills.

It was against this background of worsening economic crisis resulting from policies that appeared inappropriate that the Structural Adjustment Programme was embarked on in 1986. The specific policy objectives include restructuring and diversifying the productive base of the economy in order to reduce dependence on the oil sector and massive importation of goods and services; achieve fiscal and balance of payment viability over the period of implementation of SAP.

The most important instrument used include the adoption of realistic exchange rate for the Naira through SFEM (later FEM) as a policy instrument coupled with the liberation of the external trade and payment system and the adoption of appropriate pricing policies in all sectors with greater reliance on market forces.

From the policy objective of SAP, it appears therefore that agriculture (including fishery) is likely to be more affected by the economic measures of SAP. This is because agriculture is in the centre of the Structural Adjustment Programmed currently being implemented by many African countries.

The industrial fishery comprised 440 inshore licenced medium trawlers of between 10 - 500 GRT as at 198 and 109 distance water trawlers owned by Nigeria fishing companies or chartered to them (FDF, Lagos). As at 1988, the industrial fish production represent 8.50% of the total fish production of the nations fishery. About 200,000 persons are directly employed on board and ashore in Nigeria fish trawling industry with \$350,000.000 (N2.6 billion) as estimated total amount on fishing trawler (NFTA 1989). Estimated annual working capital on trawlers operation which directly goes into the Nigeria economy is about N600,000.00. In addition to the above figures, thousands of other hands are engaged in spin-off activities (NFTA, 1989). The contribution of the sector to Gross Domestic Product (GDP) was about 4 percent in 1982 and about US \$ 10 million is generated annually from shrimp exploration. Domestic fish production provides over 10kg of fish per capital or 40 percent of the animal protein consumed by the average Nigerian (Mabawonku 1986).

Despite the various policy measure used since 1975 to boost fish production, marketing and distribution in the country, a major characteristic of the sector is the short-fall in production target as the population continues to increase, Tobor (1985) showed that the Third Development Plan (1975 - 1980) had an allocation of N92.88 million and a fish production target of 1.2 million tons by 1980. But by the end of the plan period, production was only

430,731 tons only 35.89 percent of the target. A similar situation was also observed in the Fourth Development Plan period (1981 - 1985).

To date while the broad policy objective of SAP namely the restoration and maintenance of viability in the balance of payment in the environment of price stability and sustainable rate of economic growth Guitan (1982), has been widely accepted, it has nonetheless been argued that SAP policy measures also cause retardation in economic growth as well as severe hardship on those whom the programme is ostensibly designed to assist (Kirkpatrick and Onis, 1985). The industrial fishery because of its capital intensiveness and its degree of dependence on reign exchange (through export and import) coupled with the open-access characteristic of the sea, appears to be more affected by these SAP economic policies. It is against this background that this paper is written to assess the overall economic effect of SAP on the fish and shrimp production of the Industrial Fishery.

RESEARCH METHODOLOGY

The study adopts the descriptive survey design. In adopting this approach, the study strives to establish how the pursuit of government SAP policies affect the Nigeria Industrial Fishery and the implications on the cost and the returns conditions of the fishery.

In order to examine the effect of SAP, ten fishing companies were selected for study. Five adequately responded to the instrument used while five only gave opportunity for oral interview. The study was carried out within Lagos State as majority of the fishing companies are in Lagos., being a port city. The samples were randomly selected. The instrument involved a set of questionnaire for completion by the operation manager, marketing manager or accountant.

A basic problem encountered during the study was lack of co-operation arising from the reluctance of managers, accountants etc to release information. It would appear that vital records were not being maintained by the companies.

RESULT AND DISCUSSIONS

FISH AND SHRIMP PRODUCTION

Table 1.0 YEARLY AVERAGE OF FISH AND SHRIMP CATCH LANDINGS (METRIC TONS)

Year	1985	1986	1987	1988	1989
Fish	2931.02	2316.9	2167.54	1074.78	2703
Shrimp	14.1	15.3	15.56	37.5	41.56

SOURCE: FIELD SURVEY

Table 1.0 overleaf show yearly average of fish and shrimp catch landings of companies surveyed.

