COUNTRY REPORT OF INDONESIA

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1. INTRODUCTION

Indonesia is an archipelago, lying along the equator between the Indian and Pacific Oceans, extending from 6° North Latitude to 11° South Latitude and from 95° to 141° East Latitude. The country comprises 17,000 islands, of which about 3,000 are inhabited, with a total population of about 194 million in 1995. Total area covers about 1.9 million km^2 of land and 5.8 million km^2 of sea water with coast line length of around 81,000 km. The sea water itself consists of the territorial water of 3.1 million km^2 and the Indonesian Exclusive Economic Zone (IEEZ) of 2.7 million km^2.

The country is divided into 27 provinces, each province having several districts and municipalities, while each district or municipality consists of several sub-districts with several villages each. Around 300 districts, 3,000 sub-districts and 60,000 villages exist.

With this very huge area, the utilization of fishery resources has varied ways of implementation. Fishing and culture activities are dominated by small scale or artisanal fisheries, operating traditional technologies with low production inputs. In marine fish marketing, landings may make use of public places or fishing harbors, owned wharves, or scattered landing areas without having landing facilities and landing records. Therefore data collection for fishery statistical purposes, has been designed considering these complex situations.

2. GENERAL TRENDS IN THE FISHERY SECTOR

Indonesia is now on its Sixth Five-Year Development Plan (1993-1998) or on the first five year of the Second Long-Term Development Plan (1993-2018). Economic development showed that in 1995 the National Gross Domestic Product (GDP) at constant 1993 market prices reached 383,767.8 billion Rupiahs (1 Indonesian Rupiah = US$0.00029, 3 October 1997), a national economic growth at 8.2% compared to 1994 GDP of 354,640.8 billion Rupiahs. Meanwhile the Gross National Product (GNP) reached 341,675.7 billion Rupiahs in 1994 and 366,891.9 billion Rupiahs in 1995.

Since its national economic growth increased faster compared to its population growth, there was an obvious increase in per capita GDP and GNP. In 1995 per capita GDP reached US $1,039 an increase of 12.0% compared to 1994 which was US $994, while the per capita GNP reached US $893 in 1994 and US $994 in 1995. In 1995 the fishery sector, as part of agriculture development contributed 1.6% of the national GDP at constant 1993 market prices, or 1.7% at current market prices which amounted to 5,973.6 billion Rupiahs and 7,616.0 billion Rupiahs, respectively.

Compared to the 1994 figure of 5,695.5 billion Rupiahs at constant 1993 market prices, the fishery GDP in 1995 increased by 5.6%, an increase higher than the agriculture sector which was 4.2 % in the same period. Compared to the GDP of agriculture sector which contributed 17.9%, 16.7% and 16.1%, respectively of the 1993, 1994 and 1995 national GDP at constant 1993 market prices, the fishery sub-sector's contribution increased steadily from 9.1% in 1993, became 9.6% and 9.7%, respectively, in 1994 and 1995. The figures on the national agricultural sector and fishery sub-sector GDP, per capita regional GDP and GNP in 1993-1995 are shown in Table 1 and Table 2.

According to the 1996 figures, the total number of manpower directly engaged in the primary production of fisheries in Indonesia was 4.7 million, comprising 2.5 million fishermen in capture fishing and 2.2 million fishfarmers in culture activities. The number increased at an average of 4.6% annually of the total, or 4.1 percent and 5.3 percent for fishermen and fishfarmers, respectively, in 1990-1996. The 1990 figures showed that there was a total of 3.6 million manpower comprising 2.0 million fishermen and 1.6 million fishfarmers. In spite of good progress on the mechanization and motorization program of the government, still the total number of fishermen engaged in fishing activities has increased. The number of fishermen and fishfarmers in 1990-1996, is shown in Table 3.

The national fishing fleets are dominated by non-powered, outboard motor-powered and inboard motor-powered boats with less than 30 GT engines belonging to small-scale artisanal fisheries. The 1996 figures showed that out of the total of 413,030 fishing boats operated; 244,830 or 59.3% were non-powered; 98,510 or 23.9% were outboard motor-powered; and 66,510 or 16.1% were less than 30 GT inboard motor-powered boats. The remaining 3,180 were more than 30 GT inboard motor powered which contributed only 4.6% of the total inboard motor powered boats or 0.8% of the total number of fishing boats, and were mostly operated by industrial fisheries.

The structure of fishing fleets has also shifted. The 1990-1996 figures showed that in spite of increasing number of non powered boats at an average of 1.4% per annum, there had been a decrease in the number of non-powered boats since 1994. On the other hand, the number of powered boats increased steadily at 5.9% per annum in 1990-1996. The 1990-1996, marine fishing fleets data is shown in Annex 4.

In 1996, the total fish production reached 4.5 million mt, an average increase of 6.1% per annum in 1990-1996; the 1990 fish production was 3.2 million mt. Of the 1996 total fish production, marine fishery contributed 3.5 million mt or 77.5%, while inland fishery 1.0 million mt or 22.5%.

The share of capture fishing activities in 1996 was 3.8 million mt or 84.9% of the total production compared to culture activities with only 0.7 million mt or 15.1% of the total production. Meanwhile, the average increase of marine fishing production in 1990-1996 was at 6.7%, which was higher compared to inland openwater fishing production which was at 2.4%, as well as to culture production at 5.3% per annum.

