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The Phillipine Extended Jurisdiction: Its Cost and Benefits to Fishery Industry

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THE PHILIPPINE EXTENDED JURISDICTION: ITS COST AND BENEFITS TO FISHERY INDUSTRY

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INTRODUCTION

Although the Philippines is only 15th in terms of fisheries production among the fishing nations of the world, the Philippines is one of the countries that has its significant relations to fisheries economically and culturally. Countless of generations of Filipinos have derived a large part of their food supply from the waters around and between the Philippine islands. The coastal waters of the Philippines support over a million fishermen whose only source of income is fishing that does not go far off-shore.

Due to population pressure and increased demand for fish as a basic food supply and as a source of foreign revenue income, more and more fishermen fish at the waters that carry a limited resource. As a result, overfishing persists that has a social and economic implication. Conflicts arise among the fishermen. Management measures are not implemented successfully because of the economic dislocation it will cause to the fishermen.

The government realize the predicament of the fishing industry. Several development programs have been launched in an effort to alleviate the status of the industry. A big source of inspiration for the formulation of the programs has been the areal expanse of the waters around and

between the Philippine archipelago. The government policy makers believe that the vast maritime waters offer a great potential and is the key to the fisheries development.

It is not surprising then that the Philippines has been active on maritime claims. With the advances of the ocean enclosure movement in the international scene, the economic motivations are further ventilated as revealed by a review of the fishery development projects. Thus for examples:

> With a coastline that extend to more than 17,460 kilometers along which large portions of the fishery population lives, Filipino fishermen are provided with an extensive operational base from which they can initiate their fishing activities. Marine coastal waters total 26,597,000 hectares and there are largely abundant in fish and fishery resources. Considering that an additional 500,000 hectares of inland waters are also open to various types of municipal fishing, it appears that there are indeed more than adequate areas for exploitation.[1] [emphasis supplied]

and

> It is believed that adequate supplies of food fish to meet the projected demand will be available if the following measures are taken: resource base is expanded, as in extended jurisdiction . . . Notwithstanding the absence of a conclusive base, the Philippines EEZ is deemed to have great potentials for fisheries development.[2] [emphasis supplied.]

This paper (1) discusses the concepts of the Exclusive Economic Zone (EEZ) and its problems and issues relating to fisheries, (2) traces the history of the Philippine jurisdictional claims over the marine areas, all of which are considered by the government as potentials for fisheries, and (3) analyzes the potential benefits and costs of the extended jurisdiction in relation to Philippine fishery industry.

THE EXCLUSIVE ECONOMIC ZONE

Evolution.

For more than 300 years, the principle of freedom of the high seas has governed the oceans waters beyond a narrow belt of national jurisdiction on the territorial seas. Freedom of the high seas grant all states the right of fishing, navigation, overflight, and laying of submarine cables and pipies. A coastal state has national sovereignty over its internal waters and authority over its territorial seas, subject only to the right of innocent passange. There was no established rule on the breadth of the territorial sea.[3]

The concept that maritime zones are sources of economic benefits (resource oriented zones) originated in Latin America when in 1919, Columbia claimed exclusive right to exploit hydrocarbons beneath the territorial seas. In 1923, Columbia enacted a legislation extending its territorial seas from 3 miles to 12 miles. Panama and Venezuela also enacted laws claiming jurisdiction on fisheries bejond the limits of its territorial seas in 1921 and 1935, respectively.[4]

In 1945, Truman Proclamation was declared asserting the United States jurisdiction over the continental shelf and fisheries resources in and under the high seas contiguous to the U.S. The Truman Proclamation provided a precedent

compatible with the economic aspirations of any newly-independent, developing nations. It set the trend of "creeping jurisdiction" and inspired other governments aware that they might acquire control of the offshore resources by making a claim. In 1949, the Philippine government legislated the Petroleum Act proclaiming "ownership by the state of all natural deposits . . . found in . . . other submerged land within the territorial waters or on the continental shelf, or its analogue in an archipelago, seaward from the shore of the Philippines."[5]

Some developing countries that claimed full sovereignty over the waters were not always limited to continental shelf. For examples, Mexico proclaimed jurisdiction over the continental shelf and established a fishery conservation zone. In 1946, Argentina and Panama claimed not only the shelf and its resources but also the superjacent waters.[6]

In 1947, Chile and Peru took steps towards establishing and Exclusive Economic Zone by claiming national sovereignty for the purpose of preserving and exploiting its patrimonial seas. The countries asserted exclusive jurisdiction of all resources living and non-living.[7]

Five years later, Ecuador joined Chile and Peru in the Santiago Declaration, proclaiming the three states' sole sovereignty and jurisdiction 200 miles seawards, while preserving innocent passage.[8]

In 1970, several Latin American countries issued two

declarations proclaiming the right to establish zones of sovereignty and jurisdiction over marine resources. These declarations were refined in 1972 with the Santo Domingo Declaration that provided for a 12-mile territorial seas and a 200-mile "patrimonial sea". It provided that the coastal state has sovereign rights over all resources and jurisdiction over the scientific research and marine pollution. The freedoms of navigation, overflught and laying of submarine cables and pipelines were retained.[9]

Likewise, the Council of Ministers of the Organization of African Unity (OAU) issued a resolution in fisheries and on sovereignty of African countries over their natural resources. Kenya submitted draft articles to the Seabed Committee of UNCLOS III specifying a zone limit of 200 miles and adding regulation of scientific research.[10]

Concommitant with the preparations of the UNCLOS III was the increased "marine awareness" of the world community. At the onset of the UNCLOS III, many participants recognized the need for a new concept to provide the basis for negotiating the proper balance between the interest of the coastal state and geographically disadvantaged states; between the developing states and developed states, as a result of the realization of the rapid technological and scientific advances after the World War II that have made developing states wary about the presence of military ships of maririme powers and the enhanced ability to exploit further

reaches of the oceans.[11]

The two documents --- the 1972 Santo Domingo Declaration on the patrimonial seas, and the 1973 Declaration of the Organization of African Unity on the Exclusive Economic Zone --- played a key role in shaping the thinking of the participants.[12]

When the first session of UNCLOS III opened in June 1974 in Caracas, Venezuela, the concept of 200-mile Exclusive Economic Zone (EEZ) gained substancial support from the participants. The UNCLOS III had been delibirated for over 10 years and on December 12, 1982 it was signed by the representatives of 119 nations in Jamaica. From the large number of signatory nations, it may take less time to reach entry into force than has been expected. With the recognition of the concept of EEZ, it has taken root in positive international law.[13]

Elements of the New Fisheries Regime.

The provisions of the EEZ are embodied on Part V Articles 55 to 75 of the UNCLOS III text. This section examines the provisions concerning the general concept of the EEZ and the conservation and utilization of the living resources on the EEZ.

Article 55 deals with the legal regime of the EEZ as "an area beyond and adjacent to the territorial sea, subject to the specific legal regime established in the Part." Article 56 sets out the rights and duties of the coastal state in the EEZ. It provided "sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the waters superjacent to the seabed and of the seabed and its subsoil, and with regard to other activities for economic exploitation and exploration of the zone", such as energy production. The coastal state also has jurisdiction with regard to the establishment and use of artificial islands, installations and structures; marine scientific research, and protection and preservation of the marine environment. Article 57 establishes the breadth of the EEZ. It shall not exceed beyond 200 miles from the baselines from which the breadth of the territorial sea is measured.

On the other side of the coin, Article 58 deals with the rights and duties of other states in the EEZ. It includes freedoms of navigation and overflight, the laying

of submarine cables and pipelines, and related lawful uses of the sea. While in Article 56 the coastal state "shall have due regards to the rights and duties of other states", the duties of other states, as stipulated in Article 58 include "due regard to the rights and duties of the coastal state" and compliance with laws and regulations adopted by the coastal state in accordance with the provisions of the Convention and other rules of international law. Article 59 sets out the basis on which conflicts regarding the attribution of rights and duties in the EEZ are to be resolved. Conflicts should be resolved on the basis of equity.

Articles 61 and 62 concern the conservation and utilization of the living resources. Article 61 deals with the conservation to ensure that living resources are not endangered by overexploitation. The coastal state has the right to determine the Total Allowable Catch (TAC), in compatible with proper conservation measures, and the ability to harvest the living resources. It is the obligation of the coastal state to promote optimum utilization of the living resources and to grant other states access to the surplus allowable catch. The coastal state may also establish regulations concerning the licensing of foreign fishermen, vessels, equipments, and fees in connection with the other states exercise to harvest on the EEZ of the coastal state up to the limit of the TAC.

Issues and Problems.

For many years, demands for equitable sharing of resources in the international scene have been raised, as reflected in the call for a New International Economic Order (NIEO) at the 6th and 7th Special Sessions of the U.N. General Assembly and at the UNCLOS III[14]. To accomodate the conflicting interests of the nations of the world, numerous delibirations and discussions were held during the past decade at UNCLOS III sessions. The text of the Convention therefore reflects the compromise and balance between the nations of the world. This could not have been possible were it not for the careful choice of words on the formulation of the text of the Law of the Sea (LOS). The text are open to different interpretations that it was labeled as a "masterpiece of vagueness".[15] On the matters of EEZ, it seems paradoxical that a movement to achieve an equitable sharing of the wealth of the oceans resulted in the extensions of national jurisdictions.

There are two kinds of issues that arise from the concept of EEZ: on the effects on global fisheries, and on the relationship between the coastal state and the "other" state in the exercise of rights and duties on the EEZ.

Issues on effects on world fisheries revolve around these questions: How compatible is the "equitable sharing of resources" with the ocean enclosure movement? Does EEZ bring overall increase in welfare? Does adherence to the

provisions of the EEZ really promotes optimum utilization?

In terms of areal expanse and productivity, inequity can be seen. A tabulation on which state gets how much shows that 33% of the developed states gets five times more than their respective land areas, and 27% of the developing states. The seven countries which have the biggest area of EEZ account for 45% of the world total and of these countries only one is a developing state.[16] The biological productivity of the waters of the oceans also vary significantly. Based on the harvested catch, about 66.7% came from developed countries. Marine catches indicate that in 1970-1975 a little less than half the catch was taken by the developed countries from the coast of the other counries. Of the catches by vessels from developed countries, less than half were taken off from the coast of developing countries.[17] Thus, the most productive fishing ground are reserved for developed countries with the establishment of the EEZ.

This criticism is answered by considering that approximately 10-15% of the total world catch is taken off the coasts of developing countries primarily by developed countries. The immediate effect of the 200-mile EEZ will be to place developing countries in a position to derive some benefits of the 10-15% of the world catch which they enjoy at all before. Furthermore, while more than half of the world catch comes from the coasts of developed countries,

it has been estimated that 60% of the potential world fisheries resources are to be found off the coast of developing countries.[18] Other estimate was that before the EEZ regime, developing countries take only 0.6 metric tons from the waters off developed countries, whereas the latter were catching as much as 3.6 m.t. off the former. For developing countries as a result of 200-mile EEZ, they can appropriate net benefits of 3.0 m.t. of fish at the expense of developed countries.[19]

Reviewing the world fishing catch in the framework of the ocean enclosure movement, there has been an upward trend in the world fisheries catch between 1% and 2%. But a shift can be seen on the trend of the territorial catch of various states. Countries with vast 200-mile marine areas like Canada, Mexico, Argentina, Iceland, U.S., Brazil, and Indonesia have experienced catch increase since the 70's during which time proliferation of the ocean enclosure movement began. Countries which have extensive far seas fisheries like the Soviet Union, Poland, and Korea have experienced reduced growth during the same period. Japan far seas fisheries has fallen from its peak in 1973 as a result of the reinforcement of the regulations by the U.S. and the Soviet Union. Based on its catch statistics, European fisheries show a sluggish trend. The catch has been lower than it was even before the proliferation of 200-mile claims. The Philippines and India both have relatively vast EEZ but the

recent catch increase has not been very much compared to the aforementioned countries.[20]

Caution should be exercised on drawing conclusions on the influence of the 200-mile system on the world fisheries. However, it is clear that states which have extensive far seas fisheries have suffered due to enforced fishing restrictions and regulations by the coastal states. To a certain level, it can be seen that with the EEZ claims, resources are merely "changing hands". The EEZ could not be solely considered as the affecting factor on the fish catch trends because the level of the biological productivity, technology and fishing effort play the most important factors. It is therefore inconclusive that on the basis of the modest increase of 2% of the world catch, ocean enclosure movement brought about the better utilization of the resources.

Fisheries economists, however, emphasize that the worst problem on fisheries is the "common property" in nature of the fish resources. The attitude on the "common property" is that everybody wants to take a piece of the resources before anybody else will take it or before it runs out. It is noboby's individual responsibility to preserve. The result would be overexploitation and depletion --- the "tragedy of the commons". It is then necessary that there is an authority to regulate fishing effort in order to maintain the perpetuity of the resources. A national jurisdiction in the form of EEZ is the way to

rationalize the use of fishery resources.[21]

Some qualified observers expressed apprehension that the new fisheries regime, together with the extension of maritime boundaries, will lead to exacerbation of conflicts particularly in the Far East. The process of delimitation of EEZ and continental shelf necessitates the resolution of historical disputes in territorial claims on islands, rocks, and other entities.[22]

On the basis of the widespread practice of the nations in claiming maritime areas, the foregoing discussions become academic in the point of view of the coastal state. For a coastal state, what is important is their newly found wealth in terms of areal expanse that could be sources of potential economic benefits.

The biggest sources of issues and differences in interpretations among the elements of the new fisheries regime are Articles 61 and 62 which relates to conservation and utilization of the resources. Essentially, these provisions impose moral obligation on the coastal states to share the resources in excess of its own capacity to utilize them[23]. Although these provisions may seem to infringe the "sovereign rights" of the coastal state to the fish resources on the EEZ, the coastal state has the right to determine the TAC and the conditions of access for other states to any surplus. Thus, with an intent to thwart or exclude foreign fishermen, the coastal state can set limits at low

lvels as unwarranted or define domestic harvesting capacity at levels far too exorbitant over the actual capacity. The coastal state may also impose fishing fees and other requirements so demanding as to discourage their operations.[24]

In setting the TAC, there is no mention of the time period during which conservation calculations should be made. Although it is common to make calculations on annual basis, nothing in the 1982 Convention prevents the use of a longer time. The implication is that a coastal state, in an effort to adopt a phase-out program for foreign fishing, can calculate the TAC and surplus based on 5- or 10-year projection. Even with the imposition of a moral obligation to give access to other states the discretion of the coastal state can not be challenged.[25]

Oda pointed out that any least developed coastal country always has the capacity to harvest the total allowable catch considering that fishing is not only carried out for the livelihood of fishing villages on the coast, or for the supply of animal protein for the nationals of the coastal state, but also as a part of the national industry wherein domestic fishing regulations are formulated as a part of the labor and social policy of the state.[26]

Furthermore, in the access of other states to the surplus, the 1982 Convention suggests that the significance of the living resources of the area to the economy of the coastal state concerned and its other national interests,

the requirements of the developing states in the region, and the need to minimize the economic dislocation of the coastal state must be considered. Indeed, it is extremely difficult to determine the criteria for allocating the surplus and not clear how the significance of the living resources of the area to the economy of the coastal state be gauged.[27]

The 1982 Convention, therefore, is just a lip service to the other states'right to access of the marine resources. The coastal states in its claim to EEZ do not seem to have apprehensions on the issues involved.

