

## SITUATION OF MCS IN MALAYSIA

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### INTRODUCTION

Cheap animal protein is still found in fish. Thus, its role in supplying the daily dietary protein needs of the world population is considered paramount especially in developing country like Malaysia. In Malaysia the fisheries industry does not contribute substantially to the main economy of the country but nevertheless it provides the security in food needed by her people and the wide-range of economic and income generating activities associated with it.

In 1998, the fisheries sector contributes about 1.62% of the national Gross Domestic Product (GDP) with total production amounted to 1.35 million tonnes valued at RM4.53 billion. From the total production about 90% was contributed by the marine capture fisheries mainly from fishing vessels (more than 80%) licensed to operate in the coastal waters. The trend recorded an almost stable production each year with a minimal increase.

In general, the marine capture fisheries in Malaysia mostly concentrated their operations in the coastal areas i.e. waters within 30 nautical miles from the shore. Today, more than 95% of the 32,564 registered fishing vessels operate in these areas that are known to have rich high-valued fish resources. About 80% of these coastal vessels use traditional gears like gill/drift nets, hooks and lines, push-nets, traps etc and the other 20% use trawl and purse seine nets. The rest, which constitutes commercial fishing vessels (i.e. the larger trawlers and purse-seiners) operate in the offshore waters up to the limits of the nation's EEZ.

### MANAGEMENT OF FISHERIES

Fisheries provide a vital source of food, employment, recreation, trade and economic and social well-being for our people, both for present and future generations. The wealth of aquatic resources was assumed to be unlimited gift of nature, which, unfortunately, is still believed by the fishermen communities at large. However, with increased knowledge and the dynamic development of fisheries, especially with the introduction and investment in more efficient gears such as trawls, this myth has faded in face of the realization that aquatic resources, although renewable, are not infinite and need to be properly managed. This is to ensure that the fishery is exploited rationally through sustainable and responsible means while protecting the marine habitat from pollution and degradation.

The Department of Fisheries, under the auspices of the Ministry of Agriculture, is responsible for the proper conservation, management and development of the national fishery sector. Following this responsibility, the Department aims to bring about changes in the country's fishery sector so as to operate in a commercial, modern and progressive manner in line with the global aspiration of having sustainable and responsible fisheries. To ensure its effectiveness in the implementation of fisheries management controls a national fisheries legislation instrument was promulgated through the **Fisheries Act**.

It has been seen that lack of management has led to over-capacity and over-fishing, especially in the coastal areas and thus the depletion of the fisheries resources. There is a consensus that over-fishing should be avoided, but admittedly acknowledging the fact that fisheries management is not an easy task to implement and enforce. Realizing this, the Department of Fisheries is endeavouring to come up with comprehensive fisheries management plans/schemes (and with it the regulations) in ensuring that the contribution of fisheries aquatic resources to the nutritional, economic and social well-being of the nations' growing population is sustained. Here is where the Monitoring, Control and Surveillance (MCS) systems play its role in the conservation and management programmes in ensuring the sustainable use of all marine resources within the national maritime zone.

## **MONITORING, CONTROL AND SURVEILLANCE IN FISHERIES MANAGEMENT**

MCS is a mechanism that contributes to efficient management and sustainable development of the fisheries i.e. an essential and integral component of fisheries management. Its policy, strategies and activities need to be planned and laid out clearly to ensure that the management measures and approaches are implemented efficiently and with cost-effectiveness. In Malaysia, the system/approaches in MCS have been taken into account in the strategic planning and implementation of a national fisheries management policy/scheme. The MCS system is adapted to the cultural, geographical, political and legal framework of the nation.

### **MONITORING COMPONENT**

Monitoring is the continuous requirement for the measurement of fishing effort characteristics and resource yields. It is achieved through direct fisheries assessments. Under these programmes, it includes the collection of data on biological, economic and social aspects of the fisheries and basic information on fishers, vessels and gear. The data collected are used to monitor changes in catch rates, catch compositions, fish sizes and population structure of the fish species and the effects of fishing pressure on the fish stocks. The mechanism also includes the collection and analysis of resource assessment data to produce fishing trends and patterns, which will provide the input to the fisheries planning exercise. In this way, evaluation of the fisheries was achieved through both monitoring activities and application of research.

