A NEW MANAGEMENT STRUCTURE FOR MALAYSIAN ECONOMIC EXCLUSIVE ZONE

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Abstract
Malaysia is a Coastal State and a strong Malaysian Maritime Enforcement Agency is both in Malaysia’s long-term interest and essential to the nation’s prosperity. Maritime stakeholders need to work together to develop long-range technological road maps, foster innovation, and properly fund and innovation of the ship industry to ensure that the future of the Maritime Enforcement Agency has the size and capabilities needed to protect the Malaysia interests especially in the EEZ areas. This paper also proposes a new governance structure specifically designed towards sustainable management of the EEZ area and fulfilling Malaysia’s vision of becoming a developed maritime nation.

Keywords: Maritime Management; Coast Guard, EEZ; Cluster Strategy, Governance Structure

1.0 INTRODUCTION
Malaysia as a coastal state has the right to explore and exploit both living and non-living resources for economic exploitation in a zone adjacent to its territorial sea. According to UNCLOS III of 1982, article 56, the coastal state has sovereign rights for from the water, currents and winds (United Nation, 1983).

the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the waters superjacent to the seabed and of the seabed and its subsoil, and with regard to other activities for the economic exploitation and exploration of the zone, such as the production of energy

Malaysia’s economic growth will be linked to many aspects of the ocean particularly to her EEZ areas for exploration and exploitation of economic activities such as offshore oil and gas harvesting.
Oil and gas revenue presently account for about 40 percent of the country’s total revenue. Thus, to become a developed maritime nation and to utilize her EEZ resources in a sustainable manner, Malaysia have to pay more attention to the development of her commercial shipping and shipbuilding sector to support the offshore industry.

The maritime industry structure as shown in **Diagram 1.0** has strategic plan provides many factors to support and strengthen the offshore oil and gas sector that associated with the multifaceted sectors in the Malaysian maritime cluster. If the strategic plan succeeds in generating local synergies between maritime companies/stakeholders, researchers (R&D) and government institutions, it can have long-term benefits. Ideally, Understanding the maritime industry needs is a condition for any policy measure and is therefore a basic building block for development of the Malaysian Economic Exclusive Zone Management Structure effectively.

**Diagram 1.0** Maritime Industry Structure

Source: Authors
Malaysia lies in the tropics (Lat. 1 – 8°N, Long. 100 – 119°E), and consists of Peninsular Malaysia and the states of Sabah and Sarawak. By virtue of an extended jurisdiction of the Economic Exclusive Zone (EEZ), Malaysia has maritime areas which are much larger than its land mass (see Diagram 2.0), and seas as Malaysia’s economic lifeline.

Diagram 2.0 Malaysia Economic Exclusive Zone Areas

Adapted from 1979 Malaysian EEZ Map (The New Map, No. 26, Tambahan No.1, No.5745, 21 December 1979), Department of Survey and Mapping.

2.0 Legal Status of the Malaysian EEZ

The concept of the EEZ, along with the varying rights and responsibilities of littoral and island states, is provided legal sanction by the Conference of the United Nations Convention on the Law of the Sea (UNCLOS III). After much debate and discussion, it finally agreed to a new international Law of the Sea Convention in 1982. Some 12 years later, on November 16, 1994, the Law of the Sea entered into force, a year after 65 states had ratified the Convention. In the interim period, it was considered as part of customary international law. By late 1997, as many as 122 states had ratified the United Nations Law of the Sea Convention.

In the EEZ that has been determined in accordance with the UNCLOS and Exclusive Economic Zone Act 1984 (Act 311), Malaysia possesses the following rights and jurisdictions: sovereign rights for the
purpose of exploring and exploiting, conserving and managing the natural resources of the seabed, subsoil, and the waters; rights and jurisdiction with regard to the establishment of artificial islands, installations and structures; exclusive jurisdiction with regard to other activities for the economic exploitation and exploration of the zone, such as the production of energy from the water, currents and winds; and jurisdiction with regard to the preservation of the marine environment, including pollution control.

The declaration of an EEZ under UNCLOS III (United Nation, 1983) provides an entitlement to explore and exploit for economic gain but should have a prerequisite to the sustainable use of resources. However, Malaysia as a coastal state has not fully used her own factor endowment in EEZ areas due to its ship industry being in its infant stage and offshore technology is in disadvantage, as well as the higher barrier to entry in the ship industry sector (Othman, 2011). Thus, the capability to explore and exploit the EEZ areas is limited; indicating that development of a coherent EEZ management is required.