The Philippine Claims towards EEZ.

The 1898 Treaty of Paris.

According to the new Philippine Constitution of 1973, the national territory under Article I, Section I is as follows:

> The national territory comprises the Philippine archipelago, with all the islands and water embraced therein, and all other territories belonging to the Philippines by historic right or legal title, including the territorial sea, the air space, the subsoil, the seabed, the insular shelves, and the other submarine areas over which the Philippines has sovereignty or jurisdiction. The waters around, between and connecting the islands of the archipelago, irrespective of their breadth and dimensions, form part of the internal waters of the Philippines. [emphasis supplied.]

Contrary to conventional practice, the Philippine territorial sea boundaries vary from 270 miles offshore into the Pacific Ocean to 147 miles offshore on the South China Sea side and diminishes to less than two miles in width at its narrowest part in the Southwest corner of the rectangular area. (Fig. 1)

The term 'historic right or legal title' has its bearing on the 1898 Treaty of Paris. When Spain ceded to the United States the Philippine territory through the conclusion of the treaty, the extent of the Philippine territory was decribed as "the archipelago known as the Philippine Islands and comprehending islands within the following described lines . . .," (there followed a system of lines

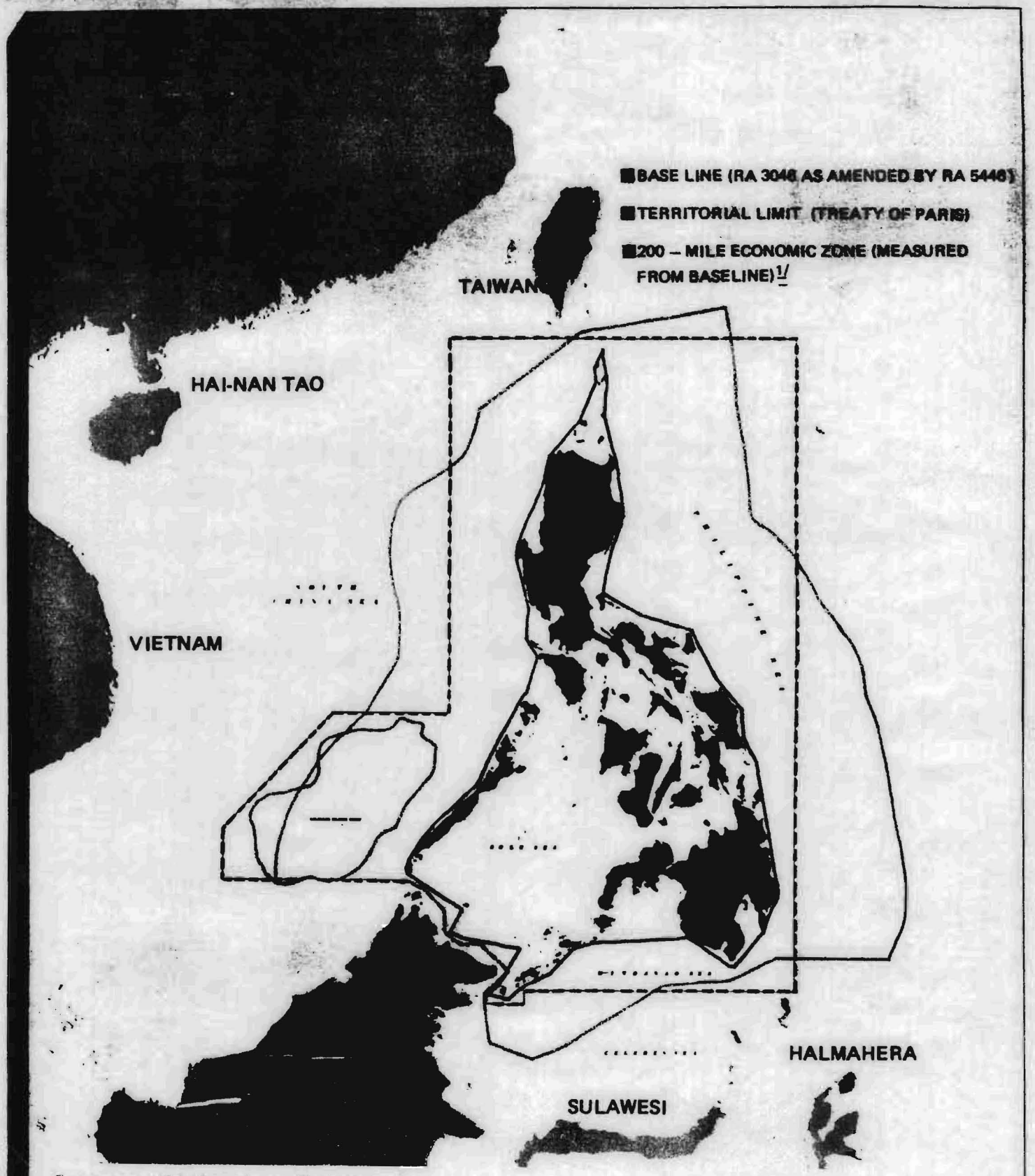

Fig.1: Philippines' 200-mile EEZ and Territorial Waters

being defined by parallels of latitudes and meridians of longitude).[28] When the Philippines gained independence in 1948, the provisions of the treaty was interpreted as the whole area enclosed by the lines (sometimes reffered to as 'international treaty limits') as the Philippine sovereign territory through the devolution of treaty rights.[29]

The crucial queation therefore arises, as to the purport of these geographical lines: are they boundary lines or not? In the Philippine interpretation it is indeed, as reflected in the Note Verbale of March 7, 1955 to the Secretary General of the United Nations. It reads:

> All waters around, between and connecting different islands belonging to the Philippine Archipelago, irrespective of their width and dimension, are necessary appurtenances of its land territory, forming an integral part of the national or inland waters [internal waters], subject to the exclusive sovereignty of the Philippines. All other waters embraced within the lines described in the Treaty of Paris . . . are considered as maritime territorial waters of the Philippines.[30] [emphasis supplied.]

The 1955 Note Verbale is the first document that mentions a claim to exclusive rights over the waters within the coordinates described in the 1898 Treaty. It can be noticed that in the 1955 Note Verbale, internal waters and territorial waters are distinguished, having some significant references to the "archipelagic concept". The waters intermediate within are loosely described as "maritime territorial waters" of the Philippines. In 1961, after the Conventions at Geneva in 1958 and 1960, the Philippines

legislated a law Republic Act No. 3046 describing the territorial extent of the Philippines with a more precise characterization similar to the wordings of the Convention, using the terms "straight baselines" and "internal waters".

The 1955 Note Verbale clearly founded the Philippine claim on the interpretation of the Treaty of Paris and on the argument that Spain and then the United States had sovereignty over the waters.[31] But there is no historical evidence of an assertion or exercise of jurisdiction over the waters by either Spain and U.S. In view of this, O'Connell observed: "If the waters are to be regarded as Philippine Waters in derogation from international law, this can only be the outcome of international toleration of a claim embodied, if one accepts the Philippine contention in the Treaty of Paris, but not proven to andedate it. Since it is clearly more advantageous to the Philippines to argue that the claim is pursuant to the international law than to defend it as a historical derogation therefrom, sociological, geological, and economic arguments have been advanced to reinforce the historical contention."[32] Thus, in the 1960 Geneva Convention, the Philippine delegation outlined the reasons for accepting the sovereignty of the coastal state over the territorial seas. These are:[33]

1) security which required a state to have exclusive control of approaches to its shores;

2) furtherance of commercial, fiscal, and political

interests which necessitates a close supervion of ships entering or leaving coastal seas;

3) the exclusive enjoyment of the products of the sea near the shores, which is essential for the existence and welfare of the coastal population.

The Philippine view, in an effort to gain international recognition of its territorial claims based on the interpretaion of the 1898 Treaty was that there is no established international rule pertaining to the breadth of the territorial sea.

Archipelagic Claims.

As mentioned earlier, the 1955 Note Verbale contained references to the "archipelagic concept" although essentially it was to reiterate the Philippine position and claim to exclusive rights and jurisdiction over the waters within the coordinates described in the Treaty of Paris. Whereas the justification of territorial claims began on the historical basis, the emphasis of the justification shifted to security and economic reasons.[34]

In the two United Nations Law of the Sea Conferences convened in Geneva in 1958 and 1960, the Philippine delegation stressed the archipelagic doctrine in defining the marine boundary by proposing the method of straight baselines to delineate the outer boundaries of the archipelagic waters and waters enclosed by the archipelagic straight baselines were to be considered as "internal waters".

The Philippine advocacy of the mid-ocean archipelago,

however, was not too successful to be incorporated in the two Conventions. During these times, the 1951 International Court of Justice (ICJ) decision in the Anglo-Norwegian Fisheries Case had provided the legitimacy of drawing straight baselines around the islands (skaergaards) of a continental country with deeply-indented coastline.[35]

When the special problem of mid-ocean archipelago was not seriously addressed in the two Conventions, the Philippines felt that it was highly discriminatory. Philippine apologists reasoned out that economic, historical, and geographic factors were equally, if not more, relevant to the mid-ocean archipelagos "where the intertwining of the land and the water probably reaches the highest degree of geographical, ecological, and economic unity".[36] Because of this the Philippines decided not to become a signatory to any of the two Conventions.

The persistence of the Philippines in pressing her archipelagic claimed culminated in the Philippine legislature, Republic Act. No. 3046 passed in 1961 which specified the latitude and longitude designations of a series of 80 straight baselines joining the outermost islands of the archipelago. (See Fig. 1). Expectedly, after the enactment of the 1961 legislature several countries protested to the Philippine Government through diplomatic negotiations instituted by the United Kingdom, United States, and Australia. Incidentally, the issue in question was not on the exclu-

sive rights to marine resources but on the passage of ships through the areas of claimed waters.[37] Such protests were defended primarily on historical grounds and eventually on the reasons outlines by the Philippine delegation during the 1960 UNCLOS II. The Philippines reasoned further that she was not a signatory of the Convention and thereby not bound to abide by the provisions of the Convention.

In March 15, 1973, the Philippines led a delegation of four archipelagic states in presenting the principles dealing with archipelagos to the U.N. Committee preparing for UNCLOS III.[38]

Continental Shelf Claims.

Four years after the Truman Proclamation, the Philippines followed the trend of "creeping jurisdiction" by legislating the Petroleum Act of 1949 proclaiming:[39]

> . . . ownership by the state of all natural deposits or occurences of petroleum or natural gas in public and/or private lands in the Philippines, whether found in, on, or under the surface of dry lakes, creeks, rivers, lakes, or other submerged lands within the territorial waters or on the continental shelf, or its analogue in an archipelago, seaward from the shores of the Philippines. [emphasis supplied.]

The Petroleum Act of 1949 is the first piece of legislation relating to continental shelf claims. As early as that time, the Philippines was fully aware of its geograp-

hic characteristics --- that she is not a continental state but comprises an archipelago --- as reflected in the addition of "[continental shelf]or its analogue in an archipelago". The subsequent claims and assertions on maritime areas dealt on the "archipelagic principle" and the extent of the territorial waters up to the extent of the international treaty limits. However, at the 1958 Geneva Convention, the Philippines proposed that the rules pertaining to the shelf should also apply to the seabed and subsoil of "similar submarine areas adjacent to and surrounding the coasts of islands" to accommodate the Philippine concern that the definition of continental shelf does not apply only to continental states but also to "archipelagic states".[40]

It was not until the late 60's during an intensified "national oil fever" and great speculation of hydrocarbon resources off South China Sea that prompted the Philippine government to do territorial claims on the continental shelf.[41] Thus on March 1968, the Proclamation No. 370 was declared announcing exclusive jurisdiction and control of all mineral and other natural resources in the seabed and subsoil of the archipelagic analogue to a continental shelf ---"adjacent to the Philippines, but outside the area of its territorial sea to where the depth of the superjacent waters admits of the exploitation of such resources."

While in the 1958 Geneva Convention on the Continental Shelf, the criteria for defining the limits of national

jurisdiction are "adjacency", 200-meter isobath, and "exploitability test"; in the Proclamation, the criteria of 200-meter isobath was deleted. The fact that the Philippines is a country with narrow continental shelf is most likely the reason why this criteria was not included in the Proclamation.[42]

During these times when extensive oil exploration surveys were being conducted beyond the 200-meter isobath such as on the Spratly archipelago, the government released circulars announcing that "all areas forming part of the aforesaid shelf of the Philippine Islands which are not within the territories of other countries are hereby open to application for exploration and exploitation".[43] When other countries protested to the oil drilling activities, the Philippines defended its actions by declaring that the area is within the definition of the continental shelf and that the economic exploitation was being conducted within the bounds of the 1958 Geneva Convention on the Continental Shelf.

The Disputed Spratly Islands.

As a part of the exercise of the Philippines on every legal means on its extension of Philippine claims that was sparked by the speculation of hydrocarbon resources, the Philippines entered into the arena of international dispute when it claimed portions of the Spratly archipelago situated

on South China Sea. (See Fig. 2)

The South China Sea is a marginal sea on the South eastern shores of the Asian continent. It is bounded on the Pacific side by Taiwan, the Philippines, and going south, Brunei, and certain Indonesian islands. On the western side it is bounded by Vietnam and Mainland China. The width of the South China Sea, measured from the Vietnamese coast near Phanrang to Balacbac Island, south of Palawan is nearly 600 miles. The length of the South China Sea, measured from Taiwan southwest to the Singapore Strait is approximately 1,800 miles.[44] If every coastal country off South China Sea proclaim a 200-mile EEZ, no part of the sea is high seas.

Hundreds of islands, islets, and rocks dot the South China Sea. For geographical purposes, most of the islands and islets are principally grouped into two: (1) The Paracels Islands, and (2) the Spratly Islands.

