

# **STATUS OF FISHING CONDITION IN INDONESIA IN RELATION TO RESPONSIBLE FISHING**

by

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## **1. INTRODUCTION**

Fishing has been a major source of food for humanity and a provider of employment and economic benefit for those engaged in this activity. Fisheries resources was not assumed to be an unlimited gift of nature. Although they renewable, how ever are not infinite. It is therefore need to be properly managed, if we want their population is to be sustained.

Indonesia, as we all together understood the nature profile of this country mostly composed of sea water, more than 70 % and 30 % are land (more than 17.000 islands). However the both are not separated one to the others. It was to be unity established the Nusantara State (archipelagic state). Based on the country profile, it is there fore fisheries is an important role in supporting and providing benefit for i.e. income, devise, etc.

Basically we all together do aware, fisheries development program in countries is not just to be set out merely for increasing fish production continuously, however sustainable resources principles also kept, with due respect to carrying of ecosystem and biodiversity. In Indonesia, in particular to support the sustainable principle there are several institutions were established dealing with utilization, protection and conservation of living and non living resources, i.e. : 1) Directorate for Conservation and Protection of nature and Biodiversity of Ministry of Forestry (they also cover the activity on all matter of living resources protection); 2) Oceanology Departement, there concerned to oceanology Research, monitoring for physical and chemical condition. Particularly in Fisheries Department (Directorate General of Fisheries) since starting their activities was facilitated with an unit activity dealing with Fisheries Resources Management and further gradually developed and improved respecting to the development of Fisheries Management criteria in the world.

Concerning to our discussion of the implementation of responsible fishing in each countries, particularly in Indonesia, princially Indonesia has implemented although still limited in term of taking fisheries management measure. It is because due to some limitation faced to this country such as limited of knowledge and man power concerned to fisheries management, particularly for them who engaged in fisheries.

## **2. MANAGEMENT POLICY IN RELATION TO RESPONSIBLE FISHING IN GENERAL**

### **2.1 General Principle of Responsible Fishing**

Historically the principles of responsible fishing declared as an out come of the COFI at nineteenth session in March 1991, and subsequently of the Conference on Responsible Fishing in Cancun (Mexico) 1992 further requested FAO to prepare a Code of Conduct for Responsible Fisheries.

This code, principally set out principles and international standards behavior for responsible practices with a view to ensuring the effective conservation, management, and development of living aquatic resources. These principles relevant to the international law i.e. MARPOL convention 1973, 1978, UNCLOS 1982, declaration of Cancun 1992, Rio declaration on environment and development, UNCED etc.

In general, their look this code (Reflecting to responsible fisheries) taken some measures in fisheries management and other measures relating to environment, in general could be groups as : 1) Fisheries management principle as guidance for countries in managing fisheries (it is voluntary); 2) These measures do not only stressing how to manage fisheries resources to be commensurate with rate of exploitation (by sustainable approach) however taking into account relevant aspects; 3) Others aspect of environment taken into account in management manner to be obliged for countries; 4) Encourage Cooperation and collaboration among countries for setting up certain fisheries management activities, bilateral, multilateral or regional i.e. shared stock management, flagging vessel, taken action/initiative for conducting research, etc.

Because of these principles, while looking the ability and capacity of developing countries where there were limited of their technological know how, man power of lack attention for sustainable principles, funding, etc., and Developing countries generally focus to develop their own national economic as a whole, accordingly implementation of fisheries management (in term of responsible fishing) commonly relatively still poor. It is not look like to be a priorities. However respecting to the code, in which an article state that the capacity of developing countries to be duly taken into account, it is there fore implementing this code suggested are gradually.

It is reasonable principles, because as above mentioned, presently developing countries still in a condition of lacking technical know how, man power, fund etc. may effect the implementation the code to be un effectively.

Other articles also state, that in order to achieve the objectives of this code, principally have to requested involvement any sides such as :

- a) any countries concerned,
- b) relevant international organization,
- c) financial institution, of which all of them expected recognition to the special circumstances and requirement of developing countries and further should be any support from them for i.e. research, technical assistance, technology transfer, training and scientific cooperation to enhancing their ability.

These assistants suggested are not only for developing their own fisheries, however in order to adopt measures of the code immediately. It would be expected fisheries development action (in term of improving their ability and capacity) and implementation measures of this code contained would be applied simultaneously.

