



**Caribbean Regional Fisheries Mechanism**



**Food and Agriculture Organization**

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**COMPARATIVE STUDY MISSION TO THE PHILIPPINES AND  
MALAYSIA FOR THE STUDY OF THE USE OF DEMOGRAPHIC AND  
SOCIO-ECONOMIC INFORMATION IN COASTAL AND FISHERIES  
MANAGEMENT, PLANNING AND CONSERVATION**

**Report of Study Mission**

**May 2005**

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### **Objective of the Study Team and Mission**

1. To examine and determine how socio-economic and demographic information is used by fisheries and other Government administration and the fisher associations in the preparation of management and development plan as well as in monitoring the impact of these plans and programmes on fishers and their families.
2. To study and determine how the socio-economic well-being of fishers and their families is improved through special performances and projects, which are implemented in the context fisheries and coastal management, development and conservation programmes.

### **Members of Study Team Visiting Philippines & Malaysia**

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### **Schedule of Visits**

The mission visited the Philippines August 15<sup>th</sup> – 21<sup>st</sup>, 2004, followed by Malaysia August 21<sup>st</sup> – 28<sup>th</sup>, 2004. A detailed schedule of the mission is presented at **Appendix 1**.

## 1.0 GENERAL COUNTRY INFORMATION

### 1.1 PHILIPPINES

#### 1.1.1 General

The Philippines, a Southeast Asian archipelago was ceded by Spain to the United States in 1898 following the Spanish American War. They attained independence in 1946 after Japanese occupation in World War II. The islands of the Philippines are located between the Philippine Sea and the South China Sea and east of Vietnam (13°N, 122°E). The total area of the Philippines is 300,000 square kilometers with 1,830 square kilometers of freshwater and with a coastline of 36,289 kilometers. The Philippine islands have a tropical marine climate and are influenced by the Northeast Monsoon in November to April; and the Southeast in May to October. The terrain is mostly mountains with narrow to extensive coastal lowlands (World Fact Book, 2004).

#### 1.1.2 Population

The population of the Philippines in 2000 was 86.24 million with an annual population growth rate of 1.88%. The ratio of males to females was 1:1, with 22.1 years being the median age of the population.



The population is a young one with 35.8% under the age of 15 years and 3.9% over the age of 65 years. The average life expectancy was 69.6 years with males being 66.74 years and females 72.61 years while the infant mortality rate was 24.24 deaths per 1,000 of the population.

There are two official languages spoken in the Philippines, Filipino and English. However, there are eight major dialects – Tagalog, Cebuano, Ilocan, Hiligaynon, Bicol, Waray, Pampango and Pangasinense. Christian Malays constitute 91.5% of the population, Muslim Malay 4%, Chinese 1.5% and other 3%. Total literacy, described as the number of persons over 15 years that could read and write is 95.9% with the distribution among sexes being almost equal.

Source: <http://www.cia.gov/cia/publications/factbook/geos>

### **1.1.3 Socio-Economic**

The Philippines was the most developed country in Asia immediately following the World War II. However, it has since lagged behind other Asian countries because of poor economic growth, overpopulation and political instability. The country benefits from significant remittances estimated at US\$6-\$7 billion annually from Filipinos living and working abroad. This along with its booming information technology industry, and cheap labour has served to nullify the effects of global economic slowdown ensuring moderate economic growth over the past 6-7 years. Japan and the United States are the top export and import partners and are also vital sources of foreign investments. In 2003 GDP estimates (purchasing power parity) was US \$390.7 billion with a growth rate of 4.5%. The service sector accounted for 50%, industry 35% and agriculture 15% of this amount. The GDP per capita during this same period stood at US\$4,600.

The major economic activities in the Philippines are a mixture of agriculture, light industry, and supporting services. In particular, textiles, pharmaceuticals, chemicals, wood products, food processing, electronic assembly, petroleum refining and fishing constitute the major income generating activities. The 2000 Census reports that the inflation rate is 5% while unemployment is 10%. The total labour force is 48.1 million.

Export and import figures for 2000 reveal that the Philippines is a net exporter. Figures show that goods worth US\$38 billion were exported while US\$35 billion were imported. The United States and Japan were both the major trading partners.

The college population of the Philippines is close to two (2) million representing about 35% of the college-age population. Business, commerce and engineering and teacher education represent the main areas of study with 85% of college students attending private schools. There are 1,357 higher education institutions, of which 1,147 are private and 210 are public. With respect to marriage, the Philippines has seen little change in the timing of entrance to first marriage of its population since 1960. The average age at first marriage in 1998 was 23.5 years compared to 23.4 years in 1968.

### **1.1.4 Political, Legal and Administrative Structure**

The government of the Philippines is loosely patterned after the American system of government. It is organized as a representative republic. The President functions as both head of the state and government, as well as being the commander-in-chief of the armed forces. The president is elected by popular vote to a term of six (6) years, during which time he or she appoints and presides over the cabinet.

The Philippines has a bicameral legislature consisting of the Senate and the House of Representatives. The members of both houses are democratically elected. There are 24 Senators in the Senate and 250 Congressmen in the House of Representatives. The Senators are elected for a period of six (6) years while the members of the House of Representatives are elected for a period of three (3) years.

## **1.2 MALAYSIA**

### **1.2.1 General**

Malaysia is a southeastern Asian country and was formed in 1963 through a federation of the former British Colonies of Malaya and Singapore including the East Malaysian states of Sabah and Sarawak on the northern coast of Borneo. Singapore seceded from the federation in 1965. Peninsula Malaysia borders Thailand in the north and Singapore to the south. East Malaysia constitutes the northern one-third of the island of Borneo, bordering Indonesia, Brunei, and the South China Sea, south of Vietnam. The country

has a tropical climate and is influenced by annual Southwest (April to October) and Northeast (October to February) Monsoons. The terrain is mostly coastal plains rising to hills and mountains. The total square area is 329,750 square kilometers with 1,200 square kilometers of fresh water and with a coastline of 4,675 kilometers (World Fact Book, 2004).



Source: <http://www.cia.gov/cia/publications/factbook/geos>

## 1.2.2 Population

In 2003 the population of Malaysia was estimated to be 23.5 million with an annual growth rate of 1.8%. The proportion of urban population had increased to 62% from 50.7 % in 1991. Kuala Lumpur, Selangor and Pulau Pinang were the states with the highest urban populations, while Kelantan, Perlis and Kedah had the lowest levels. The ratio of males to females is 1.01 with 23.8 years being the median age of the population. The population is relatively young with 33.3% under 15 years and 4.5 % over the age of 66 years. The average life expectancy is 71.95 years with males (69.29 years) and female (74.51 years), while the infant mortality rate is 5.08 deaths per 1000 of the population.

The official language is Bahasa Melayu while English, Chinese dialects (Cantonese, Mandarin, Hakka and Hainan), Tamil, Teluga, Malayalam, Panjabi and several indigenous languages such as Iban and Kadazan are spoken. The 2000 census showed that 58% of the population was Malay and other indigenous, 24% Chinese, 8% Indians and 10% other. The total literacy, described as the number of persons over 15 years that could read and write, is 88.9% with males being 92.4% and females 85.4%.

## 1.2.3 Socio-Economic

Malaysia is classified as a middle-income country. It has transformed itself from 1971 through the late 1990s from a producer of raw materials into an emerging multi-sector economy. Growth was almost exclusively driven by exports, particularly of electronics. Japan and the United States are two export destinations and key sources of foreign investment. In 2003 GDP estimates (purchasing power parity) stood at US\$207.2 billion with a growth rate of 4.9% while the GDP per capita stood at US\$9,000. The services sector accounted for 46.3%, industry 45.3% and agriculture 8.4%.

The major industries include rubber and oil palm processing and manufacturing, light industry, electronics, tin mining and smelting, logging and processing timber. Inflation is estimated at 1.2% while unemployment is 3.4%. The total labour force is 10.4 million with 14.5% in agriculture, 36% in industry and 49.5% in services. Export and import figures for 2003 reveal that Malaysia is a net exporter of goods. Some US\$98.4 billion were exported while US\$74.4 billion were imported. Apart from the United States, its major trading partners are in Asia (Japan, Singapore, Taiwan and Thailand).

The percentage of citizens aged 20 years and over with higher education (i.e., post secondary, college or university) increased from 8.9% in 1991 to 16% in 2000. The main fields of study were social science, business, law, engineering and construction. The 2000 Census also revealed that young adults tend to marry at a later age. Consequently the proportion of never married (single) persons aged 20-34 continued to increase between 1991 and 2000 from 43.2 % to 48.1 %. In addition the mean age at first marriage increased from 28.2 to 28.6 years for males and from 24.7 to 25.1 years for females over the same period.

It was observed that religion was highly correlated with ethnicity. Islam is the most widely professed religion 60.4%; Buddhism 19.2%; Christianity 9.1%; Hinduism 6.3% and others 2.6%. The economy has been able to maintain an average gross domestic product of 7 percent from 1990 to 2000. These high growth rates allowed policy-makers to support a larger effort at human development programmes, resulting in a reduction of poverty from 16.5% in 1990 to less than 8% by 2000 (Malaysia Facts and Figures).