The two archipelagos have been claimed by China and Vietnam.[45] Before the 1950's, the history of the Paracels and Spratly are similar. Both China and Vietnam relied mainly on the historical evidences on its relations to the island groups. Although there are encyclopaedic sources from both parties to back up their respective claims, there is no single unclassified source of information on the claims on South China Sea. It is then possible to assume that at various times, both parties were or have pretended to have

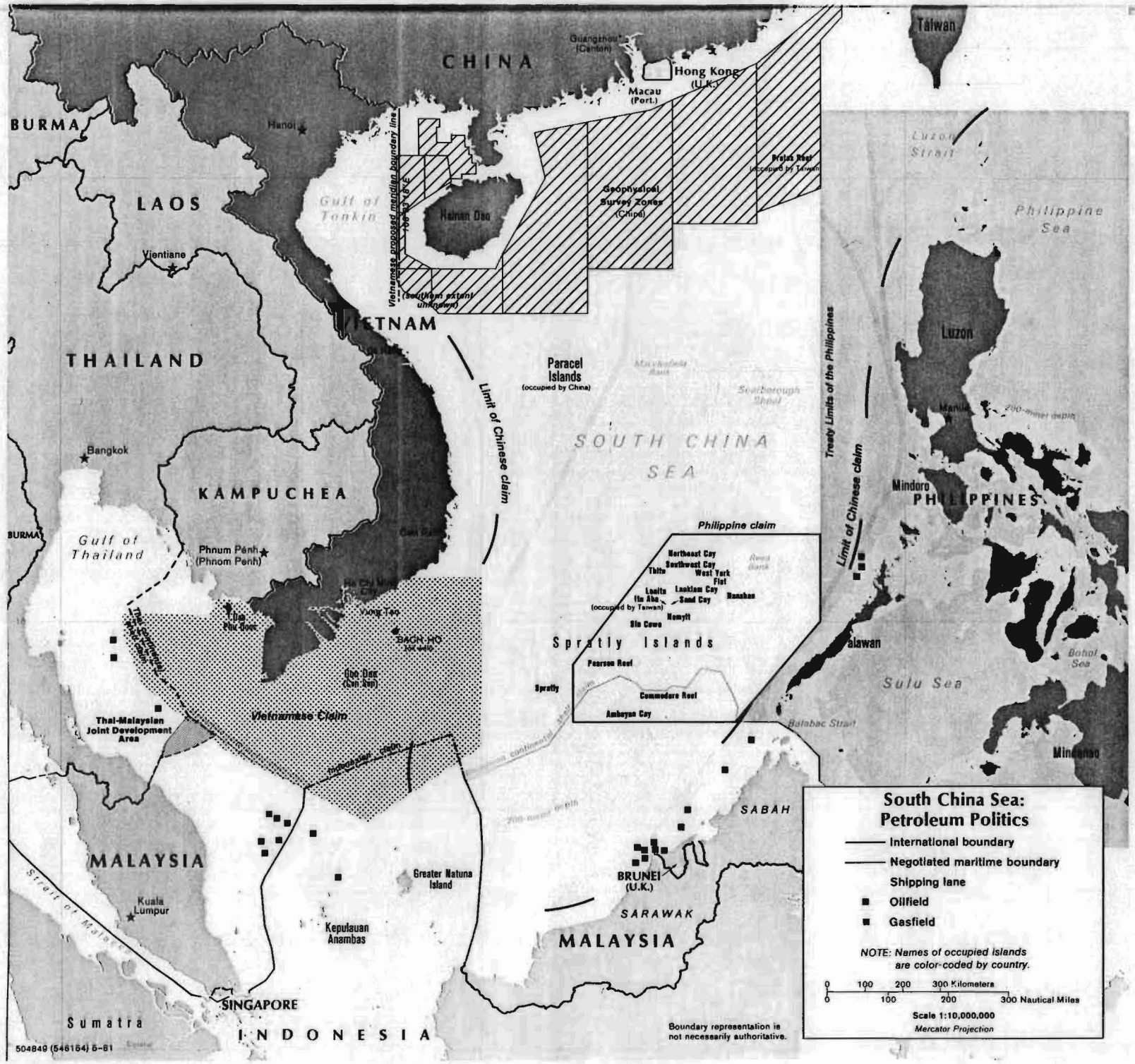

Figure 2. Claimed Portions of Spratly Archipelago

Figure 2.

been unaware of the claims made by each other.[46]

In 1956, when a private Filipino named Tomas Cloma claimed 64,976 square nautical miles of Spratly archipelago by "discovery and occupation", China and Vietnam set off a chain of protest against the Philippines.[47] The connection between Cloma and the Philippines, if there was any then and after, is not ascertained. But on that same year, the Philippine Foreign Affairs Secretary claimed the Spratly archipelago on the grounds of proximity.[48] This official action of the Foreign Affairs Secretary represented the involvement of the Philippines in the dispute over the Spratly Islands.

The involvement of the Philippines on the Spratly dispute is only a part of the already tense dispute of the Paracels-Spratly Islands. Yet this action added to the complexity of the issues of the dispute. While the involvement of the Philippines was a consistent action towards "expansion" of marine territorial claims, the motivations of China and Vietnam transcend economic interests. It is a matter of national pride to the two principal claimants. Because of the uncompromising stand of both China and Vietnam, the dispute was labelled as the "war of nerves and battle of words".[49]

After the formal involvement of the Philippines, the dispute became dormant but the issues were volatile. It was not until 1978 when Presidential Decree No. 1596 (See

Annex B) was declared proclaiming Philippine territorial sovereignty over the Spratly Islands that the controversy was revived.[50] When China and Vietman again protested, the Philippines argued that by geographic proximity, the Spratly is closer to the Philippines than the coast of other territorial claimants. Furthermore, it was argued that the status of the island is "undetermined" since the signing of the 1951 San Fransisco Peace Treaty between Japan and the Allied powers after World War II. Thus, the area became res nullius and open to acquisition by any country.[51]

To date, it is estimated that about 100 Philippine civilians and more than 400 troops are stationed on seven islands in the eastern portion of the Spratly. About 300 Vietnamese troops are holding three. PRC has no troops presently stationed. The Philippines has established a new military command to patrol and protect the 200-mile offshore zone in which oil concessionaries have been operating.[52]

The Philippines is apparently compromising and recognizing the positions of Vietnam and China when the former stated that the "Spratly should be be allowed to fall into the hands of any one country".[53] On the remote possibility that the Philippines would acquire the Spratly archipelago,[54] more problems and issues would arise on the legal status of the islands, islets, and rocks relating to the delineation of baselines, territorial sea, continental shelf and EEZ in the surrounding area.

The Philippines is aware of the implications. Considering that she has been active on its territorial claims and assertions, the Philippines was relatively delayed in declaring a claim to a 200-mile EEZ because of its pending conflicts on the South China Sea. Nevertheless, the Philippines was the first country in the Southeast Asia to officially proclaim an EEZ. On May 31, 1979, the Philippine Presedential Decree No. 1599 "Establishing an Exclusive Economic Zone and for other Purposes" went into effect. (See Annex B).

Section I of the Proclamation indicates her willingness to resolve any boundary problems when it states "where the outer limits of the zone as thus determined overlap the Exclusive Economic Zone of an adjacent or neighboring state, the common boundaries shall be determined by agreement with the state concerned or in accordance with pertinent generally recognized principles of international law on delimitation". Official coordinates of the 200-mile line from the baselines was not provided. However, from the working map of the Philippine EEZ claim, the 200-mile line did not consider the disputed Spratly Island in the determination of the baselines for measuring territorial seas and EEZ. The delimitation of the EEZ was based on the baselines established in Republic Act No. 3046. Following these baselines, the Philippine claimed portions of the Spratly archipelago is within the 200-mile boundary.

With its unique geographical characteristics and history plus the economic motivations of the Philippines, what she gets and how much are summarized in Table 1. How much the maritime area has to offer in terms of fisheries is discussed on the next section.

TABLE 1

PHYSICAL EXTENT OF PHILIPPINE MARINE WATERS

Length of Coastline:[a]	17,460 kilometers
Outer Edge of Continental Margin:[a,c]	13,000 square n. miles
Coastal Waters (Archipelagic waters plus territorial seas up to 200-m isobath):[b]	266,000 square kilometers
Oceanic Area (Territorial seas plus EEZ waters beyond 200-m isobath):[b]	1,216,570 square kilometers
Total Marine Water Area:	1,482,570 square kilometers

[a]Source: M. Valencia, "SE Asia: National Marine Intersts and Marine Regionalism", 5 O.D.I.L., No.4: from Table 2 on p. 426.

[b]Source: Fisheries Today, Vol. III #1 (March 1980):7.

[c]Areas of seabed beyond 200-m isobath through the extension of national jurisdictional limits to the outer edge of the continental margin.

THE PHILIPPINE FISHING INDUSTRY

Significance and Characteristics.

The Philippine fishing industry is composed of three sectors: (1) the commercial fisheries, (2) the municipal fisheries, and (3) the inland and aquaculture fisheries. The following discussions involve only the first two sectors which concern the marine fisheries. As stipulated in the Philippine Fisheries Decree of 1975 (Presidential Decree No. 704), the term "municipal fisheries" refers to fishing that utilizes boats of three gross tons or less, or uses gears not requiring the use of boats. Municipal fisheries is roughly equivalent to artisanal, small-scale, or traditional fisheries referred to by other countries. Commercial fisheries is the sector concerned with fish caught by fishing vessels over three gross tons. Inland fisheries referes to the sector concerned with fish and fish products introduced, fed, protected and eventually caught in brackishwater or freshwater fishponds inland.

Municipal fisheries is the subsistence livelihood of the coastal fishermen. Their fishing operation is usually confined within 5 miles from the shore. They represent the poorest of the poor of the socio-economic structure and subsist on the day-to-day basis from the daily catch from

the sea. Commerical fisheries is the non-municipal marine activities, which are business ventures by capitalists employing fishermen as crew.

Since the last past two decades, about 55% to 60% of the total catch came from the municipal fisheries and about 35% to 40% came from commercial fisheries. In 1982, commercial production of fish reached a record high level and achieved a substancial 6.1% growth in volume after several years of stagnation and decline. Municipal fisheries production has quadrupled from 219,000 metric tons in 1955 to 827,000 metric tons in 1977, but its production during the past decade stagnated. Aquaculture sector, however, showed a significant growth rate. Table 2 summarizes the Philippine fisheries production.

The modest increase on fisheries production, however, did not meet the government production targets towards fish self-sufficiency and the immediate reasons pointed out that caused to hold back production are: (1) overfishing of the developed fishing grounds, (2) insufficient marine research, and (3) inadequate post-harvesting handling and marketing facilities.[55]

Among the fishing nations of the world, the Philippines is only 15th in terms of fisheries production.[56] Yet the Philippines is one of the countries on which it has its deepest relations to fisheries, economically and socially. Philippine fishing industry supports over five million

TABLE 2

PHILIPPINE FISHERIES PRODUCTION
(Quantity in Metric Tons)

Year	TOTAL	COMMERCIAL	MUNICIPAL		AQUACULTURE
			Marine	Inland	
1973	1,204,837	465,442	639,795	-	96,600
1974	1,268,368	470,674	684,498	-	113,195
1975	1,336,803	498,617	731,725	-	106,461
1976	1,393,483	508,197	618,694	107,300	159,292
1977	1,508,855	518,165	710,840	116,260	163,590
1978	1,580,404	505,840	686,890	171,019	216,655
1979	1,581,303	500,747	635,538	203,820	241,198
1980	1,672,254	488,478	647,284	247,326	289,166
1981	1,772,897	494,768	709,989	228,639	339,501
1982	1,896,983	526,274	708,026	270,346	392,348

Source: BFAR, Fishery Statistics of the Philippines, 1983.

Filipinos or 10% of the population while contributing less than 4.5% to GNP and 6.3% employment from the total labor force. As of 1974, it was estimated that there are 34,582 registered fishermen in commercial fisheries; 1,180,000 fishermen are involved full time or part time in small-scale coastal fishing; 293,000 are involved in fishpond production; and approximately 30,000 men are employed in operating shore facilities and fish drying. The average per capita fish consumption is 24.2 kilograms/year, which is twice the world average. Fish accounts for 54% of the annual protein intake of the Filipinos.[57]

On the dependence on fisheries, the Philippines ranks 3rd among the Southeast Asian nations after Kampuchea and Vietnam in terms of percentage to the GNP; 1st in terms of percentage of the labor force and 5th in per capita fish consumption after Hong Kong, Singapore, Malaysia, and Kampuchea.[58]

The marine fisheries exploited by municipal and commercial fishermen are "open access" in nature. When entry to fishing is not restricted or controlled, it is possible to predict the inevitability of overexploitation.[59] Such is happening in the Philippine waters. Although there is no reliable scientific data to confirm the level of exploitation, intuitive knowledge and related information on fishing grounds are overfished. As a result, the coexistence of municipal and commercial fishing operations has given

rise to conflicts. Despite legislations designating fishing ground for small-scale and commercial fishing operations, commercial fishing has continually encroach on the fishing grounds set aside for small-scale fishing.[60]

Figure 3 shows the status of the Philippine fishing ground and it can be seen that fishing operations do not go too far offshore, coinciding with the narrow continental shelf and supporting the contention that more than 90% of the total fish harvest are caught within the waters less than 200 meters deep.

Table 3 shows the fish exports by quantity and value in 1981 and 1982. In 1982 exports were off more than 25% in volume but only about 4% in value, indicating a trend toward export of higher value and more highly processed product. This trend, together with the predicament of the fishing grounds and inadequate supporting infrastructure, creats an irony that municipal fishermen could not afford to eat the fish that they caught because they would rather sell it, and that an average Filipino could not afford to buy high quality fish, like tuna and shrimps because they are exported.

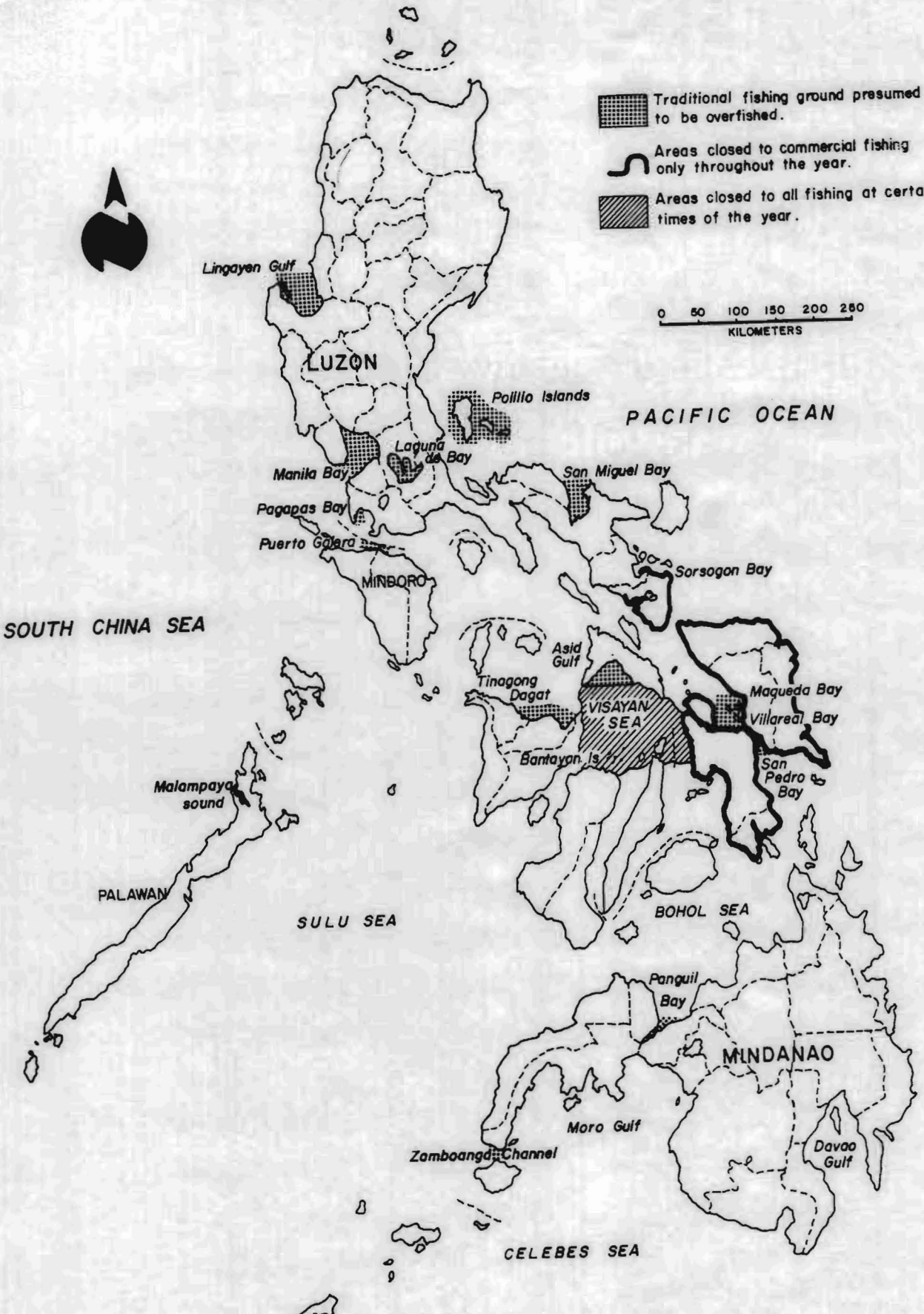

Fig. 3: Status of Philippine Fishing Grounds
Source: Ian Smith, M. Puzon, p. 19.

