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Extended maritime Jurisdiction and Indonesian Fisheries Development

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EXTENDED MARITIME JURISDICTION
AND INDONESIAN FISHERIES DEVELOPMENT

By

H a r d j o n o

A Major Paper Submitted in Partial Fulfillment
of the Requirement for the Degree of
Master of Marine Affairs

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Approved : _____

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ABSTRACT

With the declaration of the Indonesian EEZ by Presidential Decree on 21 March 1980, Indonesia has acquired a vast area of approximately 5.8 million sq.km. of sea water and opportunity to manage and utilize fisheries resources in the new extended areas of jurisdiction. The EEZ is giving many more potential fishing resources and greater opportunities to exploit its available fishery resources with responsibilities to conserve the resources.

By exercising a high degree of its authority within the EEZ, Indonesia can gain more benefits from the use of fishery resources than before the declaration. However, the benefits may not be particularly great since Indonesia must bear the management cost of the acquired resources, and to share with its neighboring state and foreign distant-water nations.

With regard to the exploitation of fishery stocks in the EEZ, government of Indonesia has introduced a set of rules and regulations on sovereign rights, jurisdiction and other obligations related to the EEZ. The arrangement of foreign fishing fleets have been set up by enacting 4 decrees of the Ministry of Agriculture.

Recognizing the nature of the highly migratory species and the stocks that have to be shared with neighboring states, regional cooperation on the management of the stocks is

necessary, to be implemented through bilateral as well as multilateral agreements. Since there is no fishery management system presently existing in the Southeast Asian region, Indonesia could profitably conclude bilateral or multilateral arrangements with its neighboring states to implement regional cooperation.

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INTRODUCTION

The Third United Nations Conference on the Law of the Sea (UNCLOS III) that produced the Convention on the Law of the Sea has proposed that coastal states be allowed sovereign rights over resources within 200 nautical miles (n.mi) of the coast.

At present many coastal states have extended their jurisdictions by unilateral declaration up to 200 miles offshore. The 200 miles extended jurisdiction is now the right of states under customary international law.

On March 21, 1980, Indonesia declared its 200 n.mi Exclusive Economic Zone (EEZ) measured from the archipelagic baselines, for the purpose of exploring, exploiting, managing and conserving living and non-living resources. In this regard, Indonesia still recognizes the freedoms of navigation, overflight, and the laying of submarine cables and pipelines of other states in the zone (Appendix A).

This paper will examine the impact of the Indonesian 200 mile EEZ on its fishery development. The discussion will emphasize Indonesia's fishery interest; government policy and Indonesia's EEZ; the interaction problems in the use of fishery resources; and joint cooperation.

1. NATIONAL FISHERY INTERESTS OF INDONESIA

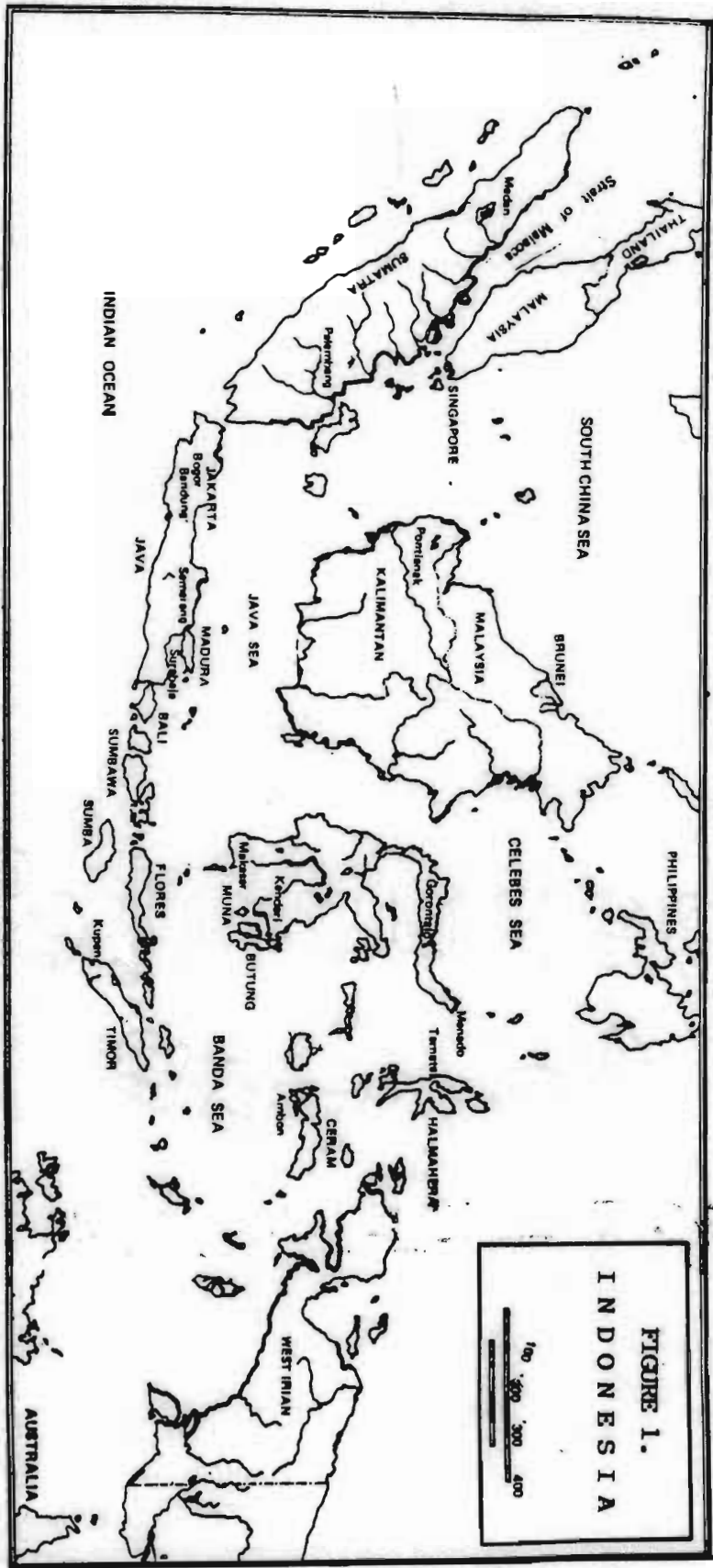
1.1. PRESENT STATUS OF INDONESIAN MARINE FISHERIES

1.1.1. Physical Setting.

Indonesia is an archipelago country located between the Indian and Pacific Oceans, consisting of more than 13,600 islands. The islands lie along the Equator, and extend farther than the distance between the states of Maine and California. Many of the islands cover less than 1 square mile (2.6 square kilometers), but about half of New Guinea, and three-fourths of Borneo - the second and third largest islands in the world after Greenland - also belong to Indonesia.

Many geographers divide the Indonesian islands into three groups, namely : (1) the Greater Sunda Islands which have 4 main islands : Sumatra, Java, Borneo/Kalimantan, and Celebes/Sulawesi; (2) the Lesser Sunda Islands consisting of Bali, Lombok, Sumbawa, Sumba, Flores, and Timor; and (3) the Moluccas and Irian Jaya (Figure 1).

Indonesia possesses a vast water area of approximately 5.8 million sq.km, which consists of 2.8 million sq.km. of internal and archipelagic waters, 0.3 million sq.km of territorial sea and 2.7 million sq.km of EEZ. The Indonesian exclusive economic zone comprises 3 main areas: the Indian Ocean from north of Sumatra to south of Nusa Tenggara up to Arafura Sea, the South China Sea, and the Pacific Ocean including the Sulawesi Sea. This water area makes up 70 percent of Indonesia's national territory



and its island areas have a combined coastline of 61,000 km.
(Figure 2).

1.1.2. History of Indonesian Marine Fisheries.

Fish harvesting in Indonesia was an important activity long before the independence of the country in 1945. It typically involved traditional fishing using sailboats and canoes either for line or trap fishing. During the colonial period between 1904 and 1941 the Dutch undertook a number of programs designed to assist the development of the fishing sector, including the establishment of fisheries research stations. Several experiments were conducted with modern trawlers beginning around 1910. Also fish markets (located mostly in Java) and an open auction system were established during this period.

The fisheries policy of the Dutch established the basis for some improvement in several facets of the fisheries including production, marketing, and processing. Modernization, however, was regarded as secondary in importance, and primary attention was given to improving the performance and welfare of traditional fishermen.

Since independence in 1945 the fisheries policy has been more wide ranging. Programs begun by the Dutch to improve the performance of the traditional fisheries were continued, but there were other developments, e.g., the construction of processing facilities and ice plants and auction halls to support the fish marketing system. However, many of these programs were

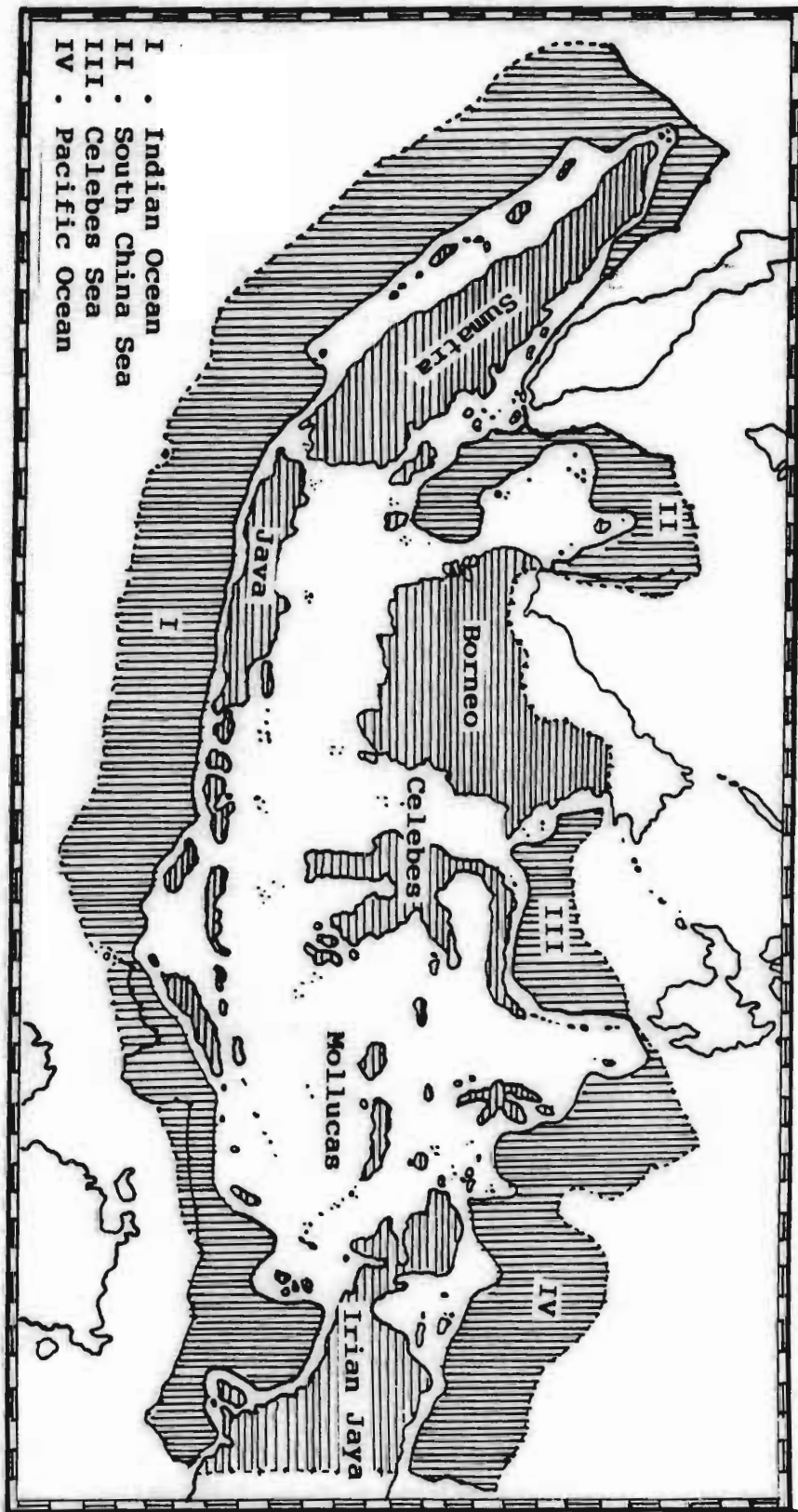


Figure 2. Indonesian Exclusive Economic Zone

not as successful as expected. Fish canning factories, for example, suffered from a shortage of tinplate and short supply of fish as well.

The fishing sector expanded significantly after 1951 in terms of both total production and consumption per capita. Between 1951 and 1967 marine fisheries production rose from 324,000 metric tons to 638,000 tons, an average rate of 4.3 percent per year. During this time the number of fishermen increased from 315,000 to 836,000, a rate of 6.3 percent increase per year. In the same period the number of vessels increased from 80,400 to 245,200, or 7.2 percent per year. Fish consumption per capita rose from 8.4 kg per year in 1940 to 11.4 kg in 1966.

After the mid-1960s greater attention was paid to the fisheries sector in Indonesia. The government became aware of the need for foreign capital to hasten the development of the fisheries industry. There were two options ; direct foreign investment (i.e. joint ventures), and foreign loans. The first option was not feasible because of the political situation at that time. With respect to the second , a plan was drawn up to establish a project that was to be financed by foreign countries in the form of production sharing arrangements. However, this plan was never implemented because new investment policies were enacted in Indonesia in 1967.

In order to assist the development of commercial fisheries, three policies were instituted : (1) to encourage private foreign investment through the Foreign Investment Law NO. 1 (1967); (2)

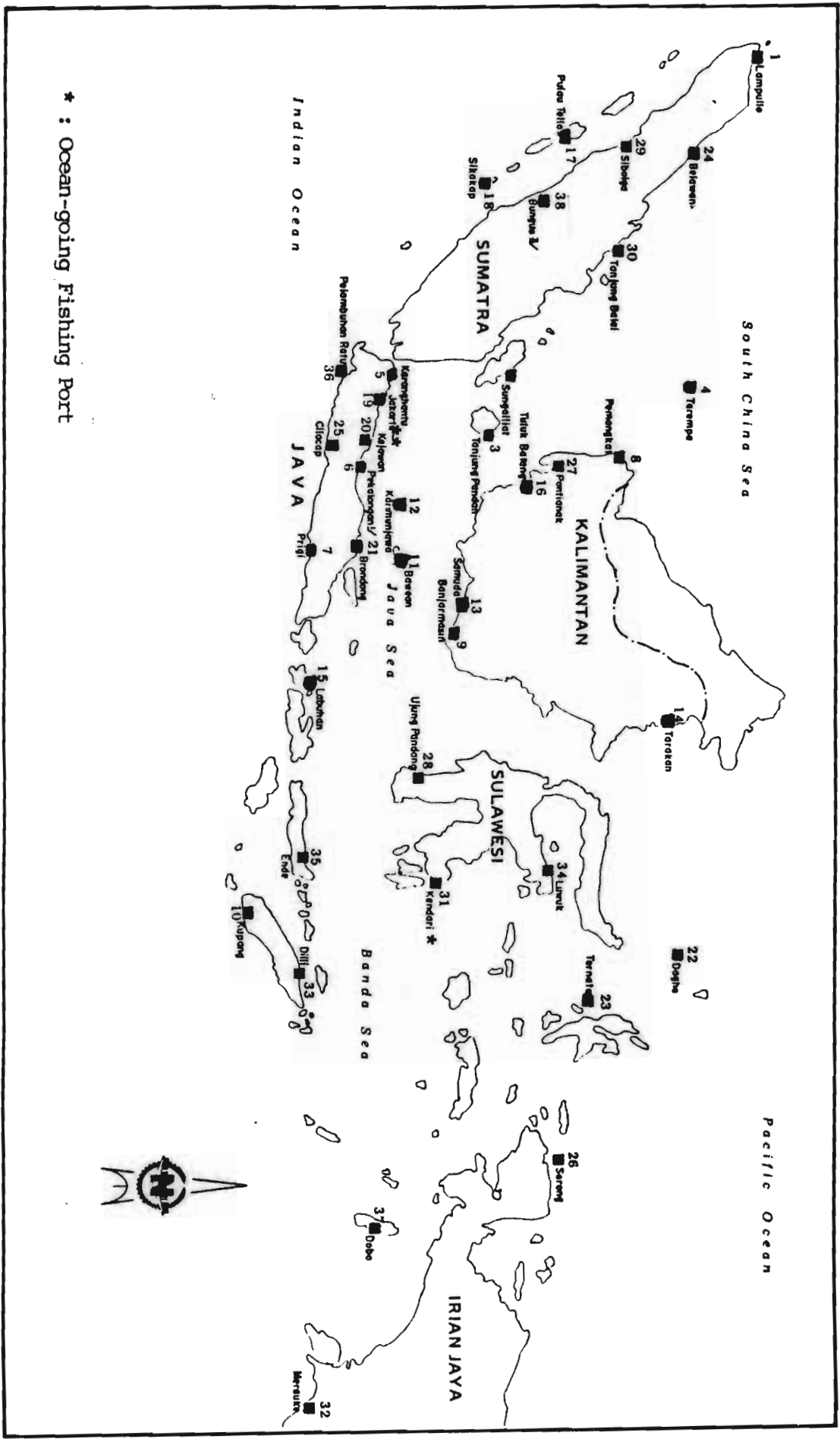
to attract domestic investment in fisheries through the Domestic Private Investment Law No. 6 (1969); and (3) to stimulate bilateral and multilateral fisheries loan agreements, e.g. with the Overseas Economic Cooperation Fund (OECE, Japanese Government), the Asian Development Bank and the World Bank. The enactment of the Foreign Investment Law and Domestic Private Investment Law have resulted in the establishment of fisheries joint venture companies and domestic fishing companies.

Realizing that fisheries development encompassed interrelated aspects of production, processing, and marketing, the government planners adopted an integrated approach involving the following actions :

(1). Creation of "non physical infrastructure" such as training, education, marine fisheries research, management and administration. Schools related to fisheries were established, including the Fisheries Academy in Jakarta, marine vocational schools in Tegal and Manado, and a Fisheries Training Center under the supervision of UNDP/FAO. In addition, 5 regional marine fisheries training centers were established in Tegal, Manado, Ambon, Singaraja, and Belawan.

(2). Establishment of "physical infrastructure" such as fishing ports, piers, breakwaters, market halls, dockyards, and slipways. The construction of fishing ports and landing piers (landing place) was viewed as one of the most important programs to promote marine fisheries development. Thirty-six fishing ports have been established throughout the country (Figure 3), and a

Figure 3. Fishing Port in Indonesia (DGF, 1983)



* : Ocean-going Fishing Port

total of 149 landing places also have been constructed.

(3). Creation of production, processing, and marketing facilities such as fishing boats, fishing gears, engines, cold storage, and credit and extension service. To cope with the problem of getting capital from private lenders who charge a high interest rate, the government adopted a small holder credit scheme that provides feasible financing for the construction of small vessels. In addition the government extends other credit schemes through financial contributions from international financing agencies, e.g. World Bank, ADB, etc.

Indonesia also received financial assistance through bilateral as well as multilateral agreements for its fisheries development. The bilateral sources are Japan, Canada, the United States, West Germany, France, New Zealand, Italy, and the United Kingdom; while the multilateral sources are the Asian Development Bank (ADB), International Development Association of the World Bank (IDA), and UNDP/FAO² (Appendix B).

The Directorate General of Fisheries (DGF) within the Ministry of Agriculture is primarily responsible for the administration, management and development of fisheries in Indonesia. The DGF deals with all matters relating to fisheries administration at the central, provincial, district and subdistrict levels. These matters include collection of statistics, applied research, planning, fisheries management, training and extension, provision of infrastructure facilities, and development and control of fisheries enterprises.

The organizational structure of the DGF at Jakarta is shown in Appendix C. While the headquarters of the DGF is located in Jakarta, its functions at provincial, district and subdistrict levels are discharged by the offices and staff of Dinas Perikanan (Fisheries Service), located throughout Indonesia. There are 27 provincial fisheries offices, 285 district fisheries offices and a large number of personnel assigned to subdistricts. The provincial, district and subdistrict offices and staff are provided to facilitate assistance to local fishermen and fishfarmers as well as to assist in coordinating fishing efforts, disseminating fishing information, collecting fisheries statistics, and providing technical advice on fishing and related activities. The provincial fisheries offices encompass separate sections for planning, education, research, technical services and administration, and are jointly funded by the Central Government and the appropriate Provincial Government. In total, Government fisheries service staff number 2,500 - 3,000.

1.1.3. The Present Indonesian Marine Fisheries Profile.

Marine fishery production had steadily increased over the past decade. During 1973 - 1978 (Pelita II/Second Year of Five Years Development Plan) fish production increased 6.1 percent per year and during 1979 - 1983 (Pelita III) increased 5.3 percent. The production of 1985 was 1,821,725 metric tons or 76 percent of the total national fisheries production (marine and freshwater fisheries). The production value of marine fisheries

in 1985 was US\$ 530 million representing almost 58 percent of the total value of national fisheries production.³

The major species of fish produced in 1985 were Layang/Scads (172,534 mt), followed by : Kembung/Indian Mackerel (124,988 mt), Tongkol/Eastern little tuna (111,630 mt), Tembang/Fringescale Sardinella (108,543 mt), Teri/Anchovies (106,887 mt), Cakalang/Skipjack (87,448 mt), Selar/Trevalies (64,663 mt), Lemuru/Indian Oil Sardinella (54,058 mt), Tenggiri/King Mackerel (40,691 mt),⁴ and Udang/Shrimp (64,430 mt).