## **2.2 Management policy respecting to responsible fishing principles**

According to the Indonesian Five Years Development Plan of Fisheries (particularly in sixth phase), the aims of these development mainly toward to establish a condition of fisheries to be at least of 3 conditions there were : achieving self supported of fisherman, as well as other man power concerned, creative and would be efficient in all of their activities in fisheries. All of them expected to increase their income and of course further impact to increase their welfare. Accordingly , the policy for increasing fish production and capacity of production to be priorities for the country, however never ignored sustainable principle.

Up to the present there were management policies has been taken such as :

### **2.2.1 Fisheries management action.**

In Indonesia since long time ago has established and published several regulation according to fisheries resources management by sustainable approach. Several of these measures were :

- a) In 1976, Indonesian government established fishing zonation policy. This regulation taken measures, principally to protect small scale fisheries from intervening large scale in their fishing ground by deviding the fishing ground into several zone criteria, upon which each fishing ground to be utilized by certain size of fishing vessel respectively (Ministry decree No.607176).
- b) Respecting to sustainable principles, of the no.1 above there were also a provisions to regulate mesh size of fishing gear, where by mesh size prohibited of less than 2,5 cm and pruse seine with target species tuna and skipjact may not their mesh size less than 6 cm.

- c) Taken fisheries allocation policy. Directorate General of Fisheries always directing fisheries resources evaluation regularly. In a National scope evaluation conducted in at least every 5 year. This result contains the information of fisheries utilization, rate of exploitation fisheries resources allocation (as basis for fishing licence), potential yield as a whole etc.
- d) Regulation for fishing vessel. This regulation as a mean for managing fishing vessel with due respect to potential yield. Fish resources utilization which reflected by numbers fishing vessel operated, that would be commensurate to the resources.

The other side according to structure of authority for issuing fishing license, there are Directorate General of Fisheries (on behalf of Minister for agriculture) and part of them authorized for local (provinces) government which principally, large scale of fishing vessel (of > 30 GT), their license issued by central government, less than 30 GT by local government.

In line to this policy, because of the Nusantara (archipelagic) principles upon which these vessel commonly may operate in all of Indonesia water (not to be limited by local government administration), this condition potential to raise conflict among fisherman or among local authorization (right). Based on situation, central government create and apply a coordination system for fisheries management, called Forum Coordination of Management.

Their members are all of Local Fisheries Service, under guidance of central government (Directorate General of Fisheries), by taken participation institutional concerned i.e. : Navy, Fisheries Company Association, Fisherman Organization, etc.

- e) Management for fish aggregate device. Since long time ago fisherman understood for using this aggregate that called by the local name is Rumpon. Using these aggregate tend increased time by time. We group this rumpon into 3 categories : 1) Bottom rumpon, 2) Shallow water rumpon and, 3) Deep sea rumpon. Presently these aggregate managed under regulation of Ministry decree No. 5/1997 upon which contains i.e. : Selected location allowed for rumpon site, distance between one to others, unit numbers may be allowed in certain location etc.
- f) At 1985 Indonesia issued Fisheries Law. This is most important law according to fisheries because this law is as umbrella of all fisheries regulation issued, covering fisheries management, handling and processing marketing, others aspect in relation with other activities and institution concerned, including the mechanism for research, etc.

- g) As consequence of declaration of the new regime of Indonesian EEZ water in 1981, Indonesia has issued The Indonesian EEZ law 1983. This law respected and referred to any provision of UNCLOS 1982. This law has taken measurement not only for fisheries management, but also covers matters relating to the light of foreign fishing vessel , MCS, etc.
- h) Local community convention regarding to fisheries management exist in certain area. They declared basically has a right upon sea surrounding to their community where they live.
- i) The important policy was trawl banned in all of Indonesian water since 1980. This Policy has at least 3 purposes, were 1) To protect and keep fisheries resources to be sustain; 2) To protect small scale fisheries because of intervening their fishing ground by large scale fisheries; and 3) As an effort to increasing welfare of fisherman.
- j) Tasking for Pearl culture companies to provide certain buffer zone area to ensure and keeping natural environment and bio-diversity as well (to ensure recruitment species to be in well condition).
- k) Tasking for shrimp trawl companies for using (to take benefit) their by catch product. This measurement regulated by ministry decree no. 561/1973.
- l) Tasking for shrimp trawl to install By Catch Excluder Device (BED) under regulation of Director General of Fisheries Decree No. IK. 010/S3.8075/1982. This decree as subsequently the President Decree No. 85/1982 that regulate shrimp trawl operation in certain area of Eastern Part of Indonesian Water including Indonesian EEZ.