The overall trend is that there is a gradual shift from fishing to shrimping from a mean fish catch landing of 2,931.02 metric ton in 1985, it fell to 2703 metric ton in 1989 while shrimp catch landing rose from a mean value of 14.1 metric ton to 41.56 metric ton in 1989. These represented a decrease of 8.44% for fish and an increase of 66.07% for shrimp. Companies

with earlier record of 40 - 45 tons of fish per fishing trip of 30 - 35 days now return with 20 - 25 tons. Captains who endeavour to return with 35 tons are immediately tagged 'good'. A similar situation was observed from figures of Nigeria fish and shrimp production as shown in Table 2.0

**TABLE 2.0 FISH AND SHRIMP PRODUCTION COMMERCIAL TRAWLERS
IN UNIT-METRIC TONS 1985 - 1989**

Year	Fish	Shrimp
1985	26,142	2,376
1986	25,042	2,623
1987	24,900	3,517
1988	35,608	2,868
1989	33,645	5,234

Source: FDF 1990

Fish production rose from 26,142 metric ton in 1985 to 33,645 metric ton in 1989 representing an increase of 27.08% while shrimp production rose from 2,623 metric ton in 1985 to 5,234 metric ton in 1989 representing an increase of 54.6%. A decreasing trend is actually observed for fish production.

The variation in fishing crafts also confirms the shift from fishing to shrimping. Fig. 1.0 show the estimated number of fishing crafts for inshore trawlers between 1985 - 1989. Number of fishing trawlers increased from 116 in 1985 to 158 in 1989 while shrimping trawlers rose from 47 in 1985 to 282 in 1989. The figures represented an increase of 26.58% and 84.3% respectively for fishing and shrimping vessels within four years of inception of SAP.

Decreasing sizes of fish is also observed to accompany the catch landings. Under sized individuals now dominate fish catch landings. Fig. 2.0 show the annual mean sizes of dominant species of croakers and sole landed by commercial trawlers from 1985 - 1990. Using 1981 - 1985 as baseline years, mean length of *P. typus* and *P. senegalensis* fell from 30.20 cm in the baseline year to 26.41 in 1989 while *Cynoglossus senegalensis* fell from 34.24cm in the baseline year to 25.47cm.

The decreasing catch size and quantity aggravated by the high cost of fishing coupled with the favourable export market for Nigeria shrimp tend to affect this shift. More foreign exchange is now earned from export of shrimp products than before the SAP period. However, a higher cost of operation is now experienced by the trawling industry than the pre-SAP, because of the devaluation of the Naira which has made import more costly. In trying to reduce the overhead cost of operation, these fishing companies now employ various mesh sizes just to make an optimum catch on return. Also the attendant rise in the foreign exchange power of processed shrimps resulted to the highly increase number of shrimpers. These shrimpers employ codend mesh sizes of 44m and therefore catch undersized individuals of commercially important fish often representing over 80% of total shrimper catches (Tobor, 1990). The shrimps and prawns which are exported include Pink, Zebra, Brown and Red Shrimp.

**COST OF OPERATION:
EFFECT OF FUEL COST/COST INSTABILITY ON FISH PRODUCTION**

All the companies surveyed reported a high cost of AGO fuel and its instability. This often leads to the reversals of companies operational schedule and the consequent loss of fishing days and therefore increased overhead cost. In some cases, vessels were made to wait for additional 7 or more days in order to obtain fuel. But normally, in order to recoup the heavy investment on a fishing vessel, it is important that turn-round time be out to the barest minimum. That is, if a fishing vessel arrives today, it is in the interest of the company that it discharges and is fitted out for a return trip within the minimum possible time usually not more than 3 - 5 days depending on the efficiency of the company in question. Fishing activities is compulsory reduced as a result of the unpredicted situation. Considering the cost of waiting time in addition to crew salaries, loss of productivity for the waiting period etc. the loss of waiting vessels sums to about N8000 per day. Table 3.0 and Fig: 3.0 show the cost per litre of AGO (Automotive Gas Oil) in Naira from 1985 to 1989. The cost differs from company depending on the source of purchase.

TABLE 3.0 COST PER LITRE OF AGO IN NAIRA FROM 1985 - 1990

Company Year	1985	1986	1987	1988	1989	1990
A	0.21	0.26	0.60	0.55	1.30	0.89
B	0.20	0.24	0.57	0.55	1.28	0.89
C	0.20	0.23	0.55	0.56	1.20	1.25
D	0.22	0.26	0.61	0.58	0.97	1.20
E	0.20	0.25	0.56	0.52	1.10	1.12
MEAN	0.21	0.25	0.58	0.55	1.17	1.07

SOURCE: FIELD SURVEY

There has been within the last few years and more particularly in the last few months of the survey, an astonishing and totally market force determined fuel prices for fishing vessels. A negative effect of the devaluation of the Naira through the supply side measure of SAP is experienced in this respect. From about 11.0 kobo per litre in 1982, it rose to about 30 kobo per litre in 1987 but now stands at over 100 kobo per litre including handling and other charges.