TABLE 3
MAJOR FISH EXPORTS , BY QUANTITY AND VALUE, 1981-1982

	1981 Quantity in Net Kgs.	Value in Pesos	1982 Quantity in Net Kgs.	Value in Pesos	Percent Change in Value
Canned Tuna	18,033,020	408,568,286	19,509,848	394,408,651	-3.46
Shrimps, prawns	2,899,488	171,987,590	2,937,812	277,253,483	61.20
Tuna (frozen)	35,829,809	361,087,707	15,239,334	155,887,607	-56.82
Misc. fish (live)	1,894,903	24,789,508	1,783,519	33,408,323	34.76
Crusteceans, Mollusks (fresh, frozen)	507,024	12,764,930	864,568	25,905,824	102.94
Cuttlefish, squid (fresh, frozen)		15,897,308	537,451	25,354,245	59.48
Milkfish (frozen)	526,398	8,538,552	982,830	20,104,165	135.45
Crusteceans, mollusks (dries,salted,smoked)	346,379	7,982,926	675,617	14,334,974	79.57
Misc. fish (dried, salted, smoked)	225,287	4,813,588	482,623	11,209,633	132.87
Sea Cucumber (dried, salted, smoked)	613,777	8,062,784	527,002	8,635,862	7.10
Canned anchovies and fishpaste	212,722	1,483,515	452,686	7,158,554	382.54
Cuttlefish, squid (dried, salted, smoked)	38,183	763,917	140,465	5,164,643	576.07
TOTAL	61,126,990	1,026,740,611	45,133,755	978,825,964	-4.66
Grands Total	62,940,310	1,052,385,967	46,379,694	1,009,509,576	-4.07

Source: U.S. Department of Commerce, Industrial Report Outlook: The Philippines, p.14

Technology and Resources.

Gear Technology and State of the Art.

The typical municipal fisherman operates a small reinforced dug-out craft (banca) of not more than 3 gross tons. The bancas are usually made of marine plywood and are relatively narrow and lightly constructed. Most are furnished with bamboo outriggers for stability. Some of the motorized bancas do not have outriggers for greater speed and less surface friction. Bamboo rafts are also used for fishing close to shore.

The Philippine Bureau of Fisheries and Aquatic Resources (BFAR) in 1976 recorded a total of 244,600 fishing bancas of which 113,191 or 46% were motorized. Approximately half of 500,000 fishermen did not own any fishing craft.[61] Motorization of the bancas began immediately after World War II when the fishermen adopted surplus U.S. Army generator engine to the bancas. It is estimated that 90% of the motorized bacas are powered by Briggs and Straton air-cooled, single-cylinder, four-cycle gasoline engine in the 10-16 hp range.[62]

As of 1978, there are 2,522 boats used in commercial fishing operations.[63] These vessels range from 3 gross tons to the most sophisticated tuna purse seiner.

Figure 4 outlines the gears that are used in the Philippines, by its mode of operation and material. The

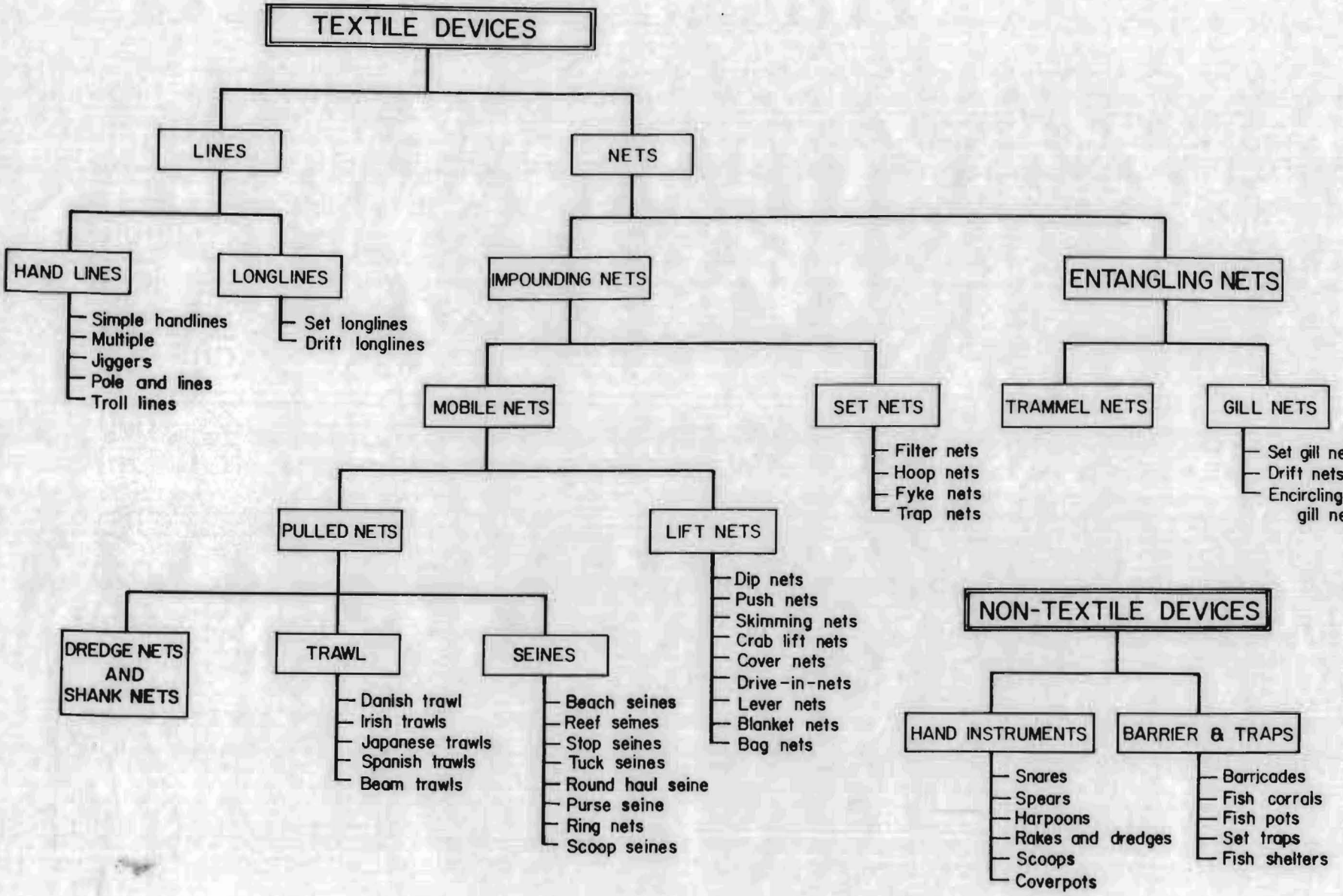

Fig. 4: Outline of Phil. Fishing Gears.
Source: Ian Smith, M. Puzon, p. 28.

diagram encompasses all the general gears used in both the municipal and commercial fisheries. A certain type of gear can have minor modifications depending on the local conditions and traditions. Some of the gears, such as gill nets and long lines, are both used in the municipal fisheries and commercial fisheries. In view of this, it has been recommended that rather than the arbitrary demarcation between "municipal" and "commercial" fisheries based on tonnage, a demarcation based on entrepreneurship or management distinguishes "small-scale", medium-scale", and "large-scale" operations.[64] For example, the operation of a beach seine requires bigger boats more than 3 gross tons but the participants are all municipal fishermen belonging to one coastal village to do the operation.[65]

Non-textile devices and simple handlines are primarily used by children as a leisure activity fishing on rivers and rice paddies. Trawls, seines, and bagnets are commercial gears because they require bigger boats and capital.

Two commercial gears need underscoring because they have significant impact on the fisheries resources and marine ecology --- the muro-ami and purse seine with the use of fish shelter.

The muro-ami consists of the net and a series of scare lines. Muro-ami are usually operated during daytime and set at a depth near coral reefs. The scare lines are suspended by weights. They are dragged and pounded on the

on the coral reef to direct the coral fishes to the net. Operation of the muro-ami is labor-intensive but the catch consists of quality fishes associated with the coral reef. Concern has been expressed about the rampant destruction of coral reef that cause adverse effects on the ecology. The Presidential Decree No. 1219 in October 1977 was issued in an attempt towards managing the country's coral resources but this legislation did not work with coral gatherers and traders managing quite easily to skirt away from its provisions.[66] The legislation was directed towards the coral trade, but the effects of muro-ami operations was not addressed.

The other gear that spurred more controversy and concern lately is the purse seine with the use of payaw or fish shelter. The payaw consists of layers of bamboo tied together and rigged with bundles of twigs or coconut fronds, anchored to a steel barrel filled with concrete and rocks. This is set at a designated sea location, tagged and is periodically checked to ascertain the presence of pelagic fishes.

The gear is usually operated during the dark phase of the moon with a pair of vessels or by a combination of large and auxilliary boats. Lamps and the payaw are used to attrack schools of fish. The auxilliary boat or skiff boat lays out the net in a circle around the school with one end of the net tied to the mother boat and the other to the

skiff boat. When the skiff boat has completely encircled the school, the sinkerline is retrieved by the mother boat to close the bottom of the seine.

The use of the payaw in purse seine operations is attributed to a Filipino innovation. With its introduction in the mid-70's, pelagic fisheries, particularly the tuna fisheries, grew into industrial scale when commercial fishing operations shifted to purse seining. Tuna and tuna-like fish production has increased from less than 25,000 metric tons in 1973 to a yearly average catch of 172,000 metric tons from 1976 to 1980 with a peak production of 218,000 metric tons. making the Philippines the biggest producers of tuna in Southeast Asia.[67]

Incidents of conflicts among commercial fishermen have been reported involving payaw. Some fishermen would set the purse seine by the payaw maintained by other fishermen, contending that no one is entitled to claim his own "territorial sea". Recently, a decline in the tuna catch was experienced and the blame was put on the excessive use of of payaw. The purse seine-payaw tuna fisheries is also catching significant quantity of immature tuna. There is an indication that there has been an overcapitalization on the purse seine payaw fishery. Aside from the significant quantities of immature tuna caught, the number of payaw set dropped to 250 units from 1,500 during the late '70's. Purse seine payaw fishery, therefore, illustrates the con-

cern of the lag in the realization that there has been an overcapitalization which led to overfishing and the decisions to implement remedial actions.[69]

The operations of the muro-ami and payaw-purse seine reminds of the dilemma that confronts the fishery administrators. Whereas fishery development programs are launched to encourage production as way to economic amelioration to the fishermen, at the same time fishery management that requires rational utilization of resources (e.g. control of fishing effort) to ensure its perpetuity should be pursued.

Fisheries Resources and Potential Yield.

In order to evaluate the prospects of fisheries expansion, an overview of the total marine production and estimate of the potential yield in the area are necessary. There are, however, some qualifications that have to be made first with regards to the following discussions. First of all, the rigid requirements of a fishery statistics collection system present a stumbling block toward a reliable estimate. Secondly, the results of the research works may be completed and released too late to timely describe the status of the resources. Various authors and organizations have attempted in the recent years to provide estimates on production and potential yield but the results produce a wide disparity. (See Tables 4a and 4b). It cannot be overemphasized that such data are the basis for effective management decisions.

Except for the estimates done by NORCONSULT/IKO, which was critisized for having an assumption that improved technology would increase productivity by anywhere from 80 to 100%,[70] estimates show that the trend on the total fisheries production increased at a very small rate that it could be considered relatively unchanged. Fisheries production from the municipal sector, however, showed a declining rate during the same period. (See Table 2). Increases in production from the commercial and aquaculture sectors were offset by a decline in marine municipal fisheries catch.

TABLE 4a

PHILIPPINE FISHERIES PRODUCTION ESTIMATES (x 1000)m.t.

Year	BFAR	NORCONSULT	NEDA	PREPF	FAO
1970	984	1877	1360	1443	-
1971	1023	1907	1405	1457	-
1972	1122	1657	1516	1536	1220
1973	1205	1684	1614	1599	1304
1974	1268	1545	1684	1631	1371
1975	1337	-	1977	1569	1443
1976	1393	-	2008	-	1393
1977	1509	-	-	-	1511

Source: Ian Smith, Miguel Puzon, from Table 5 on p.10.

Table 4b

COMPARISON OF PRODUCTIVITY ESTIMATES ON PHIL. SHELF

Source	MSY in m.t.
Kravan (SCSFDCP) 1971	1,650,000
Menasveta et. al. (1973) Aoyama (1979)	1,024,000
NORCONSULT (1975)	3,700,000
USAID (1977)	1,850,000
Yutuc and Trono (1977)	2,914,000

Source: Ian Smith, Miguel Puzon, from Table 6 on p. 12.