The above production was carried out by approximately 1.2 million small-scale fishermen mostly operating in the coastal waters of Indonesia.⁵

As a result of the diverse character of the Indonesian archipelago, the country's marine fisheries are complex and varied. The traditional fishing activities are carried out by a large number of very small vessels. In 1985 Indonesia's fishing fleet totalled about 316,446 vessels. Of these 220,823 (70%) were non-motorized, 61,867 (20%) were powered only by outboard engines, and another 25,937 (8%) were inboard powered boats of less than 5 GT. There were 7,819 inboard powered boats over 5 GT in size, and 473 over 30 GT. Indonesia's fleet of large fishing vessels in 1985 was heavily concentrated in Bali, Maluku and Irian Jaya; 20 of 143 fishing vessels over 50 GT were based in Bali and 114 based in Moluccas and Irian Jaya.

Fishermen have traditionally used a wide variety of traps,

lines and nets to capture the numerous species found in Indonesian waters. Of the 432,272 units of fishing gear in operation in 1985, gill nets were the most common, comprising nearly one third of all fishing units.

The purse seine fleet of 5,113 units, comprised largely of 10 - 30 GT class wooden hull vessels, was heavily concentrated along the north coast of Java (22,130 units), the Malacca Street (9,435 units), Sulawesi (9,325 units), and Bali-Nusa Tenggara (7,759 units).

The number of purse seiners has increased rapidly in the last ten years and the pelagic resources that they pursue are becoming heavily exploited in some areas, such as the Java Sea. It has been reported that a significant number of small seiners based in Java ports are travelling as far as 600 km to catch small pelagic species.

Virtually all of the 1,159 skipjack pole and line units are located in Maluku (567), Irian Jaya (361), North Sulawesi (128), Southeast Sulawesi (15) and West Nusa Tenggara (29), while the 395 tuna long line units are located in North Sulawesi (227), Riau (89), Maluku (58) and Bali (21).

1.1.4. The Importance of Marine Fisheries. ✓

Fish is the greatest source of animal protein in Indonesia, mainly because of its relatively cheaper price compared with the price of meat, eggs, and other sources of animal protein. About half of the total catch is processed into salted and dried fish

or other traditional preserved products. A small amount is canned, and most of the rest is marketed fresh, frozen or alive. With a population of about 158 million, Indonesia's per capita fish consumption is still quite low, with a national average of 13.7 kg in 1983. The level varies somewhat from area to area, ranging from 6.8 kg to 40.2 kg/capita/year. High consumption rates are found in Kalimantan, Sulawesi, Maluku/Irian Jaya, and Sumatra with averages exceeding the national optimum target of 18.0 kg/capita/year. The lowest is in Java (6.8 kg/capita), while in Bali and Nusa Tenggara it is approaching the optimum target (14.0 kg/capita/year).⁷

Furthermore, as export commodities, fisheries products are also a source of foreign currency. The fisheries export during 1976 - 1985 increased from 54,389 metric tons to 84,497 metric tons or 6.0 percent per year in volume, and from US\$ 131,380,000 to US \$ 259,444,000 or an increase of 10.4 per year percent in value.⁸

The main export commodities in 1985 were frozen headless shrimp and tunas (bigeye, yellowfin, and skipjack) with a value of US\$ 202,708,000 and US\$ 13,770,000 respectively.⁹

It is obvious that fisheries have become increasingly important to Indonesia's economy and thus also to its government. Based on the above data and the growth achieved during the Third Five Year Development Plan (PELITA III, 1979-1983), the government wants to increase its control over the use of fishery resources and its capabilities, especially in the EEZ, in order

to meet fishery policy objectives. In addition, marine fish production and exports are expected to increase during the Fourth Five Year Development Plan (PELITA IV, 1984 - 1988).

1.2. CONTROL OF THE USE OF FISHERY RESOURCES ✓

The extensive size of Indonesia's EEZ makes it possible to accommodate development of fishing fleets, both national and foreign. The latter fleets (Japanese, Taiwanese, and South Korean) have habitually fished in the zone for a long time. Both fishing fleets are still increasing their harvesting capability. Japanese fleets, for example, continue fishing by longline but are also developing purse seines, which are more effective than other tuna fishing gear. The increase of harvesting capability, without careful management, will only increase fishing pressure on the resource and perhaps might even deplete them.

One should consider how the fishery resources can be made a steady harvest that will not detract from their future yielding capacity. In this regard, the Indonesian government is exercising its sovereign rights to control the use of the resources.

In order to establish how far offshore Indonesia can exercise its sovereign rights in the exclusive economic zone, an agreement on the fishing zone between Indonesia and Australia has been reached concerning the utilization of the fisheries resources in the area between Timor Island and Australia. There are other overlapping areas that should be negotiated between Indonesia and its neighboring countries, namely : in the South China Sea

(between Indonesia - Vietnam; Indonesia - Malaysia), Celebes Sea (Indonesia - the Philippines; Indonesia - Malaysia), Miangas (Indonesia - the Philippines), and north of Christmas Island in the Indian Ocean (Indonesia - Australia) (Figure 4).¹⁰

To avoid conflict with its neighboring countries over EEZ delimitation, Indonesia is trying to exercise its sovereign rights up to an equidistance limit that might be acceptable both to Indonesia and its neighboring countries.

Article 47 paragraph 6 of the 1982 LOS Convention states : "If a part of the archipelagic waters of an archipelagic State lies between two parts of an immediately adjacent neighbouring State, existing rights and all other legitimate interests which the latter State has traditionally exercised in such waters and all rights stipulated by agreement between those States shall continue and be respected". This provision applies to the rights of fragmented Malaysia in the waters around Indonesia's Natuna Island.

As an implementation of Article 51 of the Convention, which provides for recognition of agreements concerning fishery rights, Indonesia and Malaysia concluded a bilateral agreement in 1976 that acknowledges Malaysia's traditional fishery rights in specified areas of Indonesian archipelagic and EEZ waters of the northern Anambas Islands.¹¹

In accordance with the declaration of the EEZ, Indonesia exercises within its EEZ sovereign rights for the purpose of exploring, exploiting, conserving and managing living and non-

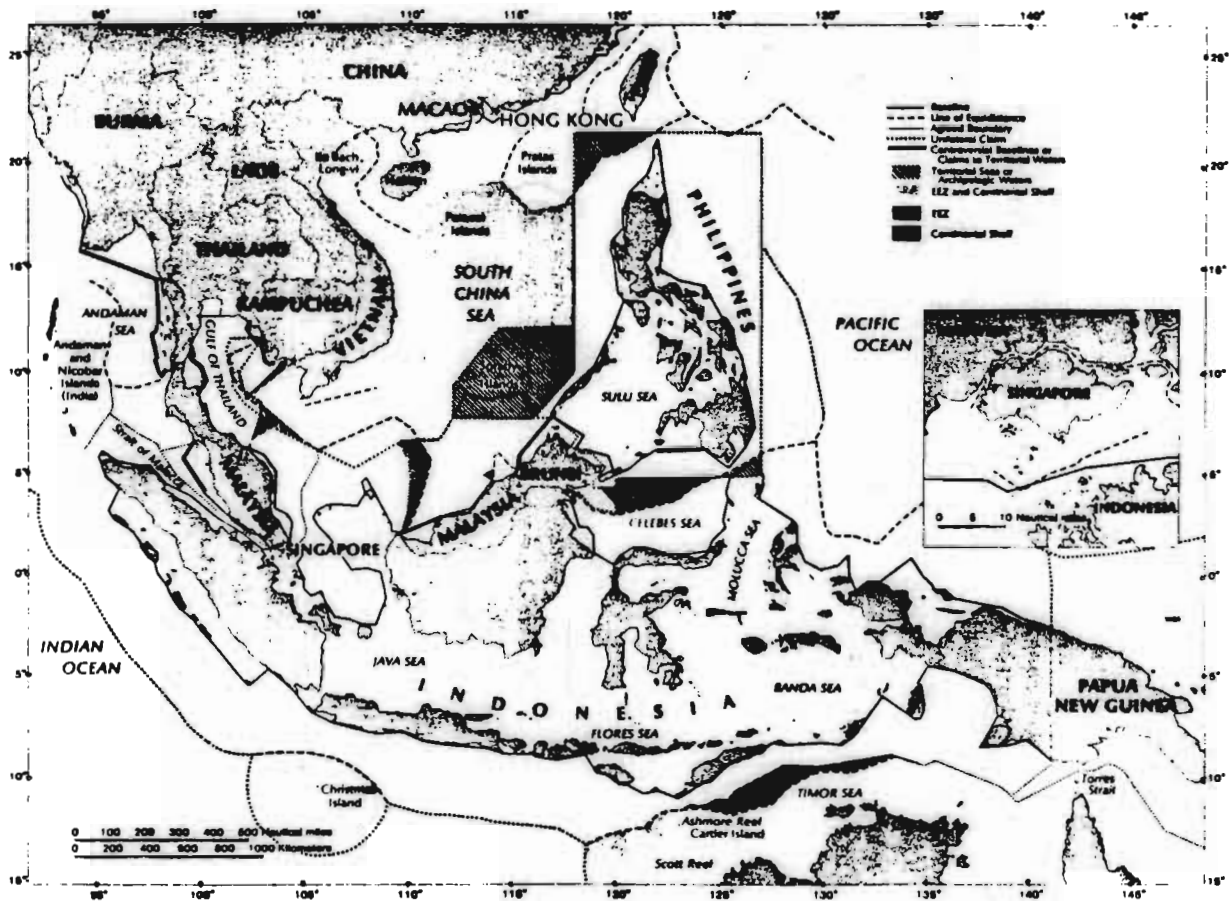


Figure 4. Overlapping area between Indonesia and its neighboring countries (M.J.Valencia, 1985)

living resources. This means that Indonesia has final authority to choose one way or another, whatever its obligations may be to consult or to take account of specific considerations, views, or evidence concerning foreign fishing. The sovereign rights of Indonesia exclude either decision-making by another entity or a claim to participate in decision-making with respect to the subject matter of the living resources. Thus, other nations, international organizations, business associations or private groups cannot lawfully claim to share equally with Indonesia in choices relating to or involving exploration, exploitation, conservation and management of the living resources of the zone. Indonesia may, in the exercise of its sovereign rights, accord a role, perhaps a decisive role, to another entity, but it is not obliged to do so by the provisions of the Convention.

There are several ways that Indonesia can exercise its sovereign rights within the zone. Indonesia may determine the size of the stocks and collect fees for fishing privileges, or establish joint ventures with distant-water fishing countries. Alternatively, Indonesia might seek to eliminate distant-water fleets through high cost surveillance and enforcement programs that can be charged to distant-water fishing nations.

With respect to articles 61(1) and 62(2) of the Convention, Indonesia decides what the total allowable catch of a particular species is, what the country's own harvesting capacity is, and whether or not there is a surplus to be shared with foreign fishing fleets. These decisions are non-reviewable by any third

party. This means that Indonesia has full discretion to determine a small total allowable catch or a negligible surplus because there is nothing to prevent Indonesia from doing so. As an implementation of article 61(1), Indonesia has decided the total allowable catch of Indonesia's fishery resources in its

EEZ.

With regard to fishery resources exploitation in the EEZ, Indonesia seeks to protect the use of fishery resources against illegal harvesting, while foreign nations want to protect their present position to continue fishing in the zone without difficulties. To accommodate these two different interests, article 62(2) of the Convention states that a coastal state, in this case Indonesia, shall determine surplus stocks to be made available to its neighboring countries as well as to foreign fishing nations which have habitually fished in the zone. The surplus stocks can be obtained by subtraction of domestic harvesting capacity from total allowable catch. Up to the present, there is no surplus in Indonesia's EEZ to be shared with foreign fishing fleets.

Instead of determining surplus, Indonesia has allocated stocks for domestic and foreign fishing fleets in the Indian and the Pacific Oceans and the Celebes Sea. Foreign fishing access to the stocks mentioned will be given through a joint venture and licensing system. In this regard, Indonesia prefers joint venture to a licensing system because it guarantees transfer of technology, creates employment opportunities, enhances statistical data collection, as well as being easier to

control.

Eventually, by careful management and restricted consumption, fishery resources can be made to yield a steady harvest that will not detract from their future yielding capacity.

1.3. INDONESIA CAPABILITIES ✓

By declaration of an EEZ, Indonesia has increased its control over exclusive fishing areas by 2.7 million sq.km and of the fishery resources potential by 1,468,000 metric tons of pelagic fish and 647,000 metric tons of demersal fish. ¹⁸ The increase of exclusive fishing areas and fishery resources potential gives Indonesia the opportunity to benefit from fisheries resources more than before, but how great the benefit will be depends on Indonesia's capacity to harvest, market, monitor, control, and maintain surveillance of fishery activities.

1.3.1. Harvesting Capability

Two types of harvesting capability will be discussed in this section; small-scale or artisanal fishermen and fishing industry capabilities.

First, the harvesting of artisanal fishermen is characterized by traditional methods, endowed with little capital, insufficient skill and technology, and fishing close to the shore.

With regard to tuna fisheries, tuna and tuna-like species are caught by artisanal fishermen in the internal, territorial and

archipelagic waters, and sometimes in the EEZ of Indonesia. Skipjack, for example, are caught off the west coast of Sumatra, the Celebes Sea and the eastern waters of Indonesia. Artisanal fishermen use traditional gears, such as tonda (troll line) and sero or belat (trap), which have been known for a long time.

Traditional methods have developed into more efficient ones, such as payang (boat seine), gill net, and purse seine. At the same time artisanal fishermen have begun to recognize the longline method, although this is still utilized in a simple way that is called "rawe tuna". In the eastern waters of Indonesia tuna and tuna-like species are caught by pole and line (huhate) but the fish are not very large.

Artisanal fishermen form the majority of Indonesian fishermen, their total number in 1985 being 1,268,448¹⁹. They are concentrated in Java, Malacca Strait and South Sulawesi. They are fishing in a limited area and competing for fishery resources which are already fully or over-exploited. Consequently, the greatest opportunities for expansion lie offshore in the remote areas, but the artisanal fishermen's ability to fish there is limited. Therefore in its small-scale fisheries development, the Indonesian government encourages artisanal fishermen to upgrade and modify their present techniques and equipment so that they can move away from their usual grounds to areas further offshore, and to more distant parts of Indonesia where the resources are presently under-utilized. According to the fisheries development plan, small-scale fisheries will be developed in the EEZ of Indonesia in the South Sunda Shelf (southern part of the South

China Sea), and small-scale tuna fisheries will be developed off the west coast of Sumatra and in the eastern waters of Indonesia. These plans involve an increase of 627 units of troll line and 298 units of pole and line.

20

Secondly, the Indonesian EEZ provides opportunities for the development of fishing industries. Up to the present, Indonesia has established four government tuna fishing enterprises (Table 1) and three tuna joint venture companies, namely PT South Thai Indonesia Sejahtera, PT Multi Transpeche Indonesia and PT Bali Raya. Their fishing areas cover the Indian and Pacific Oceans, the Celebes, the Flores and the Banda Seas. The total number of fishing vessels of the government fishing enterprises are 18 longliners of 100 GT each and 8 pole and liners of 30 GT each.

Table 1. Fishery State Enterprises, 1985

No.	Name of Company	Activities	Location
1.	PN Perikani Sulut/ Tengah	Skipjack pole and line	Menado
2.	Perum Perikanan Maluku	---	Ambon
3.	PT Usaha Mina	---	Sorong
4.	PT Perikanan Samodra Besar	Tuna long line	Bali

In addition, Indonesia has also established nine shrimp joint ventures operating in the Arafura Sea (a part of the EEZ of Indonesia), which are mostly between Indonesia and Japan. (Table 2).

Table 2. Fishing Joint Venture Companies, 1985.

No.	Name of Company	Activities	Location
1.	PT Tofico	Shrimp Fishing and Processing	Ambon
2.	PT West Irian Fishing Industries	---	Sorong
3.	PT Irian Marine Development	---	Sorong
4.	PT Nusantara Fishery	---	Ambon
5.	PT Alfa Kurnia Fish Enterprise	---	Sorong
6.	PT Dwi Bina Utama	---	Sorong
7.	PT Cejamp	---	Semarang
8.	PT Misaya Mitra	---	Kotabaru
9.	PT Mitra Kartika Sejati	---	Ujungpandang
10.	PT Multi Transpeche Indonesia	Tuna/Skipjack Fishing and Processing	Biak
11.	PT South Thai Indonesia Sejahtera	---	Sorong
12.	PT Bali Raya	---	Denpasar

In order to increase its harvesting capability, Indonesia is now gradually developing its tuna fishing fleets by adding 74 longliners (100 GT - 300 GT), 108 pole and liners (50 GT - 100 GT), and 16 purse seiners (250 GT - 300 GT).²¹

Indonesia's harvesting capability is presently still relatively limited when considering its vast fishing areas of approximately 5.8 million sq.km. The fishery resource potential of Indonesia is believed to be relatively great.

1.3.2. Marketing Capability

Almost all of the production of small-scale fisheries is sold in the domestic market, while shrimp and tunas (yellowfin, bigeye, and skipjack) from fishing industries are exported.

Frozen headless shrimps are exported to Japan mostly by joint ventures. Some of Indonesia's yellowfin, bigeye, and skipjack have been exported mainly to Japan and Singapore, and sometimes to Malaysia, the Netherlands, and West Germany. In 1985, Indonesia exported 13,770 metric tons of tuna/skipjack and 202,708 metric tons of shrimp which went mostly to Japan. (Table 3).

Table 3. Export Volume of Fishery Products by Country of Destination, 1981 - 1985. (metric tons).

Country of Destination	1981	1982	1983	1984	1985
Japan	29,562	38,332	36,526	30,656	36,464
Singapore	18,968	21,936	23,123	21,927	20,731
Hong Kong	10,929	20,356	9,460	4,359	6,505
United States	5,601	968	2,669	1,945	1,478
Netherlands	2,574	2,021	4,093	2,784	1,998
Malaysia	2,527	1,537	1,943	1,494	1,445
France	1,405	873	554	1,285	2,538
Taiwan	1,114	1,009	1,459	820	474
Others	2,498	2,897	8,538	10,425	12,864
Total	75,178	89,629	88,365	75,695	84,497

From the above data it is clear that Indonesia's marketing capability has been relatively limited, and up to the present it has depended on Japanese and Singaporean markets.

Malaysia and Thailand, which have relatively smaller fisheries resources, were able to export a greater volume of fishery commodities than Indonesia (163,500 mt and 456,756 mt in 1985 respectively).

1.3.3. Monitoring, Control and Surveillance Capabilities. ✓

Monitoring, control and surveillance elements of fishery management are inadequate to meet the need of increasing surveillance of the Indonesian EEZ.

The objective of monitoring is to know every change in the intensity of fishery resources utilization in order to prevent overfishing. Therefore, monitoring is one of the most important aspects of fishery management. To meet this objective, fishery data is needed. The data is collected from several sources, such as fishing ports, landing places, fishing villages, reports of fishing companies, and fisheries research and survey.

Stock assesment and control over fishing activities in the Indonesian EEZ will be more difficult and complicated than in other parts of the national sea territory, because the zone is now virtually open waters. The nature of highly migratory and transboundary stocks raises some difficulties in the immediate evaluation of the fishery resources. In addition, there is insufficient knowledge of the life history, migration and stock identity of those species which limits determination of the extent of these fisheries within and beyond the zone. Furthermore, few fishery biologists are apparently doing research on highly migratory species in the zone. Consequently, there is very limited information available on catch per unit effort (CPUE) and its relation to actual abundance and behavior which could help fishery managers to solve the problem of allocation.

Control is a key to successful fishery management. By employing control mechanisms, legal and illegal fishing activities can be closely identified. Licensing can be used as the main controlling device because the government rules and regulations to be obeyed by the fishing vessels are stated on the license.

The other control device is the joint venture. Fishing companies under the foreign investment law should be joint venture companies. These joint venture companies, established under Indonesian laws, have the status of an Indonesian company. Being a part of the investment, the fishing vessels used will be owned by the company, must be registered as an Indonesian vessel, and should fly the Indonesian flag.

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The licensing system and joint venture companies will be further discussed in the management of foreign fleets section.

Surveillance is the first step in the whole process of law enforcement - that is, successful law enforcement at sea depends on the surveillance capability. Law enforcement in waters within national jurisdiction is executed by the Coordinating Body for Security at Sea (BAKORKAMLA), under the coordination of the Department of Defense.

Until now, Indonesia's surveillance capability has been limited in relation to the whole area of Indonesian waters and the EEZ of Indonesia. This is because the duties of BAKORKAMLA are not only to detect and inspect fishing activities, but also

to enforce against smugglers, illegal entries, infiltration and subversion, international crimes, pollution and other illegal activities at sea. In addition, the existing surface craft and aircraft are limited in number. Therefore, in order to make surveillance more effective, all other surface craft, whether government or private, are requested to participate in detecting all operating fishing vessels which are not in compliance with fisheries regulations.

2. GOVERNMENT POLICY AND THE 200 MI EEZ OF INDONESIA ✓

2.1. FISHERY OBJECTIVE

Indonesia's general policy with respect to fisheries development, which is outlined in the fisheries section of the Five Year Development Plan, has four objectives :²⁴

- a. to increase fish production to meet the demands of the domestic and export markets;
- b. to improve the standard of living and prosperity of the fishermen by increasing their income;
- c. to extend employment opportunities through diversification and development of supporting industries;
- d. to improve conservation and management measures of the fishery resources.

In meeting the first objective, the government hopes to achieve the second and the third objectives concerned with the economic circumstances of the Indonesian fishermen. The desire to achieve such objectives within an orderly framework, taking into account the need to preserve the resource, is expressed in the fourth and final objective of the plan.

As discussed in the previous section, Indonesia is now developing the harvesting capabilities of both small-scale fishermen and fishing industries in order to meet the fishery objectives.