### **MANAGEMENT CONTROL COMPONENT**

Fisheries management control is necessary to ensure that resources are available for the future benefit of all resource users. Management controls are applied through a variety of management instruments in order to regulate the fishery. Some of the main controls and instruments that were designed and implemented in managing the fisheries are:

- i. Legislation
- ii. Fishing effort control (through licensing)
- iii. Controls on fishing areas/locations (Zonation)
- iv. Controls on duration or period of fishing
- v. Controls in ports and at sea

### ***Legislation***

An effective legal framework is a very important instrument in the implementation of fisheries resource management and conservation. It also forms a major component of the **control** aspect in MCS. The promulgation of the Fisheries Act (in 1963) gave significant control over the fishing operations, in particular the overwhelming problems of illegal fishing, both by domestic and foreign vessels. However, the greatest impacts on fisheries stem from the domestic fishing industry in the coastal and near-shore fishing zones, which need to be addressed and controlled.

Basically under the Fisheries Act it allows for the control of fishing effort and fishing areas/locations with the aims:

- vi. To ensure that no unauthorized vessels are fishing, and
- vii. To ensure that the authorized (licensed) vessels comply with the conditions of license imposed by the Department of Fisheries.

To show our commitment to the management and development of our resources, Malaysia ratified the United Nations Convention on the Law of the Sea in October 14, 1996. This was to recognize the desirability to have an equitable and efficient utilization of the resources, the conservation of the living resources and the study, protection and preservation of the marine environment.

The proclamation of the EEZ and the wide responsibility provided for under the UNCLOS 1982 had made the Fisheries Act 1963 inadequate for the conservation and management of the fisheries resources. Hence, it was repealed in 1985 to make provisions for the MCS of fishing vessels in the EEZ waters. This Act (1985) gives the provisions for the control of foreign fishing vessels intruding into the Malaysian fisheries waters. Briefly the Fisheries Act 1985 covers:

- Administration of fisheries in Malaysia.
- Licensing and management of local maritime/estuarine fishing operations.
- Control of fishing by foreign fishing vessels in Malaysian waters.
- Offences and prohibition 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.

### ***Fishing Effort Control***

Malaysia initiated the establishment of a Fisheries Comprehensive Licensing Policy (FCLP) in 1981 in Peninsular Malaysia, which is supported by an effective legislation instrument through the Fisheries Act. What was most significant in this policy was that fishing effort would be regulated through a License Limitation Scheme. The level of fishing permitted is always commensurate with the fisheries resources and measures are adopted to ensure that no vessel is allowed to fish unless so authorized in conformity with national legislation.

The FCLP was formulated on economic, biological and socio-economic criteria with as main objectives:

1. To prevent over-exploitation of the fisheries resources in the inshore waters;
2. The elimination of the competition and the ensuing conflicts between artisanal fishers and mini trawler fishers in the inshore waters;
3. To promote the development of offshore industrial fisheries;
4. Restructuring of the ownership pattern of fishing units in accordance with the New Economic Policy;
5. More equitable distribution of resources.

With the proclamation of the EEZ in 1984 the national jurisdictions expanded from 47,000 square nautical miles to 162,000 square nautical miles thus leading to challenges in the control of fisheries management.