In 1996, brackishwater pond production contributed 382.4 thousand mt or 56.2% of total culture production, followed by freshwater pond, paddy field and cages culture with 173.0 thousand mt or 25.7%, 79.9 thousand mt or 11.7% and 45.7 thousand mt or 6.7%, respectively. Although cage culture had the lowest contribution, its average rate of increase was the highest (56.4%) in 1990-1996, followed by freshwater pond and brackishwater pond culture at 6.8 and 5.3%, respectively.

On the other hand, paddy field culture production decreased at average rate of 1.3% per annum. The production data by fishery sub-sectors in 1990-1996 is shown in Table 5.

Total fish consumption, calculated based on the fluctuation of production, export and import volume, reached at 3.7 million mt or 19.0 kg per capita per day in 1996. This figure increased at the average of 4.6% for the volume and 3.1% for per capita consumption per annum in 1990-1996, whereas the total fish consumption in 1990 was 2.9 million mt or 15.9 kg per capita.

As a measurement of direct human food consumption, the food balance sheet showed that the per capita per day direct fish consumption reached 16.4 kg in 1996, an average increase of 4.1% per annum in 1990-1996. These two consumption figures are still within the government target of direct animal protein intake from fish, which is 9.0 g of protein per capita per day or 26.6 kg of fish per capita per annum. The figures on fish consumption in 1990-1996 is shown in Table 6.

The total export of fishery products in 1996 reached 596.2 thousand mt valued at US $1,892.6 million. There was an average increase of 11.4% in volume and 10.7% in value per annum in 1990-1996. Meanwhile, the total export of fisheries products in 1990 was 320.2 million mt valued at US $1,039.7 million.

The fishery export consisted of food and non-food commodities. In 1996 the food commodities contributed 537.5 million mt or 90.2% while non-food commodities contributed 58.7 million mt or 9.8% of the total export volume, valued at US $1,821.0 million or 96.2% and US $71.6 million or 3.8% of the total export, respectively.

In 1996, shrimps, tunas and other fishes dominated the total exported commodities. Although shrimps contributed only 95,120 mt or 16.0% of the total export volume, its value contributed US $1,053.4 million or 55.7% of the total export value. Tunas contributed 95,430 mt or 16.0% valued at US $241.5 million or 12.8%, while other fishes contributed 307,600 mt or 51.6% valued at US $407.4 million or 21.5% of the total, respectively. The export volume and value of fishery products by type of commodities in 1990-1996 are shown in Table 7 and Table 8.

The total import of fisheries products in 1996 reached 209.3 thousand mt valued at US $148.0 million, or at an average increase of 28.4% in volume and 23.3% in value per annum in 1990-1996. On the other hand, the total import of fishery products in 1990 was 73,285 mt valued at US $47.7 million.

Of the 1996 total import, non-food commodities consisted of fat and fish oil; fish crustacean and mollusks meal; fish feeds and others, contributing to 194,200 mt or 92.8% of the total volume, valued at US $123.0 million or 83.1% of the total value. Fish meal which was used as one of raw materials for animal feeds reached 168,370 mt or 80.4% of total import volume, valued at US $94.4 million or 63.8% of the total import value. The import volume and value of fishery products by type of commodities, are shown in Table 9 and Table 10.

From the 1995 total marine fish production of 3.3 million ton, the catch was dominated by ten fishing gear, namely, purse seine, drift gill net, other than hook and lines (other than long line, pole and line, and troll line), payang (seine net including lampara), raft net (lift net), set gill net, scoop net, sea weed collection, beach seine and stow net.

Each gear could catch more than 100 thousand mt per annum. Their contribution to the production was: 586.2 thousand mt (17.8%), 337.6 thousand mt (10.3%), 255.7 thousand (7.8%), 218.0 thousand mt (6.6%), 183.3 thousand mt (5.6%), 166.4 thousand mt (5.1%), 144.3 thousand mt (4.4%), 111.4 thousand mt (3.4%), 103.6 thousand mt (3.1%), and 100.9 thousand mt (3.1%), respectively. The total catch of these main fishing gear was 2.2 million mt or 67.0% of the total production. The data on marine fishery production by type of fishing gear in 1990-1995 is shown in Table 11.

3. FISHERY POLICY TOWARD 2010

Fishery development which is an integral part of the agriculture and national development, is on its Sixth Five-Year Development Plan, or on its first five-year development period (1993-1998) of the Second Long-Term Development Plan (1993-2018). The objectives of fisheries development in the Sixth Five Year Development Plan are:

a) To improve the quality of human resources in fisheries and fishfarmers through optimal utilization of fishery resources by applying environmentally-sound science and technology and employing techniques that will increase the value of fishery products;

b) To increase supply and distribution of fish commodities in order to increase fish consumption of the population;

c) To encourage and create jobs and productive business opportunities;

d) To enhance domestic industrial growth through increased supply of raw materials; and

e) To increase foreign exchange earnings.

The focus of these objectives indicated a shift from the previous Development Plan where emphasis was on increasing production and economic growth. The present thrust stresses not only on increasing production, but also on improving quality of human resources through sustainable development in integrated agriculture business approach. To improve the quality of life of human being, means to increase income and prosperity of the fishermen and fishfarmers, as well as to provide sufficient animal-protein intake from fish for the people.