#### 2.2.2 Environment reservation and protection.

There were several management action in supporting the principles of reservation and protection :

- a) Explorer and poison material prohibited used in fishing. This measures have been implemented since long time ago and strengthened as a provisions in Fisheries Law 1985.
- b) Set up a green belt in possible area to protect coast line from sea abortion. This principle tasking to fish farmer when they will construct brackish water pond and always encourage peoples (particularly who live in coastal area) to replanting and taken care for mangrove population.

- c) Establishing artificial reefs in certain area. This program presently as a pilot project, that to be expected followed by fishermen and others side concerned. That is very costly when established by government because of wide reefs area of Indonesian water.
- d) According to biodiversity protection and reservation there were several measures has been issued such as protecting **trochus** (*Trochus niloticus*), **Turtle** (several species), **Kima** (*Pinctata* sp) and other such as certain species of **Arwana** (*Schlerophagus* spp), **Dugong** and keep measures of CITES.
- e) Others measures, however directed by other institution out side of fisheries (by Department of Sea Transportation and Communication) were regulated on protection from pollution as refered to MARPOL convention, ensurance for safety in sea, etc.

### 2.2.3 Fishing verification and control.

These principles merely support in other to management action to be well implemented. Conception method and application has been started work. It implemented more intensify and strengthened starting when Fisheries Law 1985 and EEZ Law 1983 came into force. The method implemented Monitoring Control and Surveillance system (MCS), with addition to Investigation activities. In field Directorates General of Fisheries Conducting Corporation with other relevant institutions such as : Navy and Local Government. Problems still faced in implementation such as : man power, budget, etc. Up to present there were more than 200 persons has been trained and taken their status as inspector for fisheries and they have own right in legal manner.

## 3. EXITING CONDITION OF INDONESIA FISHERY RELATING TO RESPONSIBLE FISHERIES

### 3.1 Distribution of man power (Fisher)

Reflected from numbers of management size (house hold) of fisheries, in table No. 1 show that mostly man power engaged in fisheries dominated by fishermen of non power boat of 228.447 management units (1995) and secondly by powered boat however in out boat motor of 88.974 units. The other side as showed at table 3 boat of middle scale of more then 30 GT very small numbers, there were 2.742 (less then 1 % from total boats). Because of large numbers of small scale fisheries, indeed basically they lack of their own knowledge, their fund and attention for keeping sustainable principles.

This is a reality in the country and of course further need special attention for raising their know how relating to the responsible fishing, by setting up an extension program. Be aware that this effort are costly. That is of course for solving this

problem should be duly supported by other countries and fund institution for taking action together in order ensure the measures of the code would be well implemented.

### **3.2 Trend of fish production and export**

Increasing of fish production really is a main target in the country because of reasons i.e. :

- a) Challenging for food supplies in line with numbers of great population of Indonesian (more than 200 million) who need approximately 3 - 4 million tons of fish for consumption.
- b) Peoples engaged in fisheries relatively large and tend to increase yearly. Its need special attention how to increase their own welfare.
- c) Fish product for export exist in a good prospect based on potential yield relatively large to be utilized particularly in certain area of Indonesia (Eastern Part, Off Shore and Oceanic fishing).

Although increasing production is a target, however as has mention above, Indonesia currently consistent to implement fisheries management measures. For large scale fisheries these measures implemented more tightly, based on consideration some factors were : they are in better position of i.e. : level of fish exploitation higher rather than artisanal fisheries, their knowledge, and capital as well. They obliged to be more intensify install an instrument of By Catch Excluder Device (BED) in their trawl gear (that be called shrimp net) in the Eastern part of Indonesian water (Arafura Sea), to obey fishing gear measures (mesh size), for fishing in certain area licensed, fishing area only limited within EEZ water for foreign vessel, etc.

