

FISHERIES AS A SOURCE OF PROTEIN, INCOME AND EMPLOYMENT
(Policies in the Second Five-Year Development Plan)

by

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Summary

The importance of fisheries to the Indonesian economy is described and the objectives of the Second Five-Year Development Plan itemised. Present fisheries policy in Indonesia is characterised by a more integrated policy than hitherto, laying emphasis on the integrated nature of the development process. Targets in the Second Five-Year Plan are to increase the domestic consumption of fish by some 200,000 tons and exports by 80,000 tons. In the field of employment attention is drawn to the difficulty of increasing the income of fishermen and fish farmers in view of the limited resource potential, and the role of the processing and marketing industries in providing a solution is considered. Mention is made of the need to protect the interests of the consumer.

1. INTRODUCTION

Indonesia is an archipelago of which about 70 percent of the area is covered by water which provides the basis for an extensive fishing industry. Although still at a fairly early stage of development the role of fisheries in the national economy is increasing in importance, and with much of the resource potential still underexploited or even untouched future prospects for growth and development are bright, provided rational development and management policies are followed. The importance of fisheries to the Indonesian economy can be identified under three separate headings, i.e.:

- its contribution to the national income (GDP),
- its contribution to the national food supply,
- its contribution as a source of living and employment opportunity.

The fisheries contribution to the national income in 1972 amounted to about 2.5 as compared to 36.5 percent from the whole agricultural sector. More impressive is its progress in the export sector, where fisheries exports jumped from a negligible amount before 1969 to over US\$ 33 million in 1972, accounting for about 2.2 percent of the national foreign exchange earnings, while for 1973 the amount is estimated at US\$ 60 million.

The contribution to the domestic food supply amounted to 9.7 percent on the basis of total protein, or 71.2 percent animal protein consumed in 1972. The total fish production in that year amounted to 1,267,775 tons allowing about 10 kgs of fish consumption per caput per year.

The importance of fisheries as a source of income and employment is even more significant. In 1972 about 2 million people earned their living fully or partly from fisheries accounting for about 5.25 percent of the whole labour force in the country; it is estimated that about half of the above figure represents full-time fishermen or fishfarmers.

Present assessments of resource potential indicate that the role of fisheries in all of these three aspects can be further developed and accordingly the four main objectives of the second five-year development plan may be stated as:

- (a) to increase fish production for supplying the needs of the domestic and export market thus contributing to the increase of the national income through rational utilization of the resources;
- (b) to increase the welfare of the fishermen and fishfarmers by increasing their income thereby achieving a more even distribution of income;
- (c) to extend employment opportunities;
- (d) to maintain the fisheries resources for obtaining a maximum sustainable yield.

Notwithstanding the favourable resource potential the achievement of these goals will not be without problems. In particular there will be social problems associated with the introduction of new technology - developments in this respect being constrained by the structure of the fishing industry and socio-economic environment of the country in general.

2. STRUCTURE AND DEVELOPMENT OF THE FISHERY INDUSTRY

The Indonesian fisheries are characterised by two types of operations, namely the traditional, small-scale fisheries and the industrial fisheries. The traditional fisheries inherited from the past consist of small units, mostly with inefficient and obsolete methods of production. This type of fishery, which is more or less a subsistence operation, is carried out by almost one million fishermen and fishfarmers (1972) accounting for about 98 percent of the total fish production of the country.

The huge number of fishermen engaged combined with the widespread use of old fashioned sailing vessels lead to a stagnant business concentrated along the coast of the most heavily populated islands, especially Java and Sumatra, leaving not much of the resources to be taken for better returns.

Over much of the traditional fisheries sector the fishermen and fishfarmers do not have their own marketing channels to the consumers. They are just happy to get rid of their products as soon as possible in return for anything they could use to support their families. This situation is used by fish traders for their own benefit. Fish prices are very low at the point of production, but retail prices to the consumers are rather high. The situation is being aggravated by the fish traders entering into processing operations (salting, drying and other curing methods) and even providing working capital for the fishermen, but reluctant to enter into the risky fishing operation itself. This has created a type of monopolistic trade dominated by a small group of capital owners. These practices made the fishermen more and more dependent on the fish traders, making them reluctant to initiate any kind of development which, in their opinion, would only benefit the fish traders.