#### **1.2.4 Political, Legal and Administrative Structure**

Malaysia is considered to be a state governed by a constitutional monarchy. A bicameral system of parliament exists, consisting of a non-elected upper house and an elected lower house. Peninsula Malaysia is governed by a paramount ruler. All of the Peninsular Malaysian states have hereditary rulers except Melaka and Penang. Sabah and Sarawak in East Malaysia have governors appointed by the Malaysian Government. The powers of state governments are limited by the federal constitution. There are 13 states and three federal territories. The chief of state is the paramount ruler while the head of state is the Prime Minister.

The paramount ruler is elected by and from the hereditary rulers of nine of the states for a five-year term. The prime minister is designated from among the members of the House of Representatives. Following legislative elections the leader of the party that wins a majority of seats in the House of Parliament becomes the Prime Minister with the consent of the paramount leader.

The legal system has its premise on the English Common Law. There are judicial reviews of legislative acts in the Supreme Court at the request of the supreme head of the federation. There is also a Federal Court where judges are appointed by the paramount ruler on the advice of the Prime Minister.

## **2.0 DESCRIPTION AND STATUS OF MARINE RESOURCES IN THE PHILLIPINES AND MALAYSIA**

### **2.1 THE PHILLIPINES**

#### **2.1.1 Fisheries Resources**

Fisheries in the Philippines are conducted in marine areas (coastal and oceanic), swamplands (fresh and brackish), fishponds and inland lakes, rivers and reservoirs. About 990,872 persons are employed in the industry. The estimated total fish production in 2002 was 3,369,000 MT.

The Philippines ranks number 11 in aquaculture production in the world. It exports fish fresh, frozen, smoked, dried and canned to countries like Japan, USA, Canada and Taiwan.

1. The areas of fishery resources are:

(a) Marine Resources

Total territorial water (EEZ)	2,200,000 sq km
Coastal	266,000 sq km
Oceanic	1,934,000 sq km
Shelf Area (200 m deep)	184,600 sq km
Coral reef area (1-2- fathoms)	27,000 sq km
Coastline	17,460 km

There are two categories of marine fisheries in the Philippines, namely; municipal fisheries, where the fishing is done in coastal and inland waters and the other commercial fisheries, where boats of 3 gross tons and larger are used.

**Table 1. The catch by major species in the municipal fisheries (2002) are listed below.**

	Major Species	Total (mt) per year	% of total
1	Roundscad	234,230	22.5
2	Indian sardines	145,879	14
3	Frigate tunas	100,958	9.7
4	Skipjack	83,385	8.0
5	Yellowfin and big eyed tuna	63,051	6.0
6	Big eyed scad	38,889	3.7
7	Slipmouth	37,768	3.6
8	Fimbriated Sardines	38,889	3.7
9	Anchovies	33,706	3.2
10	Indian Mackerel	30,846	3.0
11	Other species	238,371	22.9

(b) Inland Resources

Swamplands (fresh and brackish)	246,063 ha
Fishponds (fresh and brackish)	253,854 ha
Inland resources (lakes, rivers, reservoirs)	250,000 ha

**2.1.2 Fisheries Contribution to Economy**

- (a) Contribution to total GDP – 3.9% (current)
- (b) Contribution to agriculture – 19.9 %, 2<sup>nd</sup> highest contribution to the GDP

## **Status of Fisheries**

Fish is the second most important item in the Filipino's diet. Much of the fishing is done inshore on and around coral reefs and in mangrove bays and estuaries. In Southeast Asia, 25% of live coral cover are in good condition; and 5% are in excellent state. Only 150,000 hectares of mangrove cover remain from the 400,000 hectares which existed in the 1920's. Almost all major bays are overfished. Fishing practices include mainly the use of traps in bays and some Cyanide and dynamite around Coral reefs.

### **(a) Cyanide and Dynamite**

The practice of cyanide and dynamite fishing has risen in popularity as a fishing method due to the very profitable exotic reef fish market e.g. for grouper, wrasse and fish for the aquarium trade. Cyanide fishing has produced an annual profit of 1 billion dollars. Over 330,000 gallons of cyanide are dumped over coral reefs in the Philippines every year. The cyanide is mixed to a solution of 5,000-20,000 ppm. This causes the corals to bleach and die, as corals die when exposed to a level of only 600 ppm. Corals exposed to cyanide can turn white in one day and overgrown with algae a week later. Fishermen use crowbars to rip corals apart to retrieve stunned fish. Cyanide is indiscriminate, stunning big fish while killing the smaller, more fragile organisms. It is one of the most toxic poisons and takes only 5 mg / kg to kill a person. Fifty percent of the fish caught in the reef die immediately while 80% of the remaining fish will succumb to delayed chronic mortality.

Dynamite creates shock waves in a 50 - 70 meter radius (fertilizer bombs), killing most fish in its path.

## **2.2 MALAYSIA**

### **2.2.1 Fisheries**

Fisheries in Malaysia are comprised of marine capture fisheries and fish culture / farming both in fresh water and brackish water.

There are 82,630 fishermen working on licensed fishing vessels. About one third of the number work in trawlers and purse seiners while the remainder work on traditional fishing vessels working off the East and West coasts. The number of fishing vessels stood at 30,751 in 2002 and is showing an annual increase of a little over 3% per year.

### **2.2.2 Status of Fisheries**

Fish production in 2002 was 1.46 million tones valued at RM 5.4 billion which represents 1.5% of the national GDP and 16.6 % of the Agriculture sector GDP. Marine capture fisheries production for the period was 1,272,078 tons valued at RM 4.21 billions. The coastal fishery production accounts for 87% of the total marine production and is estimated at 1,081,337 tons for 2002.

For fisheries management purposes fishing zones and closed areas are established. The main purpose for this is:

- (a) to reduce friction between traditional and commercial fisherman
- (b) to avoid overexploitation
- (c) to allow equitable allocation of the resources

The zones are as follows:

### **Zone A**

This zone is reserved solely for fishermen operating traditional fishing gear and using vessels less than 40 gross tons.

### **Zone B**

This zone is reserved for owner operated commercial gear such as trawl nets or purse nets. Also, vessels less than 40GRT can fish in this zone.

### **Zone C**

This zone is for commercial vessels with capacity more than 40GRT. Zone A and Zone B operators can fish in this area.

### **Zone C2**

This zone is for deep-sea vessels fishing with vessels  $\geq 70$ GRT. Zone A, B and C operators can fish in this zone.

Other fisheries management methods are adopted, including the establishment of Marine Protected Areas.

## **3.0 INSTITUTIONAL AND LEGAL ARRANGEMENTS FOR THE MANAGEMENT, DEVELOPMENT AND CONSERVATION OF FISHERIES, AQUATIC AND OTHER COASTAL RESOURCES**

### **3.1 THE PHILIPPINES**

In the Philippines the main institutions responsible for integrated fisheries and coastal resource management are represented by the Bureau of Fisheries of the Department of Agriculture, the Municipal or Local Government Units and the Fisheries Resource Management Councils. The model used for integrated fisheries management is one in which responsibility and authority for coastal resources have been delegated to the municipal and regional authorities, with Central Government retaining a supervisory role. Community and stakeholder participation in the planning and decision-making process is an important objective of the institutional arrangements and is achieved largely through the Fisheries Management Councils, devolution to the local government units, and a participatory decision-making process which is required by law.

#### **3.1.1 The National Fisheries Authority**

The Undersecretary for Fisheries and Aquatic Resources in the Department of Agriculture has overall responsibility for fisheries. The Undersecretary's functions as set out by the Philippines Fisheries Code 1998 are to: set policies and formulate standards for the effective, efficient and economical operations of the fishing industry in accordance with the programmes of the government; exercise overall supervision over offices and instruments related to fisheries; and establish such regional, provincial and other fishery offices as may be necessary and appropriate and organize the internal structure of the Bureau of Fisheries

and Aquatic Resources (BFAR) in such manner as is necessary for the efficient and effective attainment of its objectives and purposes.

The Bureau of Fisheries and Aquatic Resources is a line Bureau within the Department of Agriculture and has overall responsibility for development, management and conservation of the national fisheries. BFAR is headed by a Director and assisted by two Assistant Directors who supervise the administrative and technical services of the Bureau, respectively. There are 11 Divisions, 8 National Technology Centers, 7 Regional Fisheries Training Centers, and 16 Regional Fisheries Offices with Provincial Fisheries Offices, strategically located throughout the Philippines (BFAR, 2003; BFAR, <http://www.bfar.da.gov.ph/>). The functions of the Bureau include the following responsibilities, among others:

- (a) Prepare and implement a comprehensive national fisheries industry development plan;
- (b) Formulate and implement a comprehensive fishery research and development programme, such as, but not limited to, sea farming, sea ranching, tropical/ornamental fish and seaweed culture, aimed at increasing resource productivity, improving resource use efficiency, and ensuring the long-term sustainability of the country's fishery and aquatic resources;
- (c) Establish and maintain a comprehensive fishery information system;
- (d) Provide extensive development support services in all aspect of fisheries production, processing and marketing;
- (e) Coordinate with Local Government Units (LGUs) and other concerned agencies for the establishment of productivity enhancing and market development programmes in fishing communities to enable women to engage in other fisheries/economics activities and contribute significantly to development efforts;
- (f) Enforce all laws, formulate and enforce all rules and regulations governing the conservation and management of fishery resources, except in municipal waters, and to settle conflicts of resource use and allocation in consultation with the National Fisheries and Aquatic Resources Management Council (NFARMC), LGUs and local Fisheries and Aquatic Resources Management Councils (FARMCs);
- (g) Recommend measures for the protection/enhancement of the fishery industries;
- (h) Assist the LGUs in developing their technical capability in the development, management, regulation, conservation and protection of the fishery resources;
- (i) Formulate rules and regulations for the conservation and management of straddling fish stocks and highly migratory fish stocks; and
- (j) Perform such other related functions which shall promote the development, conservation, management, protection and utilization of fisheries and aquatic resources.