Considering the progress which has been achieved on national economic level and the impact of international economic development, the vision of fishery development for the next decade was to develop modern fisheries which could support the sustainable utilization of the fishery resource. Through training, fishermen and fishfarmers as one of the important economic players in production aspect, should have the capability to make decisions based on facts and their knowledge. Furthermore, they should have the capability to control technology as a main instrument in utilizing fishery resources in the optimal way. This will encourage the achievement of a high level of efficiency in fisheries in order to be able to play more role either in domestic or international market in the area of globalization. This will also encourage the economic development in rural areas in order to increase the income of fishermen and fishfarmers, the prosperity of rural population, and for them to take part on property alleviation.

In fishery management, Indonesia takes note of the United Nation conventions such as UNCLOS, CITES, UN Agreement on the Conservation and Management of Straddling Fish Stocks and High Migratory Fish Stocks, and the UN Code of Conduct for Responsible Fisheries. These are used as references in managing the fishery resources in addition to local conventions such as fishing right as reflected in community-based fishery management.

4. STATUS OF NATIONAL FISHERY STATISTICAL SYSTEMS

The Ministry of Agriculture (MOA) has the responsibility to collect data in agricultural aspects including fisheries. For fishery data, fishery production and fishery socio-economics surveys are conducted by the Sub-Directorate of Data and Statistics of the Directorate General of Fisheries (DGF) in collaboration with provincial and District Fishery Services. The Sub-Directorate of Data and Statistics of the DGF is structured under the Directorate of Programming.

The Provincial and District Fishery Services belong to the Local Administrative, namely the Governor, who acts as Head of First Level Region (Province) and Bupati, who acts as Head of Second Level Region (District). Under the latest regulation, the responsibility of field activities of agricultural statistics is submitted to the District Level of Local or Regional Administrative. While the Central Government (DGF) has the responsibility to guide and supervise the implementation of data collection in the field.

Fishery production survey designed in 1973-1974 has been implemented yearly since 1976 by the DGF of MOA in collaboration with Fishery Services in the regions. Although the survey is called Fishery Production Survey, the survey covers a variety of statistical items including the following:

a) Fishery Inventory Items:

- Fishing establishment (Culture household)
- Fishing boat (Area of fish pond)
- Fishing unit

b) Production

- Number of trip (Production input)
- Catch (Yield)

c) Disposition of catch

- Disposition of catch
- Quantity of fisheries commodities produced

The responsibilities of the statistical officials at all levels are set out as follows:

- Fishery Officer at Sub-district Fishery Office is responsible for field enumeration;
- District Fishery Service for estimation of all statistics at district level and preparation of reporting forms;

- Provincial Fishery Service for scrutiny of reporting forms and compilation of yearbook at provincial level; and
- Directorate General Fisheries (Sub-Directorate Data and Statistics) for scrutiny, tabulation and compilation of yearbook at national level.

The unit area used in the collection of fishery statistics in the survey is the district level. The survey uses the following three categories of forms:

a) Survey forms for field enumeration;

b) Estimation forms to be used by the District Fishery Service; and

c) Reporting forms which to be completed by the District Fishery Service and forwarded to the DGF through the Provincial Fishery Service Office.

For statistical purposes in Indonesia, fisheries is classified into the following sectors and sub-sectors:

a) Marine fishery

- Capture/Fishing
- Culture

b) Inland Fishery

- Capture/Fishing in open waters
- Culture in inland waters

  - Brackishwater culture
  - Freshwater pond culture
  - Cage and pen culture
  - Paddy field (Paddy cum fish) culture

For marine fishery, a survey on fishing establishments, fishing boats and fishing units is undertaken. The complete number of powered boats and fishing gears employed is collected through the implementation of powered - boat card which can be used for a ten-year period. For the number of non-powered boats, estimation makes use of a complete list of fishing households together with the number of boats operated which are prepared at the end of each year for every sample village, while the number of fishing units by type of fishing gear for non-powered boat cards and the list of non powered fishing households are updated, and the number of fishing establishment, boat by sizes, and fishing units by type of gear are counted and recorded.

The survey on number of trips and catch is divided into three types, namely, L-I, L-II and L-III surveys. L-I survey is applied to fishing companies whose catches are mainly for export, and usually these companies have their own landing sites or wharves. As these companies keep good records of fishing operations, a special survey form is delivered to them to be filled out on monthly basis. The list of such companies is prepared by the DGF. The number of trips by fishing gear and size of boats as well as catch in quantity and value are collected through this survey.

L-II survey is applied to a major fish landing place, were more than 50 percent of the total fish landings of a district are landed. With the progress of fishing boat mechanization, the role of such major landing places will become more important in terms of the data on fish landed. For this reason, a sample survey with objective measurement is applied to ensure accuracy of catch data collected.

Two-stage sampling, using day as a primary sampling unit, and trip (boat arrival) as a secondary sampling unit is applied. In principle, one day is selected from each week as a sample day. On this day, all boat arrivals are counted and at the same time a sample of trips is selected for the measurement of catch.

