

# **FISHERIES MANAGEMENT POLICY IN MALAYSIA ISSUES ON RESPONSIBLE FISHING**

by

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## **1. INTRODUCTION**

The marine fisheries are a vital part of the economy of the Country, both from the standpoint of domestic food supply and also foreign exchange. In the inshore area of Peninsular Malaysia is an estimated 588,000 tons of potential resources, with the west coast of the Peninsular contributing about 322,000 tons and the east coast about 266,000 tons. The total landing of Finfish in 1995 was around 1,108,436 metric tonnes with a value of about RM 2.711 billion. The development of marine fisheries subsector has long been restricted to the territorial waters but after the proclamation of Exclusive Economic Zone, the Department of Fisheries is not only given the opportunity to exercise resource management to ensure sustainable exploitation but also to increase production and at the same time protecting the environment from pollution and degrading which will result in loss of aquatic habitat.

There are many issues facing fisheries management, the most critical of which is overfishing of the inshore areas by both licensed and illegal fishermen. Other issues include: competition between traditional and commercial fisheries for fishing grounds; competition for the use of the coastal zone for incompatible purposes; greater fishing effort because of more efficient technology; use of destructive fishing methods and gear; impact of pollution; and destruction of mangroves. To ensure that a healthy fisheries industry is maintained, it will be necessary to reduce the fishing effort in the inshore areas through licensing and proper management, as well as through the protection and rehabilitation of the marine environment.

## **2. MANAGEMENT**

The marine fisheries of Malaysia, which are multispecies and multigear, consist of both finfish and shrimp, and are dominated by the trawl and drift net fisheries on the west coast and the trawl and purse seine fisheries on the east, where the bulk of the landings comes from. The pelagic fisheries had been the mainstay of the marine fisheries production on the east coast for most of the years from 1977 until 1986, when the demersal fisheries production overtook it.

### **2.1 The Marine Fisheries**

The marine capture fisheries can be divided into two main types i.e. coastal or inshore fisheries and deep sea fisheries. The coastal or inshore fisheries where the

vessel operate within 30 nautical miles limit and the deep sea fishing operate beyond 30 nautical miles from shore lines. The Deep sea fishing vessel are above 70 GRT ,these were the purse seiner which catches the small pelagics, tunas, and king mackerels while the inshore vessel are the vessel which operate the traditional fishing gears such as drift gill net, hand lines bagnet, lift net beach seine, traps as others. Active government encouragement, larger trawlers have began exploiting the offshore resources in the last several years, contributing to a substantial increase in demersal fish landings on the east coast. While the deep-sea areas off this coast still offer scope for development of an offshore fishery, the exploitation of the inshore demersal fish and shrimp resources has certainly reached the level of maximum sustainable yield(MSY), and possibly exceeded it. Thus, there is significant evidence of economic overfishing.

The main legal instrument used for the management of the fisheries is the Fisheries Act 1985 and its related regulations made under this Act. A number of management measures have been implemented through the legal and institutional framework currently in place as in **Appendix 1**. These include:-

- a) Direct Limitation of fishing effort
- b) Closed Fishing areas and zoning
- c) Rehabilitation of resources
- d) Conservation of turtles
- e) Biodiversity

## 2.2 Legal

The subject of fishing and fishery conservation deserves separate consideration. Thus far, it appears that the Act which have considered on the protection of the marine environment do not contain express provisions on fishery conservation, particularly with regard to fishing operations, which play a vital role in enhancing the protection of the marine environment. Matters pertaining to the afore mentioned are largely contained in the Fisheries Act 1985 and the Regulations made thereunder.

The Fisheries Act 1985 is a Federal law. It relates to fisheries matters only, including its conservation thereof, the management and development of marine fisheries in Malaysian fisheries waters. It also regulates turtles in Malaysia, which are essentially State matters according to List II of the Ninth Schedule, Federal Constitution.