Fishing vessels registered in Nigeria obtain AGO for fishing at Rotterdam price converted to the Naira, which is higher than the AGO obtained from the open market. Before the inception of SAP, the AGO at Nigeria open market was 11.00 kobo per litre at Rotterdam price. In 1989 while AGO at Nigeria open market was still less to N1.14 per litre. This high and unstable Rotterdam price is affected by the market determine exchange rate.

Trawling industry is highly capital intensive and most of the inputs are imported especially fishing and shrimping vessels. a negative consequence of the devaluation of the Naira is the escalated cost of imported vessels. Table 4.0 presentes estimated cost of vessels of different gross registered tonnage from 1985 to 1989.

TABLE 4.0 ESTIMATED COST VESSEL FROM 1985 - 1989 (IN N000)

Vessel Size Year	1985	1986	1987	1988	1989
Small	150	780	817	1,778	1,800
Medium	586	1,665	2,033	3,250	3,910
Large	700	2,066	2,697	3,336	5,400

SOURCE: FIELD SURVEY

At present, large vessel cost between 6,500,000 to 7,500,000. Vessel spare parts also rose at the same rate.

The consequence is low capacity utilisation of the industry as some fishing vessels registered with the Federal Department of fisheries are out of use. Only very few old companies purchase new vessels during the period (1986 - 1989) while those that purchase either purchased fairly used ones or new but lower powered fishing vessel (being cheaper) or shrimpers. Most of the vessels were found to be purchased before SFEM (FEM). The overall effect is that majority of the vessels result to inshore water fishing though registered as off-shore vessels, leading to congestion of effort in the inshore waters. *Penaeus notialis* and *Parapeneopsis atlantica* the dominant shrimp catch of Nigeria fishing industry are from the inshore waters. Little or no effort is made to exploit the shrimp resources of the distant water as most of the vessels are low powered and therefore unable to operate in distant water. The consequent of congestion of the inshore water is the landing of undersized fishes. The high cost of vessels and spare parts is also observed to affect fishing days as vessels develop mechanical problems on the sea, being old vessels.

The weight of the hardship being faced by the industrial fishery can be established more from the operations of a vessel under the Structural Adjustment Programme. A vessel returning from a 35 - day fishing trip which cost N150,000 to fit out comes back with a catch of about 30 tons of fish on the average (most cases less). At the current selling prices of N7,000 per ton (N8 per kilo), this will fetch a total of N210,000 which showed a loss. Where the vessels is a shrimper average catch is about 4 tons of headless shrimps and 8 tons of fish which also comes to roughly the same total intake. This has not taken into consideration the amortisation and interest payments on the vessels which on the average cost N8,000 at today's exchange rate. Interest at 20 percent average comes about N1,200,000 per annum or N120,000 per voyage, that is based on optimistic ten voyages per annum. To break even in the circumstance and perhaps register marginal profit, fish will have to be sold at exorbitant rates. This is not feasible as fish and fish products are substitute commodity. Fuel alone contribute 45.3% of this total cost. When this is considered with the decreasing catch and the longer period which voyages now takes for any reasonable catch to be registered, this industry is reduced to a situation where survival is threatened, under present economic policies.