It should be noted that while the Department of Agriculture and BFAR have overall responsibility for fisheries development and management, these responsibilities, within municipal waters, have been delegated by law to the Local Government Units.

The government has implemented a number of projects in recent years designed to improve sustainable use and management of fisheries. Notable among these are:

1. The \$41 million Canadian funded project to strengthen the system for monitoring, control and surveillance.
2. The JICA funded Bantay Dagat Programme KR-II (255 million Philippine pesos or US\$5 million approximately) to improve, conserve and manage the Country's coastal marine fisheries and aquatic resources to ensure food security and alleviate poverty. The nationwide implementation of the Project has reached the farthest and most remote regions of the country and has benefited

over 35,000 marginal fishermen from the municipal and the small commercial sectors as well. The Project encompasses the acquisition and distribution of patrol boats, introduction and transfer of innovative and eco-friendly fishing gears, training on fishing technology, resource conservation and enhancement.

3. The Fisheries Resource Management Project (FRMP) addresses the two critical and interconnected issues of fisheries resource depletion and persistent poverty among municipal fisherfolk. It represents the Government's efforts to shift the sector focus from increasing fisheries pressure to fisheries resource protection and conservation through sustainable management. It reflects the demand of municipal fisherfolk for public assistance to protect their basic livelihood, and the national and local governments' concern over poverty and environmental degradation. The Project is designed to foster municipal fisherfolk participation in resource management and enhance government capability, both at the national and local levels, to fulfill its mandate to manage the resources. It has three major components:
  - Fisheries Resource Management which consists of various tools and systems for the rational management of resources, including data management, nearshore monitoring, control and surveillance, fisheries legislation, enforcement and licensing, and coastal resource management (CRM) planning and implementation.
  - Income Diversification which focuses on organization, mobilization and strengthening of fisherfolk and coastal community groups that are savings-based and self-reliant, capable of carrying out CRM activities and income diversification on a long-term basis.
  - Capacity Building which consists of technical training programmes and on-site coaching for persons implementing the Project and beneficiaries to strengthen capacities for resource management and Project implementation.
4. The Ginintuang Masaganang Ani (GMA) for Fisheries Programme, 2002-2004 is designed to provide national directions and framework to develop and manage the country's fisheries resources for food security, and ensures socio-economic upliftment of subsistence fisherfolk. Development efforts are focused on the expansion and revitalization of productivity programmes and provision of support activities through appropriate technology, research, extension and adequate financial and marketing assistance. On the other hand, management efforts cover the conservation, protection and sustained management of the country's fishery and aquatic resources to ensure its long-term sustainability.

### **3.1.2 Local Government Units (LGUs)**

Responsibility for fisheries management is delegated to municipal authorities using Municipal Ordinances under the Local Government Code of 1991 (LGC) and the Fisheries Code of 1998. The local municipalities are given the authority and responsibility for the management of their coastal areas out to 15 km from the shoreline under the parameters set by national fisheries legislation and policies. According to section 16 of the Fisheries Code of 1998, the municipalities / city governments, in consultation with the FARMC shall be responsible for the management, conservation, development, protection, utilization, and disposition of all fish and fishery / aquatic resources within their respective municipal waters. In this connection the LGU is empowered to both enact appropriate ordinances, and to enforce all fisheries laws, rules, regulations, and ordinances (BFAR, <http://www.bfar.da.gov.ph/>).

The management of contiguous fishery resources such as bays that straddle several municipalities, cities or provinces, is done in an integrated manner, and must not be based on political subdivisions of municipal waters in order to facilitate their management as single resource systems. The LGUs which share or border such resources may group themselves and coordinate with each other to achieve the

objectives of integrated fishery resource management. Section 76 of the Fisheries Code 1998 provides for the establishment of Integrated Fisheries and Aquatic Resources Management Councils (IFARMCs) which serve as the venues for close collaboration among LGUs in the management of contiguous resources. Fisheries management of the coastal areas and fisheries resources within 15 km of the shoreline is devolved to the municipal level.

### **3.1.3 Fisheries and Aquatic Resources Management Councils**

The Fisheries and Aquatic Resources Management Councils (FARMCs) represent another important component of the institutional framework for integrated management of fisheries and coastal resources in the Philippines. The establishment of these FARMCs at the national, provincial and municipal levels fulfils a commitment by the government to involve stakeholders in the development and management of the fishing industry, and also to pursue integrated management approaches. The composition of the FARMCs includes representatives of fisherfolk organizations, NGOs, LGUs, and relevant Government Agencies. The FARMCs evolved from the former National, Regional and Bay Management Councils (Flewwelling and Hosch, 2003). They are the key management advisory councils to local, regional and national government authorities responsible for fisheries management. Sections 68 to 79 of the Fisheries Code deal with the establishment, composition, functions and operation of the FARMCs (BFAR, 2003; BFAR at <http://www.bfar.da.gov.ph/>).

The functions of the National Council (NFARMC) are to: a) assist in the formulation of national policies for the protection, sustainable development and management of fishery and aquatic resources for the approval of the Secretary; b) assist the Department in the preparation of the National Fisheries and Industry Development Plan; and c) perform such other functions as may be provided by law (s.72 Fisheries Code 1998).

The municipal councils' functions are:

- (a) assist in the preparation of the Municipal Fishery Development Plan and submit such plan to the Municipal Development Council;
- (b) recommend the enactment of municipal fishery ordinances to the sangguniang bayan / sangguniang panlungsod through its Committee on Fisheries;
- (c) assist in the enforcement of fishery laws, rules and regulations in municipal waters;
- (d) advise the sangguniang bayan / panlungsod on fishery matters through its Committee on Fisheries, if such has been organized; and
- (e) perform such other functions which may be assigned by the sangguniang bayan / panlungsod.

Thus the system of FARMC at the local, regional and national levels are designed to facilitate broad consultation with stakeholders and local communities as well as provide opportunity for consideration of cross-sectoral issues in managing fisheries and coastal resources.

### **3.1.4 Non-Government Organizations (NGOs) and the Private Sector**

The Government of the Philippines has been working with NGOs as partners in development, to facilitate greater participation and involvement of the people in planning, decision-making, and implementation of programs and projects. There are numerous private community-based organizations which have been established primarily to provide support and assistance to coastal communities. They work with the coastal community to formulate and implement projects, based on local needs and priorities, to build local capabilities and improve socio-economic conditions and living standards in the communities. The NGOs provide assistance by conducting technical training, technology transfer in respect of resource management, self-regulation and occupational diversification programmes.

On the other hand, the role of the private sector in fisheries management and development is very important in the Philippines. It is stated in the national policies that the government shall grant the private sector the privilege to utilize the fishery resources, and at the same time serve as active participant and partner of the Government in the sustainable development, management, conservation and protection of the fishery and aquatic resources of the country. This is to promote people empowerment in the fishery sector and ensure profitability of effort especially among small-scale fisherfolk (FAO Country Profile Philippines).

### **3.1.5 Main Fisheries Legislation**

The policies of the Government in respect of fisheries management and its integration in coastal management have been articulated in the main fisheries laws, including the Philippines Fisheries Code 1998, the Local Government Code of 1991, and the Philippines Wildlife Resources Conservation and Protection Act.

#### 3.1.5.1 Philippines Fisheries Code 1998

The primary fisheries legislation is the Philippines Fisheries Code, 1998. This statute, which is formally called the Republic Act 8550, is entitled "An Act Providing for the Development, Management and Conservation of the Fisheries and Aquatic Resources, Integrating All Laws Pertinent Thereto and for Other Purposes," and came into force on March 23, 1998. The Code is the policy of the Government with respect to fisheries and aims to achieve food security as the overriding consideration in the utilization, management, development, conservation and protection of fishery resources, in order to provide the food needs of the population as well as to limit access to the fishery resources of the Philippines for the exclusive use and enjoyment of the Filipino people. It is a comprehensive legislation and addresses several different aspects of fisheries in 9 Chapters and 133 sections.

The chapters are arranged as follows:

- Chapter I: Declaration of policy and definitions
- Chapter II: Utilization, management, development, conservation and allocation system of fisheries and aquatic resources
- Chapter III: Reconstitution of the bureau of fisheries and aquatic resources and creation of fisheries and aquatic resources management councils
- Chapter IV: Fisheries reserves, refuge and sanctuaries
- Chapter V: Fisheries research and development
- Chapter VI: Prohibitions and penalties
- Chapter VII: General provisions
- Chapter VIII: Transitory provisions
- Chapter IX: Final provisions

#### 3.1.5.2 The Local Government Code

The Local Government Code was enacted to decentralize local governance in the Philippines. Section 2(a) says, "It is hereby the declared policy of the State that the territorial and political subdivisions of the State shall enjoy genuine and meaningful local autonomy to enable them to attain their fullest development as self-reliant communities and make them more effective partners in the attainment of national goals. Toward this end, the State shall provide for a more responsive and accountable local government structure instituted through a system of decentralization whereby local government units shall be given more powers, authority, responsibilities, and resources. The process of decentralization shall proceed from the national government to the local government units."