The Indonesian government encourages artisanal fishermen to upgrade and modify their present techniques and equipment so that they can move away from their usual grounds which are obviously overexploited. One of the ways to implement is that the government provide mechanization through the "small investment credit scheme", for example, by subsidizing outboard motors.

Mechanization in a crowded area does not solve the problems, however, because artisanal fishermen who have obtained an outboard motor will still fish in their usual grounds and compete with other artisanal fishermen who have not gotten an outboard motor yet. Since outboard motors are more effective, this mechanization by itself will only increase fishing pressure without increasing total catch, and perhaps might even deplete the fishery resources.

Furthermore, rapid industrial expansion and artisanal development could proceed simultaneously. However, experience has shown that when two such divergent elements in the industry exploit the same stocks, the rapidly paced industrial development soon takes over and closes pathways for the potential expansion of the slower moving artisanal sector. The result is disappointment and the creation of conflict between competing elements. Such conflict occurred with the development of trawling in shallow areas in western Indonesia.

To solve this type of conflict, the government established a fishing zone and bottom trawl area through the decrees of the Minister of Agriculture No. 607/KPTS/UM/9/1976 and No.

609/KPTS/UM/9/1976 (Figure 5).

Minister Decree No. 607/KPTS/UM/9/1976 on Fishing Zone.

Fishing Zone I : 0 - 3 miles offshore, closed for :

1. Fishing vessels which use inboard motors more than 5 GT or 10 HP
2. All kinds of trawl
3. All kinds of purse seine
4. Encircling and drift gill nets for little tuna
5. All payang lampara seines with length more than 120 meter.

Fishing Zone II : 4 - 7 miles offshore, closed for :

1. Fishing vessels which use inboard motors more than 25 GT or 50 HP.
2. Bottom trawls using otter boards and having head ropes of more than 12 m
3. Mid-water and pair trawls
4. Purse seines with lengths more than 300 m.

Fishing Zone III : 7 - 12 miles offshore, closed for :

1. Fishing vessels which use inboard motors more than 100 GT or 200 HP
2. Bottom and mid-water trawls using otter boards and having head and bottom ropes of more than 20 m.
3. Pair trawls
4. Purse seine with lengths more than 600 m.

Fishing Zone IV : the area beyond 12 miles offshore, closed for :

1. Pair/bull trawls except in the Indian Ocean.

In order to better control and distribute trawler operations among fishing areas in Indonesia, the government also enacted a regulation in 1976 that divided Indonesian waters into four trawl fishing regions (Ministry of Agriculture Decree No. 609/Kpts/Um/9/1976), as follows :

- I. Area A : - The Indian Ocean, from Sumatra to Timor
- Identification for fishing vessels is RED
- II. Area B : - The Andaman Sea, the Malacca Strait and the South China Sea
- Identification : GREEN

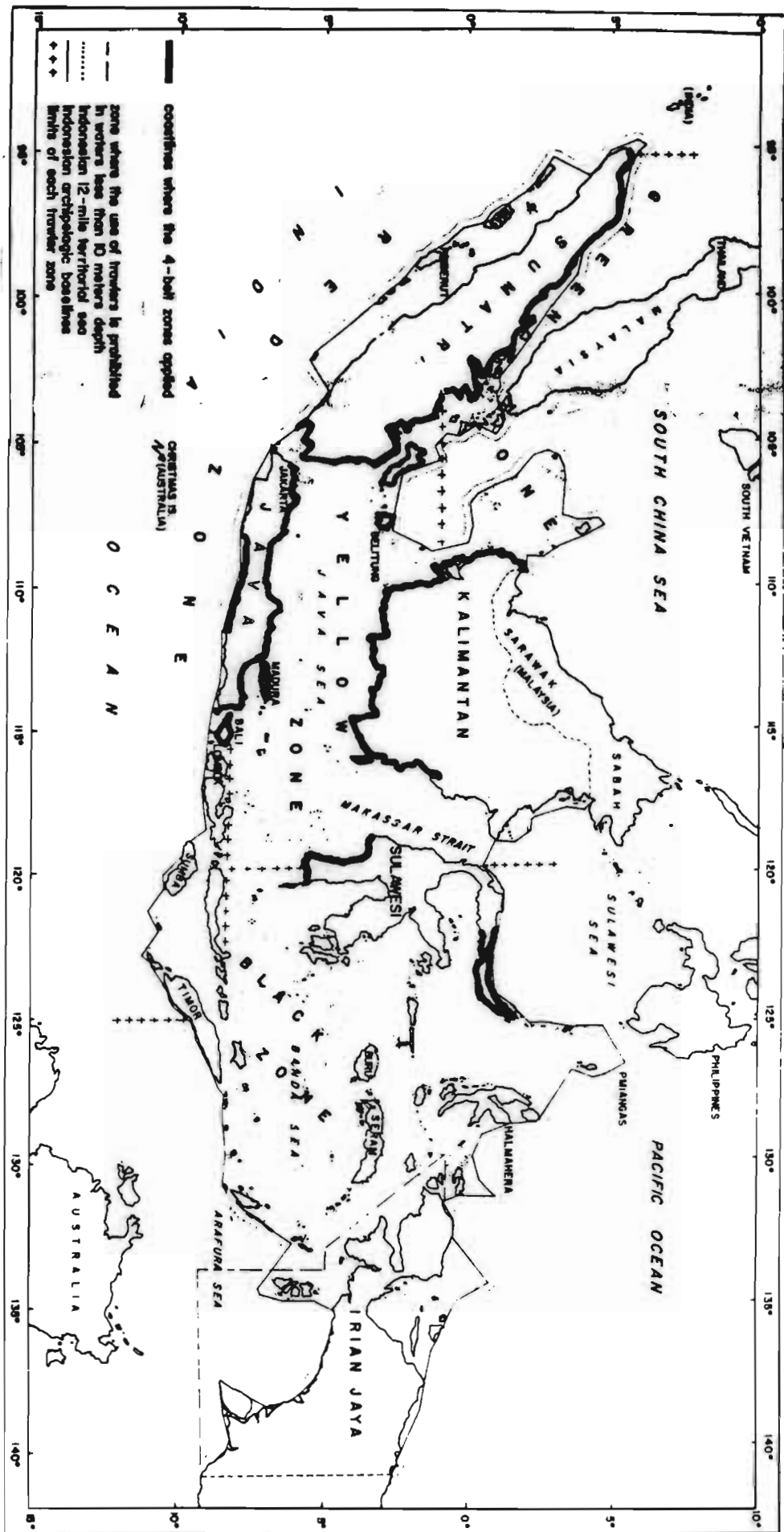


Figure 5. The four fishing belts of the Indonesian coastlines

- III. Area C : - The Karimata Strait, the Java Sea, the Makassar Strait
- Identification : YELLOW
- IV. Area D : - Eastern waters of Indonesia
- Identification : BLACK.

Violation of these regulation is punished based on the Decree of the Director General of Fisheries No. H.II/2/4/2/76 :

First violation : fishing license is suspended for 10 days with the first written warning;

Second violation : fishing license is suspended for 20 days with the second written warning;

Third violation : fishing license is withdrawn.

Since the boundaries of the fishing zones are invisible, law enforcement was difficult and very costly due to limited surveillance capability. In addition, at the time artisanal fishermen apparently became more vulnerable and as a consequence social conflicts increased. Eventually, in order to avoid social conflicts, to achieve coastal fisheries management, and to increase the artisanal fishermen's production, the government decided to phase out trawlers gradually, mainly in Java and Sumatra, by Presidential Decree No. 39/1980. The deadline was January 1, 1983, after which all trawlers were not allowed to fish in Indonesian archipelagic and territorial waters.

The total number of trawlers phased out was 2,300 units, and they were replaced by 904 units of purse seine, 1,046 units of gill net, 10 units of muro ami, 140 units of long line and 200 units of troll line.

To support the above decision and to spread artisanal fishermen out from their usual grounds, the government has undertaken a transmigration program. The program of transmigration is to move fishermen from populated areas to unpopulated areas where the resources are presently underutilized; for example, to move fishermen from Java to the west coast of Sumatra, the South China Sea, and the eastern waters of Indonesia. In this case, the main problem faced by artisanal fishermen in the new area is marketing. Such problems occurred with the development of troll lines in Jayapura (West Irian). The local market in Jayapura could not accommodate the increasing production of skipjack. As a result, the price of skipjack went down. Being aware of the situation, artisanal fishermen agreed among themselves to take turns fishing in order to stabilize the price in the Jayapura market. This means that the harvesters reduced their fishing efforts. In addition, government enterprises offered to take their production, but the products should meet the required export conditions, such as volume and quality of fish. Since their capabilities were limited, the artisanal fishermen had difficulties in meeting such conditions.

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Thus, the government still has problems in the development of the artisanal fishermen. Mechanization only increases fishing pressure without increasing the total catch, and perhaps even depletes the resources. Furthermore, the transmigration programs without increasing local market capability will cause other socio-economic problems.

The development of fishing industries will create more jobs ashore stemming from the construction and operation of fishing harbours, processing plants, storage and transportation facilities, and the development of supporting industries, such as gear and equipment manufacturing and building, and repair and maintenance of boats. Many of these jobs, however, require different skills and different attitudes than are characteristic of independent artisanal fishermen. For this reason, whereas such development programs will create jobs within the Indonesian economy generally, they may not attract many existing fishermen away from crowded fishing areas.

The development of the fishing industries is hampered by a lack of knowledge of fisheries distribution, insufficient capital, the need to appropriate fishing vessels for oceanic operation, the high cost of fishing vessel maintenance, the difficulty in recruiting skillful fishing vessel crews, the high risk, and the difficulty of finding a market for tuna.

2.2. FISHERIES STRATEGY

The Indonesia government has established a fisheries strategy for several reasons. First, the government wants to make the waters within the national territory available for the development of domestic fisheries both small-scale fisheries and the fishing industries. Second, because distant-water fishermen in the EEZ of Indonesia used higher technology than domestic fishermen did, the government wanted to prevent unequal

competition between domestic and foreign fishing fleets within the national territory. Third, to exploit fishery resources equitably and to meet fishery objectives, Indonesia wanted to reduce fishing pressure in crowded areas and to spread fishing activities to areas further offshore where the resources are under-exploited. As a result, a joint venture and licensing system will be adopted for the Indonesian EEZ, that is, outside the area reserved for domestic fishing.

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2.3. FISHERY MANAGEMENT OF THE 200 MI EEZ OF INDONESIA ✓

To prevent unequal competitions or conflict between traditional and modern fisheries, the Indonesian government has introduced a number of management measures. Two such measures are the gradual phasing out of trawlers, mainly in Java and Sumatra by Presidential Decree No. 39/1980, and limiting of the mesh size of purse seines by Decrees of the Minister of Agriculture No. 123/KPTS/UM/3/1975 and No. 607/KPTS/UM/9/1976. With respect to the latter, a doubling of the minimum size from 20 - 25 mm to 45 - 50 mm could bring about substantial reduction in the capture of juvenile fish and small shrimps. It is presumed that saving of the small fish and shrimp would result in a higher production of both shrimp and fish at sizes that would bring substantially greater market values. Currently, the regulation of trawl fisheries both in Indonesia and other countries in Southeast Asia is forcing motorized vessels to operate further offshore. Such a measure reduces conflict between these vessels and artisanal fishermen operating in inshore areas, and may

reduce the rate of exploitation of the resources. However, the extent to which these regulations are contributing to conservation is not well known. To assess the problem it would be necessary to determine the relationship between the populations fished offshore and inshore.

In general, the Indonesian scientists are concerned about the effect of the intensity and character of the inshore fisheries in Indonesia and in Southeast Asia on the health of stocks offshore; further intensification of inshore fisheries could result in declines in the productivity of some important stocks, thus threatening the basic health of the fishery. To improve the conservation and management measures of fishery resources, fishery management of the EEZ should not be separated from fishery management of the internal, territorial and archipelagic waters.

The achievement of the development objectives will only be safeguarded if complete control could be exercised on the utilization and management of the fishery resources. Although these resources are renewable, they are subject to over-exploitation, depletion, and to the influence of environmental changes. Consequently they should be utilized on the basis of wise planning and under proper management, including those in the EEZ, aiming at :

a. Rational utilization of the fishery resources.

The utilization of fishery resources should be based on resource capacity, so that harvesting will not exceed maximum sustainable yield. With respect to the nature of transboundary and highly migratory stocks, Indonesia needs to cooperate with neighboring states and foreign fleets to determine maximum sustainable yield. Recent figures indicate that the potential of the tuna and skipjack stock in the Indonesian EEZ are 83,435 metric tons/year and 98,760 metric tons/year respectively, while for pelagic fish the figure is 1,285,900 metric tons/year and for demersal fish, 647,500 metric tons. (Figure 6)²⁷

b. Equitable distribution of fishery resources exploitation.

In order to reduce fishing pressure in certain areas, such as the Java Sea and Malacca Strait, fishery resources exploitation should be distributed to areas further offshore and to more distant parts of Indonesia where the resources are presently underutilized. With regard to exploitation within and beyond the EEZ of Indonesia, equitable distribution of exploitation means balancing fishing activities within and beyond the zone. With respect to the nature of transboundary and highly migratory stocks, harvesting stocks in an area may have an adverse effect on the yield of the same stock in an adjacent area.

c. Conservation of fishery resources.

By careful conservation, the fishery resources can be made to yield a steady harvest that will not detract from their future yielding capacity. In this regard, with respect to the nature of the stocks within its EEZ, Indonesia is aware that conservation

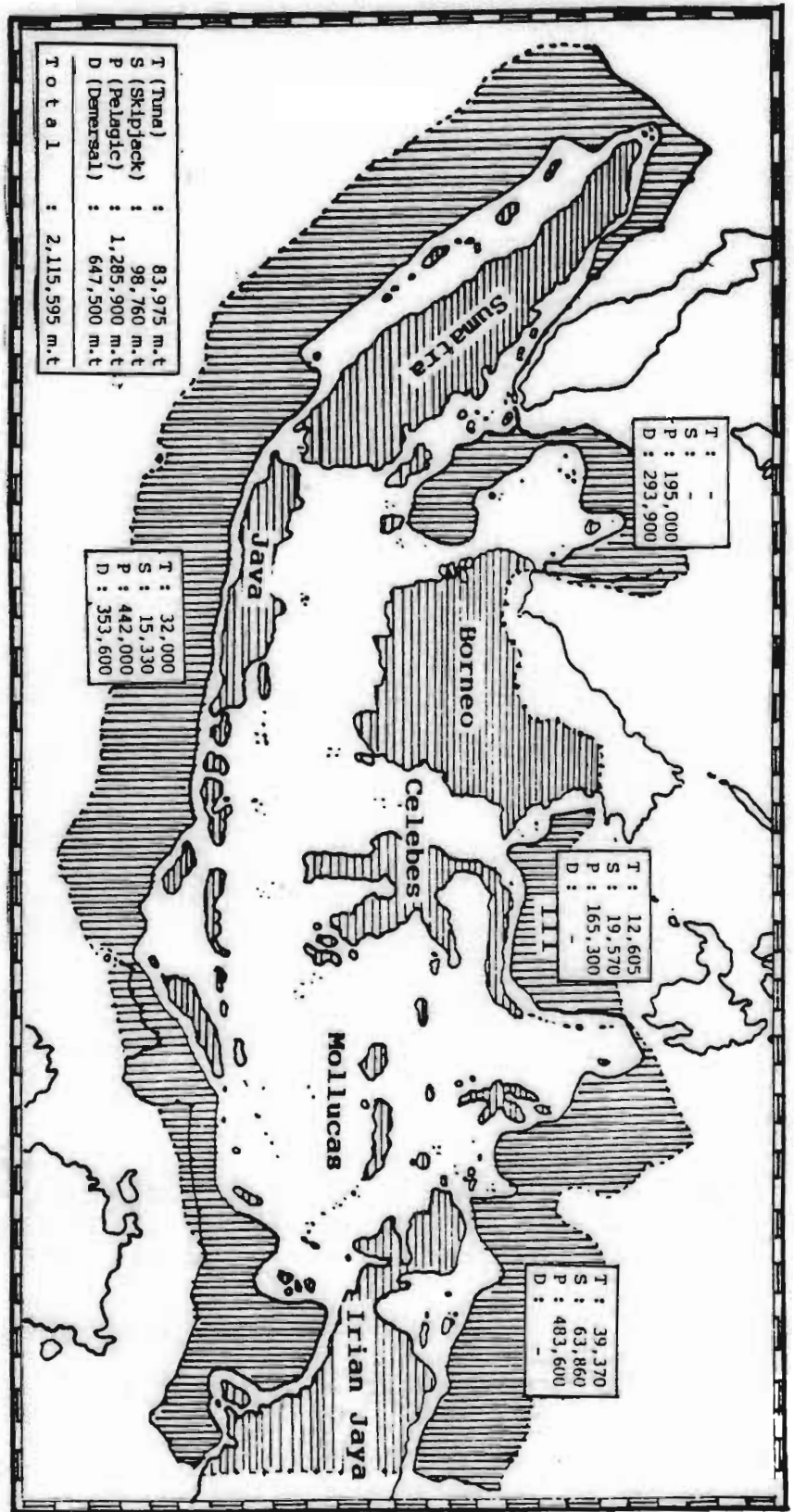


FIGURE 6. INDONESIAN EEZ FISHERIES POTENTIAL (DGF, 1983)

cannot be exercised alone, but that joint cooperation is necessary.

With the declaration of its EEZ, Indonesia has acquired sovereign rights to utilize fisheries resources in the new extended areas of jurisdiction, along with the responsibility to conserve the marine resources. In accordance with paragraph 6 of the declaration, the above provisions will be arranged by appropriate laws. For this purpose the government has introduced a set of rules and regulations on sovereign rights, jurisdiction and other obligations related to the EEZ; these are Indonesia's EEZ Law (Law No. 5, 1983), and Management of Living Resources in the Indonesian EEZ (Government Regulation No. 15, 1984).

Four decrees have been issued by the Minister of Agriculture in implementation of those laws and regulations, these are :

- 1). Minister Decree No. 473a/1985 on the Total Allowable Catch (TAC) in Indonesia's EEZ.
- 2). Minister Decree No. 475/1985 on licensing of foreign individuals or foreign legal bodies engaged in fishing in Indonesia's EEZ.
- 3). Minister Decree No. 477/1985 on fees charged to foreign individuals or foreign legal bodies engaged in fishing in Indonesia's EEZ.
- 4). Minister Decree No. 476/1985 on the check points for fishing vessels having a license to engage in fishing in Indonesia's EEZ.

In compliance with the 1982 LOS Convention, these laws and regulations also include provisions pertaining to access by other states to the surplus of the allowable catch of the living resources in the Indonesian EEZ . However, primary importance should be given to the objectives of the development of domestic fisheries and national harvesting capabilities in the zone. Therefore the granting of access to foreign fishing vessels for the resources of the Indonesian EEZ should be viewed as merely a transient phase. The problem of giving access to foreign fishing vessels has two interlinking aspects. These are, how to get maximum benefit from the access given, and at the same time assure that the expected benefits will actually be received by the respective states. With the Indonesian experience, joint ventures are the most reliable technique for exercising control to the access given. Another option is by giving fishing licenses, although this will require a more complicated and costly control system. These two options are contained in Government regulation No. 15, 1984.

Another development in establishing a legal basis for fisheries development and management in Indonesia is the promulgation of the Fisheries Law (Law No. 9, 1985). The law applies not only to marine fisheries but also to inland fisheries and aquaculture. With the enactment of this law, regulations inherited from long before World War II (during the Dutch administration) are replaced by the new law.

The Fisheries Law serves as the basis for further regulation

of all activities concerning fishing, aquaculture and the responsibilities of the government for management and conservation, promoting cooperative and marketing facilities, carrying out training, extension, information systems and control.

This Law emphasize that management of fishery resources is directed for the most benefit of the Indonesian people by means of rational utilization/exploitation, and conservation of the resources.

The Minister of Agriculture has authority to set fisheries policies and management measures such as regulation of the fishing gear and fishing vessel used, volume, species, and size of fish to be caught, zonation and fishing season, environmental protection from pollution and damage, introduction of new species of fish, etc. It is interesting to note that in this new Law, there is provision concerning the obligation of individuals or enterprises engaging in fish culture to have a permit and to pay a fee/tax. However, this obligation is not valid for individuals who engage in fish culture as well as fishing for their food.

Regulations for implementation of the Law are now being prepared, and we do hope that this new Law could be implemented in the near future.

3. INTERACTION PROBLEMS ON THE USE OF FISHERY RESOURCES

Indonesia declared an EEZ on March 21, 1980. This declaration increased its exclusive fishing areas by 2,7 million sq.km and fishery potential by 1,468,000 metric tons of pelagic fish and 647,000 metric tons of demersal fish. It seems that by exercising a high degree of its authority within the zone, Indonesia can gain more benefits from the use of fishery resources than before the declaration, but the benefits may not be particularly great. This is because Indonesia must bear the management costs of the acquired resources. The country needs to undertake increased research in order to determine the potential yield from the stocks regularly. And it needs to invest in additional enforcement activities to ensure the maintenance of the benefits. In addition, most of the species found in the zone (approximately 60 percent of the total pelagic fish potential) do not have as good a price as tuna and tuna-like species do in foreign markets; domestic markets are dominated by coastal fisheries production.

Furthermore, with respect to the nature of the stocks within its EEZ, Indonesia has to share the fishery benefits with its neighboring states and foreign distant-water nations as well. The nature of the stocks causes interaction problems with highly migratory species, shared stocks, and the management of foreign fleets.