As showed in table 4 and marine fisheries production to trend increase year by year of their average 6.2 %, that was similar with fish production for export although in average only 3.15 % in volume however in value attained 8.36 % (Table No. 5).

### **3.3 Some aspects of the implementation of fisheries management measures**

#### **3.3.1 Status of exploitation were inbalance**

Although Indonesian government has issued regulations dealing with fisheries management in other to protect fisheries resources of over exploited threatened however according to hard population in certain area commonly in western part, the hard fisheries resources exploitation has been occur in these area.

There were indicated rate of exploitation near 45 % of potential yield. This condition due to non power boat, and small scale fisheries dominated. It was effect bad impact in coastal area. Fishermen did not have their ability to

extend their fishing ground over off shore. This condition to be problem in responsible fisheries, particularly in keeping sustainable principles.

The other side in off shore and ocean including EEZ water presently generally still in light exploitation, with exception in Arafura sea rather high because of exploited by commercial vessels. Presently at least 400 shrimp trawl units are operated in the area.

Exploiting pelagic fish in off shore and Indonesian EEZ water relatively less than its potential yield.

### 3.3.2 Conflict of interest among fishermen.

Since trawl nets are banned (1980), for exploiting demersal fish there are no fishing gear as effective as trawl. In field most of fishermen have their own effort to modified their traditional gear such as : Danish seine, beach seine, monofilament gill net to be like trawl. This condition has raised up various perception and most of them classified those gear were trawl and then further effect bad impact, of which occur social economic conflict among's them and may be will influence to others strategic of public sector.

To over come this problem matter, presently government is being set up a regulation which make clear classification whether those fishing gears could be grouped as trawl nets or not. This is an effort to reduce conflict amongs them in the field.

### 3.3.3 Impact of Fish Aggregating Devices (FADs) to fish population

Currently using these FADs or rumpon has an tend increasingtend, in territorial water as well as in Indonesia EEZ water. Using this, indeed could positive impact that may raise up their production, however on the other hand FADs will be a threat for sustainable resources and some of fishermen assumed that FADs block the fish migration root. This condition indicated in Sulawesi Sea and Pacific ocean which bordered to Indonesian territorial water. Accordingly it is required any study covering the impact of this FADs particularly in case of changing behavior of fish and capture of young fish or matured fish, that may impact to decreased fish production in Indonesian territorial water.

## 4. DISCUSSION

### 4.1 Problem and conditions of developing countries

When we are taking about our option based to the principles of this responsible fishing as had been mentioned above, clearly these principles covers all aspects of fisheries management, with respect to environment and sustainable principles. Their objectives are to establish principles for responsible fishing. Fisheries activities may



taking into account all their relevant factors such as : biological, technological economic, social, environmental and commercial aspect. Comparing to the condition with the Development Countries are presently faced numbers limitation i.e. : knowledge, fund , technological know how, it's may be for implementing this responsible fishing principles could be difficult.

Countries, tasking to promote provisions implementation of this code, to facilitate relating to conservation and protection, provide guidance, etc. there are of course will take time and need a certain program development in relevant matter and supported by fund and of course need any assistant from relevant institution and other countries.

It's must be taken into account for countries, in implementing this code that some requirements of this code may respect to international conventions and agreements such as : MARPOL convention, TEREMOLENOS Convention. Authorization for implementing this convention do not in fisheries sector institution like in Indonesia. Other department, that is Sea Transportation and Communication has mandate to implement and responsible this convention. Considering limitations faced of developing countries that is reasonable when this convention (code) contain an article concerned for special requirement of developing countries (article 5, Special Requirement of Developing Countries of Code of Conduct for Responsible Fisheries). Indonesia agreed and full supported this article.

Reffered to that article in point of view, is that for implementing the measures of this code have to pay attention to the capacity of developing countries. Any sides such as countries concerned, international organization (Government or non government) financial institution expected their attention and recognition to the special circumstances and requirement of developing countries. In general, could be state these countries faced many limitation, problems and constrains.