L-III survey is applied to all marine fishing villages, excluding those places covered in L-II survey. Small-scale fisheries undertaken by a large number of small fishing households with non-powered or without boats are covered by this approach. The catch are landed along the sea coast and such landing places are not easily accessible.

To solve such problem, a sample survey is applied. Two-stage sampling is conducted: sample villages are selected from a sampling or survey frame, then sample households in each sampling village are conducted. L-III survey is a quarterly survey and actual field enumeration is confined to the sample fishing villages. The total catch per quarter of each type of gear is estimated as a product of total number of fishing units, average number of trips per quarter and average catch per trip. In order to estimate the number of trips and catch in a district, ratio estimation is used. The ratio is obtained by dividing the number of fishing households throughout a district by the number of fishing households in all the sample villages. The value of catch is estimated by utilizing the producer's average prices by species as recorded in monthly report of fish auction, or monthly report of fishing enterprises (L-I Survey). The average price per species is multiplied by the volume of catch.

The survey on distribution of catch and quantity of fishery commodities is undertaken because out of the total catch landed, the percentage disposed for fish processing is not known by the district fishery officers. The volume of catch disposed through various methods is estimated, based on any available information. The quantity of fishery commodities produced is estimated by applying a relevant conversion factor to the catch disposed. Estimated figures by species are counted quarterly at district level through the quarterly catch data, the percentage of catch disposed to each method, and conversion factors.

Survey methods applied to inland water fishery are exactly the same as those developed for marine fishery. However, since major fish landing places as in marine fishery are rarely seen in inland fishery, L-III survey is applied. Similarly, the survey methods for culture makes use of the L-III survey for marine fishery. Thus, the survey for culture is a sample survey. For the survey of inventory items like the number of culture households, area of fish ponds etc., a complete list of culture households is prepared for every sample village, and this survey is done on quarterly basis for sample village, within which ten sample culture households are randomly chosen. Estimation of inventory statistics and yield at district levels are done by using raising factors or ratio estimations. These ratios are obtained by dividing the number of culture households and area of ponds in a district by the number of culture households and area of ponds at all sample villages, respectively.

In order to obtain data on fishery development impact, the DGF together with the Provincial Fishery Services conducts fishery socio-economic survey on some selected areas of the country. A sample survey is applied in each location related to fishery activities predominant in that region.

As the object of the survey is the fishery household, the period covered is one calendar year (January to December). This survey collects information on socio-economic structure of fishery household, level of technology and management applied, level of household income, income distribution, cost and earning of fishery activity, economic efficiency of fishery activity, level of living condition, etc. This yearly fishery socio-economic survey is implemented in five-year basis in each location or area.

At present, because of the lack of supporting budget from local government, socio-economic surveys are only conducted in three provinces covering marine fishing, brackishwater and freshwater culture, the fishing and fish culture in open water activities. The DGF also analyses and publishes the progress of export and import data on a monthly and yearly basis. The data is collected from the Central Bureau of Statistics (CBS) data base. The publication covers data on export volume and value of fishery products by commodities, port of exportation and destination country, as well as on import by commodities, port of entry and country of origin.

Agricultural Census has been conducted by CBS since 1963 once every ten years. The last Agricultural Census held in 1993 covered all sectors of agriculture including fisheries. In the context of fisheries, the agricultural census collects the information on households, fishery enterprises, fishery villages, and fish landing places or fishing ports. Two methods were used in this census: complete enumeration covering all fishery enterprises and fish landing places or fishing ports; and sample census for collecting the information on fishery households.

The Agricultural Census is divided into two steps. Surveys are conducted on household listing, culture household land holdings, fishermen/fish farmers household income and fish landing places or fishing ports (complete enumeration), and fishery households (sample census). Then complete enumeration in fishery enterprises (culture and fishing enterprises) is undertaken to cover information on type of culture engaged or fishing gear operated, land or boat ownership, manpower, yield or fish production, fish product, distribution, production input, cost and earning data. Complete enumeration on fishing ports/fish landing places covers information on general condition of fishing port/landing place, facilities provided, and fish sold through auction places. Sample census on fishery households (fishing and culture households) covers information on household profile such as level of education of household members, housing condition, land or boat ownership, manpower, production input, and membership of cooperative.

Catch and effort data are collected and compiled through the Fishery Production Survey and published, as follows:

- Catch:

  a) Total catch by province/coastal area;
  b) Catch by species and province/coastal area
  c) Catch by fishing gear and province/coastal area; and
  d) Catch by quarter and province/coastal area.

- Effort:

  a) Number of fishing boats by size of boat, province/coastal area;
  b) Number of fishing units by size of boat, province/coastal area.

Although other catch and effort data are compiled, these may not be published due to unreliability of the data sent by some provinces. The data includes:

- Catch

  a) Catch by fishing gear and species (national figure) and coastal area figure;

  b) Catch by quarter and species (national and coastal area figure); and

  c) Catch by quarter and type of fishing gear (national figure) and coastal area figure.

- Effort

  a) Number of fishing units by type of fishing gears and type/size of fishing boats (national and coastal area figure);

  b) Number of fishing trips by type of fishing gear and type/size of fishing boats (national and coastal area figure);

  c) Number of fishing trips by type of fishing gear and province/coastal area.

On the other hand, in order to support data collection on catch and effort data for tuna fishery, an industrial tuna long-line survey is being prepared. A trial survey on this is expected to be conducted in late 1997.