In terms of size, ship industry in Malaysia is small relative to the world market, generated RM7.36 billion in revenue and provided 31,000 jobs in 2010 (MIGHT, 2011). According to Clarkson, Malaysia’s Orderbook for the new shipbuilding in 2009 represents only 0.8 percent of the world market. Ship industry especially shipbuilding and repair sector is an important intermediary to adopt innovation and to translate national and foreign demand into new products, processes, create specific education and training. Also, the relationship between shipping, ship industry, ports and terminals and with other nation’s economy might strengthen in the long-run competitiveness by higher level of integration of the sector with nation’s economy by strengthening ties amongst them. For an example, there seems to be a potential for increasing the interaction between the shipyards and shipping companies or offshore oil and gas sector. This may give the local shipbuilding better opportunities to experiment in the technology development phase and stimulate the innovation in the shipping companies or offshore oil and gas sector need. The more innovative the individual firms or sectors are, the stronger the maritime cluster becomes as a whole.

EEZs are extremely significant Politically, Economically, Environmentally, Socially, Technically and Legally. 36% of the world’s oceans are someone’s EEZ and 97% of world trade travels by sea i.e. passes through an EEZ areas. The following outlines the main EEZ activities (see Fig. 1.0). When reading the following descriptions, not only should it enlighten the reader to the diversity of activities, but demonstrate that many of them are more akin to “commercial” activities.

Nations approach these activities from different perspectives, partly dependent on their existing infrastructure, and their approach to manage the EEZ areas.
Fig. 1.0 The Main EEZ Activities

<table>
<thead>
<tr>
<th>Ecosystem Management</th>
<th>Maintenance of Law and Order</th>
<th>Safety of Navigation and Transit</th>
<th>Protection for the Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecosystem management is a key EEZ activity. Many nations have a system of licenses and quotas to generate revenue based on sustainable, efficient, equitable use of natural resources and preserve stocks and these laws need policing and controlling.</td>
<td>Controlling EEZ areas is a full time job requiring high manning and equipment levels. A Vessel that can conduct operations efficiently supported by competitive ship industry will be of benefit.</td>
<td>Responsibility and capability for maintaining the safety of navigation and transit in EEZ</td>
<td>Capability of protecting the environment is an important obligation for any nation that claims an EEZ.</td>
</tr>
</tbody>
</table>

**Malaysia’s Legislations:** Continental Shelf Act, 1966 (Revised 1972); EEZ Act, 1984; Environmental Quality Act, 1984; Police Act, 1967; Penal Code; Merchant Shipping Ordinance 1952; Environmental Quality Act, 1984; Dangerous Drug Act, 1952; Immigration Act, 1959/63; Extra Territorial Officers Act, 1976; Emergency (E. Powers) Act, 1979; Fisheries Act, 1985; Environmental Quality Act, 1984; Armed Forced Act, 1972; Internal

*Source: Authors*

Based on the Domestic shipping License, too many foreign vessels are operating in Malaysian waters. Foreign registered ships have been granted to operate in Malaysia waters due to the lack capacity of Malaysian vessels locally (see Figure 1.1), thus Malaysia could take the necessary measures and create the conditions in such a way that foreign ships that operate in Malaysia’s water repatriate their foreign flagged vessels to the national registers. This will boost ship management and other maritime services in the short-term as well as in the long-term strengthen the Malaysia flag state position in all regulatory bodies, like International Maritime Organization (IMO) and will result in more maritime related activities in Malaysia’s and strengthen of the Malaysian maritime cluster as a whole.
Islands dispute in the Malaysia’s EEZ areas such as Sparty islands in the South China Sea have demonstrated the need for maintain a substantial merchant fleet or operational vessels subject to its jurisdiction in order to ensure an adequate sea-lift capability.

3.0 Malaysian Coast Guard

In view of the vastly extended area of sea provided by international law, it was imperative that a separate organisation be formed to take responsibility for the management of the EZZ. Towards this end, the Malaysian government set up the nucleus team as a Committee for the establishment of the Malaysian Coast guard to preservation and protection of the Malaysia’s waters and EEZ areas in 2004. With the passage of the Coast Guard Act (Act 633) in Malaysian Parliament on July, 2004, a regular Coast Guard (independent of the Navy) was constituted as a Malaysian Maritime Enforcement Agency.