The direct related acts, ordinances, order and regulation as follows:-

- a) Fisheries Act 1985

- b) Fisheries (Marine Culture System) Regulations 1991
- c) Fisheries (Prohibition of Methods of Fishing) Regulation 1990
- d) Fisheries (Prohibition Areas) (Amendments) Regulation 1983
- e) Fisheries (Maritime) Regulation 1967
- f) The Sarawak Inland Fisheries Rules 1995
- g) Fisheries (Prohibition of Import etc. of Fish Regulation) 1991
- h) Fisheries (Cockles Conservation and Culture) Regulation) 1964
- i) Fisheries (Maritimes) Licensing of local Fishing Vessel Regulation. 1985.
- j) Fisheries (Maritime) Sarawak Regulation 1976.
- k) Rantau Abang Prohibited Fishing Areas Order 1991
- l) Environment Quality Act (EQA) 1974
- m) Environment Quality (Prescribed Activities) (EIA Order) 1987
- n) Environment Quality (Prescribed Premises)

### **2.3 Institutional**

Department of Fisheries Malaysia is entrusted with the role on the development, management and regulation the fisheries sector. Malaysian Fisheries Development Board (LKIM), however is responsible to uplift the livelihood of the fisherfolks through various programmes such as providing infrastructure for landing purposes, eco-tourism, as well as marketing of fisheries products particularly licensing for imports and exports.

Several agencies at both state and federal levels have jurisdiction over these activities. The various agencies/individuals involved and their respective roles in this field are:-

- a) Department of Fisheries(DOF) - provides technical advice on fisheries development, conducts research on techniques and identifications of suitable sites and regulates fisheries programmes/operations.
- b) Malaysian Fisheries Development Board (LKIM)

- c) State Economic Planning Unit - undertakes fisheries development planning and programmes.
- d) Harbours Master - approves any fisheries programmes/operation in a waterway, ensuring that navigation is not obstructed.

### **3. ISSUES AND PROBLEM**

#### **3.1 Management**

##### **3.1.1 Overfishing**

The exploitation of fisheries resources has reached its optimal level and one of the main concern of the capture fisheries is the problem of overfishing. The disappearance of certain species of commercially important fish has to be viewed with great concern. The changes in species composition in the landings has also to be monitored carefully to ensure that the management plans are able to sustain the commercially important food fish landings.

In the cases of both demersal and pelagic fisheries (including shrimp), the current levels of catch have exceeded the MSY levels. The current number of fishers and fishing boats exceeds that which can be sustained by current resources. Because fish is an open access resource, there is always the tendency for the industry to absorb more fishers in times of a downturn of the national economy. Even during an upturn, resident fishers do not leave the industry. Moreover, biological overfishing is a difficult problem to resolve because, as the nation prospers, there is an increased demand for fish and shrimp, resulting in their high and continually rising prices.

##### **3.1.2 Pollution**

Organic contamination (sewage and animal wastes), suspended solids (soil erosion and sedimentation), oil and grease, heavy metals, are some of the sources that pollute Malaysian rivers. These pollutants run off into the waters and hence such pollution at source has to be controlled to ensure that the marine environment is not polluted.

The use of fishing stakes (kelong), which are no longer viable for fishing, as cheap accommodations for recreational and other purposes has resulted in the pollution of the surrounding waters since there are no sewage facilities on the structures and all discharges flow directly into the sea. The resulting high nutrient levels, besides posing a health problem for swimmers, have an adverse impact on the corals. This effect has also been observed in the Great Barrier Reef of Australia.

### 3.1.3 Habitat Destruction

Habitat destruction such as land-based development, clearing of mangrove forests, degradation of seagrass, and coral reefs should be viewed seriously as the destruction of these habitats have serious implications to the well being of the environment as well as the sustainability of the marine living resources.

Tourism-related activities in the coastal areas are also one of the main causes of habitat destruction. With the promotion of tourism, there has been an increase in alienation of natural areas for tourism and infrastructure development projects in coastal areas and on offshore islands. Increased run-offs into the coastal waters, especially during the construction stages of tourism and development projects, has caused localized damage to the coral reefs and their related ecosystem. In addition to the above, better transportation facilities to offshore islands has increased the visitation rate and recreational use of coral reef resources. This has also contributed to increased localized damage to the highly visited coral reef areas. There is no set carrying capacity for any areas of the reefs. Management schemes, such as seasonal closure of damaged reefs has been practised.

Under the Fisheries Act 1985, (Marine Park Section) anchoring of boat on coral reefs is not allowed. Although mooring buoys were provided for anchoring purposed in marine park waters, anecdotal evidence shows that damage of coral reefs due to anchoring of boat on coral reefs (where there are no buoys) is still substantial.

### 3.1.4 Destructive Fishing Methods

Although the use of destructive fishing methods, such as fishing with explosives and cyanide fishing is banned, but is still being practised in Sabah. Such practices will result in indiscriminate destruction of the ecosystem especially the coral ecosystem and its associated biodiversity.