#### **4.2 Development program**

According to that principles, Indonesia will develop a program concerning to appreciation, extension and dissemination of responsible fishing principles. This program will be gradually established respecting to capacity of mainly budget constrain. The program will cover these activities :

- a) Starting to evaluate and review the Indonesian regulation related to fisheries management, and secondly will set up whether these regulation just to enhance, or strengthen and others view is to redesign new regulation concerned.
- b) Because of any authorization mandated present out side of fisheries institution, reasonable to take their attention to involve this program. It need collaboration and cooperation among institution concerned like :  
1) Department of Sea Transportation and Communication; 2)

Department of Foreign Affairs; 3) Department of Domestic Affairs; 4) Department of Cooperation; 5) Navy, etc.

- c) In regional scope it is suggested that i.e. SEAFDEC may create a program assistant for i.e. : short course for relevant rules to the code, assistant program for extension and dissemination, and promoting this code, by i.e. using booklet, regularly news, etc.

Based on the consideration above could be suggested that for the implementation of this code measures would be gradually and desired do not strictly imposed to them who engaged in fisheries. To wide impact will be suffered and many difficulties will be faced for countries when this code implemented immediately and quite bind to developing countries. Let we keep a principle that for getting effective implementation, would be done simultaneity with an effort to increase knowledge of them who relevant to this code.

- d) Establish program in relation to the implementation of conservation and management of straddling fish stock and Highly Migratory Species. It is suggested because of these stock commonly occur in bordered area between countries, that to establish this program would be by cooperation or collaboration amongs countries concerned and interested organization. This frame work applied by starting to identify what stock could be emphasized to be priorities due to in tropical water too many species may be group as shared stock.
- e) Program for managing high sea and relating for responsible coastal state in the area. Presently Indonesia has not directed management yet extended outer of own Indonesia EEZ water (high sea). It is because right now no vessel have their ability for going far away (to high sea) from their fishing base. However according to development of fisheries in the country, that is urge to pay attention for these matter.

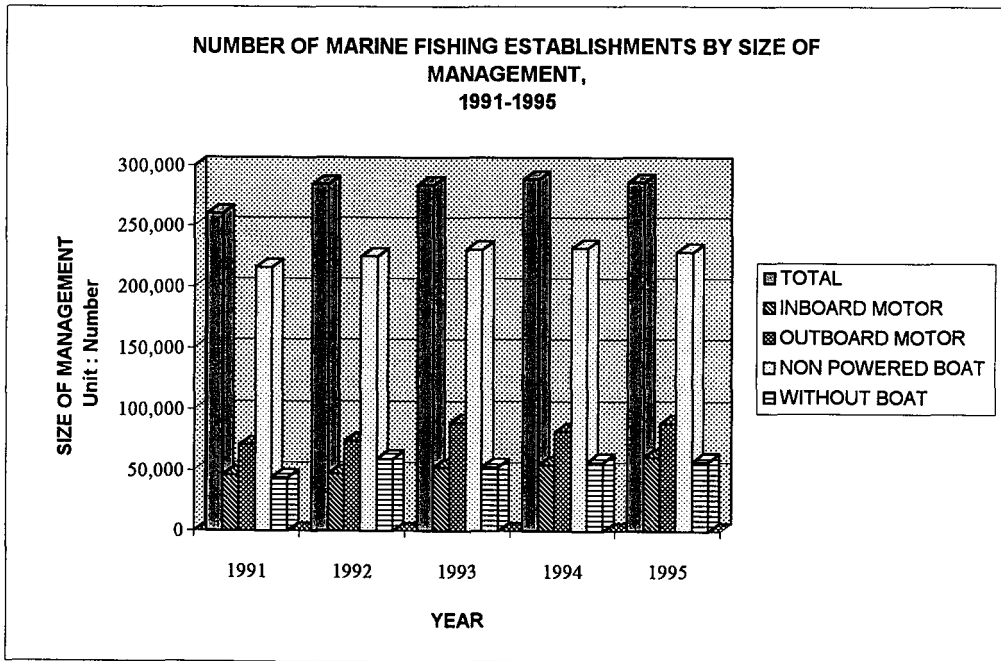
## 5. CONCLUSION

- a) Fisheries is an important role in the country because of the nature profile composed of mostly sea water (70 %) and land 30 %. Currently great peoples engaged in fisheries and others involved who taken benefit from fisheries (middlemen, retailer, processor, exporter, seller other etc.).
- b) According to fisheries management principles upon which these principle do respect to responsible fisheries, principally Indonesia has applied although in limited measures and actions. It is because of many problems and constrains faced the country i.e. limited of knowledge, fund, and facilities.