Although there were disagreements and criticisms on the assumprions and methodologies used in the separate research works on the estimates of production and Maximum Sustainable Yield (MSY), there was a consensus that municipal fisheries, restricted as they are to the shallower coastal areas, have most probably been reached, if not surpassed, their MSY. Juliano and Yutuc concluded that "there is possible overfishing in our coastal waters by municipal fishermen, as reflected in the declining production from this sector."[71] (emphasis supplied). USAID also concluded that "it is possible that municipal fishing grounds near urban centers already suffer from intensive competition, and any additional effort would only depress catch per fishermen. Increased motorization of banca operating in traditional fishing ground would increase the catch of some fishermen, possibly at the expense of others. Motorization would not help fishermen cope with a limited and dwindling resource."[72] (emphasis supplied). Since coastal waters and shallow continental shelf areas are the first areas to have been fished historically, the danger or presence of overfishing in waters fished by municipal fishermen is undoubtedly greater than in deeper waters beyond the continental shelf.

The South China Sea Fisheries Development Program (SCSP), together with BFAR, also conducted a research through a series of workshops. Their approach was to analyze the scanty catch and effort data on some important fishing zones.

The finding are summarized as follows:

Visayan and Sibuyan Sea: Almost 50% of the commercial and municipal catch comes from the two seas. Examining the catch and effort data from demersal stocks and pelagic species, the workshop concluded that "there is scope of further increases in the catches of demersal fishes, shrimps, and pelagic fishes in most areas, but showed clear evidence of overfishing of demersal fish and shrimps off Samar and of anchovies off Tayabas Bay and Marinduque".[73]

Sulu Sea, Bohol Sea and Moro Gulf: The workshop concluded that the potential for increasing catches of demersal fish on trawlable grounds was slight, but for hard bottom including reef, "there is no evidence that the fisheries . . . are nearing full exploitation." The workshop also pointed out that "it cannot be too strongly stressed that the assessment have been made with data which have been recognized often as only estimates and therefore some conclusions may prove to be wrong."[74]

Pacific Coast: The fin fishery of San Miguel Bay and Lamon Bay areas were judged to be fully exploited. Other areas along the coast showed no evidence of overfishing. The workshop, however, pointed out that "owing to the fact that on the east coast as a whole the municipal fisheries catch most of the different species and that good data on catches in the municipal fisheries only started in 1976, it was only possible to make meaningful assessments of the

potential catches of the resources in relatively few cases."[75]

Mackerels and Round Scads in the South China Sea: The workshop failed to arrive at a conclusion on the extent of the overfishing pressure because the extent of the stocks shared among countries bordering the South China Sea was not established. However, it was concluded that in Northern Palawan, "it may be possible that the mackerel stock may have been fully or nearly fully exploited."[76] (emphasis supplied).

The research studies mentioned in the preceding discussion do not include the tuna fisheries. Due to the rapid rise to importance that began only a few years back and the special problem of being highly migratory that renders difficulty in collecting data on tuna fishery, no conclusive quantification on the potentials can be made, at least on the Western Pacific region. The Inter-American Tropical Tuna Commission estimated that the tuna potential for the whole Pacific region was 850,000 to 1,200,000 metric tons. The country's tuna potential was 200,000 to 300,000 metric tons. Tuna production over the western Pacific region, however, exceeds most the the resource estimates, indicating that the estimates were inaccurate or the level of fishing effort is more than it should be.[77] In 1979, SCSP concluded that tuna stocks in the Pacific "do not show evidence of biolocal depletion, but present levels of fishing are apparently higher than that required to fully exploit the stocks."[78]

However, at that same year, it was believed that "tuna resources, particularly the skipjack is still underexploited and bigger catches are possible."[79] Considering the time element, the fact that tuna export fell from 35,800 metric tons in 1981 to 15,200 m.t. in 1982 [80] supports the contention --- fishing levels are higher than required to fully exploit the stocks --- of the SCSP study. But it should be noted that the SCSP study did not clarify the geographical areas concerned and that 70% of the Philippine tuna is caught in Manila Bay, Davao Gulf, Mindoro Strait and Sulu Sea areas. If the eastern coast of Luzon, which is an established migratory path for tuna of the Western Pacific stock (See Fig. 5), the other contention may hold true. Presently, few Philippine tuna fishing operations exist on the eastern coast of Luzon because of very rough seas but there are many incidents of illegal foreign fishing in the area. It is estimated that 50,000 to 100,000 metric tons per year are being harvested illegally by foreign fishermen in the Philippine EEZ.[81] A substancial percentage of the harvest catch could come from the Philippine Pacific coast (eastern coast of Luzon).

In summary, a situationer on the fishery resource and potential yield can be presented based on the mentioned studies, with the qualifications considered:

1) Municipal fishing grounds, which do not usually extend beyond five miles are overfished. Only underutilized species, such

as squid, are capable of being harvested at increasing yield.[82]

2) Small pelagic fishes are close to "optimum" yield. Commercial fishermen are complaining of the longer time they have to spend at sea and the small size of fish that they catch.

3) The intensity of tuna fishing on traditional fishing grounds in the past year is manifested by the significant percentage of immature tuna caught.

4) There is overfishing of demersal fishes on traditional fishing grounds. Fig. 3 that shows grounds that are extensively fished correspond to the traditional trawlable grounds. The bathymetric characteristics of the Philippine shelf indicate a small percentage of grounds suitable for trawling.

5) Tuna fisheries are still capable of further exploitation on the non-traditional tuna fishing grounds specially on the Pacific coast. This area is where illegal foreign fishing operations are sighted. The potential yield in this area is not established.

6) Potential yield off the claimed portions of Spratly archipelago is not established.

In concluding this section, the observation of Richard Neal is worth repeating:[83] "It is clear that some people do not agree that fisheries are generally overexploited in Southeast Asia. The idea (hope?) persists that the sea is virtually inexhaustible source of fishery products to which we can turn for ever-increasing yields. The truth lies somewhere between the concepts of "total overexploitation" and "infinite fish supply". Many fishery resources are clearly overexploited, but for most fisheries we cannot define maximum sustainable yield in biological terms because insuffi-

cient data are available. Our lack of solid biological and statistical data with which to describe the condition of given stocks is, in fact, a hindrance to moving ahead with viable solutions since the hope persists that difficult choices related to restricting fishing will not have to be made. They may still be more fish to be caught, and before the manager takes such steps as limiting access, restricting fishing rights or imposing catch quotas that are difficult to implement and will further limit profits of fishermen in the short run, he must be certain there are no more acceptable options."

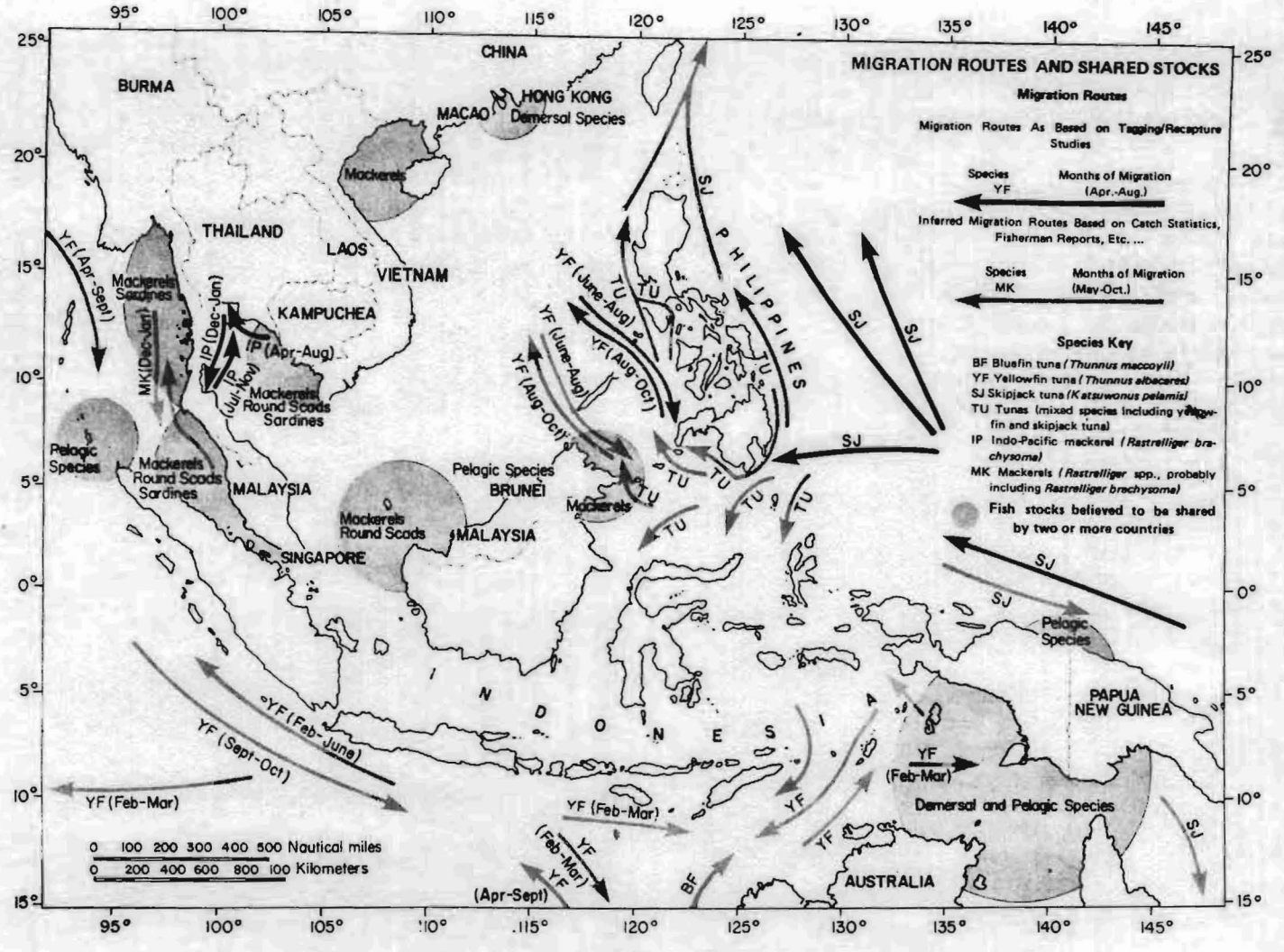

Fig. 5: Migartion Routes of Tuna in Southeast Asia.

Source: ICLARM Newsletter, Vol. 5 No. 4, Oct. 1982, p.24.

Development Programs.

Government Programs.

The overall objectives for management and development of fisheries as enunciated in the Philippine Fisheries Decree of 1974 are: 1) to maintain fish production to a level of self-sufficiency; 2) to sustain optimum yield from fishery resources through effective conservation, management and exploitation of the fishery resources of the Philippine waters; 3) to upgrade the livelihood of small-scale fishermen, increase their incones and improve their purchasing power; 4) to manage fish supply towards optimum seasonal and geographical distribution; 5) to maximize participation of the local fishing industry in the exploitation of fishery resources; and 6) to improve our foreign exchange position through expansion and enhancing our domestic capabilities.[84]

Annex D is an inventory of government projects aimed at attaining the objectives. The development projects are undertaken by the government, either on its own or with the cooperation of private and international organization. The scope of the development projects covers education, policy studies, credit, marketing, and extension, totalling to $ 215 million budget for implementation.

Marr made a distinction on two aspects of marine fisheries management: resource management and fishery management. Resource management consists of measures designed

to ensure the perpetuity of exploited stocks. It takes advantage of some biological property of the stock to maximize the productivity by limiting the catch to the level of maximum sustainable yield. It is a "conservation" action, and examples of this are closed seasons during spawning period, regulation of mesh size, banning of certain gears, etc. Fishery management on the other hand is directed towards the users of the fishery. It is management by any means to achieve some economic, social, or potilical objective. Examples of fishery management programs are facilitation of credit, provisions of fishery infrastructure (ports, markets, iceplants, etc.).[85]

Following the distinction made, it can be seen that there is an imbalance of the nature of development programs. There is a good number of fishery development projects but very few on resource management. While these programs indicate government interest and action towards increasing production, the resource management aspect which will ensure the sustained productive state and fair allocation of the resources is neglected.

Remarkable among the fishery development program is the Biyayang Dagat Project. This program, started in September 1979, was designed to boost fish production by providing low cost credit to the municipal fishermen. Originally, the program targeted the entire 600,000 municipal fishermen population as loan recipients. The project is

now considered a failure; less than 7,000 fishermen had received loans totaling $8.8 million as of March 1983. Critics believe that the program was implemented too quickly and with insufficient planning. The program required 1000 extension workers but there were only 350. Many fishermen in remote areas were simply not aware of the credit opportunities. If they received a loan, there was little supervision to ensure that the money was spent properly. Only 51% of the loans have been repaid not only because the fishermen considered the loans a political dole-out but also there was no follow-up on collecting the loans.[86]

Also, there is much uncertainty in the effective and successful implementation of other marine fisheries development projects. The choice of the site of the premier fishery university and some fishing ports are seriously challenged by specialists and the private sector, respectively.[87] Other projects fell into the trap of political quagmires and faded into obscurity together with the funding.

Presently, the objectives targets are not attained. In 1982, the Philippines imported 83,445 metric tons of fish and fish products. Most traditional fishing grounds are overfished. Small-scale fishermen live in poverty. Post-harvest handling technology and supporting infrastructure are lacking, thereby causing approximately 20% loss of the total catch through spoilage.[88]

Joint Ventures.

In light with the declaration by several countries of the 200-mile EEZ and the raising economic importance of fish, particularly the tuna, joint ventures are gaining a rapid importance.

For a developing host country like the Philippines, joint venture activities are taken as vehicles for the transmission of technology, skills, capital and management experience to facilitate the development of the local fishing industry and raise foreign exchange revenues, in congruence with the objectives #5 and #6 (see page 54). Also, joint ventures are considered to be a fulfillment of the obligation that was set through international understanding --- that coastal state must rationally develop their expanded zones and where they cannot harvest the entire catch, other nations should be given access to the surplus through agreement or other forms of agreements. For the developed countries as partners in joint ventures, the collaboration may be entry points for access to the marine catch.

A joint venture is a partnership wherein two private or government parties (one local and one foreign) undertake a project in fisheries entailing access to fishery resources, information, manpower, etc., with the risks and profits of the project shared by both parties.

Fisheries joint ventures in the Philippines are of two types: the equity type of agreement wherein a jointly owned

company is established with each of the parties owning shares of stocks. The contractual type usually consists of a charter, lease, or lease-purchase of foreign fishing vessels by local enterpreneurs.