The functions of the agency are listed in Section 6 of the Coast Guard Act. This notes that the service is to enforce the safety and security and protect the maritime and other national interests of Malaysia in the Maritime Zones (see Fig. 1.2). These include (a) to enforce law and order under any federal law; (b) to perform maritime search and rescue; (c) to prevent and suppress the commission of an offence; (d) to lend assistance in any criminal matters request by a foreign state as provided under the mutual assistance in Criminal matters act 2002 [Act 621]; (e) to carry out air and coastal surveillance; (f) to provide platform and support services to any relevant agency; (g) to establish and manage maritime institutions for the training of officers of the agency; and (h) generally to perform any other duty for ensuring maritime safety and security or do all matters incidental there to.
Clearly, the major pre-requisite for the implementation of these tasks is the ability to conduct adequate surveillance of the sea; in its absence, the Coast Guard would simply not be able to fulfill its tasks. In effect, maritime surveillance is the core business of the service. It is, therefore, the newest technology to enhance the capability to monitoring the EEZ areas should be adapted. In any case, the maritime surveillance of the EEZ is carried out, largely exclusively, by the aircraft and ships of the Coast Guard.

3.1 Maritime Surveillance by Aircraft

At present, the Coast Guard possesses 2 Bombardier 415MP Amphibious Aircraft for the specific task of EEZ surveillance by air. The major drawback of these aircraft is that they simply cannot enforce the law when required to do so, even though they have far greater speed, and can cover a much larger area of sea at any given time, in comparison to ships. At best, they can communicate the location, speed, and direction of the ship/trawler to their regional/district headquarters, and leave it to the ships to actually enforce the law by apprehending the violator. Nonetheless, they do play an important role in combating pollution at sea. Enhanced coordination between the Coast Guard and the Navy could clearly benefit airborne maritime surveillance of the EEZ.

3.2 Maritime Surveillance by Ship

At present, the Coast Guard possesses 50 ships and 76 fast boats. These range from 2,000 tonne Offshore Patrol Vessels (OPVs) to small patrol craft of less than 50 tonnes. Virtually all Coast Guard ships have been given by other maritime related agencies such as Marine Department, Police Marine, Fisheries Department and Custom. Even though the operational capability of the Coast Guard stands at its highest level yet, only 65 percent of the ships can be operational at any given time for obvious reasons. Moreover, they are also distributed amongst the three regions. These ships possess relatively limited speed and radar capability with which to detect and identify violators of the law. At a speed of 14 nm, for example, a ship could reach the outer perimeter of the EEZ only some 14 hours later, with a radar range of 30 nm, the area of sea over which surveillance can be effectively carried out is limited. If we calculate this
radar coverage for 15 ships at some distance from each other, the total area of surveillance, in relation to the size of the entire EEZ, is minuscule indeed as clearly shown in Figure 1.2.1. Although warships of the Navy also patrol the seas, their top priority is not the maritime surveillance of the EEZ.

Cleary, the Coast Guard does not have the required numerical strength to conduct effective surveillance of the Malaysian EEZ. Cooperation with the Navy would considerably enhance the surveillance of the EEZ, but this would remain of low priority to naval forces, which prefer to be engaged in other activities elsewhere. It is not surprising; therefore, that the Coast Guard chooses to maintain effective surveillance over certain limited areas of sea, where the propensity for action is seen to exist. This could take place with regard to the maintenance of law and order at sea, and disputed maritime boundaries with neighbours.

<table>
<thead>
<tr>
<th>Required speed of interceptors</th>
<th></th>
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<tbody>
<tr>
<td><strong>Duration of the attack</strong></td>
<td>15 min</td>
</tr>
<tr>
<td><strong>Speed of the pirate vessel</strong></td>
<td>90 km/h</td>
</tr>
<tr>
<td><strong>Time between distress signaling and start of the interceptor</strong></td>
<td>10 min</td>
</tr>
<tr>
<td><strong>Length of the escape route of the pirate vessel to be cut off</strong></td>
<td>18.5 km</td>
</tr>
<tr>
<td><strong>Distance between location of interceptor and point of interception</strong></td>
<td>about 60 km</td>
</tr>
<tr>
<td><strong>Required speed of interceptor</strong></td>
<td>over 200 km/h</td>
</tr>
</tbody>
</table>