The Code is a comprehensive instrument with several provisions directly addressing the adoption of integrated management of fisheries and coastal resources (Anon. 2004a; BFAR at <http://www.bfar.da.gov.ph/>). A wide range of issues related to sustainable use and integrated management of fisheries and coastal resources are dealt with, including but not limited to the following:

- Management and maintenance of an ecological balance within the territorial jurisdiction of the local government units and the national government, subject to the provisions of the code and national policies.
- Promotion of the general welfare of the inhabitants, by among others, enhancing the right of the people to balanced ecology and enhancing economic prosperity and social justices.
- The provision of basic services such as extension and on-site research services and facilities relating to agriculture and fishery, as well as enforcement of fishery laws in municipal waters, must be part of the delivery system of the local government.
- Environmental protection through either solid waste disposal systems or environmental management systems is also a basic service that should be given the people.
- Assistance to farmers and fishers in the establishment of cooperatives, if appropriate.
- Enforcement of forestry laws limited to community based forestry projects, pollution control law, small-scale mining law and other laws on the protection of the environment.
- Enactment of necessary municipal ordinances to strengthen the enforcement of fishery and environmental laws. The challenge of course is in the capacity for implementation of these ordinances to ensure that the enactment is not simply a “paper exercise” with minimal positive results.
- Establishment of partnerships with other players for more effective management.
- Provision of assistance, financial or otherwise, to individuals whose pursuits promote environmental protection and resource management.

According to the Local Government Code, the Local Government Units (LGUs) are to:

- Manage the municipal waters as defined under the Fisheries Code.
- Enact appropriate fishery ordinances related to the utilization of the coastal resources.
- Enforce all fishery laws and regulations within their area of jurisdiction.
- Grant fishing privileges to duly registered organizations or cooperatives.
- Initiate the consultation process with NGOs, people’s organizations, associations, cooperatives, fisheries councils and the coastal community.
- Maintain a registry of municipal fisherfolk.
- Issue permits to fishers, associations and cooperatives, but they must also realize their authority to refuse such access on the basis of conservation and overfishing to protect their true full time fishers, using the principle of “limited access” in RA 8550.
- Grant demarcated fishery rights.
- Provide support to technology, research, credit, production and marketing.
- Assist in the establishment of FARMC’s.
- Ensure the involvement of coastal communities in integrated coastal management.

Other important laws relating to fisheries include:

- The Implementing Rules and Regulations Pursuant to Republic Act No. 8550.
- Agriculture and Fisheries Modernization Act of 1997 (R.A. 8425), which is, "An act prescribing urgent related measures to modernize the agriculture and fisheries sectors of the country in order to enhance their profitability, and prepare said sectors for the challenges of the globalization

through an adequate, focused and rational delivery of necessary support services, appropriating funds therefore and for other purposes."

- Presidential Decree No. 704, which has the purpose of, "Revising and consolidating all laws and decrees affecting fishing and fisheries."

The Government of the Philippines faces enormous challenges in improving the socio-economic conditions of coastal dwellers and eradicating poverty. Coastal and fisheries resources have been severely depleted in some areas due to over-fishing and habitat degradation. Government policies, supported by legislation and strategic plans are focused on improving the social and economic conditions of the fishermen and their communities while at the same time protecting the natural ecological balance and sustainability of the coastal and marine ecosystems. Comprehensive legal and institutional systems are in place for integrated fisheries management. These systems seem to be logically connected and adequate to meet the long-term development objectives, taking into account the financial and technical constraints facing the country. A key feature of the system is the devolution of authority to the local/municipal governments to take the lead role in planning and implementing strategies and programmes, which are done in a participatory manner, consistent with the national policies.

### **3.2 MALAYSIA**

The Department of Fisheries has overall responsibility for fisheries management planning and implementation, including marine parks. The Fisheries Development Authority, a statutory body within the Ministry of Agriculture, has specific responsibility for enhancing the livelihood of fishers, value-added processing, and marketing, to maximise social and economic benefits from the national fisheries. The fishermen's associations are also important players in the process of development and management of the fisheries sector. The fisheries are highly regulated, and fisheries management is controlled by the federal and state governments. Compliance with fisheries law and regulation is high, with enforcement being done by the Fisheries Marine Service, Navy, Coast Guard and Marine Police. These agencies are coordinated in special joint enforcement operations, especially for offshore fisheries through the Maritime Enforcement Coordinating Centre (Flewwelling and Hosch, 2003). Malaysia represents a model of fisheries management where the government maintains full regulatory control and direction of the sector with the effective participation of the fishermen.

#### **3.2.1 National Department of Fisheries**

The Department of Fisheries is under the Ministry of Agriculture, Malaysia, and is entrusted with the role of developing, managing and regulating the fisheries sector. The objectives of the Department of Fisheries is to increase the national fish production, manage the fisheries resources in a sustainable manner, develop a dynamic fisheries industry, intensify the development of fish-based industries and maximise the income of the fishing industry (Anon., 2004; FAO Country Profile Malaysia; Bin Langgang, 2004). The main functions of the Department of Fisheries are to:

- Enforce the Fisheries Act 1985 and the Exclusive Economic Zone Act 1984.
- Manage and conserve and rehabilitate fisheries resources.
- Conduct fisheries research.
- Promote sustainable aquaculture.
- Provide fisheries extension services.
- Train fishermen, farmers and down stream industry entrepreneurs.
- Control fish diseases and provide quarantine services.
- Promote recreational fisheries.
- Monitor pollution affecting the fisheries resources.

- Provide basic fishery data.
- Establish standards and to inspect fisheries products with the co-operation of other related agencies.

The Department of Fisheries is headed by the Director-General of Fisheries who is assisted by the Deputy Director-General. There are seven divisions in the Department, each of which is headed by a Director. These Divisions are:

- Corporate Planning Division
- Resource Management and Protection Division
- Marine Fishery Resources Development and Management Department (MFRDMD)
- Research Division
- Extension and Training Division
- Engineering Division
- Administration and Finance Division.

There are 33 sub-sections under these divisions. There are also 12 state Fisheries Departments in charge of all the district fisheries offices throughout the country. Each of these state Fisheries Departments is headed by a State Fisheries Director. There are about 2,450 staff comprising of management, professional, technical, and supporting personnel.

The Third National Agricultural Policy (1998-2010) sets out the policy of the Government in respect of fisheries. It says, “The fisheries industry, particularly deep sea fishing and aquaculture, will be further developed on a commercial and integrated basis. The development will focus on conservation and utilization of fisheries resources on a sustainable basis. It will be adequately supported with modern fisheries infrastructure, processing, marketing network, comprehensive human resource development (HRD) and research and development (R&D) programmes,” (Ministry of Agriculture, 1999).

### **3.2.2 Sabah State Fisheries Departments**

The Fisheries Departments of each State is responsible for implementation of the national fisheries policy within that State. The responsibilities of the States’ Fisheries Departments are illustrated by the mission, objectives and main functions for the Fisheries Department of Sabah, which is presented below

The stated mission is to develop and manage the fisheries industry in line with the objective to establish a modern and commercial sector, provide maximum opportunities and benefits for all sectors of the industry, and for continued growth and sustainability.

The objectives of the Department of Fisheries, Sabah, in line with the New Economic Policy, and the Outline Prospective Plan of Sabah, the 3rd National Agriculture Policy and the 2nd Sabah Agriculture Policy, are as follows:

- To uplift the socio-economic status of the state’s fisheries communities.
- To guide and encourage the development of the state’s fisheries in the right direction.
- To increase the fish production from the capture fisheries and aquaculture.
- To manage the state’s fisheries resources at the optimum level to ensure an adequate supply of fish sources.
- To carry out research in fisheries technology, aquaculture and the state’s fisheries resources.
- To develop the fisheries industry as a commercial, modern and competitive sector.

The main functions of the Sabah Department of Fisheries are listed as:

- To manage and protect/conservate the state's fisheries resources through licensing, control of resource exploitation and culture methods, control of fish transportation, export and import of fish, and to enforce fisheries laws and regulations.
- To provide training and extension services to the fisheries communities.
- To carry out research especially on aquaculture, fisheries technology, resource survey and aquatic ecology.
- To provide general services to the public through the district fisheries administration.
- To establish fisheries development projects by setting up fisheries department stations in various districts in Sabah.
- To monitor and control fish diseases and quarantine, quality of fisheries products and public health.
- To collect and collate fisheries information and statistics.

The Department carries out its functions through a number of committees, which are utilized to facilitate effective, efficient and transparent decision-making.

