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profit rate in this activity is high, the Rural Banks in India should take necessary steps to foster the supply of milk by giving top priority to dairying in allied activities.

2. At present the Bank is following differential interest rate policy while advancing loans to different purposes irrespective of the relative economic position of the beneficiary. For instance, agricultural labourers in the unirrigated region are obtaining credit at 11.75 per cent interest for dairying, while those in the irrigated region are securing loans at 16 per cent for small business. So the RRBs should take necessary steps to solve this type of problem and they have to discriminate among different categories, but not for different purposes by considering the relative economic positions.

3. Finally, as evident from the analysis, the profit rate of the agricultural sector in the irrigated areas is high. In order to avoid the risk factors, the RRBs have to concentrate much on long run developments by providing credit to medium-term irrigation development projects.

PROGRAMMES AND STRATEGIES FOR THE DEVELOPMENT OF ARTISANAL FISHERIES IN NIGERIA

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This paper attempts to appraise Nigerian government development programmes and policies of a neglected part of its economy. Specifically, attention is focused on the causes of the so-called neglect of fisheries in Nigeria in the early days of economic development in the country and the problems of the sub-sector. These issues are covered in section I of the paper. Section II deals with the types of government programmes and policies addressed specifically to artisanal fisheries and section III appraises the achievement of public policies over the years.

I

PROBLEMS OF ARTISANAL FISHERIES IN NIGERIA

An examination of artisanal fisheries reveals a number of problems some of which are internal to the industry while others arise as a result of the inaction of the various governments of the country since the colonial period. In any subsistence economy a general characteristic is low level of earnings relative to the needs of the population. For an agrarian population a number of reasons could be adduced but for a fishing settlement with abundant resources such a phenomenon is difficult to explain. This is especially true when it is discovered that in the same environment (especially in the coastal areas) commercial and shrimping fisheries make high profits and are able to increase their investment, as well as hiring many of the peasant fishermen to operate

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their fleet. In other words, what are those factors that make for low earnings in artisanal relative to commercial fisheries? A unique characteristic of peasant fisheries in Nigeria is the antiquated fishing equipments which are used and outmoded ways of fish preservation. Fishing equipments include dug-out canoes (that is canoes built from tree trunks), gilt-nets, hand-lines and stakes. Thus the extent to which the abundant fisheries resources of the coastal waters in the country can be tapped is affected by the low level of technology in use. But the low level of technology in artisanal fisheries is not a result of lack of it in the Nigerian environment. It is due mainly to the low level of earnings by the fishermen to acquire it.

Much of the areas where fishermen settle along the coasts and rivers in the country are terrains that are not readily accessible either by sea or from the mainland. These areas are swampy mangrooves and creeks which make development projects far more costly than elsewhere in the country.[1]

II

TYPES OF PUBLIC PROGRAMMES AND POLICIES FOR THE FISHERIES SUB-SECTOR

The Nigerian fisheries sub-sector comprises both commercial and artisanal fisheries. But in this paper our main attention is focused on those government programmes and policies that are directed mainly to the latter.

Major concerted efforts for the development of artisanal fisheries began in 1975 during the Third National Development Plan (1975-1980). According to the plan, the programmes for artisanal fisheries consist mainly of investment in fish storage, processing and marketing, infrastructure supply and manpower training. Towards this end a total capital outlay of N£101.554 million[2] was planned. Compared to the allocations to the whole of the agricultural sector, this amount constituted just about four per cent of investment in agriculture. It is not exactly clear what the philosophies were underlying this allocation. But for the sake of exposition this allocation (given the domestic price of outboard engines) will buy only about one hundred and six thousand outboard engines. Before examining the effectiveness of this programme, it is necessary to take a look at the strategies adopted during the plan period. According to the plan, the peasant farmers were to be organized into co-operatives. Such co-operatives were to be provided with credit and boats, engines and gear at 50 per cent subsidy.

Viewed from the perspective of the architects of the plan, the formation of co-operatives among the fishermen is necessary because by pooling their resources together the average cost of operation will be lower and their earnings will be higher relative to the individual operators. In addition, a 50 per cent subsidy is seen as a way of lowering input costs and an inducement to the fishermen to acquire these inputs.

1. J. B. Scott: Report on the Fisheries of the Niger Delta Special Area, Niger Delta Development Board, Nigeria, 1966.
2. Federal Government of Nigeria: Nigerian Third National Development Plan, 1975-1980, Lagos, Nigeria.

According to the planners, the main objectives which the above programmes were designed to achieve include (1) raising the earnings and standard of living of the peasant fishermen; (2) increasing the domestic supply of fish in the country; and (3) introducing modern technology into artisanal fisheries.

III

PROGRAMME EFFECTIVENESS AND RESULTS

With this background we can now take a look at how effective these programmes and strategies have been and what results have been achieved. Of the 58.6 million naira of capital allocation by the Federal Government, the following amounts were expended between 1975 and 1979 on artisanal fisheries:

		N£
1. National Accelerated Fish Production Project	=	1,911,584.00
2. Special Fisheries Development Project	=	2,123,250.00
Total		4,034,834.00

This represents about seven per cent of total plan outlay. On per capita basis, the actual expenditure amounted to just about four naira per fisherman. While no returns are available from the States which had programmes for fisheries development, a case which typifies the high expectations and low achievements of plans in Nigeria is Rivers State. In 1975 actual expenditure was far in excess of planned outlay (110.6 per cent). But from 1976 the performance of the State declined drastically (39.6 per cent), reaching the lowest level in 1979 when actual expenditure was only 2 per cent of the planned outlay.