The situation has changed in some respects during the last few years especially after the adoption of a new policy in fisheries development as part of the first five-year development plan (1969-1974). Characterizing the new policy is greater emphasis on economics or more particularly marketing, rather than on simply increasing production which was the main approach pursued before; there is now a greater realization that fish production cannot be separated from marketing as in the case with any other commercial production activity.

The implementation of the marketing approach has been supplemented with a cold chain system for fresh fish marketing and consequently has resulted in a kind of rush among the fishermen to produce high quality fish species in fresh condition. This development has been intensified by newcomers to the industrial fisheries as a consequence of the implementation of the foreign capital investment law (1967) and the domestic capital investment law (1968), which through proper regulations have also had beneficial effects on the marketing of the artisanal fisheries, especially for export, and resulting in the remarkable increase of export of fishery products during the last few years.

On the other hand, the improvement of the marketing facilities has also induced better standards of fish handling during catching, transportation and storage of fresh fish, and at the same time improved the nutritional quality of the products. Although encouraging, all these achievements are still in their initial stage of development, and considering the tremendous problems still facing the traditional fisheries and the millions to be fed, much work is still needed in the years to come.

3. FISHERIES AS A SOURCE OF PROTEIN

3.1 Nutritional Requirements and Resource Potential

Present estimates suggest that the maximum sustainable yield of the Indonesian fisheries is of the order of 8 million tons, which is between six and seven times the present production. Present consumption is around 10 kgs per caput, which is rather low in terms of animal protein intake, especially where other animal protein sources are much more scarce and expensive. There is, therefore, clearly scope for substantial increases in consumption and neither in the short nor medium term is resource potential likely to impose any serious constraint to increased consumption.

3.2 Factors Influencing Fish Consumption

Fish consumption has always been low in Indonesia. Available records since the war show that even when fish imports were not limited as today, the per caput consumption has never been higher than the latest five year average of around 10 kgs/year. Although productive capacity might still be one of the factors limiting increases in consumption, other considerations should not be overlooked, in particular the marketing and distribution system as well as consumer attitudes. Fish consumption is influenced by many factors a.o.: level of income, price of fish, substitutes and consumer preference and no complete studies relating to these factors in Indonesia are known, however.

It is a fact that the per caput income is quite low (around \$80 per year). Fish prices vary according to species, but normally they are lower than the price of meat. No substitutes are available, especially the cheaper vegetable protein sources such as soy products. Consumers preference is difficult to measure on a national basis because local preferences vary quite considerable.

The existing fish marketing mechanism has been discussed in the previous section. Some improvement has been made during the last few years, but a more extensive basis is needed to support a nation-wide fish consumption drive.

3.3 Projection of Fish Production

Notwithstanding the quite low effective demand prevailing at present, fish production during the second five year development plan (1974-1979) has been projected at 4 percent increase per year. This will be an acceleration compared with the first five year plan and is based on domestic requirement plus a predetermined amount for export.

Projection of fish supply for domestic consumption is based on a population growth 2.3 percent, a disposable income growth of 2.75 percent and an elasticity of demand for fish of 0.5, taking 1973 as the base year. Projection of export is mainly based on capabilities to produce exportable species without sacrificing the interest of the domestic market. The whole picture for the second five year plan is as follows:

Table I
Indonesia: Second Five Year Plan
Production, Consumption and Export of Fish

	tons		
Year	Production	Export	Domestic Consumption
1974	1,352,000	46,300	1,305,700
1975	1,406,000	51,800	1,354,200
1976	1,462,000	57,600	1,404,400
1977	1,520,000	63,500	1,456,500
1978	1,581,000	70,500	1,510,500

This means an increase of around 281,000 tons above the 1973 production level.