### **3.2.3 The Fisheries Development Authority of Malaysia (FDAM)**

The Fisheries Development Authority of Malaysia (FDAM), which is also known as Lembaga Kemajuan Ikan Malaysia (LKIM), is a statutory body under the Ministry of Agriculture established through the Fisheries Development Authority of Malaysia Act 1971. The main objectives of LKIM are to improve the socioeconomic status of fishermen with emphasis on increasing their income, and expanding and developing the nation's fisheries industry. According to Section 4 of the Fisheries Development Authority Act 1971, the functions of LKIM are to:

- Promote and develop efficient and effective management of fisheries enterprises and marketing of fish.
- Provide and supervise credit facilities for fish production and to ensure that these facilities are put to maximum use.
- Engage in fisheries enterprises and for that purpose to engage in boat-building and in the production of fishing supplies and equipment.
- Promote, stimulate, facilitate, and undertake economic and social developments of Fishermen's Associations.
- Register, control and supervise Fishermen's Associations and to provide for matters related thereto.
- Control and co-ordinate the performance of the aforesaid activities.

The Fisheries Development Authority of Malaysia is headed by the Director-General who is assisted by two Deputy Director-Generals. There are five divisions under the Deputy Director-General (Development) each of which is headed by a Director. These Divisions are:

- Fishermen Institutional Development Division
- Aquaculture and Capture Fisheries Development
- Fisheries Infrastructure Management and Development
- Entrepreneur and Marketing Development
- Engineering.

In accordance with the stated mandate, various development programmes and projects have been undertaken with the aim of achieving the stated objectives. These have included programmes and projects focused on coastal infrastructure development, building artificial reefs, aquaculture development, fish marketing support, and fishermen community development. The implementation of these programmes has been undertaken with the support and co-operation of other government departments, agencies and ministries. The work of FDAM / LKIM is delivered through sub-offices located in each state. The objectives and main programmes and activities in the State of Melaka are presented below to illustrate the organization and types of projects which are undertaken by FDAM.

### **3.2.4 FDAM / LKIM Melaka State Office**

The main objectives of FDAM/LKIM Melaka are stated as: to improve the socioeconomic status of the fishermen with emphasis on increasing their income, and to expand and develop the nation's fisheries industry (Anon. 2004c)

The main objectives of the Fishermen Community Development Programme of Melaka are to:

- Develop a united, self reliant, cooperative and progressive fishermen community.
- Create a healthy, clean and conducive environment in the fishing villages.
- Establish strong, viable and capable fishermen's organizations.
- Uplift the status and quality of life of the fishing community by the involvement of fishermen and their families in all levels of activities.

To achieve the above objectives, activities are carried out under two main programs, i.e. the Fishermen Social Development Program, and the Fishermen Institutional Development Program. Recent activities under the Fishermen Social Development Programme included the following:

- Leadership Development courses for Fishermen (enforcement, leadership and motivation)
- Development of fishing villages
- Development of fishermen families
- Support services for fisheries communities (including tuition classes for children)

Recent activities under the Fishermen Institutional Development Programme include:

- Construction of fisheries landing complex of Kuala Linggi, Malacca; and
- Building of basic facilities (fish landing jetties, common hall for fishermen, raft for keeping fishing net).

In addition the Melaka office is involved in:

- Aquaculture research and development to upgrade technology in shrimp culture.
- Construction of fish aggregating devices to enhance resources in coastal waters.
- Operation of a special loans scheme for fishermen.
- Operation of a chalet (tourism) and a restaurant.

The Department also has a marketing and business development programme, the aim of which is to improve the fish marketing and distribution system by providing landing facilities, handling and storage

of fish, enforcement and collection of fish price information so that fishermen receive fair price while consumers get quality fish at a reasonable price.

Future development programmes of the Melaka FDAM/LKIM include:

- Construction and renovation of jetties in several communities
- Construction of Fish Aggregating Devices
- Upgrading the restaurant and food court
- Agrotourism (chalet)
- Aquaculture

### **3.2.5 Fishermen's Associations**

Before the 1970s, the fishermen of Malaysia were disorganized and fragmented even though for several years they had received government financial support and encouragement to form themselves into cooperatives and collective organizations to represent their interest. The Government of Malaysia, recognizing the need for enhanced involvement of fishers and their communities in planning and decision-making enacted the Fishermen's Association Act 1971, to promote and strengthen the participation of fishermen in fisheries development and management in an organized manner. The Act is a comprehensive statute which provides for the formation and operation of Area (local), State and National Fishermen's Associations to promote social and economic development of fishers and their communities. According to section 5 (1) of the Act, the Association's objective is to promote the economic and social interest of its members and it empowers the Association to "do all things necessary to achieve the objectives". The scope is wide and includes not only matters directly related to fishing and marketing of fish, but also matters related to the welfare of the communities such as the provision of health centres, nurseries, thrift institutions, insurance, mutual aid and other welfare programmes (s. 5(1)(e)).

In 1985, the National Fishermen's Association (NEKMAT) was established as a coordinating body to further promote the role of fishermen institutions in the development of the fisheries sector. In addition, there are Fishermen's organizations at the State level and also at the local (Area) level. There are currently 88 fishermen's associations (1 National, 12 State, and 75 Area) active in Malaysia, and between 60-70% of the fishermen in Malaysia are reported to be members. The State and Area Fishermen's Association are also members of the Malaysian Investment Co-operative which acts as an investment arm that helps promote savings, investment and business through its activities.

These Associations are significant players in the development and management of fisheries resources and the implementation of the Government's fisheries policy across Malaysia. They are the main organizational system and channel for delivery of government's financial and technical support to the fisheries sector, as well as for providing inputs from the resource users and their communities to central government's planning and decision-making process. The Government deploys significant resources, both financial and technical, to support the management and operation of these fishermen's associations and delivery of their plans and programmes. The State and National Governments assist the Associations with administrative and financial management and supervision. Apart from that, the bona fide fishermen themselves are responsible for the operational management of their associations. The importance of these associations in the fisheries sector should not be underestimated. Malaysia's impressive success in fisheries development and management over the past 20-30 years, particularly in improving the socio-economic conditions of fishers and fishing communities has been achieved in large part due to the organizational effectiveness and strength of these fishermen's associations. It is equally important to note that the successes of these associations would not have been possible but for the significant ongoing financial and technical support and supervision provided by governments.

The strategic plans and work programmes of the Fishermen's Associations are fully integrated into the government's national fisheries development and management policy both at the national and state levels. Both the national and state fisheries programmes are customized to the local situation and implemented through the area fishermen's associations.

### **3.2.6 Ministry of Natural Resources and the Environment**

There are three Departments within the Ministry of Natural Resources and the Environment whose work are interrelated with those of the principal fisheries organizations in promoting integrated management of the coastal and marine resources. They work in close collaboration to plan and implement the various programmes aimed at sustainable use and management of coastal and marine resources. These are the Department of the Environment (DOE), Department of Wildlife and National Parks, and the Forestry Department.

The DOE principally deals with matters involving air and water quality, industrial wastes, noise levels and environmental impact assessments. Thus, it is concerned largely with industrial pollution and environmental quality in general. Jurisdiction over land use and natural resource management rests primarily with the respective state authorities exercising competence through state legislation. Thus, issues like forestry, wetlands, mining and marine conservation do not fall directly within the DOE's mandate. It is only through the environmental impact assessment (EIA) process that the DOE exercises some measure of central supervision (Tan, 1998).

The Department's mandate is derived largely from the Environmental Quality Act 1974 (as amended 1985, 1996 and 2001), Section IV of the Economic Exclusive Zone Act, 1984, and over thirty-two separate subordinate legislation made under these Acts (Department of the Environment at <http://www.jas.sains.my/jas/>). For present purposes, it is important to note that there are a number of specific regulations and orders pertaining to environmental impact assessments, marine pollution control, and discharge of sewage and industrial effluent, which affect fisheries resources.

The Department of Wildlife and National Parks is responsible for implementation of the National Biological Diversity Policy, the Wildlife Protection Act 1972, the National Parks Act 1980, the National Parks (Amendment) Act 1983, and various other statutes dealing with national specific national parks and protected areas.

The Forestry Department administers the National Forestry Act 1984 and the Malaysian Forestry Research and Development Board Act 1985. The Department's responsibilities include control and management of mangrove forest which provide breeding and nursery grounds for several coastal living aquatic resources as well as the sites for coastal aquaculture activities.

### **3.2.7 Main Fisheries Legislation**

According to Tan (1998), apart from the familiar development-environment tensions and the common budgetary and manpower problems found in most developing countries, Malaysia faces a significant challenge in relation to federal and state government competence. As in all countries with federal structures of governance, there are substantial issues in the division of jurisdiction between the federal and state authorities. The Federal Constitution of Malaysia leaves substantial powers over land use and natural resource management to the respective States. In addition, the Constitution guarantees certain unique rights and privileges to the Eastern Malaysian states of Sabah and Sarawak. The federal Parliament would have jurisdiction to legislate for the states only in those areas which had been explicitly identified by the Constitution.

The Government of Malaysia has a fairly comprehensive system of primary and secondary legislation, at both federal and state level, aimed at controlling and regulating the development, management and conservation of the national fisheries in a manner consistent with its national policy objectives and international obligations. The primary fisheries laws in force at this time are the Fisheries Act 1985, the Fishermen's Association Act 1971, the Fisheries Development Authority of Malaysia Act 1971, and the Exclusive Economic Zones Act of 1984.