The notable measures taken under the FCLP are as follows:

i. Licensing of vessels

All vessels engaging in fishing activities in the Malaysian fisheries waters need a license to operate. These licenses issued in the form of a booklet are recorded and renewed on an annual basis subject to the vessel inspection report. This is to ensure that the codification requirements of the vessels and rules regarding gears used were in conformity with the policy. This yearly inspection exercise also helps in determining the actual number of vessels in operation and fishers working on each vessel, a data useful for fisheries planners and managers.

ii. Control on Fishing Units (Vessel Identification)

To ensure that only authorized fishing operations are allow within national jurisdictions hence a comprehensive coding or marking mechanism was formulated to easily identify them. This coding mechanism also helps in identifying illegal (unlicensed) fishing vessels, which may cause excess fishing capacity if kept unchecked. The coding or marking system are safety features as follows;

a) Emblem Marking on the Hull

All newly registered and licensed fishing vessels will have a special emblem marking hammered on the hull according to its relevant State and district. This safety feature is to denote its origin.

b) Registration Number

The registration number markings shall be prominently displayed on the vessel's side or superstructure, port and starboard, example **JHF 2020**. The code **JH**

denotes the State, the alphabet **F** fisheries whilst the digit **2020** the number of vessels that had already been registered in that state. Both the code and digits are white in colour with a black background. Some examples of the number markings are as follows:

JHF	Johore Fisheries
KNF	Kelantan Fisheries
PAF	Pahang Fisheries

c) Tin Plate

The tin plate is compulsory for all vessels that operate in zones above 12 nautical miles offshore. The plate with the features of the Departments' logo and the Director General or Deputy Director General signature is nailed at the inner side of the hull. To prevent it being easily removed and tempered the plate is nailed with a special make screws. This safety feature is a safeguard to prevent any duplication of vessel registration number.

d) Colour Codes of the Wheelhouse

The colour codes painted at both sides of the wheelhouse are used to differentiate the vessels from different States. This is for easy identification of the vessels if they encroach to other States other than the authorized fishing State. Some examples of the colour codes are as follows;

Johore State	Dark Blue
Perak State	Dark Yellow
Terengganu	Light Green

e) Fishing Zone Markings

All fishing vessels, except those without wheelhouse, will be marked with the appropriate fishing zones (A, B, C or C2) at both sides of the wheelhouse. The size of the marks depends on the tonnage of the vessels and they are painted white on a black and round background.

f) Special Marking on Trawlers

Trawlers are considered to be 'unfriendly' to the environment and resources, hence their activities need to be closely monitored by the Department. A special marking, a white line drawn diagonally across the wheelhouse on both sides, is imposed on such vessels for easy identification at sea.

### ***Controls on Fishing Areas***

iii. Zonation

The FCLP divides Malaysian fisheries waters into four zones, namely;

<b>Zone</b>	<b>Area</b>	<b>Vessel GRT</b>
<b>A</b>	0 to 5 nautical miles from shore. This zone is reserved for traditional fisheries.	
<b>B</b>	5 to 12 nautical miles from shore for commercial fisheries such as trawlers and seiners.	< 40
<b>C1</b>	12 to 30 nautical miles from shore for commercial fisheries.	> 40 < 70
<b>C2</b>	30 nautical miles from shore and beyond for commercial fisheries.	> 70

With the formulation of the system the fishing operations will be vehemently controlled in line with the FCLP objectives i.e. mainly to eliminate competitions amongst the traditional and commercial fisheries and to conserve the rich resources coastal waters, especially zone A, the 5 nautical miles limit zone, from over exploitation by trawlers.

iv. Closed Areas (Marine Parks and Reserves)

Another management tool in controlling fishing activities are closed areas. Being aware of their effectiveness in fisheries conservation the Department started to establish closed areas for this purpose under the name marine parks. The establishment of a marine park or marine reserve is to afford special protection to the aquatic flora and fauna and to protect, preserve and manage the natural breeding grounds and habitats of aquatic life, with particular regard to rare or endangered species. An area of two nautical miles around the island of the marine park is prohibited for fishing i.e. **no fishing zone**. Until now a total of 38 islands has been gazetted as marine parks.

***Controls on Duration or Period of Fishing***

In some coastal areas there is a limitation on the width of the fishing zones especially areas of the Straits of Malacca where the international boundary limits Zone B. Consequently, the fishing operations of commercial gears like trawlers are limited. Hence, there is a high tendency for trawlers to encroach the zone meant for traditional fisheries, Zone A, where the rich resources are. To avoid any untoward conflict between them the trawlers' operation time or duration needs to be addressed in a practical manner. Following this, regulations were made to allow trawlers to operate only during the day (from 6.00 a.m. to 7.00 p.m.), when normally the artisanal fishers are not fishing.