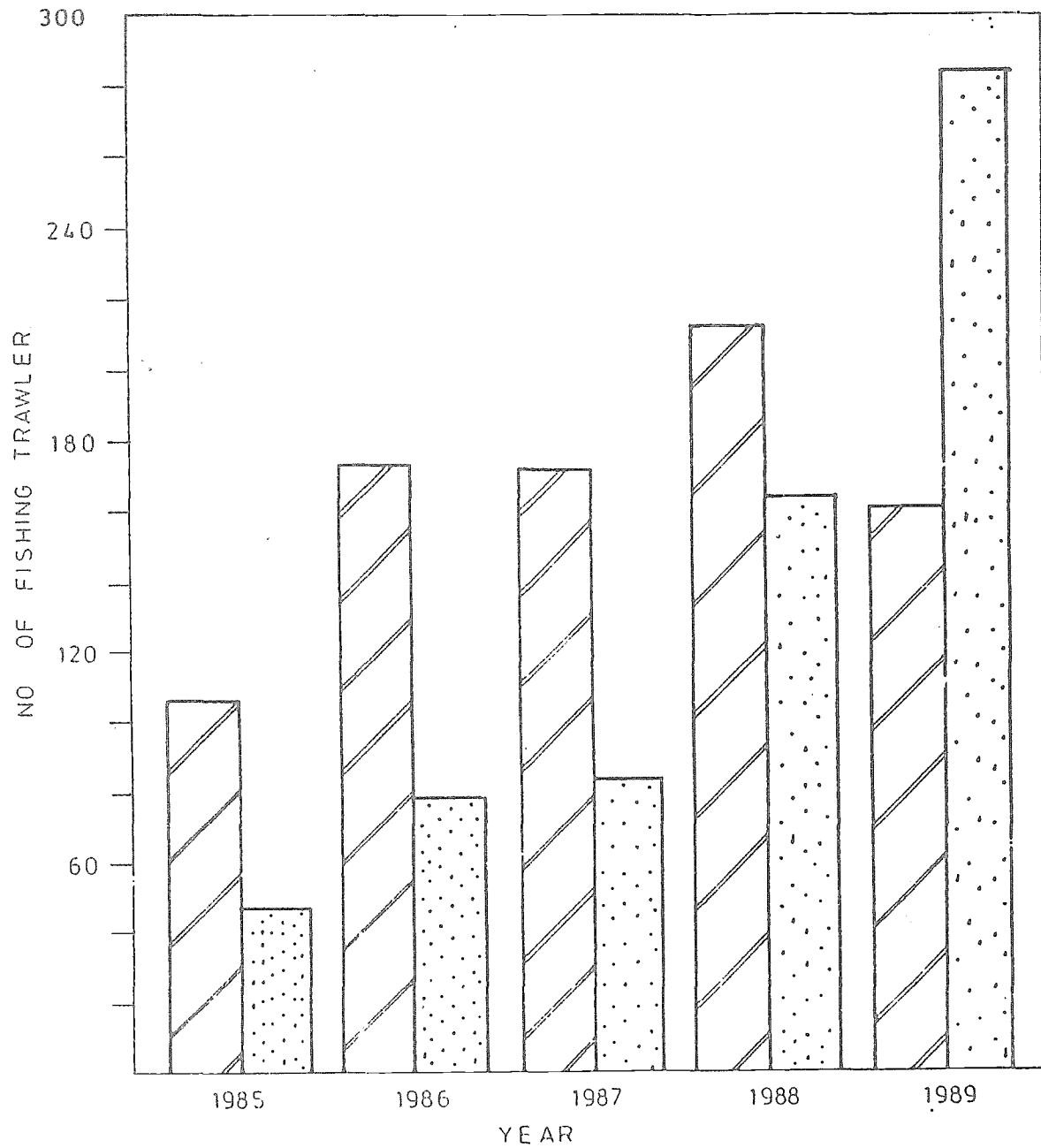
RECOMMENDATIONS

In view of the above observations, the following policy recommendations with respect to a healthy growth and sustainable resource of our marine fishery.

1. Licencing of new fishing vessels should be stopped for a period of five years to reduce the effort on our waters. Maximum effort of 246 vessels needed to sustain Nigerian inshore fisheries to give a yield of 23,163 ton has already been exceeded since 1988 (Okpanefe 1990).
2. Revolving loan should be provided for fishing companies to enable them purchase vessels with highly powered engine for the exploitation of under or un-exploited demersal fish stocks and tuna resources. This will reduce the tension on our inshore waters.
3. Regulation of the price of automotive gas oil (AGO) for fishing vessels licensed to fish in Nigeria. Market forces should not be allowed to determine the price level. Rotterdam policy of purchasing AGO should be abolished.
4. As a demand side economics of SAP, government should subsidize high powered fishing vessels. This will enable fishing companies purchase sophisticated vessels to fish in the deep sea. In this line, concensional grant should also be given to the fishing industries to obtain loans with regulated interest rate as the business is highly capital intensive.
5. The government should also ensure the effective Naval and Federal Fisheries Department patrolling our territorial waters to prevent poaching by foreign vessels and illegal sales of fish by boat crews.
6. The government should negotiate at the presidential level with the governments of the neighbouring countries for fishing right agreement. the recent fishing right agreement signed with Equitorial Guinea is highly commended.
7. Research should also be intensified at investigating the unexploited resources of our fishery. This is at present being done by the Nigerian Institute for Oceanography and Marine Research but it appears that the resources available are inadequate for this capital intensive research. More resources should therefore be made available for this purpose.