- c) Some of management measures has been set out and published such as : reduce catch by using BED (for shrimp net), mesh size regulation measures for fishing zonation, Fisheries Law 1985 (as an umbrella for all regulation). Indonesia EEZ Law (and followed by some regulation), etc.
- d) Structure of fisheries mostly composed of small scale, even part of them still in subsistence. Accordingly implementation of responsible principles assumed would be uneffectively. It is need an effort to increase their ability by i.e : training, extension program, etc.
- e) Because of their institutions out side fisheries concerned in implementing apart of these principles such as : Ministry of Sea Communication and Transportation (for protection from pollution), Navy (for fishing control and enforcement), accordingly necessary to develop or encourage a considerable frame work and cooperation among institutions manner in order to gain effective implementation of these measures.
- f) Developing countries such as Indonesia need a program assistants of increasing knowledge according to these responsible principles for fisher and relevant side concerned by i.e. extension program, dissemination, comparative study, short course, etc.
- g) Although mostly these measures are voluntary, because of these principles basically do respect to UNCLOS 1982, these measures would be binding. That suggested the implementation these measures particularly for developing countries would be gradually and simultantly with other efforts such as for increasing knowledge who engaged in fisheries.

**TABLE 1. NUMBER OF MARINE FISHING ESTABLISHMENTS  
BY SIZE OF MANAGEMENT, 1991-1995**

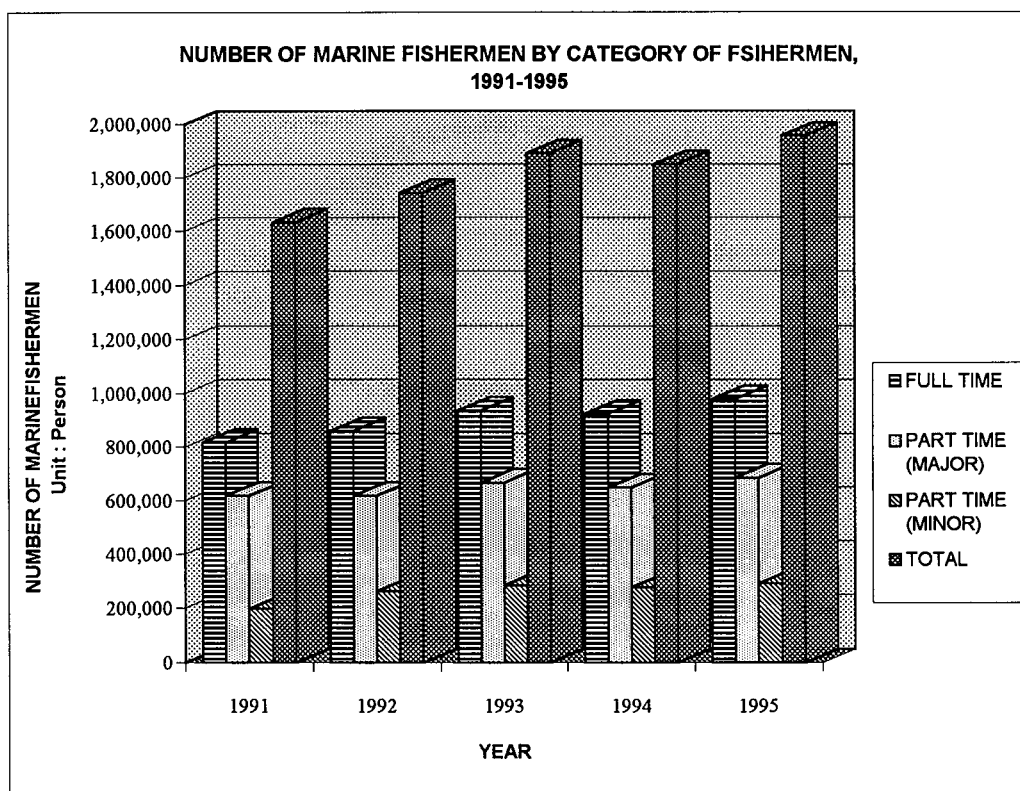
SIZE OF MANAGEMENT	YEAR					AVERAGE (%)
	1991	1992	1993	1994	1995	
<b>TOTAL</b>	259,959	284,398	283,845	288,730	286,003	3.7
<b>WITHOUT BOAT</b>	44,185	59,657	53,139	57,033	57,556	8.1
<b>NON POWERED BOAT</b>	215,774	224,741	230,706	231,697	228,447	1.5
<b>OUTBOARD MOTOR</b>	71,185	74,164	89,738	82,282	88,974	6.2
<b>INBOARD MOTOR</b>	46,186	47,146	52,687	54,769	61,097	7.3