5. PROBLEMS AND CONSTRAINTS

The problems and constraints in collecting fishery statistics may be divided into two categories: technical or statistical, and operational.

Technical or Statistical

The fishery production survey is applied throughout the country for more than 20 years without any basic changes in its system and method. With the standardized definition, classification and methods applied, publication of a series of yearly fisheries data and statistics with same pattern at district, provincial and national levels has been produced continuously. However, due to the rapid progress of fisheries, some improvements in the statistical system and method, as well as its coverage should be undertaken.

Since 1994, with a five-year assistance from the Government of Japan through the Japan International Cooperation Agency (JICA), some activities have been undertaken to improve the quality of fishery data and statistics. The activities include reviewing and improving the system and methods of the fishery production survey.

The following improvements are presently conducted, for the marine fishery:

a) Improving the quality of estimation ratio used for the sample survey, by providing guidelines on data collection and sample selection of the fishery village potential survey;

b) Development of the fishery production survey on marine culture and marine industrial fishery (tuna long line fishing); and

c) Development of the computerization on data processing and reporting.

For its next program, the improvement of inland fisheries statistics will be undertaken in late 1997. This activity will cover the development of collecting statistics from openwater culture, industrial fisheries in brackishwater culture, and seed production. Problems may be faced in the dissemination of improved methods of collection at the regional and field levels due to budgetary constraints.

Collection of catch and effort data should be improved through the implementation a special survey or a Log Book system. In late 1997, a tuna long line fishery survey will be launched. The catch and effort monitoring through the Log Book system as part of the monitoring control and surveillance (MCS) system, is being implemented in fishing harbors by other offices of the DGF.

The data coverage of fishery statistics should be extended due to the need for decision making process as well as for planning, evaluation and investment purposes. The data needed are on fishery economics, fishery products distribution and trade, and statistics to support food balance sheet of fish consumption.

Operational

This is in connection with the efforts to provide accurate, reliable, and up to date fishery statistics. In Indonesia, there is lack of manpower available and capable, in collecting fishery statistics at the regional and field offices. This is coupled with inadequate budget and facilities to support statistical work especially budget for transportation cost for field data collection in the village areas. The improvement of data processing through computerization in provincial and district level will need more computers and statistic support offices capable of undertaking the activities.

6. PROPOSALS ON NATIONAL FISHERY STATISTICAL SYSTEMS IMPROVEMENT

To overcome the problems encountered within the fishery statistical systems in Indonesia, the following activities are proposed:

a) Disseminating the results of the improved in Fishery Production Survey through training of regional fishery officers, who shall be tasked to disseminate the reviewed and improved systems and methods to high level fishery officers as well as to the field officers or enumerators. Funds to support the dissemination is needed as soon as the improved activities are completed.

b) Procurement of computers and implementation of training programs for regional officers, in order to fulfill the need for computers at the provincial and district fishery offices, and to improve the capability of fishery officers in fishery statistical data processing and reporting.

c) Improvement on catch and effort data collection through reviewing and improving the systems and methods presently applied. Technical assistance from international agencies is expected in this activity.

d) Development of systems and methods on fishery economics, fishery product distribution and trade statistical data collection. Technical assistance from international agencies is necessary in this activity.

7. FOLLOW UP FROM THE 1994 WORKSHOP RECOMMENDATIONS

The country's program on Fisheries Information System (FIS) as a tool to disseminate fishery information through computer networking, is still in the developing stage. Activities are being carried out to develop FIS, and these include the following:

a) Development of local area network (LAN) in DGF;

b) Development of data base;

c) Development of software to support the network, and;

d) Development of human resources capability.

The FIS, once developed, will be introduced throughout the country through what is called the wide area network (WAN) connecting 27 provincial fishery services and about 300 district fishery services. The system will cover subsystems of fishery data and statistics, fishery products distribution and trade, fishery science and technology, fishery investment, fishery management and fishery infrastructure. At the initial stage, concentration will be on the development of the subsystem of fishery data and statistics, where the data source is the result of Fishery Production Survey.

The development of fishery statistical database is in line with the computerization of data processing and reporting; and system onlining the district and provincial fishery offices with the DGF. At present, the development starts with the introduction and implementation of computerized reporting systems from provincial fishery offices to DGF using diskette instead of mailing the report forms.

Table 1. National, agricultural sector and fisheries subsector GDP, 1993-1995

Item	1993 (Billion Rps)	1994 (Billion Rps)	1995*) (Billion Rps)	1993-1994 (%)	1994-1995 (%)
At Constant 1993 Market Prices					
- National	329,775.8	354,640.8	383,767.8	7.5	8.2
	(100)	(100)	(100)		
- Agricultural	58,963.4	59,291.2	61,766.8	0.6	4.2
	(100)	(16.7)	(16.1)		
- Fisheries Sub Sector	5,384.9	5,659.5	5,973.6	5.1	5.6
	(1.6)	(1.6)	(1.6)		
At Current Market Prices					
- National	329,775.8	382,219.7	452,380.9	15.9	18.4
	(100)	(100)	(100)		
- Agricultural Sector	58,963.4	66,071.5	77,639.3	12.1	17.5
	(17.9)	(17.3)	(17.2)		
- Fisheries Sub Sector	5,384.9	6,543.6	7,616.0	21.5	16.4
	(1.6)	(1.7)	(1.7)		