3.1. THE USE OF HIGHLY MIGRATORY STOCKS

With respect to tuna fisheries, the important factor is that tuna and tuna-like species are highly migratory. They move freely and migrate long distances across national boundaries; thus, they become transnational issues. The distribution of Tuna/Skipjack can be seen in figures 7, 8, 9, 10, and 11. ²⁸ Indonesian Tuna/Skipjack have been for a long time exploited by foreign fishing fleets, such as the Japanese, South Korean and Taiwanese, within and beyond the EEZ of Indonesia. By declaring its EEZ Indonesia has reduced these fleets' fishing activities because they cannot fish within the zone without a permit issued by the Indonesian government. But the fleets still want to continue fishing within the zone.

On the other hand, Indonesia has been exercising its authority to a high degree to control the use of fishery resources within its EEZ. This means that virtually all of the demersal, pelagic and shellfish populations are now encompassed within the zone. ²⁹ Consequently, the extent of Indonesian control over the use of fishery resources causes significant losses for small distant-water fleets, such the South Korean, Taiwanese and Thai fleets. They suffer decreasing access to the stocks and increasing costs.

Such losses will not be very significant for Japan because Japanese fishing vessels operating in Indonesian waters already make payments through joint ventures for the right of access;

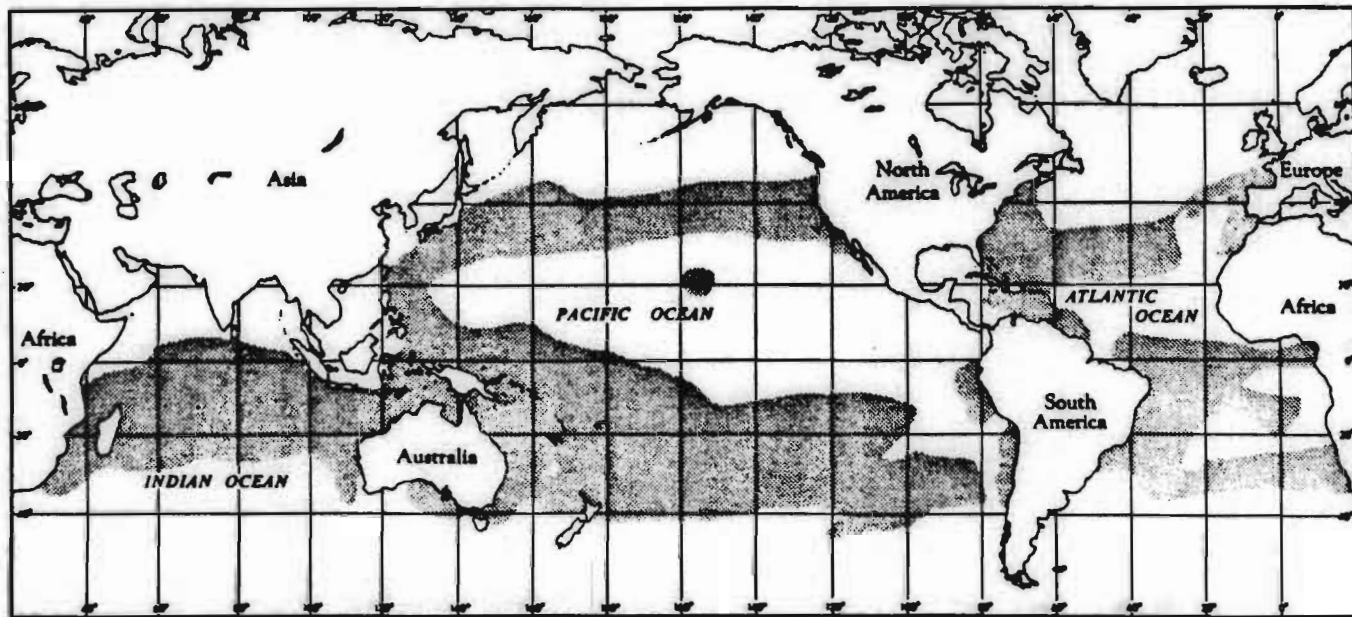


Figure 7 . Estimated distribution of albacore tuna (SB Saila, 1974)

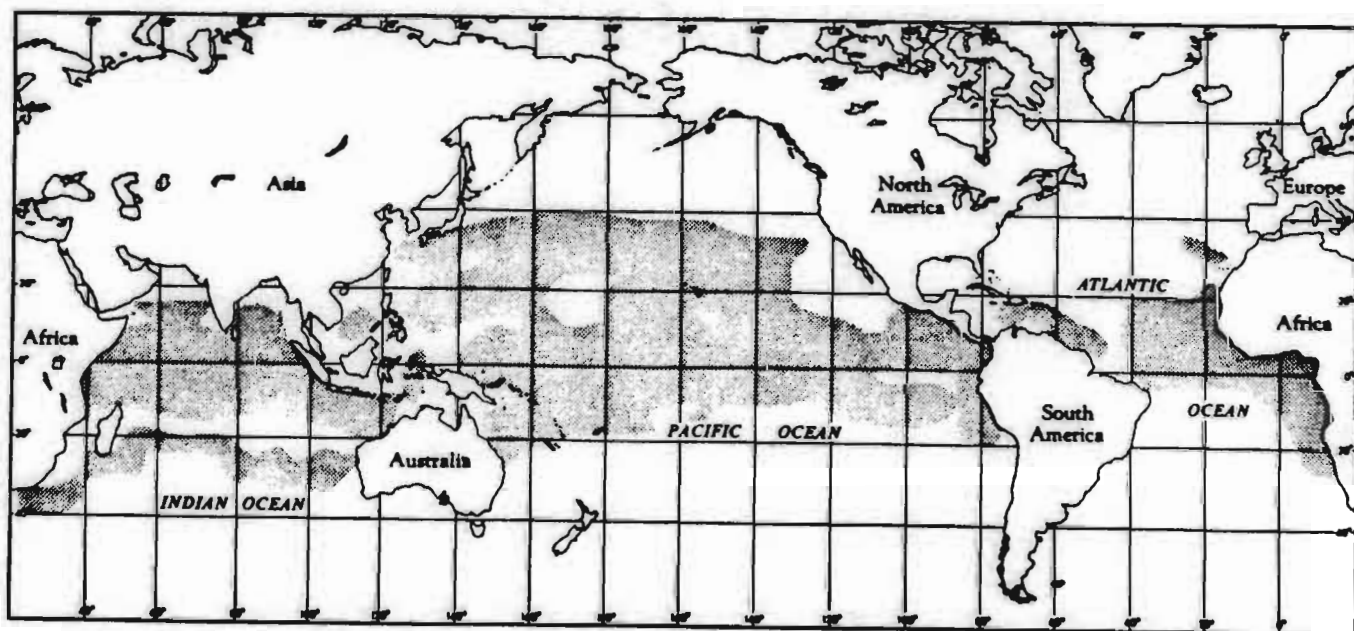


Figure 8 . Estimated distribution of bigeye tuna (SB Saila, 1974)

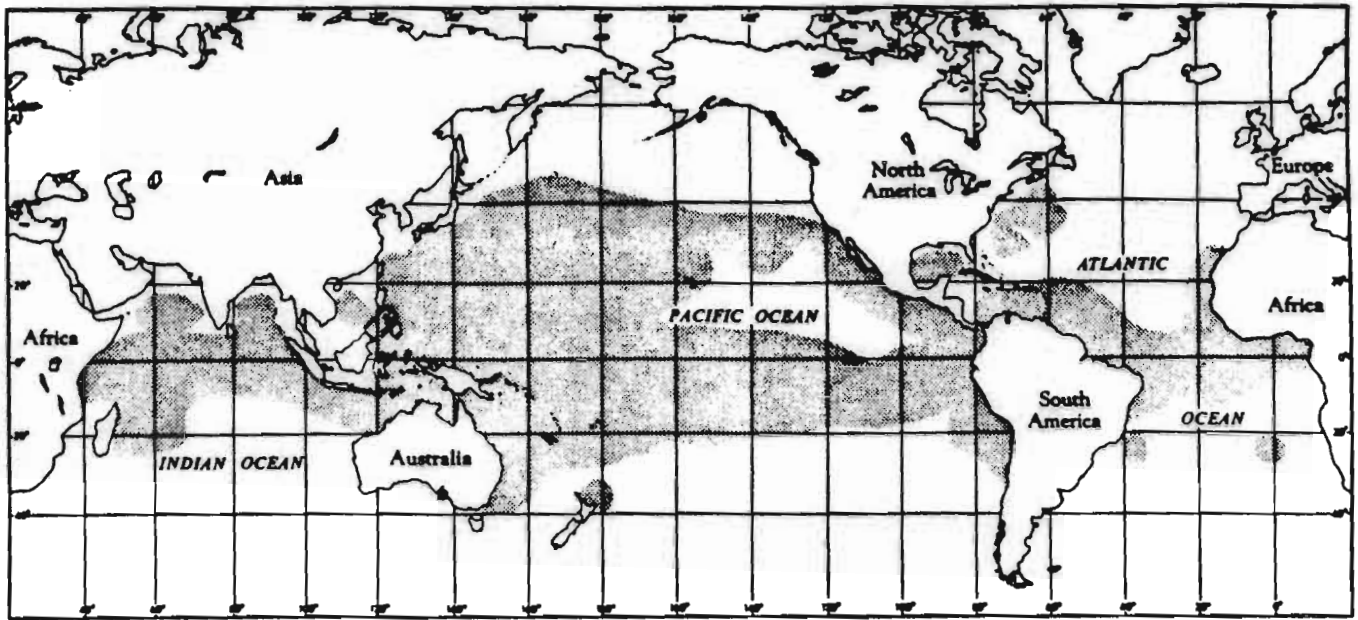


Figure 9. Estimated distribution of yellowfin tuna (SB Saila, 1974)

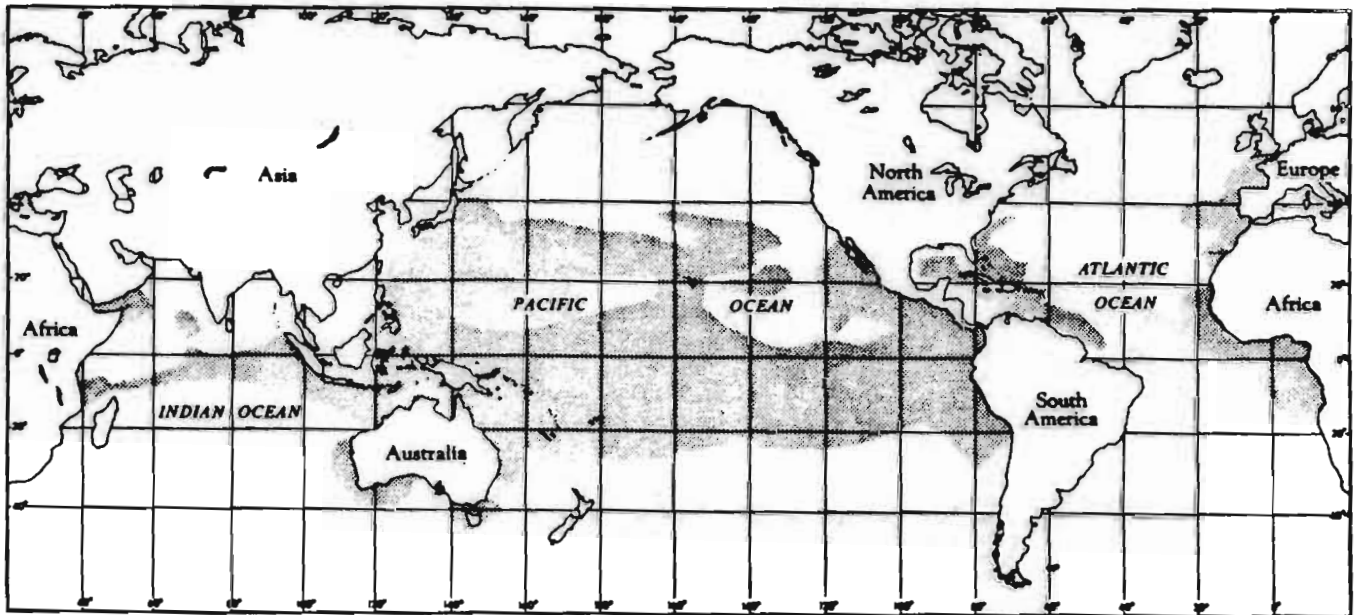


Figure 10. Estimated distribution of skipjack tuna (SB Saila, 1974)

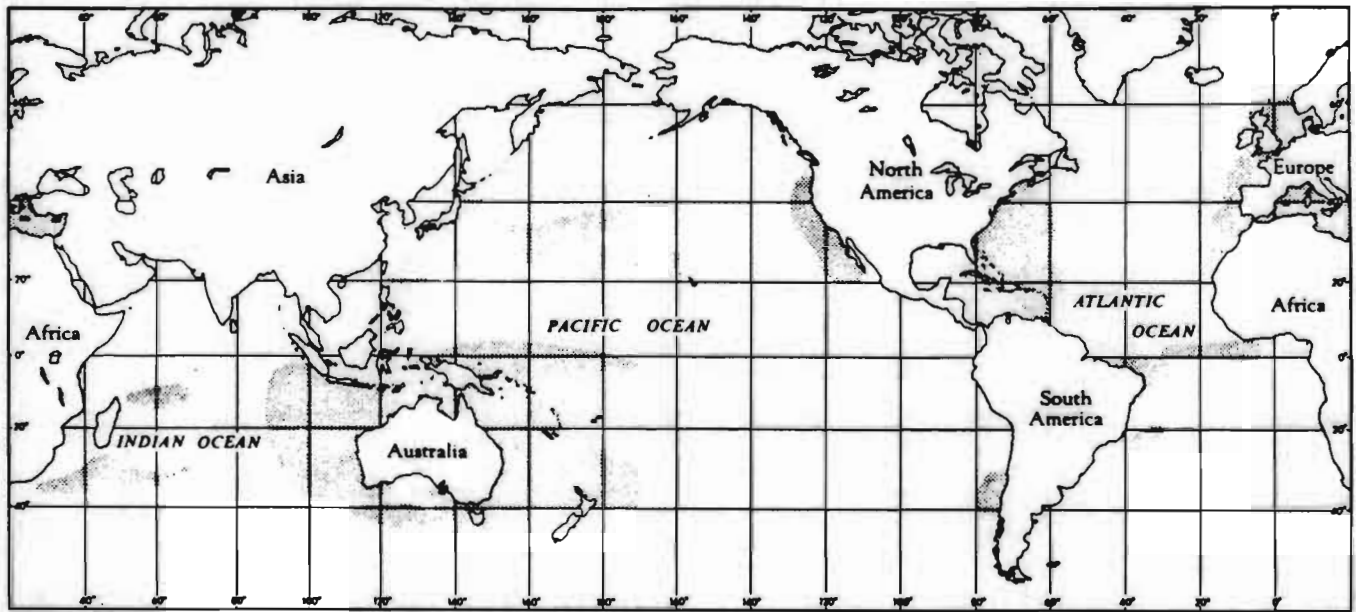


Figure 11. Estimated distribution of bluefin tuna (SB Saila, 1974)

nor will Japan have to pay more for licensing because it has dominated the global fishery market and has established numerous joint ventures elsewhere; thus, the extent of Indonesian control over the use of fishery resources in its new zone will not add significantly to the expense of Japanese fishing

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Indonesia has set up fishery policy objectives, fishery strategy and fishery management within its EEZ. On the other hand, its neighboring states are also exercising authority within their EEZs with different fishery policy objectives, fishery strategy and fishery management. Different states view the fishery resources with different goals in mind. As a result, some states will suffer less than others because foreign fishing in their waters may be particularly profitable to the host state. Indonesia, for example, with its vast zone and its relatively great fishery resources is likely to gain more than other states in the immediate future. But these gains may be short-lived if there is no effective cooperation. Effective cooperation, however, means that Indonesia and its neighboring states must face the problem of allocation.

The allocation function is that of determining "who gets what" from highly migratory stocks. Before Indonesia declared its EEZ, allocation was determined simply on the basis of who fished. Those who did not fish received no benefits. At that time it was obvious that Japan received the greatest benefits from the resources in the area which is now the EEZ of Indonesia.

In the determination of "who gets what" from the resources, the "what" is the fishery benefits that are being distributed. Allocation of the fishery benefits can be defined by a quota system, that is by the quantity of the fish that is allowed to be harvested. And "who" refers to the actors who participate in the process of "getting" benefits.

Because of the nature of the stocks, Indonesia has to share fishery benefits with its neighboring countries and distant-water fishing nations as well. So there is apparently no doubt about who shall participate in the distribution of fishery benefits; the actors include Indonesia, the Philippines, Malaysia, Australia, Papua New Guinea, and distant-water fishing nations. According to article 62 (2) of the Convention, the actors will be participants in this distribution through agreements or arrangements with Indonesia. With regard to determination of "who gets what", the agreements or arrangements are part of the process of "getting" the fishery benefits.

The fishery benefits that are being distributed are widely scattered in the Indian and the Southwest Pacific Oceans, the Celebes, the Flores, and the Banda Seas. There are three major tuna species that have to be shared, these are : Skipjack,
31
Yellowfin, and Bigeye. Skipjack and yellowfin are the most important not only because they are the most common but also because they command a high export value - being the species of tuna most suitable for canning - and they occur regularly in the
32
Indonesian and the Philippine waters. Bigeye are important
33
for sashimi and a high percentage are found in the Banda Sea.

Because of the nature of the species, tuna stocks in the Indonesian, Philippine and Papua New Guinean waters may be considered as one independent stock and perhaps can be considered as a part of the Southwest Pacific stocks. Several scientists, such as Ueyanagi (1969),³⁴ Fujino (1972),³⁵ Kearny (1975),³⁶ Dwiponggo (1976),³⁷ and Chikuni (1978),³⁸ are concerned that skipjack, yellowfin and bigeye in the Gulf of Moro (the Philippines) and the Celebes Sea (Indonesia) are considered as a part of the Southwest Pacific stocks. Therefore, the stocks are subject to being shared. The problem in dealing with these species is that yellowfin and bigeye tuna stocks in this region have been stated as fully or over-exploited, while the skipjack potential and the state of its exploitation are still being assessed.³⁹

In order to maximize fishery benefits from tuna stocks, coastal states in the Southwest Pacific region, as well as distant-water fishing nations, are developing their harvesting capability in the region and its surrounding waters.

Indonesia, for example, has been developing small-scale tuna fisheries and fishing industries in the Celebes Sea. At the same time, the Philippines has been increasing its municipal and commercial fisheries capabilities in the same area. Both states are increasing their harvesting capabilities in different ways because they have different policies, interests and capabilities, and further they view the fishery resources with different goals in mind. The Philippines has been developing longline, hook and line and purse seines in the Bohol and Celebes Sea since 1961.

Years later, it has been reported that a significant number of young and immature tuna are caught by purse seine and purse seine bamboo raft.^{40,41} On the other hand, Indonesia has been developing pole and line in the Celebes and the Molucca Seas and in the waters around West Irian, while longline has been developed in the Banda Sea and the Indian Ocean since 1973. Indonesian pole and liners still operate near to the shore in order to keep close to the bait areas and to keep the bait alive. Indonesian scientists have stated that the pelagic resource potential in the Celebes Sea and its surrounding waters is still under-exploited. From this point of view, it is obvious that the scientists of both countries have different opinions about the status of the stocks in the Celebes Sea. Their opinions will of course influence decisions of both countries on fisheries development and management.

The development of the Philippines purse seine and purse seine bamboo raft fishery is apparently rapid, and a biological depletion of the resource may be realized long before adequate knowledge of the yield potential is acquired. In Indonesia and the Philippines there are always lags in the realization that overcapitalization has led to overfishing, and the decision to implement remedial actions lags even further behind. This sometimes results in the destruction of the various productive fisheries. The Peruvian anchovy, the California sardine, and some North Sea ground fish, are classic examples of fisheries that have undergone collapse because of the lack of appropriate management measures at the opportune time.

Most of the discussion about the Indonesian and Philippines fisheries assumes that the stocks in the Celebes Sea are one independent unit, and may be a part of the Southwest Pacific stock. Therefore, the continued exploitation of young tunas by the highly efficient purse seine-bamboo raft method of the Philippine fishermen may jeopardize not only the local fisheries, but also those of adjacent coastal countries.

If the above assumption is true, as stated by several scientists mentioned above, Indonesia will suffer loss or damage, but no one knows how much. It will be difficult to determine loss or damage because there is no accurate data available. As a consequence it seems that Indonesia will have difficulties in achieving policies on fishery management and fishery strategy in this area without joint cooperation with the Philippines.

The above case illustrates what happens between Indonesia and its neighboring states in the Southwest Pacific region. Micronesian countries, such as Fiji, the Solomons, French Polynesia, Nauru, Ponape, and Belau, are now participating in tuna joint ventures, mostly with Japan. In the Micronesian group, Papua New Guinea tuna is considered to be the major fishing industry. Papua New Guinea has developed the tuna purse seine through joint venture with Japan. It also has a joint venture with the United States of America to construct tuna canneries. 42
With respect to the interaction problem between Indonesia and the Philippines, unilateral actions by Micronesian countries with distant-water fishing nations will damage the interests of all

coastal states in this region. The interaction problem in this region might become more complicated and more difficult because Japan has developed long lines and has begun to develop purse seines which are more effective than other tuna fishing gears. Simultaneously, American fishing fleets began to move to the Southwest Pacific because yellowfin tuna in the Eastern Pacific have been stated by IATTC to be fully exploited. In addition, South Korean and Taiwanese fleets are still increasing their fishing capability by longline and purse seines. Competition among the major fishing countries in this region will only place Indonesia and other coastal states in a difficult position.