***Procedures for MCS in Port and at Sea***

Some other management controls are also imposed when the vessels are in port and at sea. These controls are;

i. Local Fishing Vessels

- g) No person is allowed to bring into Malaysian fisheries waters fish taken from a foreign fishing vessel.

- h) No fishing vessel shall load or unload any fish, fuel or supplies or transship any fish in Malaysian fisheries waters.
  - i) All fish caught must be unloaded in the specified permitted port.
  - j) All fishing vessels above 70 GRT need to report to the authorized fisheries officer when leaving and entering the port.
  - k) Report on landings of vessel (LOV). All fishing vessels above 70 GRT on entering the port are required to report to the authorized fisheries officer regarding their catch.
  - l) All crew must be local.
- ii. Foreign Fishing Vessels
- m) No foreign fishing vessels are allowed to fish in national waters.
  - n) No foreign fishing vessel shall load or unload any fish, fuel or supplies or transship any fish in Malaysian fisheries waters.
  - o) All foreign fishing vessels with the intention of entering Malaysian fisheries waters for the purpose of *innocent* passage shall notify an authorized officer by radio, telex or facsimile in the English or Malay language. They need to notify the name, the flag State, location, route and destination of the vessel, the types and amount of fish it is carrying and of the circumstances under which it is entering Malaysian fisheries waters.
  - p) All foreign fishing vessels intending to enter Malaysian ports for the purpose of loading or unloading any fish, fuel or supplies need the written approval of the Director-General. On approval the procedure in (b) must be complied with.

## **SURVEILLANCE**

Surveillance is another important component in fisheries management. It relates to the observations required to police and enforce the implementation of management controls. Although several other approaches are taken, enforcement is still the most efficient tool in ensuring that fishers comply with the fisheries management legislation of the State.

Enforcement at sea is mainly carried out by the Resource Protection Branch, which falls under the ambit of the Resource Management and Protection Division. Apart from its role in enforcing the Fisheries Act and related Regulations, the said Branch also protects the interests of fishers and local fishing vessels while they are fishing at sea. To ensure its effectiveness, the Branch is being administered through an Operation Control Centre (OCC, Headquarters) and 26 Base Stations situated throughout Malaysia. OCC operates 24 hours and is prepared to receive any information, complaints or Search and Rescue (SAR) reports from local fishers who require prompt action

To carry out the task of patrolling, the Resource Protection Branch is also equipped with a total of 96 patrol boats of various sizes and capabilities (endurance). Besides that, the Branch also works closely with the Maritime Enforcement Co-ordinating Centre (MECC), which is placed under the National Security Division of the Prime Minister's Department in enforcing fisheries management legislation compliance together with other relevant maritime enforcement agencies, such as the Royal Navy, Royal Air Force and Marine Police. Under

this set-up, it enables the maximum utilization of resources in combating the issues at hand through a co-ordinated and integrated approach.

Under the surveillance component three main mechanisms are practised, namely:

- i. air surveillance,
- ii. surface surveillance, and
- iii. VMS (Vessel Monitoring System).

However, there are also other surveillance programmes, such as:

- iv. Coastal Watch programme,
- v. Local Management Group, and
- vi. Fisher Contact programme.

i. Air Surveillance

With the extended jurisdiction, under the EEZ, it is very pertinent for air surveillance to be conducted regularly, especially for monitoring illegal fishing activities beyond the inshore areas. Surveillance is conducted using chartered airplanes, from the Royal Air Force and private companies, with observers from the Department on board. Patrol vessel activity will be integrated with the airborne surveillance programme and will come into action based upon intelligence relayed via the OCC base. Data on the identity/nationality of the vessels, locations, numbers and gear used are also recorded and stored in the computerized surveillance programme system.