It is believed that if all these recommendations are adopted, the threat of gross decline in industrial fish and shrimp production, reduction in foreign exchange earning, unemployment etc. being posed by the collapse of the vital industry of Nigeria economy will be avoided.

Fig:1.0 ESTIMATED NUMBER OF INSHORE FISHING TRAWLER (1985 - 1989)



KEY
FISHING TRAWLERS
SHRIMPERS

SOURCE - FDF

Fig. 2.0 MEAN SIZE OF CROAKERS AND SOLE LANDED BY INDUSTRIAL TRAWLERS 1985 - 1989.

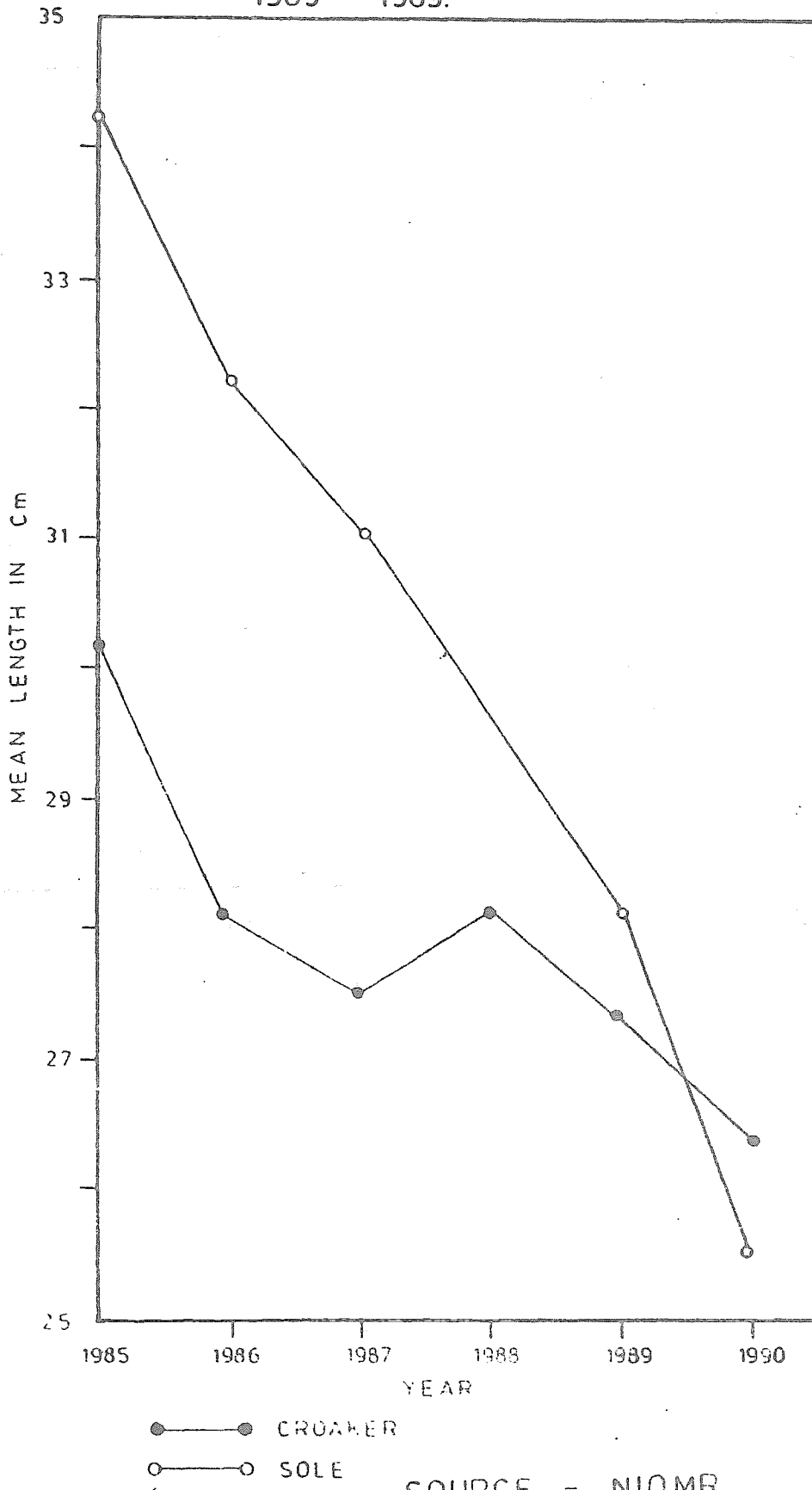
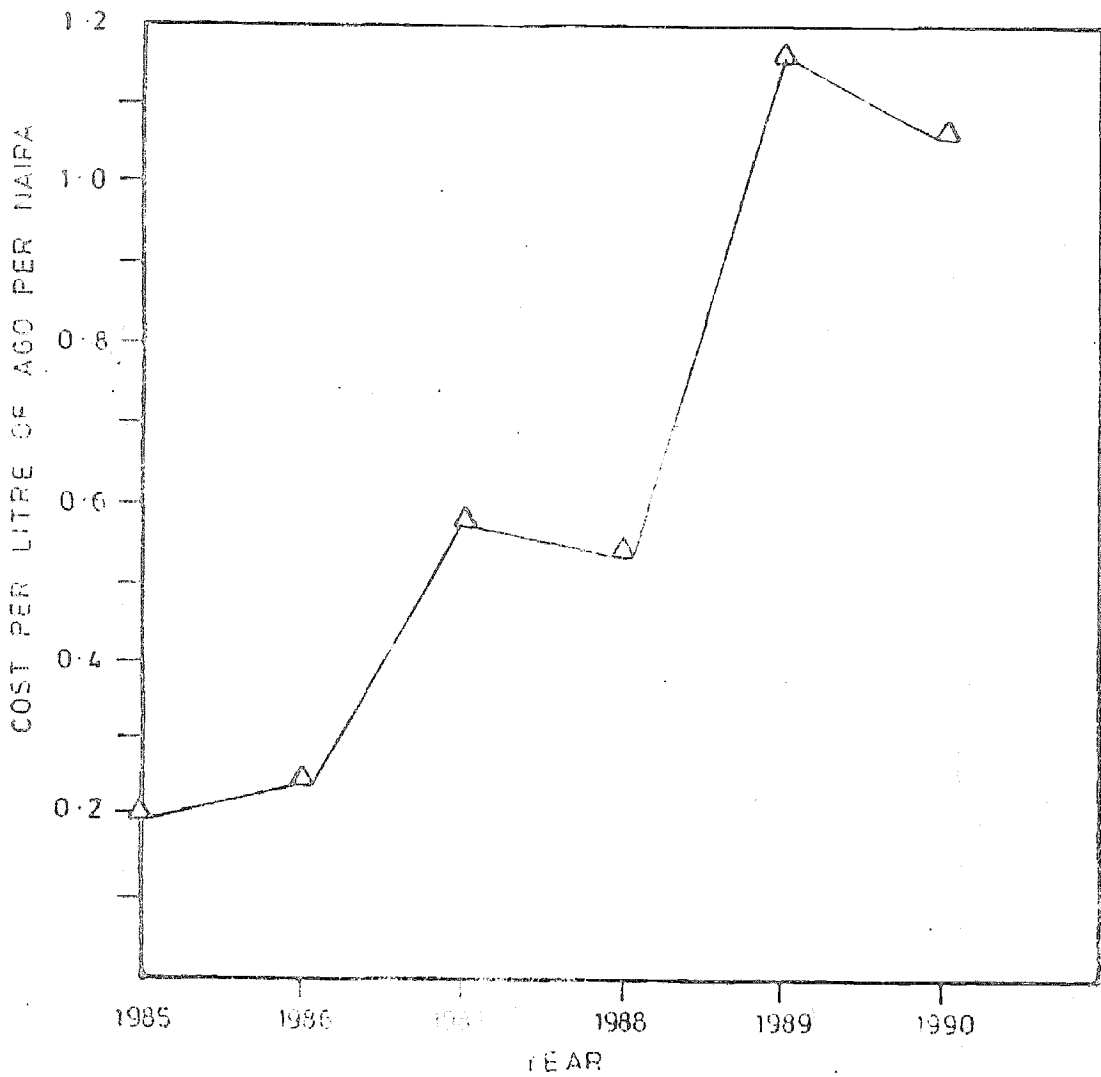


Fig - 3.0 COST PER LITRE OF AUTOMOTIVE GAS OIL
(AGO) IN NAIRA FROM 1985-1989



SOURCE - FIELD SURVEY

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