Destructive fishing techniques, such as use of fish traps (*bubu*), trawls, muro-ami and *kelong* in and around coral reef areas, and also small fishing stakes (*togok*) and stationary gear in the estuary and mangrove areas, have adverse impacts on the fisheries due to the use of small-sized mesh fishing nets. In the case of muro-ami, the actual breaking of the corals themselves occur during fishing operations.

### 3.1.5 Marine Park Management Plan

Most islands and the surrounding marine park waters do not have management plans. The existing marine park management plans were formulated in isolation of other agencies involved in the management of these

areas. The existing marine park management plans also need to be revised to keep pace with present developments. Even though the Marine Park Management Conceptual Plan For Peninsular Malaysia has been formulated, it has yet to be adopted by the Government. This could be due to two factors.

Firstly, the existence of the three tiered institutional framework: the federal, state and district levels. Most initiatives on coral reef management policies are developed at federal level, with minimal input from state and local levels. Such top-down approach has alienated the spectrum of managers at state and district levels, who implement and enforce the policies. Due to the lack of understanding of such policies, there is weak enthusiasm by state and local managers of the relevant agencies to implement the management plan

### 3.1.6 Lack Of Environmental Awareness And Expertise

Awareness on environmental issues, especially on marine-related issues among the communities, private sector and local authorities is still lacking. Managing the fisheries resources requires expertise from various fields because it encompasses a range of issues. Expertise among policy makers and managers at all levels of government (federal, state and local) is limited, and awareness on environmental issues is still low. Most of the policies formulated at state level are geared towards exploiting the resources, and little regard is given to ensure that the resources are exploited on a sustainable basis.

### 3.1.7 Availability Of Research Data

There is a lack of detailed information on the fish stocks for the establishment of individual fisheries management plans. There is a need to know, for example, the biology and migration patterns of the commercial species of fish and shrimp that breed or spend their juvenile phases in the mangroves.

Information is not readily available and not easily accessible to support the formulation of environmental policies by policy makers and to guide managers in managing the resources. Published reports were also not easily available to the resource managers.

### 3.1.8 Research and Monitoring

Issues pertaining to research and monitoring are:-

- No long term research plan on marine-related issues, causing an overlapping of effort between the various institutions involved.
- lack of funding to carry long-term research and monitoring.

Most research in Marine Park areas are conducted on *ad hoc* basis

### 3.1.9 Biodiversity

The implementation issues identified include:-

- the lack of a national biodiversity policy.
- the lack of an effective national mechanism (institutional framework) to co-ordinate and implement biodiversity studies.
- the lack of an effective legal framework on biodiversity.
- the lack of manpower and expertise.
- the lack of documentation on biodiversity.

## 3.2 Institutional

Various federal, state and local governments agencies are involved in managing resources. There is no formal mechanisms to co-ordinate these agencies, resulting in conflicts of management objectives.

### Limited Public Participation

Initiatives on coral reef conservation in Marine Parks were mooted by non governmental organizations and international agencies. Once these initiatives are accepted by the Federal Government, most of the management strategies are formulated and implemented in isolation of the public. The implementation of such strategies could be further facilitated with the consensus of the public. This could be facilitated if consultation with the public is carried out at the planning stage.

## 3.3 Legal

The Fisheries Act (1985) is a comprehensive law that provides for the conservation, management and development of marine fishing. Marine fisheries are federal matters, with DOF empowered to undertake their management via this Act. Turtles and revering fisheries on the other hand, are state matters, although training and research of conducted for these resources come under federal purview.

The Fisheries Comprehensive Licensing Policy(FCLP) is a management scheme based on the limitation of fishing effort. However, besides overfishing, the other main problem in fisheries is the destruction of fish and shrimp habitats by coastal development and pollution of the revering, estuarine and marine waters from land

sources and ships. The laws pertaining to pollution, coastal development and shipping are varied and come under the purview of several state and federal agencies. This creates a problem of overlapping jurisdiction in the same spatial dimension and presents a conflict of interests in the same area.

#### Limited Legislation To Protect Coral Reefs

Coral reefs are essential breeding and nursery areas for many types of fish. In recent years, the fringing reefs around the islands of Johore have been damaged by trawl fishing, the anchorage of tourist and fishing boats, sewage effluent, sedimentation from land developments, sand mining, illegal collection of corals and water pollution.