The fisheries laws in Malaysia are comprehensive, well developed, and target three main priorities, namely, optimum exploitation of fisheries resources, protection of the interests of the traditional fishers and improvement in their socio-economic status, and sustainable exploitation of the fisheries resources. The legislation includes a comprehensive description of compliance and enforcement requirements, as well as the authorities, rights, and responsibilities of both government officials and fishers in this process for licensing, inspections, reporting requirements, dockside monitoring, use of vessel monitoring systems (VMS), air surveillance, and landing checks, but legislation does not yet include coverage by observers, nor electronic reporting of catches. It should be noted however, that the most effective fisheries licensing system in Asia is that in Malaysia, a system that has been certified as ISO 9000 approved (Flewwelling and Hosch, 2003).

A review of the fisheries laws since the early 1900s indicates a very active development of the legislative framework to ensure that the laws are kept up to date and consistent with the policy objectives of the Government. The Fisheries Ordinance 1909 (as amended in 1912, 1924 and 1926) was the main legislation regulating the fishing industry until it was repealed in 1951. The Fisheries Rules of 1951 came into force on August 10<sup>th</sup>, 1951. During this time there were also seven Fisheries Ordinances or Enactments introduced by the various States. The fishing industry at that time was mostly small-scale, traditional fisheries and regulation was minimal.

In the 1960s and 1970s, the fisheries sector grew and expanded significantly following the introduction of trawling in coastal waters, creating new problems and management challenges such as conflict between traditional fishermen and trawlers, which could not be controlled by existing legislation. This led to the formulation of the Fisheries Act 1963, which provided a more comprehensive legal framework to manage the fisheries in Malaysian waters. This Act was formulated to integrate and strengthen the legal framework relating to marine and inland fisheries; to protect the natural living resources; to protect the interest of the fishermen; to ensure equitable allocation of fisheries resources; and to strengthen administrative activities to reduce conflict among the fishing communities. The 1963 Act was replaced by the Fisheries Act 1985 to incorporate developments related to the Third United Nations Convention on the Law of the Sea.

#### *3.2.7.1 Fisheries Act 1985*

The Fisheries Act 1985 is the primary legislation under which marine fisheries development, management and conservation, is effected in Malaysian fisheries waters. This Act is comprehensive and represents an expansion of, and improvement on the previous 1963 Act, incorporating the Exclusive Economic Zone (EEZ), consistent with relevant provisions in the 1982 United Nations Convention on the Law of the Sea (UNCLOS), to which Malaysia acceded on October 14<sup>th</sup>, 1996. Several new provisions have been incorporated into the Fisheries Act 1985. The Director-General of the Fisheries Department is required to formulate and continuously upgrade fishery programmes based on the latest scientific knowledge to ensure optimum utilization of fishery resources in line with good management practices. The Fisheries Act 1985 has provisions for the monitoring, control and surveillance (MCS) of fishing vessels in the EEZ. Foreign fishing vessel caught fishing illegally in the Malaysian EEZ are apprehended and severely dealt with under this Act. The objective of the Act is to provide better conservation, management and

development of fisheries in Malaysia in the light of Malaysia's commitment towards the implementation of the provisions of UNCLOS. The Act covers:

- Administration of fisheries in Malaysia.
- Licensing and management of local and estuarine fishing operations.
- Control of fishing by foreign fishing vessels in Malaysian fishing waters.
- Offences, prohibitions and control of certain methods of fishing.
- Establishment of marine parks and marine reserves.
- Offences and legal procedures relating to the implementation of the Act.

The 1985 Act provides the Minister of Agriculture with powers to make regulations for the management and conservation of marine resources. Several subordinate legislation (regulations and orders) had been made under the Fisheries Act 1963, before its repeal, and the Fisheries Act 1985, addressing various aspects of fisheries. The main ones are presented below (FAO Country Profile):

The **Fisheries Regulations (1964)** is applicable in the waters off the coast of Sabah, and provides procedures for application for fishing appliances licences, with licence fees, deposits and conditions attached to the licences for different types of fishing gear.

The **Fisheries (Conservation & Culture of Cockles) Regulations 1964** deals with the management, control, and licensing of collection of adult cockles and cockle spat from natural spatfall areas and culture areas. The minimum size for collection of adult cockles and cockle spat is also determined in this regulation, and there is also a fee charged for the licence to collect cockles.

The **Fisheries (Maritime) Regulations 1967**, lays down procedures for application for licences for different types of fishing appliances, with licence fees, deposits and conditions attached to such licences. This regulation is applicable in the maritime waters off the east and west coasts of Peninsular Malaysia.

The **Fisheries (Maritime) Regulations (Sarawak) 1976**, is applicable in the waters off the coast of Sarawak, and provides procedures for application for fishing appliances licences, with licence fees, deposits and conditions attached to the licences for different types of fishing gear.

The **Fisheries (Prohibition of Methods of Fishing) Regulations 1980** prohibits unsustainable fishing practices, such as use of explosives, poison and electric fishing, pair trawls, beam trawls and drift gill nets of more than 10 inches for catching rays, etc.

The **Fisheries (Licensing of Local Fishing Vessels) Regulations 1985** is for the licensing of local fishing vessels. It provides the procedures to licence fishing vessels, with conditions for marking of vessels, fees and deposits payable.

The **Fisheries (Marine Culture System) Regulations 1990** lays down procedures for application for permits for the establishment of marine culture systems, such as cage culture, pole culture, etc., and licensing of such systems, with conditions attached. This regulation is for the control of marine and brackish aquaculture activities and to control pollution arising from such culture systems.

The **Fisheries (Prohibition of Import etc. of Fish) Regulations 1990** provides a listing of the species of piranha fish that are prohibited from being imported, exported, sold or kept in captivity unless permitted by the Director-General.

The **Fisheries (Prohibited Areas) Rantau Abang Regulations 1991** provides protection for turtles that beach in Rantau Abang to lay eggs. The regulation designates areas in Rantau Abang, Trengganu as turtle sanctuaries and prohibits fishing in these areas unless specifically permitted.

The **Fisheries (Prohibited Areas) Regulations 1994** provides that the waters around the islands in Sarawak are fisheries protected areas, and prohibits the collection of shells, mollusks and corals. Fishing is also prohibited unless licensed to do so.

The **Establishment of Marine Parks & Marine Reserves Order 1994** establishes a number of marine parks for marine biodiversity conservation. The waters around 40 islands in Malaysian fisheries waters have been declared as Marine Parks Malaysia. Fishing and collection of fish and other aquatic animals are prohibited in these areas.

The **Fisheries (Close Season for the Catching of Grouper Fries) Regulations 1996** is applicable in the states of Kelantan and Trengganu only. Fishing of grouper fries during the months of November and December is prohibited unless permitted by the Director-General.

The **Fisheries (Prohibited Fishing Methods for the Catching of Grouper Fries) Regulations 1996** prohibits the collection of grouper fries in the lagoon and estuary of rivers unless permitted by licence to do so, and specifies that only fish traps can be used to catch grouper fries in the lagoon and estuary of rivers.

The **Fisheries (Control of Endangered Species of Fish) Regulations 1999** lists the species of endangered fish and mammals that are protected, and includes the dugong, whale, dolphin, whale shark and the giant clam, which are included in the list of endangered species in the Convention on International Trade of Endangered Species (CITES). The regulations makes it an offence to fish for, harass, catch, kill, possess, sell, buy, export or transport any endangered fish as specified in this regulations. Any of the listed endangered fish species caught unintentionally must be released immediately or disposed of as directed by a Fisheries Officer.

Other important legislation that affect fisheries and have not been mentioned above are:

- (i) Land Conservation Act 1960 (revised 1989)
- (ii) National Land Code 1965
- (iii) Town and Country Planning Act 1974
- (iv) Street, Drainage, Buildings Act 1974
- (v) Local Government Act 1976
- (vi) Uniform Building By-Laws 1986.

In concluding this section it is important to note that the main focus of government policy is sustainable use of the fisheries resource for socio-economic development. The fisheries institutional framework and laws in Malaysia are comprehensive, well developed, logically integrated and target three main priorities, namely, optimum exploitation of fisheries resources, protection of the interests of the traditional fishers and improvement in their socio-economic status, and sustainable exploitation of the fisheries resources. The key institutions are organised and given the basic human and financial resources needed to execute their mandate. The legislation includes a comprehensive description of compliance and enforcement requirements, as well as the authorities, rights, and responsibilities of both government officials and fishers in this process for licensing, inspections, reporting requirements, dockside monitoring, use of vessel monitoring systems (VMS), air surveillance, and landing checks, but legislation does not yet include coverage by observers, nor electronic reporting of catches. It should be noted, that the most effective fisheries licensing system in Asia is that in Malaysia, a system that has been certified as ISO

9000 approved (Flewelling and Hosch, 2003). Tan (1998), however, argues that there is need for greater inter-ministerial coordination to address natural resource management issues which straddle the jurisdiction of several agencies. He also argues for greater public participation to enable NGOs and the general public to have a larger role in decisions which affect their lives, pointing out that such increased participation would have to be sought in both legal, as well as extra-legal mechanisms.

#### **4.0 SOCIO-ECONOMIC AND DEMOGRAPHIC INFORMATION THE PHILIPPINES AND MALAYSIA**

#### **4.1 PHILIPPINES**

##### **4.1.1 Socio-Economic and Demographic Information**

###### ***4.1.1.1 Availability of Socio-economic and demographic information on Coastal Communities***

The Philippines National Statistics office through the Census exercise, which is conducted every ten (10) years, generates data on population, employment, unemployment, income, age, sex, etc. The data is readily available.