**TABLE 2. NUMBER OF MARINE FISHERMEN BY CATEGORY OF FISHERMEN  
1991-1995**

Unit : Person

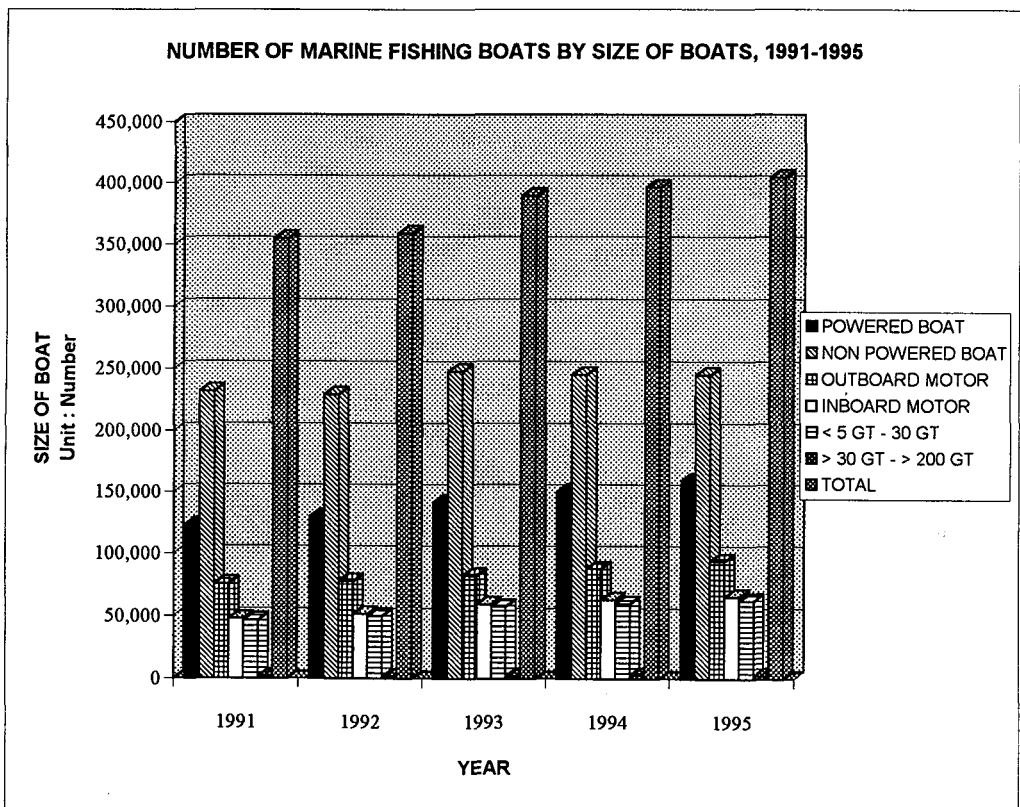
FISHERMEN CATEGORY	YEAR					AVERAGE (%)
	1991	1992	1993	1994	1995	
<b>TOTAL</b>	1,632,630	1,742,210	1,889,524	1,850,244	1,957,678	4.7
<b>FULL TIME</b>	817,301	859,004	937,261	925,335	979,434	4.6
<b>PART TIME (MAJOR)</b>	617,544	618,890	667,129	648,007	686,174	2.76
<b>PART TIME (MINOR)</b>	197,785	264,316	285,134	276,902	292,070	11.05