ii. Surface Surveillance

Besides surface assets from the Department, assistance is also available from the Royal Navy and Marine Police in carrying out sea patrols. Future approach in sea surveillance will be based more on integrated enforcement to ensure maximization utilization of such assets in the most efficient and cost-effective manner.

iii. VMS (Vessel Monitoring System)

The latest compliance method for surveillance is the Vessel Monitoring System (VMS), which was established in 1998. This system is used as another management tool because of its capability to manage and control the activities of the intended vessels. Currently this system is used to monitor chartered vessels (foreign owned under charter to Malaysians) that operate in the offshore waters. But ultimately, under this programme, it will be mandatory for all offshore local fishing vessels to install the system. Under this system the vessel will be fitted with an ALC (Automatic Location Communicator), which will transmit data on position, speed and course to the Ground Station in the Department's Operation Control Centre via Inmarsat-C satellite. Normal transmissions are usually done every two hours. Although the system offers the most efficient method in monitoring the vessels, its implementation is faced with some teething problems such as:

- a) High cost to the vessels owner in installing the ALC. (one unit of the ALC cost RM 20,000, nearly US\$ 5,300; US\$ 1.0 = RM3.8).



- b) Reluctance and some resistance from the skippers because the system can trek their fishing operations and reveal especially information on the fishing grounds, which normally is their trade secret.
- c) Tempering/Damaging the ALC equipment to prevent being monitored.
- d) Currently, there is no legislation on VMS (still being legislated). Thus, enforcement and legal actions cannot be taken if they do not comply. During this interim period only administrative actions are taken.
- e) Temporary loss of transmission due to technical problem in the system.

iv. Coastal Watch Programme

The main objective of this programme is to have a surveillance mechanism to monitor coastal activities, especially illegal fishing activities. It is a new programme, currently managed by the Department. At present four centres, equipped with monitoring and communication equipment, are set up at sensitive areas with a high incidence of encroachment and illegal fishing activities. Future surveillance will involve the fisher community to create awareness among themselves on their responsibility towards the fisheries resources. Ultimately the Centre will be converted into a congregation place and as an Information/ Learning Centre for the local fisher community.

v. Local Management Group

This group is formed with the main intention of setting up a forum to interact and deliberate local fisheries management issues and to create awareness regarding Government fisheries policies/plans in achieving sustainable fisheries. The group consists of influential local fisher representatives and fisheries administrators. Meetings are held on a regular basis.

vi. Fisher Contact Programme

Fishers are important assets to the Government. They can play a significant role in the political stability of coastal communities, a pre-requisite for good implementation of development plans and projects. They are also considered as the ‘ear, eye and mouth of the Government’ in combating community problems. Under this programme influential and capable fishers were selected to act as contact persons between the Government and local fisher communities. With this mechanism important information for surveillance purposes becomes easily accessible.

## CONCLUSION

As already mentioned, MCS is an essential and integral component of fisheries management. In short, it is the implementation of a fisheries plan or strategy and not merely an enforcement mechanism, which is generally misconceived among fisheries managers. In fact, the concept of MCS is not new. It had already been implemented way back in the early days when fisheries legislation was first promulgated to ensure proper development, management and

conservation of the marine resources. Throughout the years it has been revised and major structural changes made in the endeavour to achieve a sustainable development in the fisheries sector.

With the proclamation of the EEZ and the extended national jurisdiction fisheries management became more challenging. Principles on the implementation of national policies for responsible conservation of fisheries resources and fisheries management and development needed to be established in accordance with the relevant rules of international law. Policies, which are part and parcel of the national objectives, will have to be adjusted from time to time to take account of the changes in a fast-paced globalised world. Towards this, the Department of Fisheries Malaysia will continuously put the effort to have the best MCS system, relative to efficiency and cost-effectiveness, in pursuing the above objective.

However, the above effort also requires regional co-operation and obligations from all neighbouring coastal states. We just have to improve it to meet the challenges of the years to come and make its implementation more effective. An effective regional MCS system will be promising for the well-being of fishers at large and ensure the sustainable usage of marine resources for the present and future generations.