Under the authority of the Department of Agriculture, additional information on demographics and socio-economic information as it relates to the fisheries sector is generated by the Bureau of Fisheries and Aquatic Resources (BFAR). BFAR generates useful information on the number of registered fishers, the number of aquaculture farms, employment in the sector and at the macro level income generation and the sector's contribution to GDP.

At the regional level, BFAR receives additional assistance in gathering sectoral information through BFAR Regional Offices. At the micro level, the information is supplemented by Local Government Units (LGU) through their Fisheries Management Units (FMUS) specifically, as well as fishermen associations/cooperatives as it relates to coastal communities.

###### ***4.1.1.2 Use of Socio-economic and demographic indicators.***

Approximately eighty (80%) percent of the population in the Philippines live below the poverty line and depend on the resources of the coastal zone for livelihood and sustenance. The government of the Philippines recognized various key issues and concerns besetting the fisheries sector, inclusive of but not limited to the following: socio-economic issues and concerns, resource management and environmental issues and concerns, policy issues and concerns and industry issues and concerns.

##### **4.1.2 Preparation and implementation of special projects and activities in the context of fisheries and coastal area management and conservation, which aim at improving the socio-economic well-being of coastal fishers and their families**

In an effort to avoid any further decline in the economic status of coastal fishermen and generate greater empowerment, the BFAR embarked on a Fisheries Resource Management Project to address some of the issues and concerns noted at 4.1.1.2. The project has been designed to address two (2) critical issues namely, fisheries resource depletion and persistent poverty among municipal fisherfolk.

The Fisheries Resource Management Project is divided into three components, namely Component One, which addresses issues and concerns related to Fisheries Resource Management; Component Two, which

addresses matters relating to income diversification; and Component Three, which addresses matters relating to capacity building.

4.1.2.1 Using socio-economic and demographic indicators in monitoring the impact of management regulations and other measures on the socio-economic well-being of fishers, their families and other segment of the coastal population.

Programmes related to Component One, which address issues and concerns related to Fisheries Resource Management are at varying degrees of implementation and ongoing. The programmes comprise the following:

<b>Component One: FISHERIES RESOURCE MANAGEMENT</b>		
<b>PROGRAMME</b>	<b>DESCRIPTION</b>	<b>STATUS</b>
Resource and Social Assessment (RSA)	12 month research studies that will provide vital information on the condition of coastal resources and socio-economic profiles of communities for planning and decision making.	7 RSAs have been completed and are being used for coastal resource management while contracting for other bays is ongoing.
Philippines Fisheries Information System (PhilFIS)	PhilFIS is an electronic repository of fisheries information RSA studies, licensing systems, GIS, etc. that will assist planners and policy makers at the national and regional levels.	Linkage with BFAR and Regional Offices and the DA National Information Network established. Linkages with LGUs being undertaken.
Information, Education and Communication	Support provided to special Coastal Resource Management (CRM) activities at the community level.	1. Advocacy has resulted in heightened awareness and participation on resource management and protection. 2. Networking with media strengthened.
Costal Resource Management Planning (CRM)		72 of 100 municipalities have formulated their Municipal CRM plans.
Resource Enhancement Projects		1. 92 mangrove rehabilitation projects established nationwide. 2. In Bani, Pangasinan, an increase in fish catch from 2 kg to 3.5 kg per day. 3. 123 fish sanctuaries and fishery reserves established nationwide.

Legislation and Regulation		75 municipal fisheries ordinances adopted by LGUs
Municipalities Fisheries Licensing System (MFL)		11 municipalities have established MFLS.
Fishery Law Enforcement Teams (FLET)		80 FLETs established.
Law Enforcement		1. 53 patrol boats procured and delivered. 2. Installation of telecommunication equipment.

*4.1.2.2 Component two of the Fisheries Resource Management Project addresses issues related to income diversification and generation by fishers in coastal communities through either fishermen associations or cooperatives*

The status of the component's implementation is as follows:

Component Two – INCOME DIVERSIFICATION		
PROGRAMME	DESCRIPTION	STATUS
Livelihood Development	The introduction of alternative means of income generation and diversification among fishers in the coastal communities of the Philippines.	1. Seaweed Culture - Commenced 2. Cage Culture of Milkfish - Commenced 3. Cage Culture of Grouper - Commenced 4. Aquasilviculture - Commenced 5. Fish Processing - Commenced 6. Mud Crab Fattening - Commenced

*4.1.2.3 Component three of the Fisheries Resource Management Project addresses programmes related specifically to Capacity Building for both the public sector and fishers in coastal communities*

Training ongoing under this component is as follows:

Component Three – CAPACITY BUILDING		
PROGRAMME	DESCRIPTION	STATUS
Training	1. Fishery Law Enforcement Training.	Conducted
	2. LGU training on the preparation of Municipal Fisheries Ordinance.	Conducted
	3. Restricted Land Mobile Operator's Certification.	Conducted
	4. Review for Government Radio Operator's	Conducted

	Certification. 5. Training on the FRMP Bantay Baybay (Coast Watch) System	Conducted
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## 4.2 MALAYSIA

### 4.2.1 Socio-economic and Demographic Information Availability

In Malaysia, there are numerous sources from which socio-economic and demographic information/data can be obtained. A major source is the Malaysian five (5) year series of Annual Reports, which provides data on population, age, sex distribution, access to basic amenities, housing conditions, employment by industry and unemployment, income and poverty levels, educational attainment, agriculture and fisheries development, environment and sustainable resource management and human resource development. The information is readily available.

At the Sector level, the Malaysian Department of Fisheries, the Fisheries Development Authority of Malaysia (FDAM) and the National Fishermen’s Association (NEKMAT), State Fishermen Association, Area Fishermen Associations and Fishermen Cooperatives generate specific socio-economic data on fishers in terms of the number of registered fishers, the number of fishing boats, area fishermen associations, state fishermen associations, the number of aquaculture farms, the level of income generation, contribution to the Gross Domestic Product (GDP), women in fisheries and poverty levels. Interested persons have access to all the information, which is lodged with the all six (6) institutions. Accessibility can also be achieved through the web.

### 4.2.2 Use of Socio-economic and demographic indicators

In a concerted effort to raise the socio-economic conditions of Malaysian fishers, especially those who live, work and operate in the coastal communities and to eradicate the high levels of poverty among them, the Malaysian government established the Fisheries Development Authority of Malaysia (FDAM) or Lembaga Kemajuan Ikan Malaysia (LKIM) in 1971. The FDAM is a statutory body, under the Ministry of Agriculture established through the Fisheries Development Authority of Malaysia Act 1971. The main objectives of FDAM are:

- To improve the socio-economic status of fisherman with emphasis on increasing their income; and
- To expand and develop Malaysia’s fisheries industry.

The FDAM has as its mission to form and create a self reliant, dedicated and progressive fishermen community, which is able to move in line with the nation’s development and establish a modern fisheries industry.

Based on the results of surveys and research undertaken on the socio-economic conditions of most coastal fishers and issues related to the management and conservation of the surrounding marine environment, the FDAM developed a comprehensive Fishermen Community Development Project. The objectives of the project are:

- ❑ To develop a united, self reliant, cooperative and progressive fishermen community;
- ❑ To create a healthy, clean and conducive environment in the fishing village;

- ❑ To establish strong, viable and capable fishermen organizations; and
- ❑ To uplift the status and quality of life of the fishing community.

The Development Project focuses on two (2) main areas namely the Fisheries Industry Development Programme and the Fishermen Community Development Programme. The Fisheries Development Programme is comprised of seven (7) specific development programmes, which focus on the following:

1. Coastal Fisheries Industry Development;
2. Deep Sea Fisheries Industry Development;
3. Aquaculture Development;
4. Upstream Fisheries Industry Development;
5. Downstream Fisheries Industry Development;
6. Marketing Support Services; and
7. FDAM Commercial Development.

The development programmes, while administered by the FDAM, are sponsored by the Southeast Asian Fisheries Development Center (SEAFDEC), an autonomous intergovernmental body established as a regional treaty organization in 1967 to promote fisheries development in Southeast Asia. The center is currently made up of 11 Member Countries, namely Cambodia, Indonesia, Japan, Brunei Darussalam, Lao PDR, Singapore, Thailand, Vietnam, Malaysia, Myanmar and the Philippines. It has four technical arms located in different member countries of which the Marine Fishery Resources Development and Management Department (MFRDMD) is located in Malaysia. MFRDMD acts as a center to plan coordinate and implement research on fishery resources in Malaysia and on regional fishery resources research programmes.

The Fishermen Community Development Programme is made up of four (4) specific programmes, which include the following:

1. Fishermen Social Development Programme;
2. Fishermen's Institutional Development Programme;
3. Hardcore Poor Development Programme; and
4. Agro-tourism Industry Development Programme

The first three (3) programmes are all FDAM sponsored programmes, whilst the latter is sponsored by the Ministry of Agriculture.