**TABLE 3. TREND OF MARINE FISHING BOAT BY SIZE OF BOATS, 1991-1995**

Units

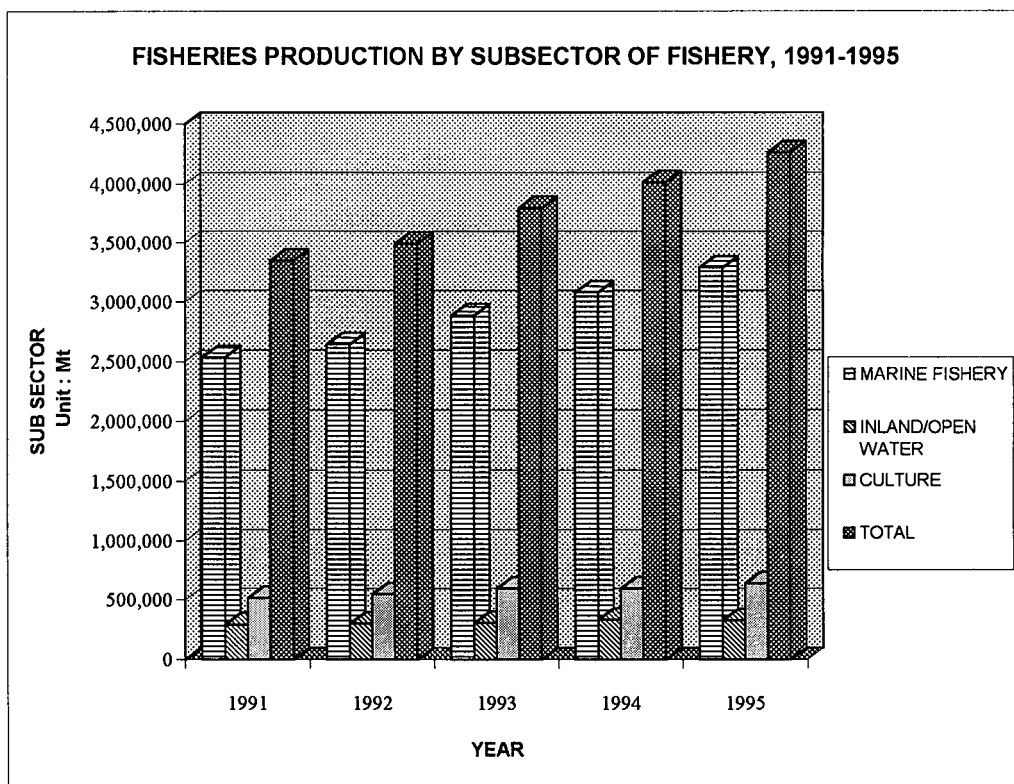
SIZE OF BOATS	YEAR					AVERAGE (%)
	1991	1992	1993	1994	1995	
NON POWERED BOAT	231,659	229,377	247,745	245,486	245,162	1.5
OUTBOARD MOTOR	75,416	77,779	82,217	87,749	94,024	5.7
< 5 GT - 30 GT	46,205	49,989	57,557	59,999	62,725	8
> 30 GT - > 200 GT	1,504	1,761	1,979	2,951	2,742	17.9
<b>TOTAL</b>	<b>354,784</b>	<b>358,906</b>	<b>389,498</b>	<b>396,185</b>	<b>404,653</b>	<b>3.4</b>



**TABLE 4. TREND OF FISHERIES PRODUCTION BY SUBSECTOR, 1991-1995**

Tons

SUB SECTOR	YEAR					AVERAGE
	1991	1992	1993	1994	1995	(%)
<b>TOTAL</b>	3,349,601	3,493,332	3,795,322	4,013,831	4,263,587	6.2
<b>MARINE FISHERY</b>	2,537,612	2,642,068	2,886,289	3,080,168	3,292,930	6.7
<b>INLAND/OPEN WATER</b>	294,477	300,896	308,649	336,141	329,710	2.9
<b>CULTURE</b>	517,512	550,368	600,384	597,522	640,947	5.5



**TABLE 5. EXPORT AND IMPORT OF FISH PRODUCTION BY YEAR, 1993-1995**

ITEM	YEAR			AVERAGE (%)
	1993	1994	1995	1993-1995
EXPORT (TON)	529,213	545,371	563,065	3.15
IMPORT (TON)	177,200	276,829	163,240	7.6
EXPORT VALUE (US\$)	1,503,748	1,678,720	1,763,989	8.36
IMPORT VALUE (US\$)	109,197	136,713	115,917	4.99