It is obvious that unilateral actions by an individual state against distant-water fishing nations can be very damaging to the interests of all parties. And unilateral action may place greater pressures on stocks and lead to declining yields and greater economic waste. Although Indonesia, or other coastal states in the region, may gain immediate benefits from unilateral approaches, the lack of coordination in dealing with distant-water fishing nations is likely to result in the dissipation of all benefits in the long run. As a result, an equal distribution and rational utilization of the resources, as stated in the fishery management policy of Indonesia, might be difficult to achieve.

3.2. SHARED STOCKS

Fishery resources within the Indonesian EEZ include not

only highly migratory species, but also fish stocks that do not migrate great distances, such as scads, mackerels, sardines, etc. They move freely and migrate across national boundaries, so that they can not be restricted by boundaries made by man. Consequently, Indonesia and its neighboring states might harvest the same stocks. Harvesting a stock in a given area may influence the yield of the stock of the same species in adjacent areas. These stocks are called shared stocks.

Shared stocks that are causing or might be causing significant problems are scattered along the Malacca Strait, the Sunda Shelf, and the Celebes Sea (Figure 12, 13, 14, 15, 16, 17).⁴³ The shared stocks problems faced by Indonesia and its neighboring states include biological, economic and social problems, such as the depletion of stocks, over capitalization and gear conflicts.

There is an indication that fishery resources in the Malacca Strait have been over exploited, where catch per unit effort (CPUE) of both Indonesian and Malaysian fishermen has been decreasing and fish production in this area has surpassed the maximum sustainable yield (MSY). Meanwhile, some stocks in the South China Sea, varying with region and species, are moderately or fully exploited, especially in the east coast of Peninsular Malaysia and the Gulf of Thailand. On the other hand, according to statistical data on the Indonesian fisheries in 1985, fish stock on the Sunda Shelf are still underexploited. The depletion of fish stocks has also been reported in the Celebes and Mindanao Seas and other parts of the Philippine waters.⁴⁴ The

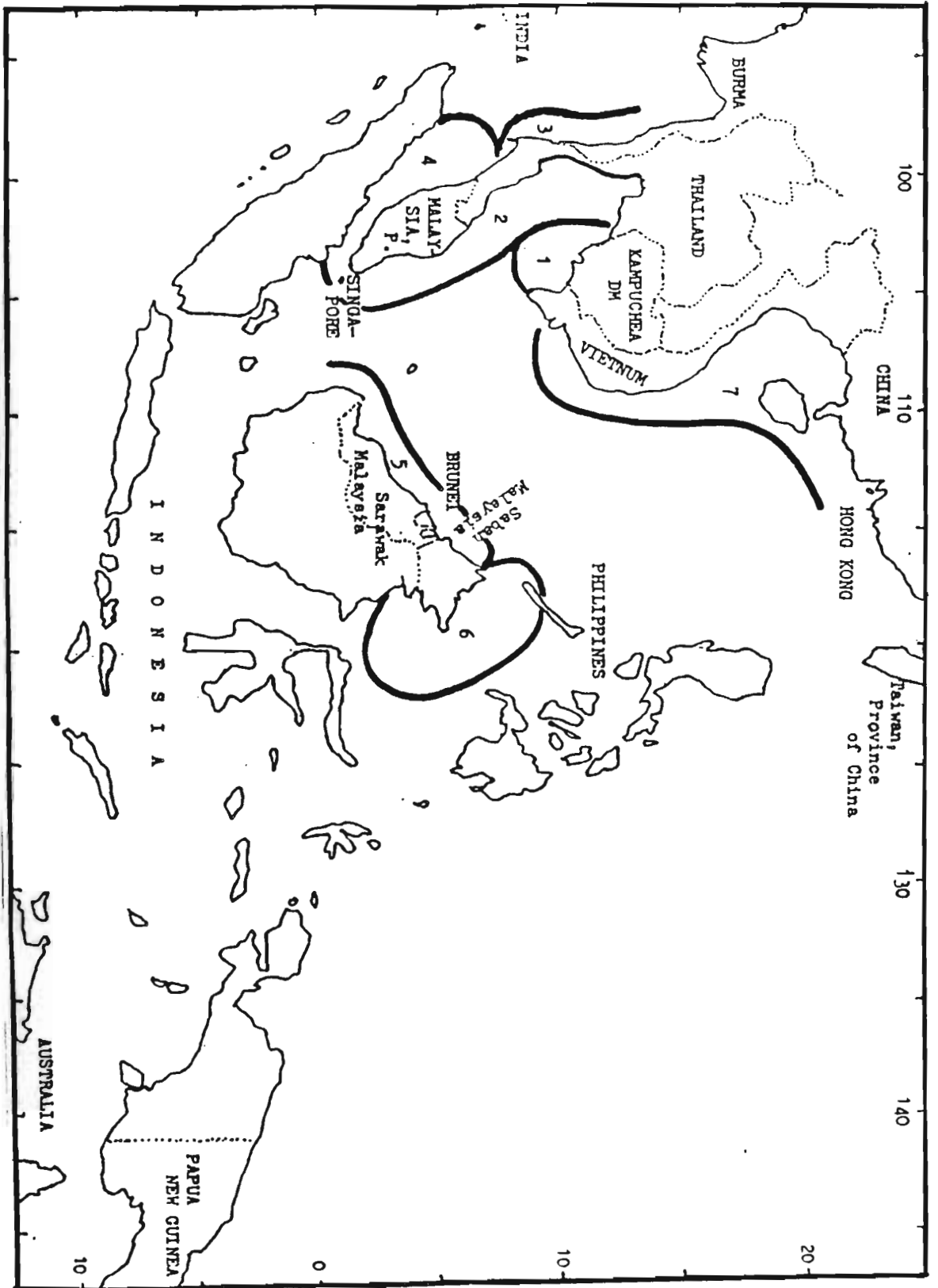


Figure 12. Shared stocks of mackerels, *Rastrelliger* spp
(FAO/SEAFDEC, 1985)

Figure 13 - Approximate location of major rivers in Indonesia

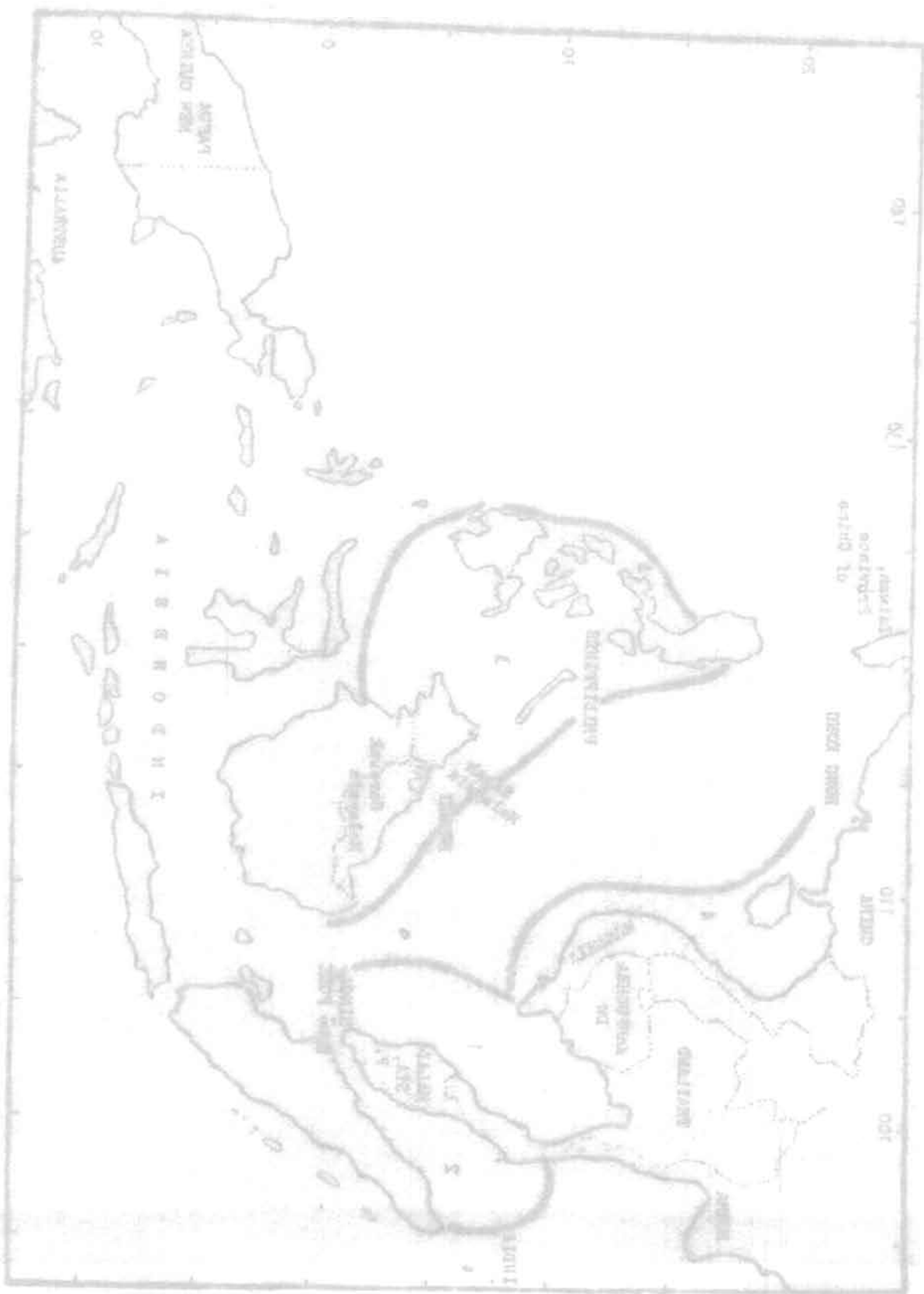


Figure 14. Shared stocks of sardine, *Sardinella* spp
 (FAO/SEAFDEC, 1985)

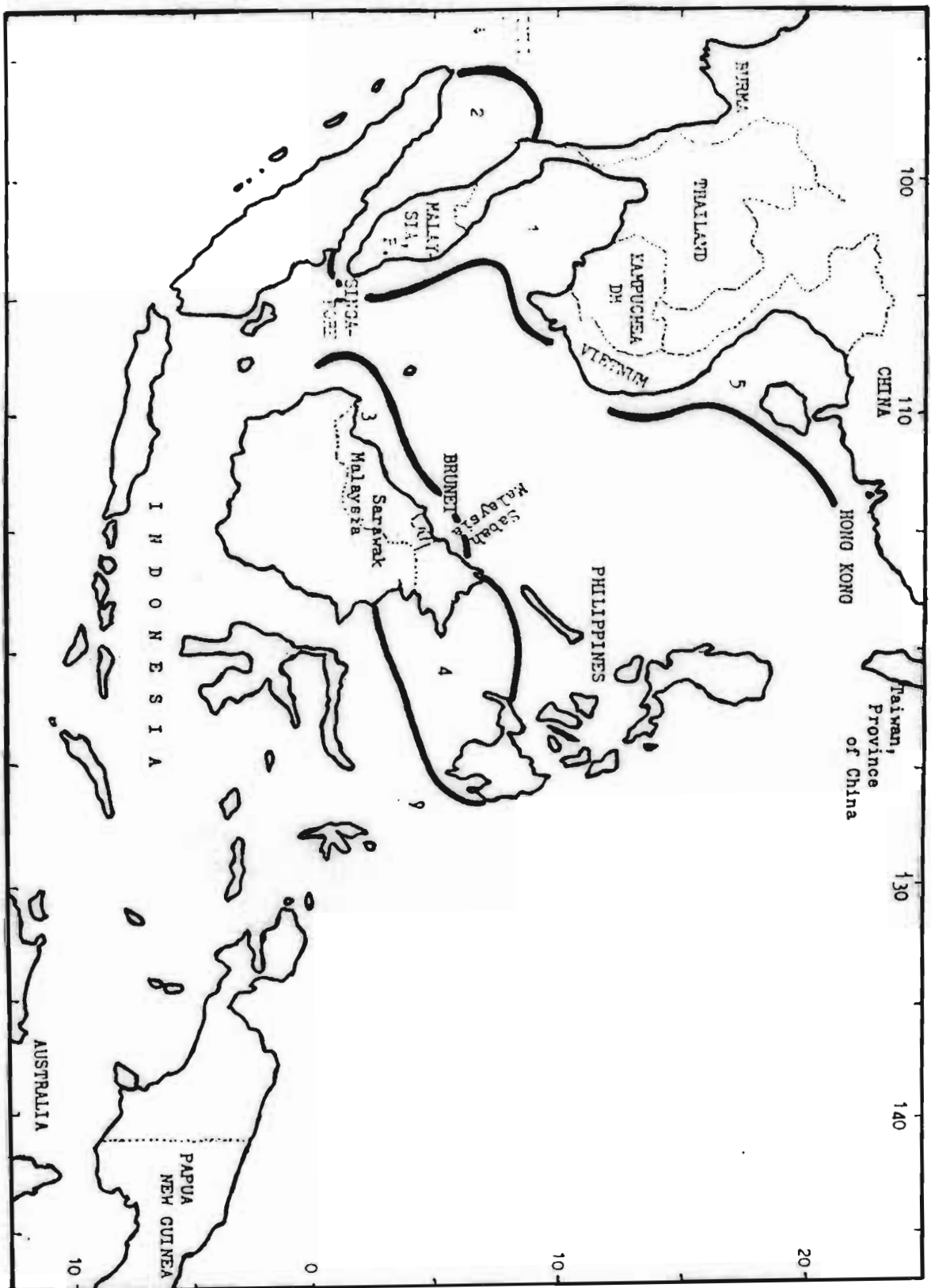


Figure 15. Shared stocks of trevallies, *Caranx* spp., *Carangoides* spp., *Alectis* spp., and *Selaroides* spp (FAO/SEAFDEC, 1985)

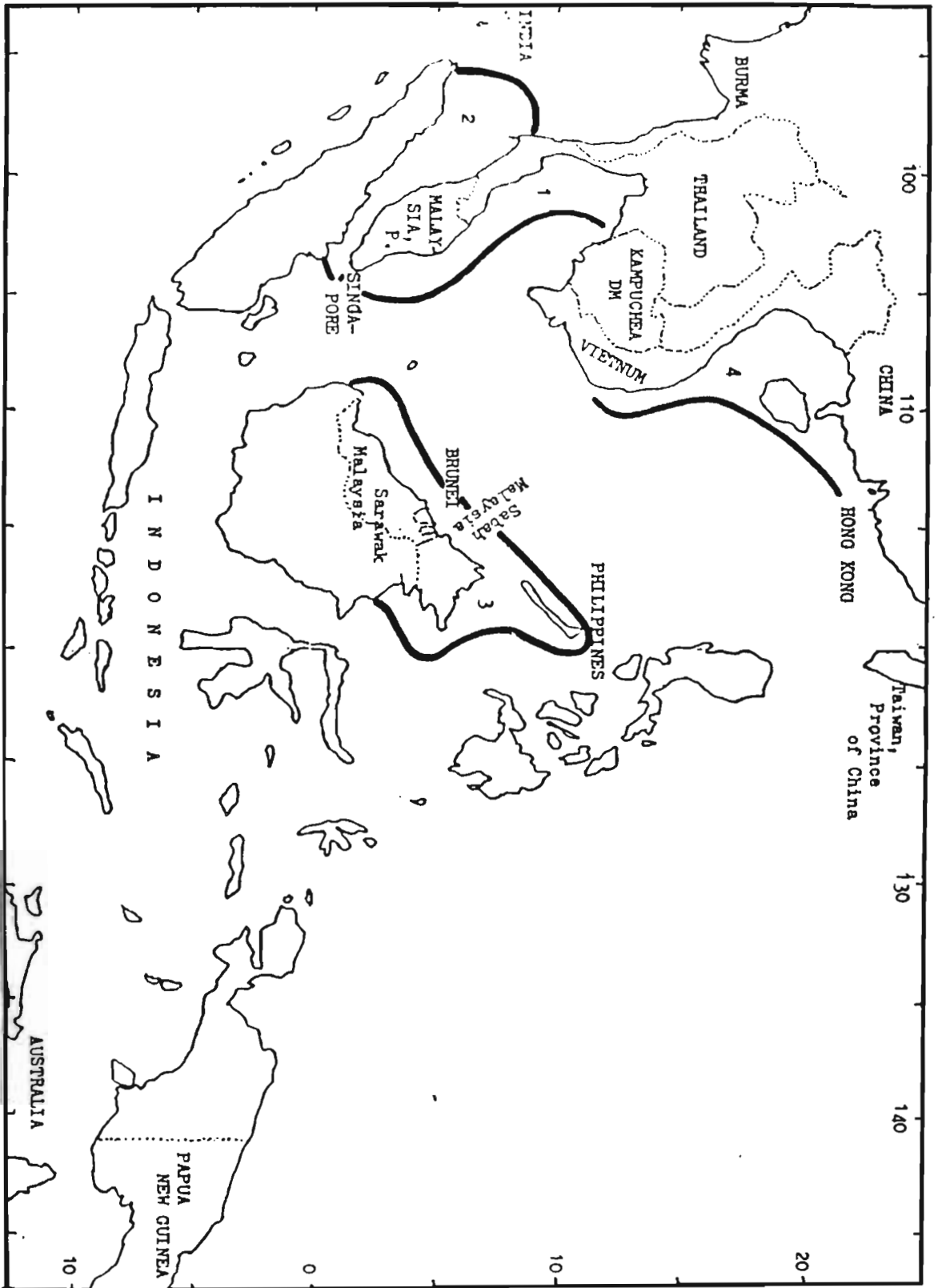


Figure 16 . Shared stocks of Spanish mackerels, Scomberomorus spp
 (FAO/SEAFDEC, 1985)

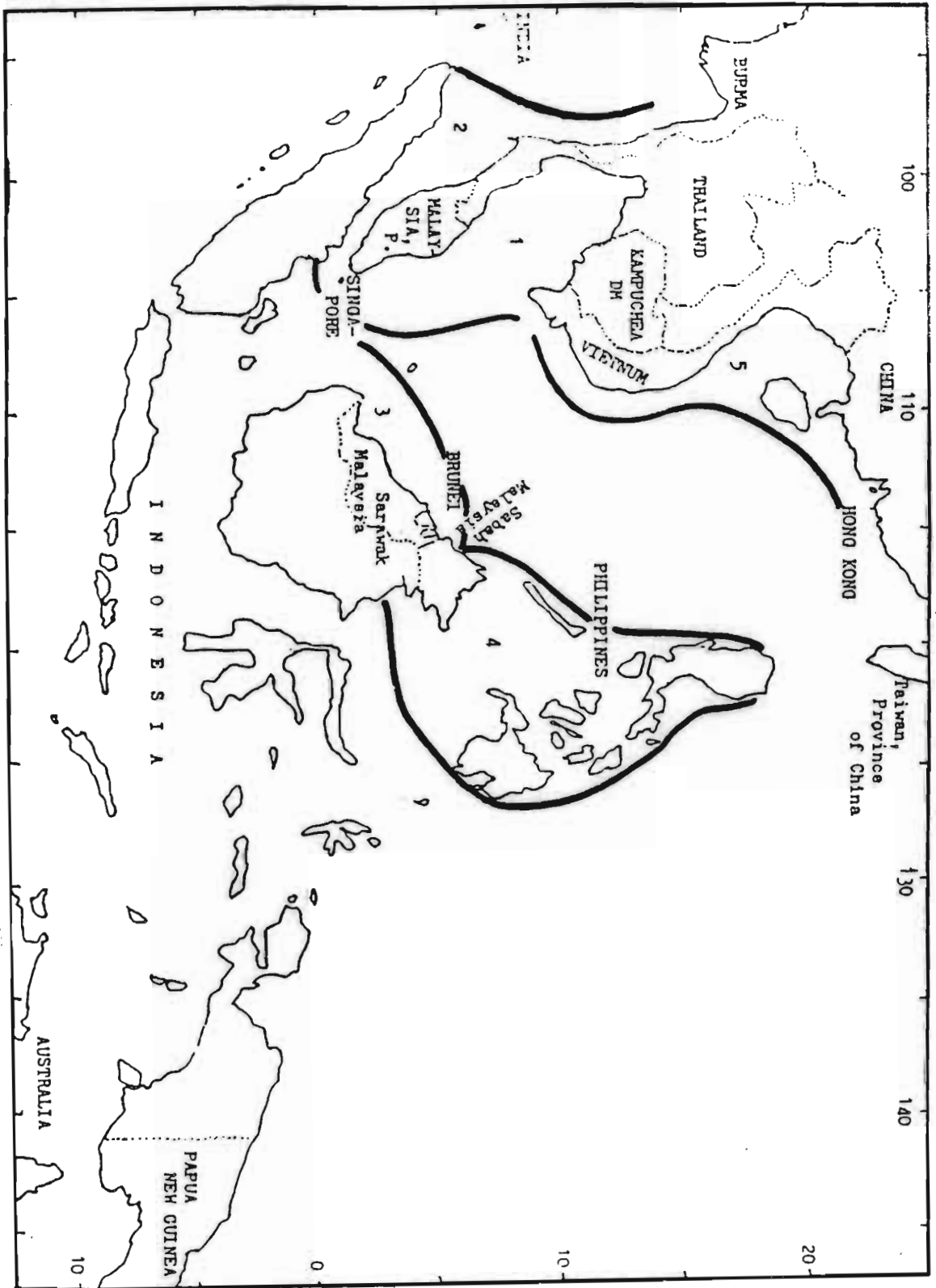
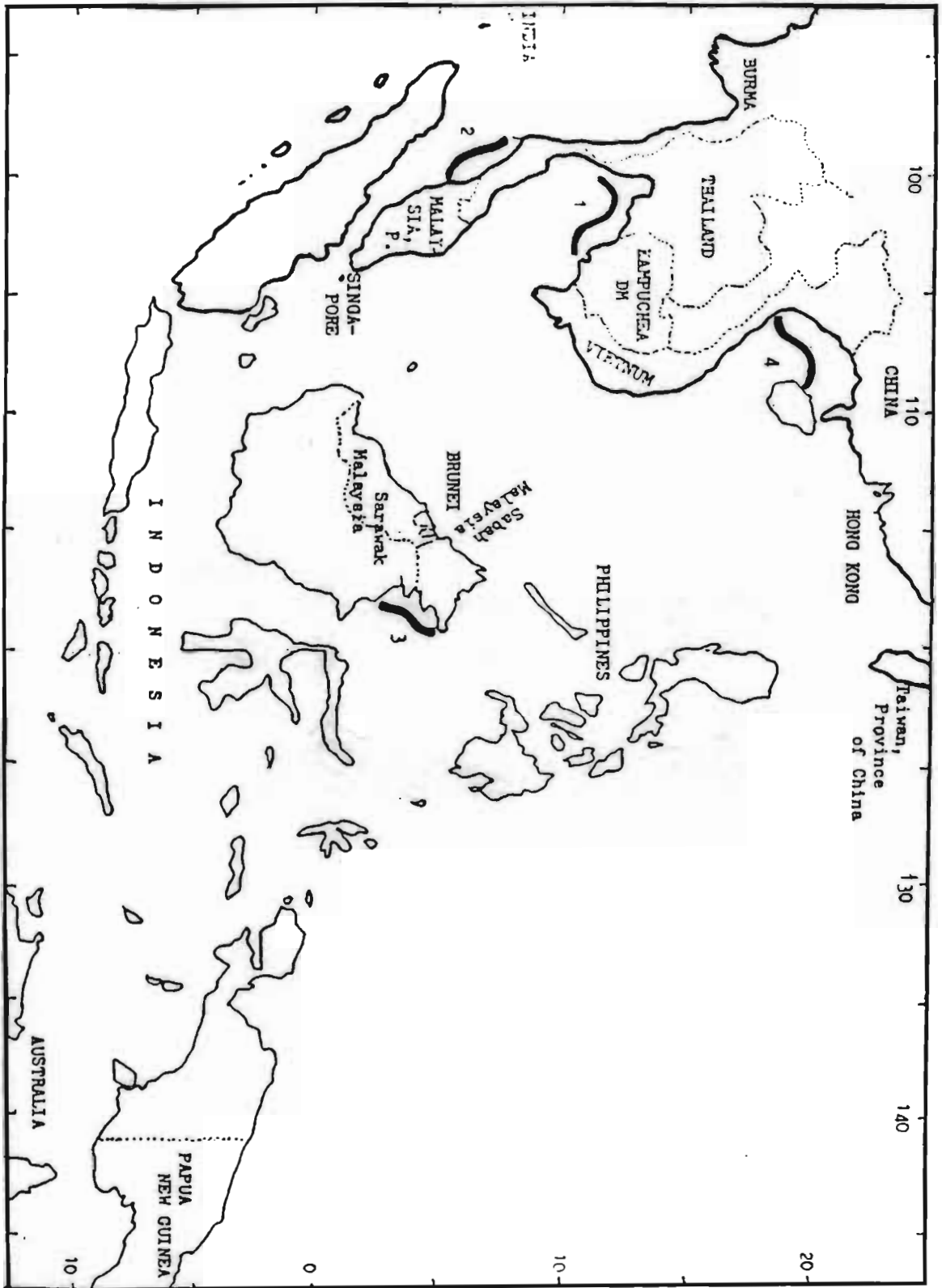