While the Fisheries Act 1985 provides for the conservation and management of Marine Parks, to date the only regulation that has been gazetted is the Marine Park Establishment Order 1994. There is an urgent need to formulate appropriate Marine Park Regulations under the Fisheries Act to manage and conserve the marine park ecosystem.

A serious problem of Malaysian coastal fisheries is the lack of strict enforcement of relevant regulations on fishing operations, thus leading to rampant illegal fishing. This includes the establishment of illegal fishing stakes (e.g., *kelong* and *togok*) in the nearshore areas and around the islands.

#### **4. GENERAL MANAGEMENT POLICIES**

The goal of Marine fisheries management is to achieve a sustainable coastal fisheries industry with particular attention to the finfish and shrimp resources.

- review the effectiveness of the FCLP;
- identify areas that should be protected and managed as nursery areas to ensure the survival of juveniles;
- identify ways in which development has potentially detrimental impacts on fisheries and fishing communities, so that mitigating measures can be undertaken;
- facilitate co-operative research efforts between the government and the academe to provide data essential for the formulation of area management plans in Johore; and
- establish strict enforcement of regulations that address the problem of illegal fishing operations.



## MANAGEMENT MEASURE FOR FISHERIES ACTIVITY

### 1. Direct Limitation of Fishing Effort

At present a moratorium has been placed on the issue of additional/new fishing licences for vessels to fish in the coastal waters. This is to ensure that the current high fishing pressure on the limited coastal fisheries will not be further increased to prevent over-exploitation. The regulation of cod end mesh from 25 mm to 38 mm will let off the artificial trash which are composed of juvenile of commercial fish.

### 2. Closed Fishing Areas/Zoning

The more efficient commercial fishing gears such as the trawl and purse seine nets are prohibited from operating in the inshore waters up to 5 nautical miles from the coast. This is to protect the juveniles of fish that are concentrated in the inshore waters from the intensive fishing pressure of these commercial gears.

The trawlers and purse-seiners are restricted to operate in designated zones depending on the tonnage of the vessels. The establishment of the management zones is to reduce conflict among the fishermen and to ensure an equitable allocation of resources between the fishing vessels of different sizes and capacities. The FCLP divides Malaysian fishing waters into four zones:

- Zone A: 0-5 miles from shore, reserved for traditional fisheries;
- Zone B: 5-12 miles from shore, for commercial fisheries that use gear such as trawls and purse seines below 40 GRT (gross registered ton);
- Zone C1: 12-30 miles from shore, for commercial fisheries that use boats above 40 GRT;
- Zone C2: 30 miles from the shore and beyond, for commercial fisheries that use boats 70 GRT and above; and

### 3. Rehabilitation Of Resources

Artificial reefs have been established in Malaysian fisheries waters to enhance the marine resources. This reflects one of the steps taken by the Government to alleviate the problem of depleting fish resources in the coastal waters. The artificial reefs are used as a possible tool for fisheries management in maximizing exploitation, resource conservation, habitat rehabilitation and mitigating the effects of overfishing.

#### **4. Conservation Of Resources**

Marine Parks and Marine Reserves as well as fisheries prohibited areas have been established under the Fisheries Act 1985 as one of the resource conservation measures. The primary objective of establishing Marine Parks is to conserve biodiversity as well as to protect nursery areas of certain commercial species of fish and prawns. Various actions/programs have been implemented to manage recreational use and to ensure the protection and development of the marine parks in Malaysia.

These include:

- a) The establishment of a Marine Park Trust Fund to finance the establishment of marine parks centres and related facilities.
- b) Formulation of infrastructure development plans for the islands whose surrounding waters have been gazetted as Marine Parks.
- c) A National Marine Park Advisory Council has been established to advise the Minister of Agriculture on matters relating to marine parks and marine reserve areas.
- d) The establishment of a Marine Park State Consultative Committee to overcome the dichotomy of jurisdiction for island and marine areas between Federal and State Government.
- e) The implementation of public outreach and awareness programmes.
- f) Installation of mooring buoys in the Marine Parks for dive boats and passenger vessels since 1989.
- g) Formulation and revision of marine park management plan.
- h) Formulation of marine park regulations in consultation with the public sector.
- i) Establishment of forward bases on offshore islands of Marine Parks to increase the area of coverage of management practices.
- j) Research and Monitoring Programs in Marine Parks conducted by the Government agencies and Non-Governmental Organizations.