The prevalent type of joint venture in the Philippines is the contractual type. Since 1978, 32 joint ventures proposals have been received by the Fishery Industry Development Council (FIDC)[89], 31 of which fall under the contractual type of agreement. Of the 32 applications, only 11 were granted permits. Of this, only five are operating. The five firms operate 36 vessels, with a total capacity of 9,659 gross tons. Sixty percent belong to the 3-50 gross ton size, 22 percent to the 51-200 gross tons size and 18 percent to more than 200 gross ton size. Vessels with sizes of more than 200 gross tons are usually equipped with purse seines and have been chartered from the U.S. while the smaller ones are usually gears with longline or hook and line and have been chartered from Taiwan and Japan.[90]

The legal framework of establishing joint ventures are stipulated in Section 21 of the Philippine Fisheries Decree and the Fisheries Administrative Order (FAO) No. 121. As analyzed by Lawrence Christy, the process for approval of charter arrangements currently prescribed by Section 21 and by FAO No. 121 is both bureaucratic and confusing. FAO 121 imposes a series of procedural requirements, each of which must be met before the next step is begun. Many of

these have little apparent relevance to decisions under Section 21. He warned that where it is very difficult to proceed in accordance with the law, there will be a tendency to proceed in defiance of it. By contrast, the penalties actually imposed for illegal fishing are minimal (see Annex C) and the chance of apprehension appear slight.[91] It is not surprising then that as many as 72 out of some 200 operating purse seiners are "illegal" joint ventures. These operandi are completely financed by either Taiwan, Japanese, or Americans; only the crew is Filipino. Most of the ships are registered in a Filipino name. As an incentive to cooperate in the scheme, the crew's relatives are often provided free schooling and other benefits. Expectedly, they do not report any data on their catches.[92]

Christy concluded that there is an urgent need for a more rational approach to joint ventures, if such programs are encouraged, particularly in the light that the set-up does not assume proportionate benefits accrue to the Philippines from the exploitation of its national fisheries.[93]

In view of this observation, the joint venture policies are being reviewed and revised. The guiding principles for the evaluation of joint ventures applications is to consider the following factors: a) the nature and extent of the fishery resources to be exploited; b) the effect of the proposed project on existing fishery activities; c) the contribution the foreign participation can be expected to

make to the development of Philippine fisheries; and d) the foreseeable ability of the qualified corporation to operate independently of the foreign person, corporation or entity at the end of the contract period. Proposed policies on foreign participation set conditions that the fishing activities will benefit the country's municipal fishermen; it will not be conducted in areas determined to be sufficiently exploited or extensive; and it will not be competing with the local fishermen.[94]

Meanwhile, the existing joint ventures suggest a competition against the local fishing industry. The 36 vessels operating under joint venture have concentrated their fishing in traditional fishing grounds. Although there are scanty reports on their catch, during the period 1979-1980 their catch increased while those of local commercial vessels have been declining since 1978. The existing "illegal" joint ventures manifest the loopholes and bureaucracy involved with the present policy and the social issue associated with preventing the local fishermen to grab the opportunities offered by the foreign counterpart of the "illegal" joint ventures.

Fisheries Management and Research.

Effort at fisheries management pertain mainly to legislation at the national or local levels. It is concerned with the drafting and promulgation of fishery laws, rules and regulations. For examples, trawl fishery which used to be the most dominant gear along with the purse seine and bagnet has been banned in certain areas and in waters seven fathoms deep because of its "over-efficiency" in catching juvenile fishes and the tendency to destroy coral resources. Four administrative orders were issued banning the operation of trawl for a period of five years in the waters of Bohol, Cebu, Negros Occidental and Quezon Province. In Visayan Sea, the use of all kinds of fishing nets employing light attraction is prohibited. A fishery administrative order imposed in October 1973 closed totally the Malampaya Sound in western Palawan "to protect certain species of fish". Likewise, two fisheries administrative orders issued on February 1982 established a closed season for five years for the operation of commercial fishing boats in San Miguel Bay and the operation of trawl and purse seine in Palawan.[95] A Presidential Letter of Instruction (No. 480) was imposed to reiterate the banning of operation of trawl seven kilometers from the shoreline in the provinces of Leyte, Samar, and Sorsogon.

In any fishery situation, the stock of mature fish should be prevented from being reduced so that there is

enough left to reach sexual maturity and replenish the stock. If overfishing persists, urgent management measures are needed to avoid depletion.[96]

The legislation of the fishery laws, rules and regulations are the management measures undertaken in the Philippines. Unfortunately, the restrictions have been imposed without initial proper biological studies of the stock. These drastic restrictions had done more harm than good because of the multi-species nature of the fisheries in the Philippines. The closing of the Malampaya Sound caused economic dislocation among 2000 families whose only livelihood was to fish in the area. The ban of coral harvesting have caused some disgruntled gathers to join the underground rebel movement in Zamboanga.

Notwithstanding the lack of the biological studies and stock assessment made as a basis for formulating the laws, the social and political aspects were apparently neglected. Indeed, the major obstacle to effective implementation of management schemes is to consider the multidisciplinary aspects of the marine fishery industry.

The lack of the biological studies as well as the consideration of the social implications in the promulgation of fishery laws reflects the research situation in the Philippines. There are too much to be done.

There are only two major institutions involved in the marine fishery-related research: the BFAR and the University

of the Philippines in the Visayas (UPV). In addition, there is the Marine Science Center (MSC) which tackles marine scientific problems not necessarily related to marine fisheries.

The progress in research remains considerably hampered by a number of interrelated problems. Among the most dominant constraints is the insufficient number of qualified manpower. The Research Division of the BFAR has a staff of 100 who undertakes numerous studies in fishing technology, fish biology and oceanography.[97] For 1976, the Food and Agricultural Organization (FAO) of the U.N. correspondence lists 12 marine fishery scientists, 6 of which are concerned with fisheries biology, 4 with aquaculture and 2 with ichthyology.[98] Also, there is a lack of standardized salary rates and rewards that does not provide incentives for researchers and technologists. There is no available information on the number of competent social scientists actively involved on fisheries. Previous works on socio-economic studies on small-scale fisheries merely describes "what it is" rather than "what it should be".

At present, the research institutions are exerting efforts to enhance its research capabilities. Various institutional strenghthening grants from international organizations are being implemented and linkages with foreign universities are being sought.[99] The Philippine Council for Agricultural Research (PCAR) is conducting a study to

Philippines, the responsibility of the armed forces are greatly diffused. In short, the Philippines does not have the capability of enforcing and exercising EEZ jurisdiction.

The Philippine Coast Guard is intending to procure weather cutters, radio communications equipments and patrol crafts for the purpose of guarding the EEZ but these equipments will cost around ₱ 500 M (₱ 9.00 = US$ 1.00).[103] There are no plans to involve the private sector (i.e. fishing boats operators) for patrol undertakings in the form of "auxilliary forces" in apprehending illegal foreign poaching, but their cooperation on locating poachers are encouraged.

formulate a policy on financial rewards and incentives for researchers and natural scientists and social scientists involved in fisheries.[100] All these efforts are being done in the hope of catalyzing the development of Philippine fisheries.

Enforcement of Fishery Laws and Exercise of EEZ Jurisdiction.

In the promulgation of restrictions, enforcement is seldom provided for in terms of funding or logistic support. Oftentimes, the restrictions remain on paper. In most cases, there is a wanton disregard of the regulations. In some cases where there is a more strict enforcement of fishery laws, fishing operators with political contacts do away with it. The writer, in his course of doing some field work in coastal villages and boarding research vessels, always encounters trawlers operating on less than seven fathoms deep on broad daylight. Even with the deputization of other government units such as the Philippine Coast Guard and the Philippine Navy to augment the 268-man fishery law enforcement team of BFAR,[101] implementation of fishery laws is lacking.

The Philippine Navy and the Coast Guard are in charge of protecting the marine areas. As of 1977, it has a combined total fleet of 55 and a personnel of 10,000. The number of airforce and navy aircraft is 500.[102] To enforce the EEZ jurisdiction, a single enforcing vessel has to watch an area of 10,000 square miles and 1,190 miles of coastline; and a single aircraft has to watch 2,200 square miles. This is on the assumption that enforcing maritime jurisdiction is the sole purpose of the navy and the Coast Guard. Because of some internal security problems in the Southern

CONCLUSIONS

Considering the fact that the Philippine martime areas comprise a limited area of continental shelf above which most fishes are caught, the opportunities from the EEZ on fisheries are on the highly mugratory tuna species. But its potential is yet to be established. Notwithstanding the uncertainty of the tuna benefits that the Philippines are bound to accrue, the cost of establishing the EEZ is easily discernable. The most obvious is the surveillance requirements. Although it may not be necessary to watch over every segment of the EEZ waters, additional surveillance capacity enough to discourage poachers would require enormous amount of money enough to offset the potential tuna benefits.

The greatest cost to the Philippine establishment of EEZ is the wishful thinking it creates among policy makers that the areal expanse of marine waters under Philippine jurisdiction is proportional to the possibility of increasing fisheries production. The record of success of implementation of the fisheries project, specially the production-oriented programs, should serve as a reminder that this is not the case.

The problem of rational utilization of marine fisheries is not only scientific (biological) ignorance. The major

constraint lies in the institutional mechanisms, the complexity of the social, political, economic, ethical, and bureaucratic constraints. Unfortunately, in the fisheries development programs designed to help the municipal fishermen, the municipal fishing communities are regarded as a separate entity that they are rarely included in the general rural development schemes. In order to improve the quality of life of fishermen, fisheries development program should be entwined in the broader matrix of rural development that the solution might not come from the fishery resource sector. Thus, instead of looking outward through the waters, policy makers should consider more the internal factors that affects the general economy of the country before implementing fishery development projects.

Since the establishment of the EEZ is irreversible, the burden of having it can be minimized if the fishing industry broadens its outlook in light with the extended jurisdiction and shift its emphasis from municipal fisheries, in general, to tuna fisheries. One way is to consider the responsibilities and obligations that come along with the EEZ, that of rational utilization. Although rational utilization of fishery resources is difficult to define, the joint ventures program where mutuality exist could bridge the gap towards rational utilization. Outright nationalism could have detrimental effects to the industry. The complex procedural requirements of forming joint ventures should be simplified.

and at the same time the Philippines should initiate collaborative efforts towards international mechanism for tuna management.

ANNEX A

REPUBLIC ACT NO. 3046*

AN ACT TO DEFINE THE BASELINES OF THE TERRITORIAL SEA OF THE PHILIPPINES

WHEREAS, the Constitution of the Philippines describes the national territory as comprising all the territory ceded to the United States by the Treaty of Paris concluded between the United States and Spain on December 10,1898, the limits of which are set forth in Article III of said treaty, together with all the islands embraced in the treaty concluded at Washington, between the United States and Spain on November 7, 1900, and in the treaty concluded between the United States and Great Britain on January 2, 1930, and all the territory over which the Government of the Philippine Islands exercised jurisdiction at the time of the adoption of the Constitution;

WHEREAS, all the waters within the limits set forth in the above-mentioned treaties have always been regarded as part of the territory of the Philippine Islands;

WHEREAS, all the waters around, between and connecting the various islands of the Philippine archipelago, irrespective of their width or dimension, have always been considered as necessary appurtenances of the land territory, forming part of the inland or internal waters of the Philippines;

WHEREAS, all the waters beyond the outermost islands of the archipelago but within the limits of the boundaries set forth in the aforementioned treaties comprise the territorial sea of the Philippines;

WHEREAS, the baselines from which the territorial sea of the Philippines is determined consist of stright lines joining appropriate points of the outermost islands of the archipelago; and

WHEREAS, the said baselines should be clarified and specifically defined and described for the information of all concerned; Now, therefore,

Be it enacted by the Senate and House of Representatives of the Philippines in Congress assembled:

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*As amended by RA 5446.

ANNEX B

PRESIDENTIAL DECREE NO. 1596

DECLARING CERTAIN AREA PART OF THE PHILIPPINE TERRITORY AND PROVIDING FOR THEIR GOVERNMENT AND ADMINISTRATION.

WHEREAS, by reason of their proximity the cluster of islands and islets in the South China Sea situated within the following:

KALAYAAN ISLAND GROUP

> From a point [on the Philippine Treaty Limits] at latitude 7°40' North and longitude 116°00 East of Greenwich, thence due West along the parallel of 7°40'N to its intersection with the meridian of longitude 112°10'E, thence due north along the meridian of 112°10'E to its intersection with the parallel of 9°90'N, thence northeastward to the intersection of the parallel of 12°00'N with the meridian of longitude 114°30'E, thence, due East along the parallel of 12°00'N to its intersection with the meridian of 118°00'E, thence, due South along the meridian of longitude 118°00'E to its intersection with the parallel of 10°00'N, thence Southwestwards to the point of beginning at 7°40'N, latitude and 116°00'E longitude.

are vital to the security and economic survival of the Philippines;

WHEREAS, much of the above area is part of the continental margin of the Philippine archipelago;

WHEREAS, these areas do not legally belong to any state or nation but, by reason of history, indispensable need, and effective occupation and control established in accordance with international law, such areas must now be deemed to belong and subject to the sovereignty of the Philippines;

WHEREAS, while other states have laid claims to some of these areas, their claims have lapsed by abandonment and can not prevail over that of the Philippines on legal, historical, and equitable grounds.

NOW, THEREFORE, I, FERDINAND E. MARCOS, President of the Philippines, by virtue of the powers in me vested by the Constitution, do hereby decree as follows:

ANNEX B cont.

SECTION 1. The area within the following boundaries:

KALAYAAN ISLAND GROUP

From a point [on the Philippine Treaty Limits] at latitude 7°40' North and longitude 116°00 East of Greenwich, thence due West along the parallel of 7°40'N to its intersection with the meridian of longitude 112°10'E, thence due north along the meridian of 112°10'E to its intersection with the parallel of 9°90'N, thence northeastward to the intersection of the parallel of 12°00'N with the meridian of longitude 114°30'E, thence, due East along the parallel of 12°00'N to its intersection with the meridian of 118°00'E, thence, due South along the meridian of longitude 118°00'E to its intersection with the parallel of 10°00'N, thence Southwestwards to the point of beginning at 7°40'N, latitude and 116°00'E longitude;

including the seabed, sub-soil, continental margin and air space shall belong and be subject to the sovereignty of the Philippines. Such area is hereby constituted as a distinct and separate municipality of the Province of Palawan and shall be known as "Kalayaan."

SEC. 2. Pending the election of its regular officials and during the period of emergency declared in Proclamation No. 1081, and unless earlier provided by law, the administration and government of the area shall be vested in the Secretary of National Defence or in such officers of the Civil government or the Armed Forces of the Philippines as the President may designate.

SEC. 3. This decree shall take effect immediately.

Done in the City of Manila, this 11th day of June, in the year of Our Lord, nineteen hundred and seventy-eight.

ANNEX C

PRESIDENTIAL DECREE NO. 1599

ESTABLISHING AN EXCLUSIVE ECONOMIC ZONE AND FOR OTHER PURPOSES

WHEREAS, an exclusive economic zone extending to a distance of two hundred nautical miles from the baselines from which the territorial sea is measured is vital to the economic survival and development of the Republic of the Philippines;

WHEREAS, such a zone is now a recognized principle of international law;

NOW, THEREFORE, I, FERDINAND E. MARCOS, President of the Philippines, by virtue of the powers vested in me by the Constitution, do hereby decree and order:

SECTION 1. There is hereby established a zone to be known as the exclusive economic zone of the Philippines. The exclusive economic zone shall extend to a distance of two hundred nautical miles beyond and from the baselines from which the territorial sea is measured: Provided, That, where the outer limits of the zone as thus determined overlap the exclusive economic zone of an adjacent or neighboring state, the common boundaries shall be determined by agreement with the state concerned or in accordance with pertinent generally recognized principles of international law on delimitation.