#### **4.2.3 Preparation and implementation of special projects and activities in the context of fisheries and coastal area management and conservation, which aim at improving the socio-economic well-being of coastal fishers and their families**

The Malaysian Department of Fisheries has undertaken several management initiatives to protect the fishery resources in order to achieve sustainable coastal fisheries, while at the same time improving the standard of living for fishers and their families. The management initiatives have been formulated to control fishing effort and promote rehabilitation and conservation of fishery resources and marine ecosystems. Management measures that have been implemented through the legal and institutional framework to control fishing effort include the following:

- Direct limitation of fishing effort through the licensing of fishing gear and fishing vessels. A moratorium has been placed on the issuance of new or additional fishing vessels to fish in coastal waters. This is to ensure that the current high fishing pressure on the limited coastal fisheries resources will not be increased to prevent overexploitation.
- Registration of Fishers: Every fisher is required to have a fisherman registration card.

- Identification of nursery areas that should be protected and managed to ensure survival of juveniles of commercially important species. The areas are gazetted as closed fishing areas or areas that are zoned for specific fishing gear, based on the tonnage of the fishing vessel.
- Rehabilitation of resources through the establishment of artificial reefs and coral replanting programmes.
- Conservation of turtles and biodiversity of marine ecosystems.
- Facilitation of cooperative research efforts between government and academics to provide data essential for the formulation of area management plans.
- Resettlement of excess Fishers into Other Sectors: A voluntary programme to resettle fishers is in place to reduce fishing pressure, especially on inshore fishing. The fishers are encouraged to venture into other downstream activities such as aquaculture and post-harvest fish processing.
- Closed Fishing Areas: Commercial fishing vessels such as trawlers and purse seiners are prohibited from fishing in waters less than 5 miles from shore, which are the nursery grounds for juvenile prawns and fish.
- Management Zones: Four fishing zones have been established through a licensing system whereby zones are designated for specific fishing gear, classes of vessels. An attempt has been made to provide equitable allocation of fisheries resources and reduce conflict between traditional and commercial fishers.
- Conservation of Resources: Marine Parks, Marine Reserves and Fisheries Protected Areas have been established under the Fisheries Act 1985 as a management measure. Public awareness of the need to protect the corals and other marine flora and fauna in the waters surrounding the islands off the coast is being promoted to ensure their conservation. To date, 40 islands off the west and east coasts of the Malaysia Peninsular have been gazetted as Marine Parks and Marine Reserves. The waters around the islands of Sarawak, namely Pulau Talang-Talang Besar, Pulau Talang-Talang Kecil and Pulau Satang, have also been gazetted as Fisheries Protected Areas, whereby collection of marine fauna and flora is prohibited.

In 1971, an Act to establish Fishermen's Associations in Malaysia was formalized. Malaysia used a modified version of the successful Taiwanese Model of Cooperatives to establish its fishermen associations. The objectives of the Malaysian fishermen associations are as follows:

- To manage and operate financial aid schemes to provide credit and capital resources to members;
- To promote member education and training including circulation of information on matters of interest to members;
- To organize exhibitions, fairs and displays;
- To organize fishing operations or aquaculture; the assembling, storage, processing, distribution and disposal of members' products;
- To provide health centers, nurseries, thrift institutions, insurance, mutual aid and other welfare programmes;
- To assist in investigations and collection of statistics of the fishing industry;
- To provide buoys and other navigation aids and fishing harbour facilities;
- To mediate in disputes involving a member or members arising in the fishing industry;
- To organize the participation of members in any programmes for the conservation of fishery resources;
- To operate and provide transportation facilities to enhance fish marketing activities and related activities;
- To provide marketing, storage, drying, warehousing and other facilities; and
- To facilitate capital formation and investment among members through the establishment of companies or equity participation in trading and business ventures.

Other activities implemented, which aim at improving the socio-economic well-being of coastal fishers and their families include the formulation of the National Fishermen's Association (NEKAT), State Fishermen Association (SFA), Area Fishermen Association (AFA) and Fishermen Cooperatives. To date, it is mandated by Malay law that fishers join fisher organizations.

The implementation of an interest-free Soft Loan Programme for fishers in coastal areas.

#### **4.2.4 Using socio-economic and demographic indicators in monitoring the impact of management regulations and other measures on the socio-economic well-being of fishers, their families and other segments of the coastal population.**

In 1970 the incidence of poverty among fishers in Malaysia stood at 73.2%. In 1971 the FDAM embarked on a program to eradicate incidences of poverty among fishers especially in coastal areas and fishing communities. Over a twenty-five (25) year period (1970 – 1995), the poverty level among fishers was reduced by eighty-five (85%) percent.

#### **INCIDENCE OF POVERTY**

(FISHERMEN)

<b><u>YEAR</u></b>	<b><u>PERCENTAGE (%)</u></b>
1970	- 73.2 (Peninsular Malaysia)
1976	- 62.7 (Peninsular Malaysia)
1984	- 27.7 (Peninsular Malaysia)
1987	- 24.5 (Peninsular Malaysia)
1989	- 26.0 (Peninsular Malaysia)
1992	- 17.9 (Malaysia)
1995	- 11.8 (Malaysia)

To date, there are twelve (12) SFAs and seventy-six (76) AFAs in which over sixty (60%) percent of the fishers in Malaysia are members.

During the period 2001 to 2003 four hundred and ninety-five (495) fishers benefited from a total loan of RM10 million under the Soft Loan Programme.

## **5.0 Conclusions**

In an effort to improve the standard of living of fishers and their communities, while at the same time improving fisheries conservation and management, Malaysia and the Philippines have, over the past three decades, refocused their efforts on the human factor. This is evidenced by the increased use and reliance on socio-economic and demographic data and information in the formulation of policies and development

and implementation of programmes to address, in a direct manner, the social and economic needs of fishers and their communities. Fisheries management has shifted from the traditional narrow focus on fisheries biology, ecology and conservation, towards a wider developmental perspective based on the principles of integrated coastal resource management.

The importance of socio-economic and demographic studies as it relates to fisheries development policies and the formulation of programmes to address concerns and issues such as those noted above and which aim to balance human population dynamics and demographic trends with marine resources and the environment has been highlighted and effectively utilized in Malaysia and the Philippines, but much more so in Malaysia. In Malaysia, the establishment of FDAM in 1971 under the authority of the Department of Fisheries, to deal specifically with fishers' economic empowerment, especially in coastal regions has dealt effectively with coastal fishers concerns. The activities of FDAM are concentrated in 4 main programs designed to address a) fishing industries development; b) fish marketing / marketing support services; c) fishers' institutional development; and d) entrepreneurial development.

The findings of the study tour of Malaysia and the Philippines suggest that the fisheries sector no longer seems to be a last resort employment opportunity as it used to be for people in coastal areas. In Malaysia, where there is an overall increase in the standard of living and decline in the number of coastal fishers, it is also reflected in an occupational mobility out of fishing into other occupations in the service sector such as tourism and eco-tourism. In the Philippines, the decline has recently become more evident. One plausible explanation for the changes in both countries, in the context of declining catches and income per fisher on the one hand, and economic growth and rising levels of education on the other hand, is that alternative and economically more rewarding employment opportunities have developed outside the fisheries sector facilitating vocational mobility. Government policies aimed at a reduction and limitation of fishing effort, conservation, the introduction and formation of fishermen associations and/or fishermen cooperatives and the rehabilitation of fisheries resources have played a role in moving fishers and their families out of their traditional occupation.

Results of the study tour of Malaysia and the Philippines have indicated that there could be great value in using socio-economic and demographic data in assessing, evaluating, planning, monitoring and managing fisheries in the Caribbean. Although already being utilized in some countries in the Caribbean i.e. Belize, it is being done to a greater degree in Asia, where they continue to experience and realize positive results arising from the programmes that have been implemented and are being implemented as a result of studies. Fisheries development and management in the Caribbean is still largely dependent on the use of biological and ecological data and information and the achievement of sustainable fisheries.

Socio-economic and demographic studies, which basically illustrate conditions of life in a community can have far reaching positive effects in the Caribbean if utilized more effectively to improve the quality of life for small-scale fishers in the region. Results of such studies can assist in designing programmes specific to entrepreneurial development of fishers, the importance and advantages of fishers' associations/cooperatives especially in small communities such as the Caribbean region, as well as assist in poverty alleviation.

As the development and management of fisheries in the Caribbean move forward, the formulation of policies and programmes requires reliable statistics and data on fishers and fisherfolk, in addition to biological and ecological data. The first step should be to gather basic information on the socio-economic and demographic characteristics of fishing communities. This information would include family size, sources of employment, income etc. In most situations this information is readily available starting from information available in population censuses and household income surveys, which are conducted in all countries of the Caribbean region and could be complemented by case studies examining the structure of the fisheries sector in each case.

Likewise, population policies, which aim to balance human population dynamics and demographic trends with marine resources, should adequately take into account the special natural, economic, social and cultural context of fishing communities. It should be noted in this respect that fishing communities sometimes are composed of members of specific groups, warranting specially designed programmes.

The disaster caused by the recent tsunami in Asia, where fishermen and fishing communities bore a disproportionate amount of the destruction and damage as a consequence of their location in the coastal zone, further underscores the need for greater use of socio-economic and demographic data in planning and implementing fisheries programmes. Caribbean fishermen are today as vulnerable as their Asian counterparts to the impact of natural events such as hurricanes, storms and tsunamis, and global warming and climate change.

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