#### **5. Conservation on turtles**

Efforts undertaken to control the collection of leatherback turtles eggs will be continued. Other measures undertaken to conserve turtles include:-

- a) The gazette of the Fisheries (Prohibition of Methods Of Fishing) Regulations 1990 which banned the use of drift gill nets with mesh size of more than 10 inches.
- b) Establishment of the Rantau Abang Turtle Sanctuary in 1990.
- c) The gazette of the Fisheries (Prohibited Area) Regulations 1991 where the waters off the coast of Merchang to Kg. Kuala Abang (Tanjung Jara), Trengganu was declared a prohibited area.
- d) Establishment of 6 turtle hatchery centres to hatch turtle eggs and these hatchlings will be released into the sea.
- e) Research on the biology and migratory behaviour of turtles.
- f) Formulation and implementation of education and public awareness programmes on Malaysia's turtle heritage.

## 6. Biodiversity

Malaysia is one of the countries in the world identified as a 'megadiversity' region. The research progress made in biodiversity studies from 1992-1996 include:- Seagrass communities appear to be one of the most threatened habitats in Malaysia. Seagrass beds are less conspicuous than the mangrove and coral communities, but their ecological function is no less importance

In Malaysia, certain species, example *Stichopus variegatus* have been intensively harvested. Due to the heavy exploitation, the species is endangered.

In Peninsular Malaysia, giant clams are found only in waters around the island groups off the east coast. This is probably due to unfavourable sites on the west coast which has lower salinity and high turbidity.

Studies on the fauna and flora in mangrove forests were carried out with the objective of supplying information on how they could be exploited in a sustainable manner.

## **SPECIFIC POLICIES AND GUIDELINES FOR FISHERIES**

### **MANAGEMENT**

#### **1. Conservation And Management Of Marine Coastal Resources**

For the conservation and sustainable exploitation of marine resources, monitoring of commercial landings as well as surveys with research vessels will have to be stepped up. The strategy of enforcing a moratorium on all new fishing licences in the coastal waters should be maintained despite political pressure.

Detailed data on coastal habitats, including mangrove areas and estuaries, should be obtained, and integrated management plans for these areas should be established.

A more cost-effective monitoring, surveillance and law enforcement programme should be formulated to deter and stop illegal fishing operations as well as to protect marine park ecosystems.

Fisheries management does not only involve exploitation of resources at economically and biologically sustainable levels, but also the protection and management of fish habitats. Efforts should be undertaken to:-

- a) Protect all fish breeding and nursery grounds, such as mangroves, estuaries and coral reefs.
- b) All proposed development projects within and adjacent to fish breeding and nursery grounds should include an Environmental Impact Assessment report.
- c) Strict pollution and development control and mitigation measures should be implemented and effectively audited.

An educational program should be developed and established for decision makers, fishermen and general public regarding fishery issues. The program should include information on fishery resources and activities, locations, functions and management of marine parks and protected areas.

Various legal instruments should be reviewed to make them more effective in addressing the problem of pollution and indiscriminate development of the coastal areas.

A formal mechanism to integrate land-based development with marine park management should be established to facilitate the suitable development and management of Marine Parks and their associated islands. In relation to this, the islands associated with Marine Parks should be gazetted as land parks.

Open and regular dialogues to be instituted between relevant Government agencies and the academic research community so that research is streamlined to provide data for the establishment of area management plans for fisheries. This co-operative effort will make efficient use of the limited manpower and resources available in the various government agencies.

A national and ministerial policy for the conservation of mangroves as fish breeding and nursery habitats should be initiated.

Research efforts should be intensified in the area of population dynamics of fish stocks, mangrove ecosystem, fishing gear technology and biodiversity.

A legal and institutional framework should be established to integrate coastal area development and management, including the marine living resources at the national level. Such a framework will facilitate collaboration between Federal and State Government and their relevant agencies.

## **2. Biodiversity**

In relation to biodiversity, the following recommendations are suggested:-

- Formulation of a national biodiversity policy.
- Formulation of an effective national mechanism (institutional framework) to co-ordinate and implement biodiversity studies).
- Formulation of an effective legal framework on biodiversity.
- Conduct training for researchers and policy makers on biodiversity.
- Documentation of studies made on biodiversity by a national biodiversity body/organization.