SEC. 2. Without prejudice to the rights of the Republic of the Philippines over its territorial sea and continental shelf, it shall have and exercise in the exclusive economic zone established herein the following:

a. Sovereign rights for the purpose of exploration and exploitation, conservation and management of the natural resources, whether living or non-living, both both renewable and non-renewable, of the seabed, including the subsoil and the superjacent waters, and with regard to other activities for the economic exploitation and exploration of the resources of the zone such as the production of energy from the water, currents and winds;

b. Exclusive rights and jurisdiction with respect to the

ANNEX C cont.

establishment and utilization of artificial islands, off-shore terminals, installations and structures, the preservation of the marine environment, including the prevention and control of pollution, and scientific research;

c. Such other rights as are recognized by international law or state practice.

SEC.3. Except in accordance with the terms of any agreement entered into with the Republic of the Philippines or of any license granted by it or under authority by the Republic of the Philippines, no person shall, in relation to the exclusive economic zone:

a. explore or exploit any resources;

b. carry out any search, excavation or drilling operations;

c. conduct any research;

d. construct, maintain or operate any artificial island off-shore terminal, installation or other structure or device; or

e. perform any act or engage in any activity which is contrary to, or in derogation of, the sovereign rights and jurisdiction herein provided.

Nothing herein shall be deemed a prohibition on a citizen of the Philippines, whether natural or juridical, against the performance of any foregoing acts, if allowed under existing laws.

SEC. 4 Other states shall enjoy in the exclusive economic zone freedom with respect to navigation and overflight, the laying of submarine cables and pipelines, and other internationally lawful uses of the sea relating to navigation and communications.

SEC. 5. (a) The President may authorize the appropriate government office/agency to make and promulgate such rules and regulations which may be deemed proper and necessary for carrying out the purposes of this decree.

(b) Any person who shall violate any provision of this decree or of any ruke or regulation promulgated hereunder

ANNEX C cont.

and approved by the President shall be subject to a fine which shall not be less than two thousand pesos (₱2,000.00) nor be more than one hundred thousand pesos (₱100,000.00) or imprisonment ranging from six (6) months to ten (10) years, or both such fine and imprisonment, in the discretion of the court. Vessels and other equipment or articles used in connection therewith shall be subject to seizure and forteiture.

SEC. 6. This Decree shall take effect thirty (30) days after the publication in the Official Gazette.

DONE in the City of Manila, this 11th day of June, in the year of Our Lord, nineteen hundred and seventy-eight.

ANNEX D: Inventory of Philippine Fisheries Development Projects.

PROJECT TITLE	PROJECT DESCRIPTION	AREA COVERAGE	IMPLEMENTING AGENCY (SUPPORT)	PROJECT COST (US$000,000) GOP	FOREX (SOURCE)	TOTAL	STATUS/DURATION
EDUCATION							
IBRD-Assisted Fisheries Education Project	Relocation of the University of the Philippines College of Fisheries from the Diliman campus to Miag-ao, Iloilo to form the core college of the new U.P. Visayas; establishment of seven Regional Institutes of Fisheries Technology (RIFTs) in Aparri, Cagayan; Tabaco, Albay; Aborlan, Palawan; Catbalogan, Samar; Carmen, Cebu; Panabo, Davao del Norte, and; Rio Hondo, Zamboanga City; and finally, esteblishment of Regional Fishermen's Training Centers (RFTCs) adjacent to the proposed RIFTS.	Nationwide	EDPITAF (BFAR, UP System, MEC)	32.6	38.0 (IBRD)	70.6	Land preparation and building construction ongoing; also ongoing are community liaison building, equipment procurement and faculty recruitment and development
Esteblishment of Five Regional Municipal Fisheries Training Centers	Establishment of Regional Municipal Fisheries Training Centers in the cities of Tacloban, Cagayan de Oro, General Santos and in Bicol and Ilocos Norte	Nationwide	BFAR (UNDP, FAO, MNR, MLGCD, DBP, CBP, MEC)	1.42	0.642 (UNDP)	2.062	
South China Sea Fisheries Development and Coordinating Programme (Phase II)	A programme to initiate various development and training projects concerning the fisheries sectors for the purpose of uplifting the conditions of the fishery industry and conserving the fishery resources of the South China Sea	International	SCSP	4.556 (RP, etc.)	2.8 (CIDA) 2.84 (UNDP)	10.196	Five years or more
Brackishwater Aquaculture Development Training	Establishment of four strategic field aquaculture demonstration and training units on the basic of physiographic regions of fishfarm areas	Nationwide	BFAR	3.26	0.74 (FAO-UNDP)	4.0	
Freshwater Fish Hatchery Development and Training	Construction of 59 hatchery ponds, service security and storage building, fish hatchery and field laboratory building, and administrative building		BFAR	0.63	1.18 (Loan grant 1.5 (USAID Loan)	3.31	Five years
Unlad Palaisdaan Program	Training of fishpond operators on modern aquaculture techniques using progressive fishfarmers as cooperators whose areas shall be opened for demonstration	Nationwide	FIDC (BFAR, PFFP)		Not specified		14 cooperators identified; organizational meetings conducted in Iloilo City, Zamboanga City and Davao City

PROJECT TITLE POLICY	PROJECT DESCRIPTION	AREA COVERAGE	IMPLEMENTING AGENCY (SUPPORT)	PROJECT COST (US$000,000) GOP	FOREX (SOURCE)	TOTAL	STATUS/DURATION
Integrated Fisheries Development Plan	Preparation of a master plan for the total development of the Philippine fishery industry; covers programs, projects, areas of responsibilities among government and private agencies, targets, timetables	Nationwide	FIDC		Not specified		Constantly under process of updating as projects/programs are completed and others are envisioned
Expanded Fish Production Program	A subset of the IFDP, this program serves as a guiding instrument to carry out the functions of BFAR in tranalating the broad policies and basic development approaches of the government into operational terms. The objectives are to attain self-sufficiency in fish, to optimize the utilization of fish and other aquatic resources, to increase the exportation of traditional and non-traditional fish products, to promote import substitution and to alleviate and maintain the productive condition of the country's fishery resources.	Nationwide	BFAR	15.89	82.8 (Phil. private sector; not Forex)	98.69	Several specific projects have been formulated; those related to municipal fisheries are itemized hereunder:
a. Inland and Aquatic Fisheries Development Program	Involves fingerling production and dispersal, extension service, research, fishpond development survey and training	-do-					
b. Municipal Fisheries Development Project	Credit through the Biyayang Dagat Program, extension services, cooperative development, training and sea farming	-do-					
c. Fish and Fishery Products utilization	Involves research, extension services, ice plants and cold storage construction, product development, fish handling and market development and training	-do-					
d. Conservation and Fishery Law Enforcement	Involves law formulation and enforcement, research, training, leasing of fishponds and licensing of fishing vessels	-do-					

PROJECT TITLE	PROJECT DESCRIPTION	AREA COVERAGE	IMPLEMENTING AGENCY	PROJECT COST (US$000,000) GOP	FOREX (SOURCE)	TOTAL	STATUS/DURATION
CREDIT							
Biyayang Dagat Program	A supervised credit program for small and medium-scale fisheries designed to devise a new approach to credit that will increase its absorption in the countryside with greater viability and assist the small fishermen increase their production through the adoption of modern and more effective fishing technologies.	Nationwide	MNR (BFAR, FIDC, PFMA, CBP, MOB)	113	none	113	Implementing guidelines finalized; US$2.21 released to 1,106 fishermen-borrowers
MARKETING							
National Fish Marketing Infrastructure Development Program	Intended to develop a nationwide network of fishing ports and fish markets together with ancillary post harvest infrastructure as a response to the overall development of the fishery industry and the effective marketing of fish and fishery products. The components are as follows:	Nationwide					
a. Navotas Fishing Port and Fish Market	A central fish landing and market complex for the entire country where catch from many areas are unloaded for marketing in Metro Manila, complete with repair, storage and other facilities	Navotas, MM	PFMA (MNR, BFAR, FIDC, NEDA)	9.16	4.5 (ADB)	13.66*	Currently operational; expansion continuing
b. Fishing Ports Package I	Construction of fishing ports in Sual, Pangasinan; Camaligan, Camarines Sur; Lucena City; Iloilo City; and Davao City	Nationwide	-do-	11.0	25.8 (OECF)	36.8	Construction going on
c. Fishing Ports Package II	Construction of fishing ports in the cities of Tacloban, Bacolod, Cagayan de Oro, Cebu, and Davao	Nationwide	-do-		Under Study		Under study
d. ADB-Assisted Northern Palawan Fishery Development Project	Comprehensive fisheries development plan for Northern Palawan including provision of engines, gears and infrastructure support	Northern Palawan	-do-	10.7	13.6 (ADB)	24.3	Terms of reference finalized; contract for construction awarded to selected private management firms
e. Municipal Fishing Ports Project	Establishment of municipal fishing ports all over the country to service the needs of local fishermen	Nationwide	PFMA (MPWTC)	48.7	none	48.7	54 sites have been identified for initial implementation; initial construction going on

*Based on NEDA report (1979)

PROJECT TITLE	PROJECT DESCRIPTION	AREA COVERAGE	IMPLEMENTING AGENCY (SUPPORT)	PROJECT COST (US$000,000) GOP	FOREX (SOURCE)	TOTAL	STATUS/DURATION
Bohol-Cebu Fisheries Development Project	Technical Cooperation Agreement of ADB to assist FIDC in the preparation of a detailed feasibility study for the integrated development of the fisheries of Bohol and Cebu	Bohol-Cebu areas	FIDC		0.7 (ADB)	0.07	Surveys prior to preparation of the study completed
MNR-IBRD Small-Scale Fisheries Development Project	Technical Cooperation Program of FAO to assist GOP in the preparation of a feasibility study for the integrated development of the fishery industry in Samar Sea, Visayas Sea and Ticao Pass including provision of gears, engines and support fishery infrastructure	Bicol-Samar--Masbate areas	FIDC (MNR, PFMA, BFAR)	25.6	21.9	47.5	Computerization of survey results ongoing; feasibility study completed; verification of catch rate and fish volume in selected areas going on; preparations for Appraisal Mission being done
Fish Transport Services Program	Identification of required fish transport facilities and the provision of these (e.g., refrigerated carriers) in strategic areas to alleviate bottlenecks in the current distribution system which has been identified as the cause for the existence of fish surplus and deficit areas	Nationwide	PFMA		Not specified		Feasibility studies of two transport routes will be conducted to connect the identified fish port sites with major consumer centers
Cogtong Bay Fishery Industry Complex Development	Establishment of a fishing port complex along Cogtong Bay and integration of processing plants to compose the complex	Cogtong Bay, Bohol	NACIAD (BFAR, MPH, Bohol Integrated)		Not specified	43.3	Feasibility study completed; negotiations on funding with JICA ongoing
Marinduque Ice Plant and Cold Storage Project	Establishment of ice plant and cold storage complex in Barangay Tamayo, Sta. Cruz, Marinduque to service the needs of local fishermen	Sta. Cruz, Marinduque	NACIAD (BFAR, MPH)		Not specified	0.272	Feasibility study completed; implementation deferred pending funds release
Tawi-Tawi Fisheries Development Project	Technical assistance project for the identification and feasibility study of centers to be established in five locations which shall be the sites of various facilities such as fish processing, canning and landing; carrier vessels shall be used to transport fish catch from outlying areas to these plants; project shall also organize the Tawi-Tawi Fisheries Development Commission to manage these plants	Tawi-Tawi	SCSP (MNR, BFAR, DBP, Tawi-Tawi provincial government)	0.34	none	0.34	Feasibility study completed; fund source currently being identified

PROJECT TITLE EXTENSION	PROJECT DESCRIPTION	AREA COVERAGE	IMPLEMENTING AGENCY (SUPPORT)	PROJECT COST (US$000,000) GOP	FOREX (SOURCE)	TOTAL	STATUS/DURATION
Project Proposal for the Establishment of a Nationwide Seafarming Program	Identification of seafarming demonstration sites all over the country to serve as channels for the dissemination of seafarming technologies; also for research and verification of various culture methodologies most effective for each commodity and/or location; eventually, such farms will be turned over to small fishermen for management to augment their income	Nationwide	FIDC (BFAR ICLARM, local governments)		Not specified		Feasibility study completed; 14 areas identified for initial implementation
Pre-Investment Feasibility Study for a Project in Seafarming for Small-Scale Fishermen	Technical Cooperation Program of FAO to assist FIDC in formulating a feasibility study for a project in seafarming for small-scale fishermen (fish, shellfish, seaweed)	Nationwide	FIDC (BFAR, ICLARM)		0.05 (FAO)	0.05	Project implementation awaiting arrival of expatriate consultant from FAO
Strengthening of the BFAR Extension Program	Manpower development for BFAR extension force to make them more effective in their work; provision of equipment such as vehicles and communication facilities which are essential in extension work	Nationwide	BFAR		Not specified		Ongoing
Marinduque Fry Bank and Demonstration Farm Project	Establishment of a fry bank to serve as a central facility for spawning and rearing of bangus and other cultivable species of fish supplying the entire project area and nearby provinces with fingerlings in sufficient amounts for the planned expansion in fishery production in the area	Sta. Cruz, Marinduque and outlying areas	NACIAD (BFAR)		Not specified (European Economic Commission and Development VIII)	0.16	
Looc Fish Corral Project	38-hectare pilot fishpen project in Looc, Cardona, Rizal to serve as demonstration fishpen and as a center for research on fishpen technology	Laguna Lake area	LLDA (Vitarich)		Not specified		Project in operation since 1970
Socol Neighborhood Model Community Deep-Sea Fishing Project	Cooperative deep-sea fishing project using 36 beneficiary fishermen who will be given four fishing vessels and the required gears in their operations	Socol, Buenavista, Lanao del Norte	MHS (BFAR)	0.01	none	0.01	To be implemented soon
Bangus Fishpond Culture Project	10-hectare fishpond culture of bangus from fresh to brackish-water; project for fishermen beneficiaries in the area	Sta. Monica, Puerto Princesa, Palawan	MHS (BFAR)	0.02	none	0.02	To be implemented soon

PROJECT TITLE	PROJECT DESCRIPTION	AREA COVERAGE	IMPLEMENTING AGENCY (SUPPORT)	PROJECT COST (US$000,000) GOP	FOREX (SOURCE)	TOTAL	STATUS/DURATION
Fingerling Fishpond Culture Project	Culture of fingerlings in fresh and brackishwater ponds; project for fishermen beneficiaries in the area	Bo. Tuban Sta. Cruz, Davao del Sur	MHS (BFAR)	0.01	none	0.01	To be implemented soon
BLISS I Sites: Prospective Livelihood Projects	Miscellaneous projects deemed appropriate for residents of various BLISS sites, e.g., fingerling culture, bangus culture, etc.	Nationwide	MHS (BFAR)		Not specified		Preparation of feasibility studies going on
NACIAD Fishery Estate Project	Establishment of a fishery estate featuring fishponds, a research and training center, fish processing and storage complex, fishermen's wharf and a fishermen's village patterned after the Human Settlements concept	Bicol River Basin area	BRBDP (BFAR, BFW)	5.33	none	5.33	All sub-projects under this program ongoing
Laguna Bay Fishpen Development Project	Development of 2,500 hectares of fishpen in Laguna Bay to be managed by fishermen beneficiary families under a cooperative venture	Laguna Bay area	LLDA, (DBP, PFMA, NEDA FIDC, BFAR PC/INP)	1.7	12.5 (OPEC)	14.2	Organization and staffing of project management office has been started; selection of site and procurement of materials ongoing; identification of selected beneficiaries also ongoing
Capiz Agricultural and Fishery School—Mini Agro-Industrial Estate Project	Development of a mini agro-industrial estate with emphasis on self-liquidating economic activities such as fishpond development, fish processing and marketing	Pontevedra, Capiz	MHS (CHFS)		Not specified	0.25	25-year development plan starting in 1978
Fishery Resources Management Program (FIRM)	Organization of fishermen's associations all over the country, which shall be incorporated as non-stock non-profit corporations and be given various projects to manage and shall be given total institutional support by FIRM extension workers	Nationwide	MNR (DAP, MSSD, CBP, LBP, various civic organizations, MLGCD)		Not specified		76 fishermen's associations organized; 53 small-scale projects implemented; two large-scale projects implemented by various FAs
Samahang Nayon for Fishermen	Organization of fishermen's cooperatives all over the country engaged in the provision of projects and credit facilities	Nationwide	MLGCD		Not specified		

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FOOTNOTES AND REFERENCES

[1]Nicandro C. Chavoso,"Bracing up for the 80's," Fisheries Today, November 1980, p.42.