Notes : *) Preliminary figures
Source : Central Bureau of Statistics

Table 2. Per capita national GDP and GNP, 1993-1995

Item	1993	1994	1995	1993-1994 (%)	1994-1995
At Constant 1993 Market Prices					
- GDP (Billion Rps)	329,775.8	354,640.8	383,767.8	7.5	8.2
Per Capita GDP (Rps)	1,757,969.8 (US$842)	1,859,913.2 (US$928)	1,980,737.0 (US$1,039)	5.8	6.5
- GNP (Billion Rps)	317,223.2	341,675.7	366,891.9	7.7	7.4
- Per Capita GNP (Rps)	1691,054.4 (US$810)	1,791,917.7 (US$893)	1,893,635.6 (US$994)	6.0	5.7
At Current Market Prices					
- GDP (Billion Rps)	329,775.8	382,219.7	452,380.9	15.9	18.4
Per Capita GDP (Rps)	1,757,969.8	2,004,550.7	2,334.869.2	14.0	16.5
- GNP (Billion Rps)	317,223.2	367,941.1	432,798.3	16.0	17.6
- Per Capita GNP (Rps)	1,691,054.4	1,929.666.6	2,233.797.7	14.1	15.8
Mid Year Population (Thousand)	187,589	190,676	193,750	1.7	1.6

Notes : *) Preliminary figures
Source : Central Bureau of Statistics

Table 3. Number of fishermen and fishfarmers by fishery activities, 1990-1996

Unit: Person

Item	1990	1991	1992	1993	1994	1995	1996 *)	Average Increase Per Annum (%)
Fishermen/Fishing	1,994,414	2,126,000	2,208,580	2,337,190	2,315,787	2,463,237	2,529,084	4.07
- Marine	1,523,472	1,632,630	1,742,210	1,889,524	1,850,244	1,957,678	2,023,339	4.90
- Inland Openwater	470,942	493,370	466,370	447,666	465,543	505,559	505,745	1.32
Fishfarmers/Culture	1,622,296	1,845,968	1,739,307	1,969,356	2,064,119	2,104,822	2,177,907	5.25
- Brackishwater Pond	150,627	176,087	184,280	185,774	205,462	212,196	220,510	6.69
- Freshwater Pond	1,119,050	1,184,776	1,214,444	1,342,042	1,388,779	1,388,710	1,405,390	3.93
- Cages	11,111	18,392	17,828	20,933	29,731	44,804	57,155	33.36
- Paddy Field	341,508	466,713	322,755	420,607	440,147	459,112	494,853	8.81
Total	3,616,710	3,971,968	3,947,887	3,947,887	4,379,906	4,568,059	4,706,992	4.56

Notes : *) Preliminary Figures
Source : Directorate General of Fisheries

Table 4. Number of marine fishing boats by size of boats, 1990-1996

Size of Boats	1990	1991	1992	1993	1994	1995	1996	Average Increase Per Annum (%)
Non-Powered Boat	225,359	231,659	229,377	247,745	245,486	245,162	244,830	1.44
Powered Boat	119,686	123,125	129,529	141,753	150,699	159,491	168,200	5.85
- Outboard Motor	73,144	75,416	77,779	82,217	87,749	94,024	98,510	5.10
- Inboard Motor	46,542	47,709	51,750	59,536	62,950	65,467	69,690	7.03
= <5 GT	35,435	35,179	37,913	43,396	45,331	48,855	51,780	6.62
= 5 - 10 GT	6,897	7,391	7,936	9,791	9,604	9,562	10,180	7.00
= 10 - 20 GT	2,336	2,726	3,156	2,812	3,376	2,789	2,890	4.64
= 20 - 30 GT	831	909	984	1,558	1,688	1,519	1,660	13.93
= 30 - 5 GT	631	738	1,049	1,170	1,869	1,682	1,860	21.83
= 50 - 100 GT	119	185	208	351	567	687	890	41.48
= 100 - 200GT	173	272	184	213	340	253	280	14.22
= >200 GT	120	309	320	245	175	120	150	17.10
Total	345,045	354,784	358,906	389,498	396,185	404,653	413,030	3.07

Notes : *) Preliminary Figures
Source : Directorate General of Fisheries

Table 5. Fisheries production by sub sector of fishery, 1990-1996

Unit: 1,000 Ton

Sub Sector	1990	1991	1992	1993	1994	1995	1996*)	Average Increase Per Annum (%)
Marine Fishery/Fishing	2,370.11	2,537.61	2,692.07	2,886.29	3,080.17	3,292.93	3,503.10	6.73
Inland Fishery	792.36	811.99	851.26	909.03	933.66	970.66	1,016.80	4.25
- Inland Openwater/Fishing	292.54	294.48	300.90	308.65	336.14	329.71	335.80	2.38
- Culture	499.83	517.51	550.37	600.38	597.52	640.95	681.00	5.34
= Brackishwater Pond	287.07	323.16	337.43	355.28	346.21	361.24	382.40	4.99
= Freshwater Pond	120.60	106.86	116.71	141.89	140.10	162.20	173.00	6.76
= Cages	4.48	6.65	8.82	26.05	33.01	39.86	45.70	56.43
= Paddy Field	87.67	80.85	87.42	77.17	78.20	77.66	79.90	-1.31
Total	3,162.47	3,349.60	3,543.33	3,795.32	4,013.83	4,263.59	4,519.90	6.13