Figure 17. Shared stocks of shrimps, Penaeidae (FAO/SEAFDEC, 1985)



depletion of stocks is also accelerated by over-capitalization in the areas mentioned above, especially the Malacca Strait.

Dealing with the problems of stock depletion and over-capitalization in the Malacca Strait, the Indonesian government has introduced several management measures, such as a zoning system, mesh-size regulations and the gradual phasing out of trawlers by the Decrees of the Minister of Agriculture No. 607/KPTS/UM/9/1976 and No. 123/KPTS/UM/3/1975 and the Presidential Decree No. 39/1980. The first two management measures were intended to avoid gear conflicts and social conflicts between artisanal fishermen and the fishing industries, especially trawlers. But the zoning system apparently could not work well due to the lack of surveillance capability. Eventually, the government phased out trawlers. Zoning systems and mesh-size regulations are most suitable for situations such as that in the Malacca Strait, and are more appropriate biologically and economically than is the gradual phasing out of trawlers. This is because the gradual phasing out of trawlers has been primarily based on social consideration. In multispecies fisheries in Indonesia, drastic and absolute restrictions can do more harm than good. The prohibition of trawlers has apparently been imposed without the benefit of appropriate and adequate biological and resource management studies in accordance with standard fisheries management procedures and principles.

On the other hand, Malaysian fishermen are still operating trawlers in Malacca Strait. They might apparently gain more benefits from the use of resources than Indonesian fishermen do.

In addition, from the economic point of view they will take the Indonesian portion in the Singapore market. It seems that there is no convincing evidence that the prohibition of trawlers has improved stock abundance, or that the fishing communities depending on these fisheries have been economically benefited.

As noted above, stock depletion also occurs in the Gulf of Thailand and in the east coast of Peninsular Malaysia. For this reason, the fishing fleets of Taiwan, Thailand, Singapore and Malaysia move southward to the South Sunda Shelf. They fish mainly for demersal species within and beyond Indonesia's EEZ, sometimes inside Indonesian waters. Meanwhile the Indonesian government is now developing its small-scale fisheries capability in the area. This increase of fishing activities causes several management problems due to foreign fleets fishing the same stocks as the Indonesians. These problems are already being dealt with to some extent through informal consultations between Indonesia and its neighboring states (Malaysia, Thailand, and Singapore). Access to the resources, for example, is one of the problems.

With respect to the underexploited stocks in areas where Indonesia small-scale fisheries capability is still developing, surplus stocks might occur. This means that the right of foreign fishermen to continue fishing in such areas, in accordance with the Convention, may be considered appropriate. Such access, of course, would be under terms and conditions established by Indonesia, such as information on catches, fishing efforts by

area and time, and direct observation on board the fishing operations. In addition, the foreign fishermen could be excluded from areas such as coastal and territorial waters, that would interfere with Indonesia's fishing activities.

With respect to the fisheries development in the South Sunda Shelf, Indonesia should take into account the depletion of stocks in some areas of the South China Sea which will interact with the same stocks in the South Sunda Shelf.

Depletion of shared stocks also occurs because of fishermen using dynamite to fish such stocks and because of gear conflicts. The use of dynamite has been reported in the South China Sea⁴⁵ and the Celebes and Mindanao Seas.⁴⁶ It seems that fishermen in the areas will suffer serious economic dislocation if they continue with their illegal dynamite fishing activities. The gear conflicts have become a serious problem faced by Indonesia and the Philippines, because the dynamite fishing severely damages the stocks, which ultimately causes an imbalance in the distribution of resources among the fishermen.

It is obvious that the depletion of stocks, over-capitalization, and gear conflicts cause imbalances in the distribution of benefits from the shared stocks. There are apparently difficulties faced by Indonesia and its neighboring countries in solving these problems due to differences in fishery management measures, regulations, and types of fishing gear used. In this regard, Indonesia and its neighboring countries should cooperate in fishery management and research to avoid biological

and economic waste. Furthermore, it seems necessary for them to adopt bilateral or multilateral agreements to implement regional cooperation.

3.4. MANAGEMENT OF FOREIGN FLEETS

The purposes of management of foreign fleets are to maximize the benefits from the use of the resources, to ensure that foreign fisheries comply with agreements, and to protect the resources from poaching or illegal activities.

Based on the declaration of its EEZ, Indonesia is now exercising its sovereign rights over the resources in the zone. Paragraph 6 of this declaration states that all provisions mentioned in the declaration "will further be regulated by law and regulations". Such laws and regulations will include provisions pertaining to access of other states to the surplus of allowable catch of the resources in the EEZ of Indonesia. For this purpose the Indonesian government has introduced a set of rules and regulations on sovereign rights, jurisdiction and other obligations related to its EEZ; these are Indonesia's EEZ Law (Law No. 5, 1985), and the Management of Living Resources in Indonesia's EEZ (Government Regulation No. 15, 1984).

In connection with the regulation of foreign fleets, Indonesia has introduced 4 decrees issued by the Minister of Agriculture. According to these regulations, all foreign fishing vessels

operating in the zone shall comply with the following requirements:

- a. Foreign fishing vessels shall not engage in fishing activities in the EEZ of Indonesia without a permit issued by the Indonesian Government c.q Directorate General of Fisheries, Ministry of Agriculture, upon request of the state concerned.
- b. A permit is valid for 1 year with the possibility of an extension.
- c. Admission fees and fishing fees have to be paid prior to receiving the fishing license.
- d. Before or after fishing operations, foreign vessels which are obligated to enter the designated port shall report to the officer or officers appointed by DGF.

The other conditions that have to be performed are described in Appendix D.

As already mentioned above, Indonesia has allocated tuna and skipjack for both domestic and foreign fishing fleets in the Celebes Sea and the Indian and Pacific Oceans. In order to maximize benefits, Indonesia has chosen licensing systems and joint ventures as the form of foreign access to the resources in the areas.

In fact, the licensing system is easier to apply than a joint venture, but it is more difficult to control. It is easier to apply because the government has only to sell licenses and collect fees. On the other hand, the problem faced by the government is how to ensure that foreign fishing vessels comply with the law, regulations, and the agreement. The Banda Sea Arrangement between Indonesia and Japan is an example of the problem. There are difficulties of strictly enforcing the arrangement with Japan :

First, the area covered by the arrangement was large enough that it would be difficult for the law enforcement agencies to supervise the whole area.

Second, the area is also used by other vessels, including fishing vessels, as a transit route between the Indian and the Pacific Oceans; it is not easy to clearly distinguish between vessels which are covered by the arrangement and those which are merely passing through.

Third, the enforcement of the arrangement required an enlargement of the enforcement capabilities either in terms of personnel, equipment, and methods, or through coordination between the various enforcement agencies.

Fourth, assuming the enforcement activities at sea worked smoothly, the process of judicial solution through the courts would still be monumental. A vessel, alleged to have violated the arrangement or Indonesian rules and regulations on fishing, would have to be brought to the court which could be a few hundred miles away from the location where the vessel had been apprehended, and a few weeks or even months could pass before the case was finally settled. The financial damage both to the vessel and to the Indonesian Government (which would have to feed the crew during the waiting period) could be enormous.

To avoid this situation and the long judicial process through the court, the Indonesian government issued a "peaceful fine system" under which every violation could be fined and after paying a certain fine to the surveillance authority, the fishing vessel would be ordered to leave Indonesian waters immediately. Unfortunately, this system met with difficulties, such as misuse
48
by the authority, and eventually it was abrogated.

With respect to the above problem, it will apparently be more difficult to control licensing systems in the EEZ of Indonesia due to the vast area of waters to be covered and limited surveillance capability.

There have also been various licenses given by the Indonesian government to various Japanese companies to fish through joint venture agreements with Indonesian private fishing companies. In earlier years, such licenses were used in the Arafura Sea, mainly for shrimp. In this joint venture the companies were established under Indonesian laws, and they had the status of Indonesian companies. Their fishing vessels were registered as Indonesian vessels and the Indonesian flag should be flown. Because shrimp do not migrate as far as other demersal fish, and because all shrimp joint ventures were under Indonesian laws, such joint ventures did not create the same problems as do licensing systems.

On the other hand, a problem will appear when joint ventures are used for highly migratory species, such as tuna. With respect to the nature of the tuna stocks, fishing fleets will follow the path of tuna migrations. As a result, they will fish far away from their home base. Since there is no domestic market for tuna in Indonesia, fishing vessels prefer going directly to foreign markets rather than going back to their home base to report, because returning will be very costly. And, after selling the catch the vessel can fish again without first going to its home base. Consequently, since the stocks and fishing fleets are mobile, it will be difficult to control them and to collect data.

To solve the problems of joint venture and licensing systems, there is a form of cooperation called "indirect harvesting cooperation" that can be considered by Indonesia. In this arrangement foreign fishing vessels are not allowed to fish, only

allowed to buy fish from domestic fishermen. If this cooperation can be applied in Indonesia, it will apparently be easier to control because the surveillance authority can use Indonesian fishermen as agents of control. Furthermore, it will also help to solve Indonesia's marketing problem. In order to ensure that domestic fishermen and foreign fishing comply with laws, regulations and agreements, however, an increase of surveillance capability is still necessary.

The three systems referred to above will be more complicated to apply in the situations where a stock is shared with other states, such as the case of tuna. In these situations, the fishery benefits that can be gained by one state from the use of the resource depend upon the fishery benefits gained by other sharing states. In order to achieve an equal distribution of fishery benefits, Indonesia cannot ignore the arrangement that foreign fishermen are working out with the Philippines in the Celebes Sea, or with other countries in the Southwest Pacific.

To deal with the above situations, the sharing states must adopt bilateral or multilateral agreements to implement regional cooperation. In this regard, one should consider that such agreements might be unstable because as soon as one state believes, rightly or wrongly, that another state is in violation, there will be no incentive for the first state to continue the agreement. Each state will then attempt to maximize its own immediate catch and will invest effort until all net gains are dissipated.

One other important purpose of management of foreign fishing is that of preventing poaching and other illegal fishing activities. Poaching already occurs along boundaries between Indonesia and its neighboring states, especially in the pocket areas of the Arafura and South China Seas. At least seventy seven foreign fishing vessel were seized between 1974 and 1980. Thirty-one of those seized were Taiwanese, with two from the Philippines, and one each from Hong Kong and Singapore. Most of these seizure were either for lack of fishing documents or for lack of appropriate security clearance. (Figure 18).⁵⁰

With respect to the areas mentioned above, surveillance is concentrated in the Arafura and South China Seas, the Banda, and the Molucca Seas. Surveillance in other Indonesian waters is based on the fishing season due to limited surveillance capability. In addition, foreign fishing vessels that are engaged in fishing in the Indonesian EEZ are obligated to enter into designated ports (before and after fishing operations) and must report to the officer in the port stated in the permit; the vessels may then be inspected by an Indonesian Government Officer. The designated ports for reporting are : Tanjung Pinang (Riau, Sumatra), Tarakan (East Borneo), Bitung (North Celebes), Biak (Irian Jaya), Benoa (Bali), Jakarta, and Sabang (Aceh).⁵¹

The lack of surveillance capability will have several consequences. First, it will cause decreasing foreign interest in applying for a fishing license or permit. As a result, illegal fishing might not decrease, and might even increase. Second, it

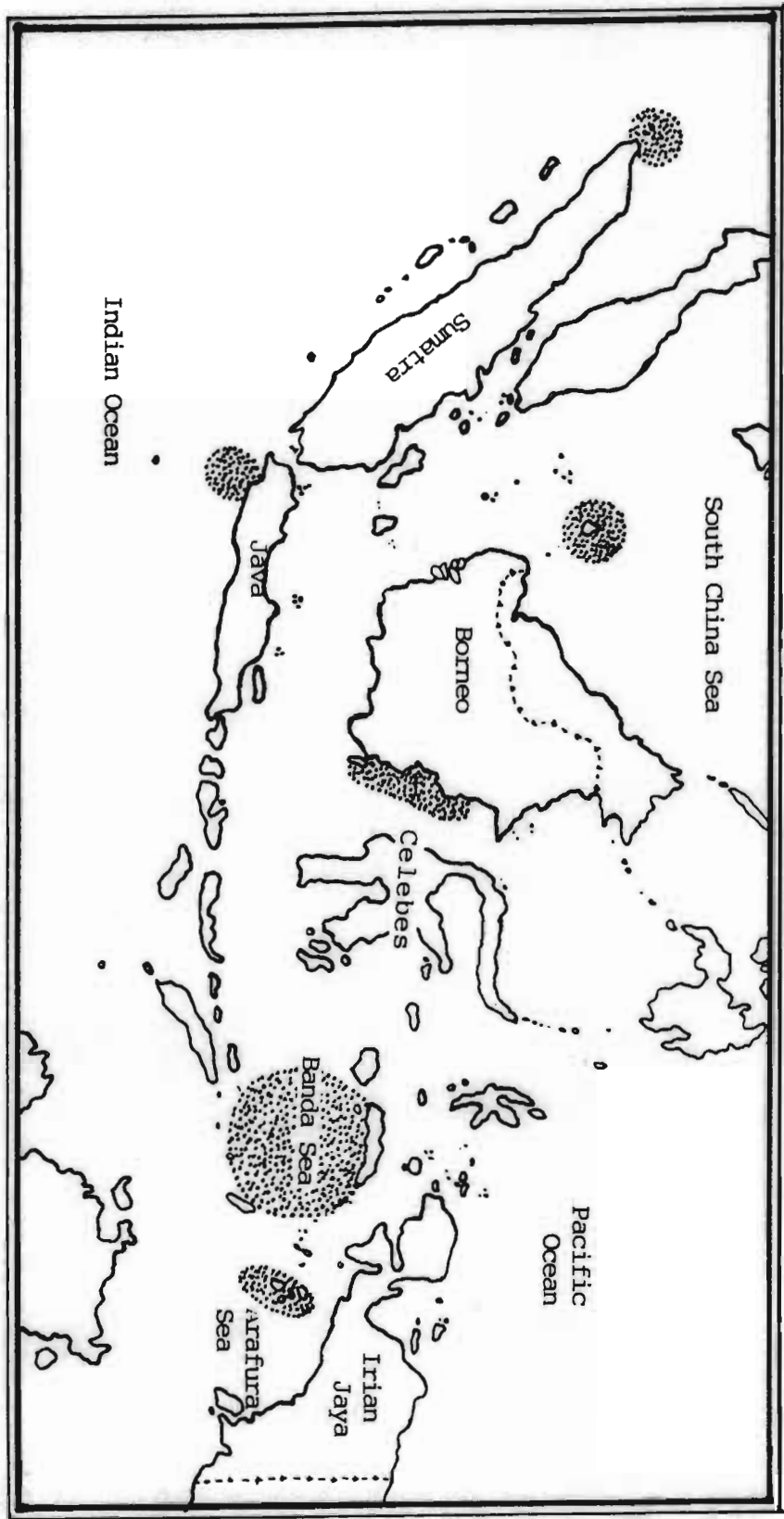


Figure 18. Areas where vessel seizures have occurred (H.F. Olson and Morgan J.R, 1985)

is difficult to ensure that the foreign fishing fleets comply with the law, regulations and agreements. Third, it is difficult to make the conditions required by the arrangement effective. Finally, it is difficult to ascertain if foreign fishing vessels have met required conditions, such as keeping fishing gear stowed during passage through archipelagic sealanes.

As a result, the prevention of poaching and other illegal fishing activities will require increased effectiveness in surveillance activities. In this regard, the increasing cost of surveillance and enforcement are borne by foreign fishing vessels by apportioning the cost through several kinds of fee or tax, such as a fishing vessel license fee, a fishing gear fee, and a catching power fee.

4. JOINT COOPERATION

By declaring its EEZ, Indonesia will increase the benefits derived from the use of its fishery resources. But this declaration itself will not solve the fishery problems because of the natural characteristics of fish that migrate from place to place. There is virtually no boundary for fish. As a result, fishery resources within the Indonesian EEZ and its neighboring countries are transnational issues.

Since different states view the resources with different goals in mind, fishery benefits that can be gained by one state from the use of the resources depend in part on the fishery benefits gained by other sharing states. In this situation, unilateral action by an individual state may be very damaging to the interests of all other sharing states. And any unilateral action will place greater pressures on stocks and lead to declining yields and greater economic waste. Even though coastal states in the same region (sharing states) may gain immediate benefits from unilateal approaches, the lack of coordination in dealing with distant-water fishing nations is likely to result in the dissipation of all the benefits in the long run. It should also be recognized that an increase of the harvesting capability of major fishing countries in their EEZs, and competition among those states that have different economic systems, will only place coastal countries of the region in more difficult positions with respect to dealing with fishery management issues.

Thus, extended jurisdiction and increased coastal state control of broader maritime areas is not a panacea for the problems associated with highly migratory and shared stocks, with unrestrained expansion of the mobile fleets of major fishing countries, and with the export market monopoly of developed countries over processed tuna products. Dominant fishing countries probably wish for a management system that would preserve the present pattern of catch distribution, but this is no longer acceptable to the many coastal states who wish to develop their own fishing fleets and increase the benefits from the use of the resources within their EEZ. The dilemma is exacerbated by the fact that any enlargement of the fishing fleets of distant-water and coastal states will only increase fishing pressures without increasing worldwide catch, and perhaps might even deplete the overall fishery resources.

It is obvious that the need for sub-regional, regional, and international cooperation is inevitable. To deal effectively with transnational fishery issues, regional and international organizations, such as the Indo-Pacific Fishery Council (IPFC) and the Indian Ocean Fishery Commission (IOFC), can greatly contribute to management efforts through fishery research, identification of fish stocks, and assesment of maximum sustainable yield.

Indonesia is a member of both IPFC and IOFC. These two organizations are involved in scientific fishery management and conservation in the Indian Ocean and the Indo-Pacific region; it can be added here that the South Pacific Forum Fisheries Agency

(SPFFA) serves the South Pacific.