What then are the major implications of these findings vis-a-vis the objectives of the programme? The main priority of the governments of the federation at this period was for the country to produce enough fish domestically to reduce imports. And because artisanal fisheries contribute no less than 80 per cent of the country's fish output,[3] one expects that the output from this sub-sector will increase appreciably and imports will reduce considerably.

The output of fish product from artisanal fisheries declined throughout the plan period (from 0.463 million metric tonnes in 1974 to 0.324 million metric tonnes in 1979) while production from commercial fisheries increased appreciably (from 10.6 thousand to 0.350 million metric tonnes during the same period).[4] This differential performance was due to a number of reasons. Firstly, the increase in commercial fish production was due to the increased

3. A. A. Aderonmu, "Integrated Development of Artisanal and Inshore Fisheries in Nigeria", Paper presented at the National Seminar on Integrated Fisheries Development, Ilorin, Nigeria, April 1980.

4. Base-line data obtained from Federal Department of Fisheries, Lagos, Nigeria.

number of trawlers registered in the country during the period under review. Secondly, the declining performance in artisanal fisheries resulted from insufficient investment and aid to fishermen by the government and the declining fish prices resulting from both commercial lendings and imports. With falling prices, many peasant fishermen could no longer compete effectively and had to move to other industries or occupations.

To what extent have the earnings of fishermen increased, given the meagre expenditure by the government? In a survey of artisanal fisheries conducted in 1979-80,[5] it was discovered, as shown in Table I, that the average monthly fish catch (between the months of November and February) of those peasant fishermen receiving subsidy from the government was higher than those who did not receive subsidy, the difference averaging about 29 per cent.

TABLE I—IMPACT OF THE SUBSIDY PROGRAMME ON FISHERIES LABOUR PRODUCTIVITY

State	Average labour productivity (kg. of fish catch per month)		
	With subsidy (A)	Without subsidy (B)	$\frac{A - B}{A} \times 100$ (per cent)
Ogun	248·13	277·56	—11·85
Bendel	571·80	538·83	5·77
Lagos	628·01	388·15	38·19
Ondo	248·72	183·12	26·38
Cross River	1,970·53	1,527·69	22·47
Rivers	1,109·19	352·17	68·25

Source: Mabawonku *et al.*: *op. cit.*

In other words, it could be said that while the programme is effective in improving labour productivity in fishing, the fact that only a handful of the fishing population could benefit from it and because actual expenditures were meagre relative to the needs of the fishermen, the programmes appear to have made little or no impact in improving the earnings of pesant fishermen relative to the earnings in other sectors of the economy.

The question therefore arises as to the size of the subsidy programme, the appropriateness of such and what other measures can be used to effect a redistribution of income towards the fishing population in the country. Related to the incidence of a redistribution strategy is the size of the redistribution itself. For without an accurate knowledge of the needs of the beneficiaries relative to their income a situation of over- or under-redistribution may

5. A. F. Mabawonku, J. O. Bolaji and T. Igun: Survey of Artisanal Fisheries in Nigeria: Report on Bendel, Lagos, Cross River, Ogun, Ondo and Rivers States, Federal Department of Fisheries, Lagos, Nigeria, February 1980.

prevail. In order to provide information on the level of poverty in artisanal fisheries surveys were conducted between 1979 and 1980 in all the major fishing areas of the country to determine the income levels, and the consumption needs of the households. The results of the survey are summarised in Table II in which the index of poverty W (calculated as $W=\frac{Y_{ij}}{N_{ij}}$ where Y_{ij} denotes the income level of household type i at location j and N_{ij}, the need of the household) is plotted against the percentage of respondents falling

TABLE II—PERCENTAGE DISTRIBUTION OF FISHING HOUSEHOLDS BY LEVELS OF POVERTY

Poverty level intervals	Percentage distribution of fishing households							
	Kwara	Benue	Borno	Sokoto	Kano	Niger	Bendel	All States
0 - 0·5 ..	—	28·57	1·15	26·09	1·47	20·00	15·00	13·18
0·51 - 0·99 ..	2·08	30·61	12·64	63·04	26·47	52·00	77·50	37·76
1·00 - 1·59 ..	4·11	20·41	75·86	10·87	32·35	22·00	5·00	23·79
1·60 - 2·09 ..	8·33	4·08	1·15	—	16·18	—	2·50	4·02
2·10 - 2·59 ..	6·25	2·04	2·30	—	14·71	2·00	—	3·90
2·60 - 3·09 ..	12·25	6·12	2·30	—	2·94	4·00	—	3·94
3·10 - 3·59 ..	6·25	2·04	2·30	—	1·47	—	—	1·73
Over 3·59 ..	60·42	6·12	2·30	—	4·41	—	—	10·46
Total ..		99·99	100·00	100·00	99·99	100·00	100·00	

Source : Mabawonku *et al.* : Economic Survey of Artisanal Fisheries in Nigeria, Federal Department of Fisheries, Lagos, Nigeria, August 1980.

in each poverty range. It is observed that the farther down the interval a family finds itself the more abject is its poverty level. The proportion of fishing households falling in the poverty range, that is, the range in which the ratio of the level of income relative to needs is less than one, was as high as almost 90 per cent in Sokoto State. For the States as a whole above 50 per cent of the households fell in the poverty range. Such a sorry picture depicts a problem of gigantic proportions far beyond what can be handled with piecemeal policies.