[2]Estela R. Perez,"Benchmark Facts on RP Fisheries in World Perspective," Fisheries Today, November 1979, p.5.

[3]U.N. Convention of the High Seas, April 29, 1958. Article 2.

[4]Robert B. Krueger and Myron H. Nordquist, "Economic Zone: State Practice," Virginia Journal of International Law, Vol.19:2 (1979),:323.

[5]Diane C. Drigot, "Oil Interests and the Law of the Sea: The Case of the Philippines," O.D.I.L. Vol. 5 (1982):26.

[6]R.B. Krueger and M.H. Nordquist, supra note 4, at 323.

[7]Ibid. [8]Ibid. [9]Ibid.

[10]Ibid. See also Arata Yokokama, "The EEZ and its Delimitation," EEZ 1982 Proceedings of the 7th International Ocean Symposium (Tokyo: The Ocean Association of Japan, 1983) p. 31. Hereafter cited as EEZ 1982 Proceedings.

[11]Lawrence Juda, "UNCLOS III and the New International Economic Order," O.D.I.L. Vol. 7 (1979):221.

[12]Thomas A. Clingan,"Rights, Duties, and Obligations of States in the EEZ under the Law of the Sea Convention," EEZ 1982 Proceedings, p.24.

[13]Yozo Yokota, "How the Concept of the EEZ has been Formed," EEZ 1982 Proceedings, p.14

[14]Manjula R. Shyam, "The New International Economic Order and the New Regime for Fisheries Management," Ocean Management Vol. 8 (1982):51.

[15]Philip Allot,"Power Sharing in the Law of the Sea," American Journal of International Law Vol. 77, No. 1 (January 1983): 1.

[16]Choon-Ho Park, "Current Status of the 200-mile Claims," EEZ 1982 Proceedings, p.40.

[17]Manjula R. Shyam, supra note 14 at 53.

[18]Ibid., p.63.

[19]Wontack Hong, discussion section on p. 52 of Parzival Copes, "Optimizing the Use of Ocean Fish Resources in the Context of Extended National Jurisdiction," in Renewable Resources in the Pacific, ed: H.E. English and Anthony Scott (Ottawa: International Development Research Centre, 1982) pp. 33-48.

[20]Ibid.

[21]See for example, Parzival Copes, "The Impact of UNCLOS III in the Management of World Fisheries," Marine Policy (July 1981): 217-228.

[22]See for example, Jeremiah Sullivan, Pacific Basin Enterprise and the Changing Law of the Sea (Lexington, Mass: D.C. Heath Co., 1977) p.33.

[23]Article 61 states that "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.

[24]Kunio Yonezawa, "Some Problems related to the Exersice of Coastal State Jurisdiction with Respect to Fisheries," EEZ 1982 Proceedings, p. 56.

[25]Thomas Clingan, supra note 12, at 24.

[26]Shigeru Oda, "Fisheries Under the United Nations Conference on the Law of the Sea," A.J.I.L. (Vol. 77):744.

[27]Ibid., 745.

[28]Miriam D. Santiago, "The Archipelagic Concept in the Law of the Sea: Problems and Perspectives," Philippine Law Journal Vol. 49 (1974):360.

[29]Ibid., 362.

[30]D.P. O'Connell, "Mid-Ocean Archipelago in International Law," in The British Yearbook of International Law (London: Oxford University Press, 1971) p. 27.

[31]For a more detailed discussion on the arguments, see Santiago, op. cit.

[32]D.P.O'Connell, supra note 30, at 29.

[33]2nd United Nations Conference on the Law of the Sea, Official Records, p. 51 as cited by O'Connell, op. cit.

[34]See preceding note. See also, A.M. Tolentino, The Waters All Around Us; Why the Archipelagic Doctrine is Vital to the Philippines,(Manila: Bureau of National and Foreign Information, Paper No. 5) p. 5.

[35]Lewis Alexander, Delimitation and Maritime Boundaries, (mimeo) p. 12.

[36]U.S. Mani, "National Jurisdiction: Islands and Archipelagos," Law of the Sea, Caracas and Beyond,p. 96 as cited by Drigot, op. cit. p.29.

[37]D.P. O'Connell, supra note 30, at 30.

[38]Fiji, Indonesia, Mauritius, and the Philippines.

[39]Article 3, R.A. 387 or Petroleum Act of 1949, in Official Gazette, (RP, Vol. 45, No.8 August 1949) p. 3193.

[40]UN Doc. A/CONT. 131C.41 L.26.

[41]See Diane Drigot, op. cit.

[42]Examination of isobath reveals that Spratly archipelago, a group of disputed islands on South China Sea where the greatest potential of hydrocarbon is speculated, is beyomd the 200-meter isobath.

[43]Such as Mines Administrative Order No. V.34 and Administrative order V.37. See Diane Drigot, op. cit.

[44]N. Ely and J.M. Marcoux, "National Seabed Jurisdiction in the Marginal Sea: The South China Sea," in Limits to National Jurisdiction over the Sea, ed. by G.T. Yates and J.H. Young (University Press of Virginia, 1974) p. 125.

[45]Before the fall of Saigon, South Vietnam was the principal claimant. To date, Hanoi has not renounced former South Vietnam claims and there is no reason to expect Hanoi's position to be different from that of its predecessor. See, Chong-Hoo Park, "The South China Seas Disputes: Who Owns the Islands and the Natural Resources," O.D.I.L. Vol. 5 (1978).

[46]Ibid., p. 33.

[47]The Chinese Foreign Ministry issued a statement on May 29, 1956 reasserting that Spratly Islands are Chinese territory. Likewise, Vietnam issued a communique on June 1, 1956 reaffirming its ownership of the Paracels and Spratly. See, H. Chui and C.H. Park, "Legal Status of the Paracels and Spratly, " O.D.I.L. Vol.5 (1975):15.

[48]Dieter Heinzig, Disputed Islands in the South China Sea (Hamburg: Institute of Asian Affairs, 1976) p. 42.

[49]C.H. Park, supra note 45, at 20.

[50]Diane Drigot, supra note 5, at 44.

[51]Ibid. [52]Ibid.,p.55. [53]C.H. Park, supra note 45 at 33.

[54]Writers on international law conclude that the Philippines basis of claim is the weakest among the principal claimants. See H. Chui and C.H. Park supra note 47; and Tao Cheng, "The Dispute over the South China Sea Islands," Texas International Law Journal, Vol. 10 (1975): 265-277.

[55]U.S. Embassy (Manila), Industrial Outlook Report: Fishing Industry, the Philippines, (U.S. Department of Commerce, National Technical Information Service, June 6, 1983) p. 1. Hereafter referred to as Industry Outlook Report.

[56]This is the rank as of 1978. The ranking fluctuates from year to year but always in this neighborhood. See FAO, Yearbook of Fisheries Statistics (Rome: FAO, Vol. 47, 1978).

[57]Ian R. Smith, Miguel Puzon, and Carmen Vidal-Libunao, Philippine Municipal Fisheries: A Review of Resources, Technology and Socio-economics(Manila: Fishery Industry Development Council, 1983) p.3.

[58]Mark J. Valencia, "Southeast Asia: National Marine Interests and Marine Regionalism," O.D.I.L. Vol.5 No.4 (1978): 430, from table 4a.

[59]Percival Copes, "The Backward-bending Supply Curve of the Fishing Industry," Scottish J. Political Economy Vol. 17 (1970):69-77.

[60]For example, Section 17 of P.D. 704 prohibits commercial fishing in waters less than 7 fathoms deep.

[61]Ian Smith, et.al., supra note 57, at 4.

[62]J. H. Cook, "Air Cooled Gasoline Engine," in Small Boat design (ed. by Johanna Reinhart). ICLARM, Manila (1981), pp.69-70.

[63]FAO, Fishing Fleet Statistics (Rome: FAO, 1978), table A.1 at p. 5.

[64]Ian Smith, et.al., supra note 57, at 4.

[65]The beach seine is usually operated early in the morning near the shore. Upon reaching the fishing ground, the fishermen scouts for a school of fish. When a school is spotted, the boatman runs in a semi-circle course while the net is being payed out. Upon encircling the fish, the pull ropes at both ends of the net are dragged manually towards the shore. This need a large number of fishermen or other household members.

[66]Numerous articles stressed the urgent need for research and to manage the coral reef resources for this reason. See for example, E.D. Gomez, "Perspective on Coral Reef Research and Management," Ocean Management, Vol. 8 (1982/1983):281-295.

[67]Virginia L. Aprieto, "Philippine Tuna Fishery Management," Fisheries Research Journal of the Philippines, Vol. 7 No. 1 (1982, June):38.

[68]Industry Outlook Report, p.20.

[69]R. Lawson, "Problems of Exploitation of Fisheries in Indo-Pacific," CRES Working Paper, R/WP36 (1979), as cited by Aprieto, op. cit.,p.45.

[70]For a more detailed analysis and critique of the studies summarized on Tables 4a and 4b, see Ian Smith, et.al. op. cit.

[71]R. Juliano and S. Yutuc, "AN evaluation of Fishery Statistics toward the construction of Statistical Benchmark Data for Fish Production," in PREPF (Manila: Development Academy of the Philippines, 1977) p.1232.

[72]USAID/Philippine Fisheries Report Mission, The Philippine Fisheries Sector Study (Manila:USAID, 1977) p. 22.

[73]SCSP, Fishery Resources of the Visayan and Sibuyan Sea (Manila: South China Sea Fishery Development and Coordinating Program, SCS/GEN/76/7, 1976) p.21.

[74]SCSP, Fishery Resources of the Sulu Sea, Bohol Sea, and Moro Gulf (Manila: South China Sea Fishery Development and Coordinating Programme, SCS/GEN/77/11, 1977) pp.3-5.

[75]SCSP, Fishery Resources of the Pacific Coast of the Philippines (Manila: South China Sea Fishery Development and Coordinating Programme, SCS/GEN/78/19, 1978) p.1.

[76]SCSP, Mackerels and Round Scads in the South China Sea (Manila: South China Sea Fishery Development and Coordinating Program, SCS/GEN/77/17, 1977) p. 23.

[77]As reported in "Current Tuna Fishing Technology," Fisheries Today, Vol.V #1 (June 1983), p.5.

[78]Ibid.

[79]V. Aprieto, supra note 67, at 41.

[80]See Table 3. [81]V. Aprieto, supra note 67, at 49.

[82]Efren E. Flores, "Light Attraction Technique in Squid Fishing," Fisheries Research Journal of the Philippines (Vol.7 No. 1 June 1982):101.

[83]Richard Neal,"Dilemma of the Small-scale Fishermen," ICLARM Newsletter, Vol.5 #3, p.9.

[84]As reported in Estela R. Perez, "Fishery Management Under the New Regime of the Sea: Policies, Action Plan," Fisheries Today, Vol. V #1 (June 1983).

[85]John Marr, Fishery and Resource Management in Southeast Asia (Washington D.C.: Resources of the Future Paper No. 7, February, 1976) p. 18.

[86]Industry Outlook Report, p.17.

[87]V. Aprieto, supra note 67, at 41.

[88]Ian Smith, et.al., supra note 57, at 10.

[89]The FIDC was created under Sec. 12 of P.D. 704. The function of the FIDC is defined in Sec 13: "The Council shall formulate and establish comprehensive policy guidelines for the management, protection, conservation and utilization of the fishery/aquatic resources of the country and for the creation of a healthy investment climate for the development of the fishery industry. It shall collate data and information from member agencies and the private sector for the formulation of policy guidelines."

[90]As reported in Miguel Puzon," Are Joint Ventures in Fisheries a Bane or a Boost?," Fisheries Today , Vol. IV No.1 (Dec. 1982) p. 20.

[91]Lawrence C. Christy, Legal and Institutional Aspects of Fisheries Development: Republic of the Philippines (Manila: South China Sea Fisheries Development and Coordinating Programme, SCS/77/WP/65,1977) p.11.

[92]Industry Outlook Report, p.11

[93]Lawrence C. Christy, supra note 91.

[94]"Policy Directions for the 1980's,"Fisheries Today, Vol III #1 (March 1980) p.1

[95]V. Aprieto, supra note 67, at 42.

[96]R. Jones, Mesh Regulation in the Demersal Fisheries of the South China Sea Area (Manila: SCSFDCP, SCS/76/WP/134), p.1.

[97]As reported in Ma. Consuelo C. Distor, "Fishery Research and Techonoly Development: BFAR's Uphill Struggle," Fisheries Today, Vol.V #1 (June 1983) p.33.

[98]Christine L. Dawson, "A Comparison of National Resources Available for Fishery Research," O.D.I.L. Vol. 5:11.

[99]For examples, BFAR has research activities which are FAO/UNDP-assisted. Some of the projects are listed in Annex D. UPV is seeking institutional linkage with University of Rhode Island.

[100]Pers. comm. Dr. Elvira Tan of Fisheries Research Division, PCARR.

[101]Estela P. Perez,"Conservation Activities and Law Enforcement Measures for Municipal Fisheries," Fisheries Today Vol. III #2 Nov. 1980, p.9.

[102]Mark Valencia, supra note 58, at 426.

[103]"See Need to Boost Surveillance Capabilities," Fisheries Today Vol. II #1 Feb. 1979, p.33.