3.4 Production Pattern and Regional Approaches

In line with the greater emphasis given to marketing since the first five year development plan, the production pattern in the second five year plan was determined not only by considering the production aspects but also the possibilities of marketing the catch.

With almost 67 percent of the population concentrated on Java, the main production increase should be obtained on and around this island, if the difficulties of transporting such a perishable product are to be avoided.

With its northern coastal waters almost overfished, expansion of offshore fishing is necessary. For this purpose a new supply-line running from the southeastern coast of Sumatra to the southern coast of Kalimantan and Sulawesi will be exploited through the operation of pelagic and demersal fishing fleets supported by fish carriers. A second expansion is planned off the western coast of Central Sumatra to supply the heavily populated part of that island. All increases in production from these areas will be in the small scale artisanal sector. Expansion of industrial fisheries will take place outside the artisanal fisheries zone, mostly on the eastern part of the country or on the oceanic part of the archipelago.

Fish culture will be intensified in the existing freshwater and brackishwater pond areas on Java, Sumatra and Sulawesi, with some expansion to new localities outside Java. The culture business is particularly reserved for artisanal operations, but in bigger collective units.

Regional approaches have been introduced, where several provinces with common geographical and economical characteristics are grouped and managed into bigger economical units called regions. These regional approaches will increase efficiency and avoid unnecessary rivalry between the provinces in the production and marketing of fishery products.

4. FISHERIES AS A SOURCE OF INCOME AND EMPLOYMENT

4.1 The Nature of the Problem and Possible Solutions

One of the long term objectives of fisheries development is to increase the income of fishermen and fishfarmers. However, to raise the income of all people now fishing to say Rp. 40,000/- per year (\$100) implies at present prices a catch greater than the potential of Indonesian waters. Disregarding the possibility of fish capture outside the national territorial waters there are two alternatives which could be considered to increase the average fisherman's income from available resources:

- (a) reducing the number of fishermen/fishfarmers;
- (b) increasing the value of the product or increasing the share of the value added to the final product received by the fishermen/fishfarmers.

Although the first alternative would in many cases be a logical consequence of modernization and industrialization, the idea would be very unpopular when put forward explicitly. The second alternative could be further divided into two ways. The first way is by controlling the species caught or cultured through selective fishing or culture. Increasing the value by selective catching has certain limitations since it depends on the abundance of certain species in nature. More controllable is fish culture, where high value species could be produced almost exclusively.

The other way is by giving opportunity to the fishermen to have their share not only of the value of the raw material, but also of the processed product at the market level. In fact the sales price of highly processed fishery commodities is frequently 2 to 4 times the price of their raw materials, although it already includes processing and marketing costs. This fact presents a possible basis for increasing the value of the fish produced and allowing the fishermen and fishfarmers to expect something more for their living. But before that, a workable way should be formulated in which the fishermen and fishfarmers could have the opportunity of taking part not only in the primary production of fish but also in the processing and marketing of their products. At least two ways are possible.

The first way is an indirect participation of the fishermen through their cooperative or other organizations who will enter the processing and marketing business. The second way is by directly converting part of the less productive fishermen and fishfarmers into the secondary industry and marketing business, either as labourers or entrepreneurs. This way actually leads to a reduction of the total fishermen as advocated in one of the earlier alternatives. The implementation of both ways might be combined, such action in some cases being complementary in nature.

4.2 The Integrated Approach

Although every effort should be made to increase the fishermen's income, the consumer interest should not thereby be sacrificed. The conflict of interest between the consumer and the producer has in many cases been solved successfully to the satisfaction of both sides. This is especially true where the cost paid to intermediaries between the producer and the consumer has been excessively high as in the case of Indonesia today. This does not mean that the role of the intermediary between the fishermen and consumer is not a useful one. The main point is that the system should be rationalized and a more even distribution of income promoted, so that the natural resources could be exploited and utilized to the benefit of all people.

For this purpose an integrated approach is needed covering the primary production (capture and culture), processing and marketing of fishery products, and even the supporting industries. This can only be accomplished through close coordination by the administration of all related activities, serving a single objective through a single policy.