No fishery management system presently exists in the Southwest Pacific and Indian Oceans. This is because several countries are not members of the same fisheries regulatory agencies in the region, also most of them have not developed their fisheries. Collaboration in fishery management among the member and non-member nations can not be achieved unless they are bound by a regulatory body.⁵³

In the Southeast Asian region, Indonesia and its neighboring states are aware of the responsibilities and problems of fishery management in relation to the EEZ, but they have not established a regional fishery management yet. This is apparently due to the fact that only Indonesia and the Philippines are interested in fishery development in the EEZ. ASEAN, the Association of Southeast Asian Nations composed of the Philippines, Indonesia, Thailand, Malaysia, Singapore and Brunei, apparently does not have concrete plans to promote fishery management cooperation in the EEZ. ASEAN, however, could serve as an effective tool for Southeast Asian fishery cooperation.⁵⁴

It will take time to create global or regional fishery management programs. While waiting for such programs to be formed, Indonesia could conclude bilateral or multilateral arrangements with the Philippines and Papua New Guinea to implement regional cooperation, as for example in exchanging surveillance data.

CONCLUSION

1. With the declaration of the Indonesian EEZ by Presidential Decree on 21 March 1980, Indonesia has acquired a vast area of approximately 5.8 million sq.km of sea water area, which consists of 2.8 million sq.km of internal and archipelagic waters, 0.3 million sq.km of territorial sea, and 2.7 million sq.km of EEZ. The Indonesian EEZ comprise 3 main areas : the Indian Ocean from north of Sumatra to south of Nusa Tenggara, up to the Arafura Sea, the South China Sea, and the Pacific Ocean including the Celebes Sea. This water area makes up 70% of Indonesia's national territory.

2. The fisheries sector is an important part of Indonesia's economy as a source of foreign exchange and the greatest source of animal protein for the Indonesian people's diet.

In general, Indonesian fisheries are dominated by small-scale operations, characterized by low technological inputs and low productivity. The development of small-scale fisheries is directed to the offshore waters or to artisanal fishermen moving away from their usual grounds by upgrading and modifying their present techniques and equipment. According to the fisheries development plan, small-scale fisheries will be developed in the EEZ of Indonesia in the south Sunda Shelf, and small-scale tuna fisheries will be developed off the west coast of Sumatra and in the eastern waters of Indonesia.

3. For the purpose of managing the small-scale fisheries,

including resources conservation and prevention of unfair competition between different types of fishing operations, several regulatory measures have been introduced. These are : Decree of Minister of Agriculture No. 607/KPTS/UM/9/1976 and No. 609/KPTS/UM/9/1976 concerning the fishing zone, and No. 123/KPTS/UM/3/1975 concerning the limitation of the mesh size of purse seines. However, since the boundaries of fishing zones are invisible, law enforcement was difficult and very costly due to limited surveillance capability. Eventually, in order to avoid social conflicts, the government decided to phase out trawlers gradually by Presidential Decree No. 39/1980.

4. Development of commercial fisheries was encouraged by the enactment of Domestic Investment Private Law No.6,1969, Foreign Investment Law No. 1,1967, and was stimulated by providing bilateral and multilateral fisheries loan agreements.

5. By exercising a high degree of its authority within the EEZ, Indonesia can gain more benefits from the use of fishery resources than before the declaration, but the benefits may not be particularly great since Indonesia must bear the management cost of the acquired resources. Furthermore, with respect to the nature of the stocks within the EEZ, Indonesia has to share the fishery benefits with its neighboring states and foreign distant-water nations.

6. With regard to the utilization of fishery stocks in the EEZ, the government of Indonesia has introduced a set of rules and regulations on sovereign rights, jurisdiction and other

obligations related to the EEZ. These are Indonesia's EEZ Law (Law no. 5, 1983), and Management of Living Resources in the Indonesia's EEZ (Government Regulation Np. 15, 1984). For the implementation of those regulations, the Minister of Agriculture has issued decrees, namely : decree concerning Total Allowable Catch, licensing for fishing in Indonesia's EEZ, the kind and amount of fees charged, and the check points for fishing vessels operating in Indonesia's EEZ. It is stated in those regulations that fishing permit will not be given to the foreign fishing vessels unless the country from which those individuals or enterprises came has signed a bilateral agreement concerning cooperation in the fishery with the government of Indonesia.

7. In order to gain more benefits from their EEZ, states in the region are increasing their harvesting capabilities in different ways according to their policies, interest, and capabilities . The interaction problems in the region become more complicated and more difficult because distant-water nations develop more effective tuna fishing gear. Unilateral actions by individual states against distant-water fishing nations involve greater economic waste. Although Indonesia, and other coastal states in the region, may gain immediate benefits from unilateral approaches, the lack of coordinations is likely to result in the dissipation of all benefits in the long run. Therefore, an equal and rational utilization of the resources, as stated in the Indonesia's fishery management policy, might be difficult to achieve.

8. Shared stocks - fish stocks that migrate across national

boundaries and are harvested by two or more states-, are scattered along the Malacca Strait, the Sunda Shelf, and the Celebes Sea. These shared stocks include scads, mackerels, sardines, trevalies, and shrimp. It has been reported that fishery stocks in Malacca Strait and the Celebes Sea have been overexploited, some stocks in the South China Sea are moderately or fully exploited, while fish stocks on the Sunda Shelf are still underexploited. The increase of fishing activities by Taiwan, Thailand, Singapore, Malaysia, the Philippines, and Indonesia for the same stocks causes several management problems. The differences in fishery management measures, regulations, and types of fishing gear used cause difficulties in solving the problems incurred. These problems are already being dealt with to some extent through informal consultations between Indonesia and its neighboring states. Therefore, it seems necessary to adopt bilateral or multilateral agreements to implement regional cooperation.

9. Indonesia has chosen licensing systems and joint ventures as the forms of foreign access to the resources in the EEZ. The problem faced by Indonesia is how to ensure that foreign fishing vessels comply with the law, regulations, and the agreement, especially due to the vast area of waters to be covered and limited surveillance capability. The lack of surveillance capability will have several consequences, among others being the decrease of foreign interest for applying for fishing license, difficulties in ensuring that foreign fishing fleets comply with law, regulation and agreements, difficulties in making the

conditions required for effective arrangement, and difficulties in ensuring that foreign fishing fleets have meet required conditions. Therefore, an increase in effectiveness of surveillance and enforcement are badly required. In this regard, the increasing costs of surveillance and enforcement are borne by foreign fishing vessels by apportioning the cost through several kinds of fee or tax.

10. The enlargement of the fishing fleets of coastal and distant-water states will increase fishing pressure without increasing worldwide catch, and perhaps might even deplete the overall fishery resources. Regional and international organizations are required, which can greatly contribute to management efforts through fishery research, identification of fish stocks, and assesment of maximum sustainable yield. Since there is no fishery management system presently existing in the Southeast Asian region, Indonesia could profitably conclude bilateral or multilateral arrangements with its neighbouring states to implement regional cooperation.

NOTES

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2. Asian Development Bank, Indonesian Fisheries Sector-Study, ADB, December 1983, 168 p.

3. Directorate General of Fisheries, Fishery Statistic of Indonesia, Jakarta, 1985.

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7. Directorate General of Fisheries, Country Statement of the Republic of Indonesia, Department of Agriculture, Jakarta, 1987, 18 p.

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10. Prescott, J.R.V, "Maritime Jurisdiction Issues" in G.Kent and M.J.Valencia (eds), Marine Policy in Southeast Asia, (University of California Press), 1985, p: 58 - 97.

11. Elisabeth D.Samson, "Fisheries" in G. Kent and M.J. Valencia (eds), Marine Policy in Southeast Asia, (University of California Press), 1985, p: 101 - 154.

12. Paragraph 2 of the Declaration of the 200 n.mi EEZ of Indonesia. See also Article 56 of the 1982 LOS Convention which states that in the EEZ the coastal state has sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or nonliving, of the seabed and subsoil and superadjacent waters,

13. Burke, William.T, The Extended Fisheries Jurisdiction and New Law of the Sea, University of Washington, December 1981.

14. Articles 61 and 62 of the 1982 LOS Convention admonish the coastal state to "determine the total allowable catch (TAC)- and its capacity to harvest the living resources of its exclusive economic zone; and where the coastal state does not have the

capacity to harvest the entire allowable catch ... it shall .. give other states access to the surplus of the allowable catch.." Further, the coastal state in giving access to other states "shall take into account .. the requirements of the developing countries in the subregion or region in harvesting part of the surplus and the need to minimize economic dislocation in states whose nationals have habitually fished in the zone or which have made substantial efforts in research and identification of stocks".

15. Miles, Edward L., The Impelemantion of the Convention on the Law of the Sea and the New Ocean Regime for Scientific Data and Information Exchange Program of the IOC, Hamburg, Federal Republic of Germany, 1981.

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21. Ibid

22. FAO Fisheries Yearbook, Food and Agriculture Organization, Rome, 1985.

23. Foreign Investment Law No. 1, 1967.

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28. Saila.S.B. and Norton.W.J. , Tuna : Status, Trends and Alternative Management Arrangements, (Resources for the Future, Inc), 1974, 59 p.
29. Miles, Edward L., Implication of the Convention on the Law of the Sea and the New Ocean Regime for Scientific Data and Information Exchange Programs of the IOC, Hamburg, 1981.
30. Christy, Francis T. Jr., Changes in the Law of the Sea and the Effects on Fisheries Management : with Particular Reference to Southeast Asia and The Southwest Pacific, ICLARM, 1978.
31. Saila.S.B. and Norton.W.J., Tuna: Status, Trends, and Alternative Management Arrangements, (Resources for the Future, Inc), 1974, 59 p.
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33. A Memorandum from the Executive Director, Micronesian Maritime Authority, with Subject : Japan - Indonesian Unofficial Agreement on Banda Sea Fishing, October 17, 1979.
34. Ueyanagi, S., "Observation on the Distribution of Tuna Larvae in the Indo-Pacific Ocean with Emphasis on the Delineation of the Spawning Areas of Albacore, Thunnus alalunga, Bull. Far. Seas Fish. Res. Lab. (2), 1969, p: 177 - 256.
35. Fujino, K., "Range of the Skipjack Tuna Subpopulation in the Western Pacific Ocean ", Proceeding of the Second CSK Symposium , Tokyo, 1972, P: 373 - 384.
36. Kearney, R.E., "The Stocks Structure of Skipjack Resources and the Possible Implications on the Development of Skipjack Fisheries in the Central and Western Pacific", FAO Fisheries Tech. Paper (144), 1975, p: 59 - 69.
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38. Chikuni, S., "Report on Fishing for Tuna in the Philippines Waters and Biological Features of the Resources", Iest Fishing for Tuna and Small Pelagic Species , South China Sea Development and Coordinating Programme, Manila, Philippines, 1976, p: 1 - 44.
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51. Decree of the Minister of Agriculture No. 476/KPTS/UM/7/1985 concerning the reporting places for fishing vessels which have been granting fishing permits in Indonesian EEZ.

52. According to the Decree of the Minister of Agriculture No. 477/KPTS/UM/7/1985, the amount of fishery fees is determined as follow :

- a. Registration fee : US \$ 3.00/GT of vessel
- b. Ammendment fee : US \$ 100.00 every revising needed
- c. Fishing fee within one year period of fishing :
 - US \$ 69.00/cubic meters of fish hold for vessel with long line
 - US \$ 82.00/cubic meters of fish hold for vessel with pole and line
 - US \$ 85.00/cubic meter of fish hold for vessel with purse

seine

- US \$ 44.00/cubic meters of fish hold for vessel with gill-net or another type of fishing gear except trawl.

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54. Aprieto, Virginia L., Fishery Management and Extended Maritime Jurisdiction : The Philippines Iuna Fisheries Situation, East-West Center, Research Report No. 4, 1981.

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Appendix A. Indonesian Declaration on Exclusive Economic Zone (EEZ)

INDONESIA

Act No.5 of 1983 on the Indonesian exclusive economic zone,

18 October 1983

Chapter I

General provision

Article 1

For the purposes of this Act,

- a. "Living natural resources" means all species of animals and plants, including their divisions, found on the sea-bed and in the water area of the Indonesian exclusive economic zone;
- b. "Non-living natural resources" means natural substances being non-living natural resources, found on the sea-bed and in the subsoil thereof as well as in the water area of the Indonesian exclusive economic zone;
- c. "Scientific research" means any activity in connection with the research on any maritime aspects on the water surface, in the water column, on the sea-bed and in the subsoil thereof the sea floor in the Indonesian exclusive economic zone;
- d. "Conservation of natural resources" means all efforts aimed at protecting and preserving the natural resources in the Indonesian exclusive economic zone;
- e. "Marine environmental protection and conservation" means any effort aimed at preserving and maintaining the whole of the marine ecosystem within the Indonesian exclusive economic zone.

Chapter II

Indonesia's exclusive economic zone

Article 2

The Indonesian exclusive economic zone is the outer strip bordering the Indonesian territorial sea as determined by the law applicable to the Indonesian waters, covering the sea-bed, the subsoil thereof and the water above it with an outermost limit of 200 (two hundred) nautical miles, measured from the baseline of the Indonesian territorial sea.

Article 3

- (1) In the event that the Indonesian exclusive economic zone overlaps the exclusive economic zone of another State whose coastline is opposite or adjacent to that of Indonesia, then the boundary line between the exclusive economic zone of Indonesia and that of the other State shall be established by agreement between the Republic of Indonesia and the State concerned.
- (2) So long as such agreement as referred to in paragraph (1) does not exist, and no special conditions need to be considered, the boundary line between the exclusive economic zone of Indonesia and that of the other State shall be the median line or a line that is equidistant from the baselines of Indonesia territorial sea or the outermost points of Indonesia and the baselines of the territorial sea or outermost points of the other State, except if an agreement has been reached with the said State on a provisional arrangement of the boundaries of the Indonesian exclusive economic zone.

Chapter III

Sovereign rights; other rights, jurisdiction and duties

Article 4

- (1) Within the Indonesian Exclusive Economic Zone, the Republic of Indonesia shall have and exercise:
 - a. Its sovereign rights to conduct the exploration, exploitation, management and conservation of the living and non-living resources on the sea-bed and in the subsoil thereof, as well as the water above it, including other activities for the purpose of economic exploration and exploitation of said zone, such as the generation of power by means of water, current and wind;
 - b. Its jurisdiction in connection with:
 1. The construction and use of artificial islands, installations and other structures;
 2. Marine scientific research;
 3. The protection and conservation of the marine environment;
 - c. Other rights and duties, based on the applicable provisions of the Convention on the Law of the Sea.

- (2) As far as it concerns the sea-bed and the subsoil thereof, the sovereign rights and other rights, jurisdiction and duties of Indonesia as referred to in paragraph (1), shall be exercised in accordance with the legislative provisions on the Indonesian continental shelf, agreements concluded between the Republic of Indonesia and neighbouring States and the rules of international law in force.
- (3) Within the Indonesian exclusive economic zone, the freedom of international navigation and overflight, as well as the freedom of laying submarine cables and pipelines, shall be respected in accordance with the principles of the international law of the sea.

Chapter IV

Activities within the Indonesian exclusive economic zone

Article 5

- (1) Without prejudice to the provision in article 4, paragraph (2), the exploration and/or exploitation of natural resources or any other activities for the purpose of the economic exploration or exploitation of said natural resources, such as generation of power by means of water, current or wind within the Indonesian exclusive economic zone, may only be conducted on the permission of the Government of the Republic of Indonesia, or on the basis of an international agreement concluded with the Government of the Republic of Indonesia. Such activity has to be carried out under the conditions of such permit or such international agreement.
- (2) Without prejudice to the provision in paragraph (1), any exploration and/or exploitation of the living natural resources shall comply with the provisions on management and conservation as stipulated by the Government of the Republic of Indonesia.
- (3) Without prejudice to the provision in article 4, paragraph (2), any exploration and/or exploitation of the living resources in a certain area within the Indonesian exclusive economic zone, conducted by any person, a corporate body or Government of a foreign State, may be permitted provided that the catch as allowed by the Government of the Republic of Indonesia of the species in question is in excess of Indonesia's capacity to harvest the allowable catch.

Article 6

Whoever constructs and/or used any artificial island or installations or other structures within the Indonesian exclusive economic zone, may do so based on the permission of the Government of the Republic of Indonesia. Such activities have to be carried out under the conditions of such permit.

Article 7

Whoever intends to conduct any scientific research activity in the Indonesian exclusive economic zone has to ensure that such activity shall obtain the prior consent of, and such activity shall be carried out under the conditions as determined by, the Government of the Republic of Indonesia.

Article 8

- (1) Whoever conducts any activity within the Indonesian Exclusive Economic Zone has the duty to take steps towards preventing, minimizing, controlling and surmounting the pollution of the environment.
- (2) Discharge of waste in the Indonesian exclusive economic zone may be effected only after having obtained the permission of the Government of the Republic of Indonesia.

Chapter V

Indemnity

Article 9

Whoever conducts any activity in violation of the provisions of the statutory regulations of the Republic of Indonesia and international law in relation to artificial islands, installations or other structures within the Indonesian exclusive economic zone and causes loss shall be liable for such loss and shall pay indemnity to the owner of such artificial islands, installations and/or other structures.

Article 10

Without prejudice to the provision in article 7, whoever conducts any activity within the Indonesian exclusive economic zone in violation of the provisions of the statutory regulations of the Republic of Indonesia and the rules of international law, as applicable to the field of marine scientific research, and causes loss shall be held responsible for such loss and shall pay indemnity to the Republic of Indonesia.

Article 11

- (1) Without prejudice to the provision in article 8 and with due observance to a fixed maximum of indemnity, whoever causes pollution of the marine environment and/or damage to the natural resources within the Indonesian exclusive economic zone shall be held fully responsible for such pollution or damage and shall pay immediately a reasonable amount of the rehabilitation costs for the marine environment and/or natural resource.
- (2) Exempted from the full responsibility as provided for in paragraph (1) are those who can prove that such pollution of the marine environment and/or damage to the natural resources was the result of:
 - a. A natural calamity, being beyond one's power;
 - b. A damage which wholly or partly was caused by an act or negligence of a third party.
- (3) The form, type and size of the loss resulting from the pollution of the marine environment and/or damage to the natural resources shall be fixed on the basis of the outcome of an ecological investigation.

Article 12

The regulation pertaining to the limit of maximum indemnity, method of ecological investigation and claim for damages, as referred to in article 11, shall be dealt with by statutory regulations as referred to in article 20.

Chapter VI

Law enforcement

Article 13

In exercising the sovereign rights and other rights, jurisdiction and duties, as specified in article 4, paragraph (1), the competent law-enforcement agency of the Republic of Indonesia may take law-enforcement measures in accordance with Act No.8 of 1981 on the Code of Criminal Procedure with the following exceptions:

- (a) In the case of any ship and/or persons deemed to have committed an offence within the Indonesian exclusive economic zone, such measures shall include

the detention of the ship until the handing over of such ship and/or persons at the port, where the said case can be further prosecuted.

- (b) The handing over of such ship and/or persons shall take place as soon as possible, not exceeding a period of 7 (seven) days, except in case of a force majeure.
- (c) For the purpose of detention, the criminal act as referred to in article 16 and article 17, shall come under the category of criminal acts as referred to in article 21, paragraph (4), letter b, Act No.8 of 1981 on the Code of Criminal Procedure.

Article 14

- (1) The law-enforcement agency in the field of investigation within the Indonesian exclusive economic zone is a Navy Officer of the Indonesian Armed Forces, so assigned by the Commander-in-Chief of the Armed Forces of the Republic of Indonesia.
- (2) The plaintiff is the public prosecutor attached to the court of first instance as referred to in paragraph (3).
- (3) The court of justice authorized to try offences arising from violation of the provisions of this Act is the court of first instance whose jurisdiction covers the port where the detention of such ship and/or persons as referred to in article 13, letter a, has taken place.

Article 15

- (1) Any request for the release of such ship and/ or persons arrested on the ground of being accused of having committed a violation of this act or any legislative provision issued on the basis of this act may be filed at any time prior to the verdict of the competent court of first instance.
- (2) Any request for such release as provided for in paragraph (1) may be complied with after the claimant has handed over a reasonable amount of bail as fixed by the competent court of first instance.

Chapter VII

Penal provisions

Article 16

- (1) Whoever commits a violation of the provisions in article 5, paragraph (1), article 6 or article 7 shall be punished by a fine to a maximum of Rp 225,000,000 (two hundred and twenty-five million rupiahs).
- (2) The court in its verdict may decide to confiscate the products of activity, the ship and/or the equipment used in committing the criminal act as referred in paragraph (1).
- (3) Whoever deliberately commits an act causing damage to the life environment or the pollution of the life environment within the Indonesian exclusive economic zone shall be threatened with punishment in accordance with the legislative provisions applicable to the field of life environment.

Article 17

Whoever damages or destroys the evidences used in committing a criminal act referred to in article 16, paragraph (1), with the purpose of avoiding the confiscation of said evidences during the investigation, shall be punished by a fine to a maximum of Rp 75,000,000 (seventy-five million rupiahs).

Article 18

The criminal act referred to in article 16 and article 17 shall be regarded as a crime.

Chapter VIII

Transitional provision

Article 19

Any provisions on the exploration and/or exploitation of the living resources enacted before the promulgation of this act shall remain in force until changes are made by virtue of legislative provisions issued on the basis of this Act.

Chapter IX

Closing provisions

Article 20

- (1) Other statutory regulations shall be adopted to implement further the provisions of this Act.
- (2) The government regulation in implementing the provisions of this Act may stipulate a maximum fine of Rp 75,000,000 (seventy-five million rupiahs) against any violation of its provisions.

Article 21

This Act shall come into force as from the date of its promulgation. In order that everybody may have knowledge of it, the promulgation of this act is hereby ordered through its placing in the State Gazette of the Republic of Indonesia.

STATE GAZETTE OF THE REPUBLIC OF INDONESIA OF 1983, No.44.

ANNEX

Elucidation of Act No.5 of 1983

I. GENERAL

The Government of the Republic of Indonesia has long since felt the great importance of the exclusive economic zone to support the realization of the Archipelagic Outlook in the framework of improving the welfare of the Indonesian nation, by way of utilizing all natural resources, both living and non-living, found within its exclusive economic zone.