Notes : *) Preliminary Figures
Source : Directorate General of Fisheries

Table 6. Fish consumption, 1990-1996

Item	1990	1991	1992	1993	1994	1995	1996*)	Average Increase Per Annum (%)
Total Consumption (Ton)	2,856,300	2,883,783	3,160,422	3,313,388	3,534,868	3,653,389	3,739,448	4.63
Per Capita Consumption Per Annum (Kg)	15.85	16.12	17.14	17.66	18.54	18.86	19.00	3.09
Food Balance Sheet (Per Capita Consumption) Per Annum (Kg)	12.91	12.82	13.85	13.87	14.65	15.48	16.35	4.07

Notes : *) Preliminary Figures
Source : Directorate General of Fisheries
Central Bureau of Statistics

Table 7. Export volume of fisheries products by type of commodity, 1990-1996

Unit: M. Ton

Type of Commodity	1990	1991	1992	1993	1994	1995	1996*)	Average Increase Per Annum (%)
Food	302,415	389,200	398,011	494,121	492,979	510,262	537,520	10.62
- Shrimps	94,037	95,626	100,455	98,569	99,523	94,551	95,120	0.24
- Tunas/Little Tunas/Skipjack	72,756	103,368	73,439	92,764	79,729	86,470	95,430	7.37
- Other Fishes	107,851	153,061	183,513	262,093	268,214	292,162	307,600	20.20
- Frog Leg	3,916	5,082	5,630	4,912	3,858	5,068	5,260	6.92
- Jelly Fish	2,222	4,211	2,610	3,834	4,038	4,816	5,310	22.21
- Crabs	5,123	5,907	4,693	6,081	6,884	6,490	7,010	6.64
- Others	16,510	21,945	27,671	25,868	30,733	20,705	21,790	7.32
Non Food	17,826	19,843	23,356	35,092	52,392	52,803	59,680	23.41
- Ornamental Fish	1,827	2,322	2,593	3,161	3,232	3,254	3,660	12.68
- Pearl	1	2	79	18	103	68	80	662.61
- Sea Weeds	11,788	11,305	12,047	16,562	18,689	24,958	28,460	16.73
- Coral Reefs/Shelves	1,713	1,322	2,474	1,214	1,132	1,171	1,130	1.10
- Others	2,497	4,892	6,163	14,137	29,236	23,352	25,350	57.75
Total	320,241	409,043	421,367	529,213	545,371	563,065	596,200	11.42

Notes : *) Preliminary Figures
Source : CBS, processed by Directorate General of Fisheries

Table 8. Export value of fisheries products by type of commodity, 1990-1996

Unit: US$ 1000

Type of Commodity	1990	1991	1992	1993	1994	1995	1996*)	Average Increase Per Annum (%)
Food	987,600	1,203,572	1,203,463	1,442,215	1,602,922	1,696,948	1,820,950	11.00
- Shrimps	690,230	769,982	764,850	876,703	1,009,738	1,037,006	1,053420	7.49
- Tunas/Little -Tunas/Skipjack	124,748	184,525	145,968	213,818	182,200	212,983	241,450	14.83
- Other Fishes	115,771	174,371	205,239	269,029	266,151	339,098	407,360	24.31
- Frog Leg	13,340	21,144	23,597	18,455	15,014	21,634	23,780	13.95
- Jelly Fish	3,553	7,458	4,577	8,442	9,531	12,384	15,260	36.96
- Crabs	10,672	10,533	10,172	14,901	21,027	27,837	32,430	21.96
- Others	29,286	35,559	49,060	40,867	99,261	46,006	47,250	22.44
Non Food	52,079	52,091	60,072	61,533	75,797	67,041	71,620	6.04
- Ornamental Fish	7,683	6,985	7,513	8,976	9,140	9,607	10,030	4.88
- Pearl	15,576	15,876	21,631	17,521	20,873	11,710	13,630	1.80
- Sea Weeds	7,865	5,676	5,438	8,480	9,029	16,263	19,090	21.32
- Coral Reefs/Shelves	10,760	5,508	6,300	5,108	5,950	5,773	5,140	-8.47
- Others	10,195	18,046	19,190	21,448	30,805	23,688	23,730	19.30
Total	1,039,680	1,255,663	1,263,535	1,503,748	1,678,720	1,763,989	1,892,570	10.74

Notes : *) Preliminary Figures
Source : CBS, processed by Directorate General of Fisheries