Based on what is mentioned above and in order to safeguard the national interest, particularly in the matter of satisfying the need of the Indonesian people for animal protein and in regard to the utilization of non-living resources, protection and conservation of the marine environment and marine scientific research, the Government of the Republic of Indonesia issued a government announcement on 21 March 1980 on the Indonesian exclusive economic zone.

International law on the exclusive economic zone has been developed by the international community through the Third United Nations Conference on the Law of the Sea and State practice, and is aimed at protecting the interests of the

coastal State against the danger of exhausting the natural resources adjacent to its coast by fishery activities on the basis of the regime of the high seas.

Besides, the exclusive economic zone also serves to protect the interests of coastal States in the field of the conservation of the marine environment and the conduct of marine scientific research in the framework of supporting the utilization of natural resources within the exclusive economic zone.

The United Nations Convention on the Law of the Sea has provided the Republic of Indonesia in its capacity as a coastal State with the sovereign right to explore and exploit the natural resources found within the exclusive economic zone and the jurisdiction relating to the exercise of such sovereign right.

On the other hand, Indonesia has the duty to respect the right of other States in its exclusive economic zone, such as the freedom of navigation and overflight, as well as the freedom of the laying of submarine cables and pipelines within the exclusive economic zone.

With special reference to the utilization of the living resources found within the Indonesian exclusive economic zone, any other State may, in accordance with the United Nations Convention on the Law of the Sea, take part in utilizing the living resources, so long as Indonesia has not yet fully utilized all of these living resources.

Besides announcing the above-mentioned principles and basic policies, which are primarily directed towards the outside world, it was found necessary also that said principles and basic policies be laid down in an Act so as to provide a solid basis for the exercise of the sovereign right, other rights, jurisdiction and duties within the exclusive economic zone, so that, in this way, legal security may be established as well.

It was in this connection that the Act on the Indonesian Exclusive Economic Zone was drawn up, which stipulates the sovereign right, other rights, jurisdiction and duties of the Republic of Indonesia within its exclusive economic zone.

This Act only provides the basic rules, while further implementation of the provisions of this act shall be laid down in other statutory regulations.

II. ARTICLE BY ARTICLE

Article 1

The term "living resources" in this act means the same as is meant by the term "fishery resources" in the provisions of the statutory regulations on fishery.

Article 2

This article clarifies and confirms the geographical definition of the Indonesian exclusive economic zone as contained in the announcement of the Government of the Republic of Indonesia dated 21 March 1980 on the Indonesian exclusive economic zone.

Article 3

Paragraph (1)

Sufficiently clear.

Paragraph (2)

This paragraph provides that the principles of equidistance is applied to determine the boundaries between the exclusive economic zone of Indonesia and a neighbouring State, except in case of special circumstances necessitating consideration, so as not to prejudice the national interest.

Such special circumstances, for example, may include the presence of an island belonging to another country, located at a distance less than 200 (two hundred) sea miles from the baseline from which the breadth of the Indonesian exclusive economic zone is measured.

Article 4

Paragraph (1)

The expression "Indonesian sovereign right" is not the same as or cannot be equalized with the full sovereignty as possessed and exercised by Indonesia over its territorial sea, interislands waters and inland waterways.

Based on what is mentioned above, so the sanctions imposed in the Indonesian exclusive economic zone differ from those imposed upon the waters falling under the sovereignty of the Republic of Indonesia.

Other rights, based on international law, include the right of the Republic of Indonesia to enforce the law upon and undertake a hot pursuit of any foreign ships committing

a violation of the provision of Indonesia's statutory regulations in the exclusive economic zone.

Another duty, based on international law, is the duty of the Republic of Indonesia to respect the rights of other States, such as the freedoms of navigation and overflight, as well as the freedom for the laying of submarine cables and pipelines.

Paragraph (2)

This paragraph stipulates that, as far as it concerns the living and non-living resources found on the sea-bed and in the subsoil thereof, within the boundaries of the Indonesian exclusive economic zone, the Indonesian sovereign right shall be exercised and shall be based on Indonesia's statutory regulations as applicable to the continental shelf regime, as well as international agreements on the continental shelf determining the boundaries between the continental shelves of Indonesia and neighbouring States whose coasts are opposite or adjacent to those of the Republic of Indonesia.

Paragraph (3)

In accordance with the applicable principles of international law, such as those originating from the practice of States and laid down in the United Nations Convention on the Law of the Sea as adopted at the Third United Nations Conference on the Law of the Sea, within the exclusive economic zone, any State, whether coastal or landlocked, shall enjoy the freedom of international navigation and overflight as well as the freedom of the laying of submarine cables and pipelines and using the sea pursuant to said freedoms, such as the operation of ships and aircraft and the maintenance of submarine cables and pipelines.

Article 5

Paragraph (1)

Any exploratory or exploitative activity of the natural resources or any other activity for the purpose of economic exploration and/or exploitation, such as the generation of power from water, current and wind, conducted within the Indonesian exclusive economic zone by any Indonesian national or corporate body shall be based on a permit granted by the Government of the Republic of Indonesia.

Activities as meant above conducted by a foreign State, foreigner or foreign corporate body shall be based on an international agreement concluded between the Government of the Republic of Indonesia and the foreign State concerned.

The terms and conditions of such international treaty or agreement have to state the rights and duties to be observed by those conducting exploratory or exploitation activities within the said zone, such as the duty to pay levies to the Government of the Republic of Indonesia.

Paragraph (2)

Living resources basically have the quality to recover, but not in the sense of being unlimited. Therefore, with the presence of such quality, the Government of the Republic of Indonesia, in the management and conservation of the living resources, has decided upon the degree of utilization in the Indonesian exclusive economic zone, in part or in whole.

Paragraph (3)

Within the framework of conserving the living resources, Indonesia has the duty to guarantee the maximum sustainable yield of the living resources within the Indonesian exclusive economic zone.

With due observance to said maximum sustainable yield, Indonesia also has the duty to fix the maximum quantity of allowable catch of the living resources.

In the event that the Indonesian fisheries industry is not yet fully capable of utilizing said maximum quantity of allowable catch, then the difference between the allowable catch and the Indonesian harvesting capacity may be utilized by another State with the permission of the Government of the Republic of Indonesia on the basis of an international agreement.

Suppose the allowable catch is fixed at 1,000 (one thousand) tons, while Indonesia's harvest capacity has reached only 600 (six hundred) tons, another State may participate in utilizing the remaining 400 (four hundred) tons, with the permission of the Government of the Republic of Indonesia on the basis of an international agreement.

The reference to article 4, paragraph (2), is meant to clarify that sedentary species found on the sea-bed within the exclusive economic zone are subject to the continental

shelf regime (art.1, letter b, Act No.1 of 1973, on the Indonesian Continental Shelf). Therefore, they are not subject to the provision under this paragraph.

Article 6

In accordance with article 4, paragraph (1), the Republic of Indonesia has the exclusive right to develop, license and arrange the development, operation and use of artificial islands, installations and other structures.

Besides, Indonesia has exclusive jurisdiction over such artificial islands, installations and structures, including jurisdiction relating to the implementation of legislative provisions in the fields of customs, taxation, health, safety and immigration.

Although Indonesia has exclusive jurisdiction over such artificial islands, installations and structures, nevertheless they do not have the status of islands in the sense of State territories, and therefore do not have a territorial sea of their own, and their presence does not affect the boundaries of the Indonesian territorial sea, exclusive economic zone or continental shelf.

Article 7

Any marine scientific research within the Indonesian exclusive economic zone may only be carried out after the requested for such research has been approved previously by the Government of the Republic of Indonesia.

In the event that in 4 (four) months following receipt of such request, the Government of the Republic of Indonesia fails to state:

- (a) its objection against such request, or
- (b) that the information provided by the applicant is not consistent with the reality or is incomplete, or
- (c) that the applicant has not fulfilled his duty in the matter of an earlier research project.

then the marine scientific research project may be implemented within 6 (six) months following receipt of a research application by the Government of the Republic of Indonesia.

Article 8

Paragraph (1)

The authority to protect and conserve the natural resources within the Indonesian exclusive economic zone is based internationally on the practice of States that has now been embodied in the United Nations Convention on the Law of the Sea, whereas from the national point of view, its basis is to be found in Act No.4 of 1982 on the Basic Provisions pertaining to Life Environmental Management.

Paragraph (2)

Dumping in the sea may cause pollution of the marine environment, and for that reason it was deemed necessary to arrange the site, manner and frequency of dumping as well as the type, content and volume of the materials to be dumped under licence. Such dumping covers the dumping of rubbish and other materials that may cause pollution of the marine environment. Ordinary disposal of refuse by ships during their voyage does not need a permit.

Article 9

Sufficiently clear.

Article 10

Sufficiently clear.

Article 11

Paragraph (1)

The duty to bear strict liability and to pay indemnity for the rehabilitation of the marine environment and/or natural resources is the consequence of the duty to maintain environmental harmony and equilibrium.

Therefore, such duty shall rest upon whomsoever commits an act or fails to prevent the commission of the act or allows the occurrence of the pollution of the marine environment and/or damage to the natural resource.

"Strict liability" implies that said liability takes effect as from the very moment that pollution of the marine environment and/or damage to the natural resource occurs, and, that the production of evidence in terms of procedure is no longer necessary.

Paragraph (2)

Sufficiently clear.

Paragraph (3)

The form, type and size of loss caused by the pollution of the marine environment and/or damage to the natural resources shall determine the amount of indemnity. Ecological investigation on the form, type and size of such loss shall be conducted by a team comprising members representing the Government, the sufferers and the offenders. Such special team is meant to be set up for each case.

Article 12

Sufficiently clear.

Article 13

Any ship and/or persons being suspected of having committed a criminal act based on sufficient preliminary evidences at sea, particularly in case of a foreign ship and/or foreigners, further investigation may be conducted by way of arresting the ships and/or persons concerned.

Any ship and/or persons having Indonesian nationality can be given an ad hoc order to proceed to a port or base appointed by the investigator at sea for further prosecution.

Such an above-mentioned arrest cannot always conform to the time limit of arrest, i.e., one day, as fixed in Act No. 8 of 1981 on the Code of Criminal Procedure.

Therefore, for an arrest at sea, a reasonable period of time is needed so as to enable the law-enforcement agency at sea to escort such ship and/or persons to any port or base.

A period of time of seven days is considered to be the maximum time required to haul or tow such ship from the farthest point within the Indonesian exclusive economic zone to any port or base.

The provision on detention for reasons of a criminal act according to this Act has not yet been dealt with in Act No. 8 of 1981, whereas the detention of such criminal act is a means to enable further prosecution of the case.

In this connection, although the criminal punishment that can be imposed is in the form of a fine, nevertheless, for its being qualified as a crime, such criminal act should come under the category of criminals acts as referred to in article 21, paragraph (4), letter b, Act No.8 of 1981 on the Code of Criminal Procedure.

Article 14

Paragraph (1)

The Navy Officer of the Indonesian Armed Forces, who may be appointed as investigator, is, for instance, the ship's captain, Navy District Commander, Base Commander and Navy Station Commander. The appointment of a Navy Officer of the Indonesian Armed Forces as the investigating agency within the Indonesian exclusive economic zone is in conformity with the provision of Article 30, paragraph (20), Act No.20 of 1982 on the Basic Provisions of Defence and Security of the Republic of Indonesia, and article 17, Government Regulation No.27 of 1983, concerning the Execution of Act No.8 of 1981 on the Code of Criminal Procedure.

Paragraph (2)

Sufficiently clear.

Paragraph (3)

Sufficiently clear.

Article 15

Paragraph (1)

The request for the release of a ship and/or person arrested for being suspected of having committed an offence can be filed, based on conventional practice, by the legation of the State of the foreign ship concerned, the owner or the captain or whomsoever having any work or business relation with the ship or person concerned, based on legal evidences.

Paragraph (2)

The fixing of the amount of bail is based on the value of the ship, its equipment and the proceeds of its activities, increased by the maximum of fine.

Article 16

Paragraph (1)

Sufficiently clear.

Paragraph (2)

Sufficiently clear.

Paragraph (3)

Sufficiently clear.

Article 17

Sufficiently clear.

Article 18

Sufficiently clear.

Article 19

Sufficiently clear.

Article 20

Sufficiently clear.

Article 21

Sufficiently clear.

SUPPLEMENTARY STATE GAZETTE OF THE REPUBLIC OF INDONESIA, No. 3260.

(Source : Kenneth R. Simmonds, "New Directions In The Law of the Sea", (Oceana Publications, Inc, London), May 1987).-

Appendix B. External Assistance To The Indonesian Fishery Sector.
(\$ 1,000).

A. Multilateral Sources	139,530
A.1. ADB (Loans and Grants)	
A.1.1. Loans.	
1. Riau Fisheries Development Project	2,500
2. Irian Jaya Fisheries Dev. Project	7,900
3. Java Fisheries Development Project	13,200
4. Sumatra Fisheries Dev. Project	14,000
5. Second Irian Jaya Fisheries Dev. Project	34,000
6. Brackishwater Aquaculture Dev. Project	23,000
A.1.2. Grants.	
1. Sumatra Fisheries Development Project	298
2. Second Irian Jaya Fisheries Dev. Project	150
3. Brackishwater Aquaculture Dev. Project	100
4. Java Fisheries Development Project	180
5. Fisheries Sector Study	50

	95,378
A.2. IDA (Loans)	
1. First Fisheries Project	3,500
2. Fisheries Credit Project	6,500
3. Fisheries Component Under Rural Credit Project	14,500

	24,500
A.3. UNDP/FAD (Grants).	
1. Naval Architects (Fishing Boats)	10
2. Training Center on Improved Fishing	125
3. Fish Preservation (Madura)	23
4. Brackishwater Shrimp and Milkfish Culture Research Training	1,587
5. Training Center (Flores)	385
6. Fisheries Development Training	1,051
7. Marine Fisheries Development (Irian Jaya)	1,669
8. Inland Fisheries Development (Irian Jaya)	165
9. Sumatra Fisheries Development Project	87
10. Marine Fisheries Training 1979	3,491
11. Fisheries Management and Development 1979	2,209

12. Subproject of the Indian Ocean Fishery Survey and Development Program "Joint Eastern Fishery Survey" 1979 - 1981	400
13. Fisheries Extension Services 1979 - 1983	2,921
14. South China Sea Fisheries Dev. Program	3,560
15. Brackishwater Aquaculture Dev. Project	88
16. Site Selection for Shrimp Culture Development	81
17. Seafarming Dev. Project	1,800

	19,652
 B. Bilateral Sources	 67,836
 Canada (Grants)	
1. Research on Fish Parasites in Fish Culture	124
2. Study on the Dev. of the Sea Fish 1980-1982	1,010
3. Feasibility study for Development of Fisheries in Kepulauan Tujuh and Sangihe 1980-1982	811

	1,945
 United Kingdom (Grants)	
1. Assistance to Institute of Fisheries Technology Jakarta 1976 - 1979	239
2. Post Harvest Fish Research	210

	449
 France (Grants)	
1. Lake Research and Development Jatiluhur	177
 Federal Republic of Germany (Grants)	
1. Demersal Fisheries Research	1,256
2. Regional Surveys of Fish Resources	2,750

	4,006
 Italy (Grants)	
1. Study on Fresh Fish Marketing in East Java	3,037

Japan (Loans)

1. Tuna Fisheries Development Project	7,856
2. Jakarta Fishing Port	37,867

Japan (Grants)

1. Study on Fishing Port in Pelabuhan Ratu 1979	100
2. Jakarta Fishing Port/Market Development OECF	2,100
3. Fishery Advisory Team, 1972-1980	1,929
4. Strengthening of Academy of Fisheries	2,000

	51,852

New Zealand (Grants)

1. Fresh Fish Marketing Pilot Project 1976	432
2. Supply of Fish Trawlers for Marine Fisheries Training and Development 1976	285
3. Fisheries Cold Storage Padang 1976-1978	600
4. Feasibility Study for Fishing Port U.Pandang	5

	1.322

United States of America (Grants)

1. Small-scale Fisheries Development	3,000
2. Tambak Irrigation Study	477
3. Brackishwater Aquaculture	805
4. Fisheries Production 1976	388
5. Fishery Research and Education Program, Jakarta	270
6. Fishery Research and Education Program, Ambon	108

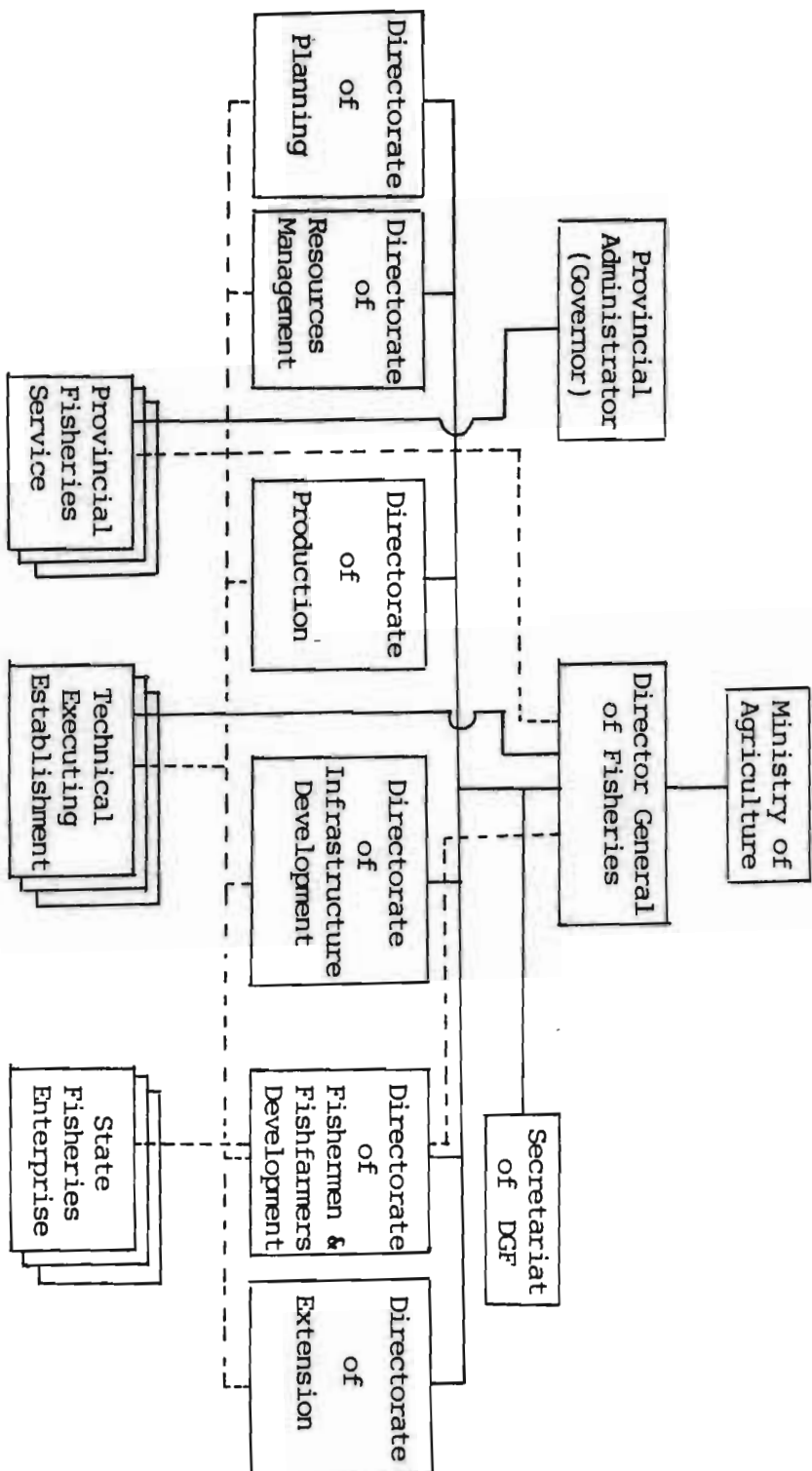
	5,048

A. Multilateral Sources	139,530
B. Bilateral Sources	67,836

TOTAL	207,366
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(Source : Asian Development Bank, Indonesia Fisheries Sector Study, 1983).

Appendix C. Organizational Chart of the Directorate General of Fisheries



----- : Technical guidance

Appendix D. The conditions to be performed by foreign fishing vessels engaging in fishing activities in Indonesian EEZ.

1. The original permit shall be kept on the vessel and shall be shown to Indonesian Government officer on inspection.
2. The permit is not valid for other vessels and transfer of permits is prohibited.
3. Any time the vessel may be inspected by an Indonesian Government officer.
4. The use of explosives, poisonous substrate, electricity or other dangerous substrate or instruments for fishing is prohibited.
5. It is prohibited to carry or use fishing gears other than those stated in the permit.
6. Not later than 24 hours before entering Indonesian EEZ, the Captain shall inform the officer of the port by electronic communication instruments.
7. Before or after fishing operation, the Captain of the vessel which is obliged to enter the designated port shall report to the officer in the port stated in the permit.
8. The Captain/vessel owner shall fill out the designated report forms and submit to the officer or the officer appointed by

Directorate General of Fisheries.

9. During the fishing operation of the vessel concerned, every 24 hours or upon request by an Indonesian Government officer, the Captain shall report the position of the vessel by electronic communication instruments.

10. Not later than 24 hours before the foreign fishing vessel concerned is leaving the Indonesian EEZ, Captain shall report to the port officer about the vessel's position and fishing data in accordance to the report forms.

11. During the passage in Indonesian territorial waters, all fishing gears on the vessel concerned must be stored in its hold or other place provided for that purpose.

12. Other conditions.

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