Table 9. Import volume of fisheries products by type of commodity, 1990-1996

Unit: M. Ton

Type of Commodity	1990	1991	1992	1993	1994	1995	1996*)	Average Increase Per Annum (%)
Food	7,117	3,737	15,101	12,187	14,016	14,487	15,050	43.26
- Fresh/Frozen Fish	5,043	2,692	3,523	9,703	10,552	10,454	10,800	28.47
- Canned Fish	953	382	382	935	562	371	400	3.13
- Jelly	406	342	342	272	285	496	530	8.24
- Others	715	321	10,854	1,277	2,617	3,166	3,320	544.79
Non Food	66,168	67,815	67,981	165,013	262,813	148,753	194,260	31.99
- Fat and Fish Oil	9,229	9,225	148	4,984	4,944	8,454	11,000	544.91
- Fish Meal	52,574	48,676	47,676	122,620	227,213	128,957	168,370	36.72
- Crustacean/Molluscs Meal	3,353	9,144	14,466	32,348	20,628	7,725	10,410	48.42
- Fish Feeds	591	498	397	759	749	2,712	3,100	55.04
- Others	421	272	5,294	4,302	9,279	905	1,380	311.70
Total	73,285	71,552	83,082	177,200	276,829	163,240	209,310	28.41

Notes : *) Preliminary Figures
Source : CBS, processed by Directorate General of Fisheries

Table 10. Import value of fisheries products by type of commodity, 1990-1996

Unit: US$ 1000

Type of Commodity	1990	1991	1992	1993	1994	1995	1996*)	Average Increase Per Annum (%)
Food	9,491	7,240	18,510	17,518	18,032	21,041	25,000	27.50
- Fresh/Frozen Fish	2,751	1,910	3,297	9,369	1,659	9,146	12,140	104.66
- Canned Fish	1,928	539	2,981	2,296	1,365	805	900	48.04
- Jelly	3,796	3,305	1,476	2,818	2,890	4,711	5,040	15.87
- Others	1,016	1,486	10,756	3,035	12,118	6,379	6,920	143.12
Non Food	38,194	45,143	46,179	91,679	118,681	94,877	123,020	26.35
- Fat and Fosh Oil	4,077	3,481	253	2,740	2,436	5,222	7,060	169.02
- Fish Meal	29,183	30,552	31,761	67,141	92,490	72,959	94,390	27.68
- Crustacean/Molluscs Meal	3,543	9,452	6,993	14,595	10,182	4,922	7,090	35.27
- Fish Feeds	387	443	363	818	579	2,783	3,270	81.78
- Others	1,004	1,215	6,809	6,385	12,994	8,991	11,210	95.44
Total	47,684	52,383	64,689	109,197	136,713	115,917	148,020	23.31

Notes : *) Preliminary Figures
Source : CBS, processed by Directorate General of Fisheries

Table 11. Marine fishery production by type of fishing gear, 1990-1995

Satuan/Unit : Ton Mt

Type of Fishing Gear	1990	1991	1992	1993	1994	1995	Average Increase Per Annum (%)
Total	**2,370,107**	**2,537,612**	**2,692,068**	**2,886,289**	**3,080,168**	**3,292,930**	**6.80**
- BED equipped shrimp nets	18,249	23,846	44,928	56,652	79,619	95,536	41.14
- Payang (included Lampara)	198,764	206,127	206,098	267,449	242,450	217,976	2.80
- Danish seine	22,172	26,161	42,394	40,981	45,618	48,071	18.68
- Beach seine	85,729	102,853	94,966	103,119	92,611	103,639	4.52
- Purse seine	395,857	441,135	488,686	515,291	611,464	586,241	8.44
- Drift gill nets	261,778	289,482	295,796	332,112	338,332	337,571	5.34
- Encircling gill nets	56,151	60,410	51,226	59,216	64,338	71,587	5.58
- Shrimp gill nets	51,629	60,106	55,883	55,468	57,983	59,757	3.25
- Set gill nets	123,645	126,009	139,926	134,138	148,784	166,424	6.32
- Trammel nets	45,987	43,095	50,693	55,883	75,870	73,089	10.74
- Boat/Raft nets	126,817	140,644	153,546	149,358	160,208	183,259	7.80
- Bagan (included Kelong)	93,338	87,850	87,980	96,865	88,364	81,421	-2.45
- Scoop nets	18,980	21,610	22,114	39,345	20,679	144,257	128.85
- Other lift nets	26,771	23,210	20,526	21,321	24,848	21,246	-3.79
- Tuna long line	40,674	33,168	33,336	29,469	40,910	58,631	10.52
- Drift long line other than tuna long line	17,101	24,662	20,936	26,299	29,844	26,372	11.31
- Set long line	52,260	53,027	50,622	56,463	78,236	69,327	7.13
- Skipjack pole and line	78,529	87,596	113,370	82,991	92,968	89,611	4.52
- Other pole and line	189,109	185,762	194,943	223,017	220,695	255684	6.48
- Troll line	76,750	88,799	82,306	92,774	93,131	99,466	5.66
- Guiding barriers	40,574	43,915	46,641	48,688	55,200	60,437	8.34
- Stow nets	111,131	110,093	110,218	97,043	106,271	100,838	-1.68
- Portable traps	13,972	15,490	17,590	25,119	18,300	27,626	18.21
- Other traps	27,104	41,609	36,177	46,240	42,099	46,414	13.91
- Shell fish collection	35,225	34,712	39,686	41,904	49,298	51,524	8.12
- Sea weed collection	115,764	97,356	98,943	115,391	110,636	111,439	-0.21
- Muro Ami (included Mallalugis)	3,705	3,563	2,774	4,430	7,319	7,541	20.39
- Cast nets, Harpon, etc.	42,342	65,322	89,764	69,285	84,366	97,946	21.35

Source : Directorate General of Fisheries