4.0 EEZ Surveillance and Management in the Future

In essence, the effectiveness of maritime surveillance is dependent on two critical capabilities there are, detection and identification. More often than not, detection by itself is not sufficient. As soon as a ship/trawler is detected, it is important that identification be made, in order to distinguish it from the other ships detected in the area. This requires the ability to scan a wide area of sea, the provision of high resolution imagery, and near real-time transmission. These operations would also be needed to be as economical as possible. It is clear that neither ships nor aircraft can wholly meet these criteria. Instead, two possible options for effective maritime surveillance of the EEZ in the future are the deployment of Unmanned Aerial Vehicles (UAVs) at
sea, the launch of satellites especially equipped for this task and using the wing ground effect (WIG) craft that has a capability as a ship and aircraft.

4.1 Unmanned Aerial Vehicles

Unmanned Aerial Vehicles (UAVs) are increasingly being used by the enforcement agencies around the world. Since then a number of countries have been engaged in the development and production of UAVs. The major problems in development currently being faced include the attempt to place too many sensors on too small an airframe, the transmission of unhindered data from the UAVs, and the retention of control by the ground control station.

Engagement in the development of a Remotely Piloted Vehicle (RPV), as well as a Pilotless Target Aircraft (PTA) should be carried out by local maritime industry players for comprehensive operational in the EEZ areas.

4.2 Satellites

Satellites in orbit clearly provide the key to comprehensive and effective maritime surveillance, although it is clear that only a handful of countries can develop such technologies and expertise. Since the first Sputnik launch by the erstwhile Soviet Union in 1957, thousands of satellites have been launched into orbit. In the near future, at least 70 per cent recent of all satellites built and launched are expected to be civil (commercial) communications satellites. The remainder will comprise other civil satellites (for navigation, scientific, weather, and earth imaging/observation purposes), and military satellites (for communications, early warning, navigation, reconnaissance and surveillance, scientific and weather purposes).

It is these civil (commercial) earth imaging satellites (expected to constitute only 5 per cent of the total market in the near future) that have critical utility for maritime surveillance. This is especially true when over 70 per cent of the globe is covered with water. The advent of these remote sensing capabilities transformed earlier conventional surface measurements by aircraft, through uniformity of coverage and the provision of a series of reliable and repetitive measurements. The inability of these satellites to clearly identify violator ships amongst the hundreds of fishing boats/trawlers in a specific area in proximity to the coast posed problem in carrying the enforcement tasks. Such a task would require electronic identification aboard all legitimate ships in the Malaysian EEZ, which would enable space-based sensors to track their progress, as well as identify boats fishing illegally in Malaysian waters.

4.3 The Ground Effect Craft (WIG)

One of the intermediate vehicles that operate using water and air motion is WIG craft. WIG craft concepts are different among other vehicles since it can be categorized as an intermediate level between ships and airplane. Wing In Ground (WIG) craft is one of high speed low altitude flying vehicle which could take off and land on any relatively flat surface such as land and water. It could fly just a few meters above the sea level. Ground effect at this craft is resulted from cushion high pressure air created from interaction between wings and the surface. This effect will give two advantages to the operation of WIG craft which are significant augmentation on lift coefficient and substantial reduction in drag.

The phenomenon about WIG craft could be discovered in nature like a birds and flying fish which are carrying less energy when fly near ground surface (water). The first development of WIG craft was made by Russian during a cold war. It is known as Ekranoplan (see Fig. 1.3). It was the biggest WIG craft that ever built. Ground effect appeared to be the solution to efficient transportation especially for implementation of law in the EEZ areas.
It is clear that the maritime surveillance of the Malaysian EEZ is an extremely difficult and complex task, at the best of times. The sole organization responsible for this mission, the Coast Guard, simply does not have the requisite resources, ships, aircraft or manpower, to conduct it effectively. Naval assets could assist in this mission, but it would never be on a priority basis for the Navy. In effect, the Coast Guard is daily engaged in the surveillance of specific areas of the EEZ, where the potential for trouble is perceived to exist. Clearly, for the effective surveillance of the EEZ, and its consequent impact on enhancing Malaysian safety and security, a new type of EEZ management structure and additional funds need to be provided to acquire the best assets for the Coast Guard in the immediate period.

In terms of technologies for maritime safety and security in the future, the deployment locally of UAVs, earth (read water) observation satellites and development of the WIG craft, provide the best strategy towards strengthen law and order in the Malaysian EEZ. Malaysia should make considerable progress in these areas to become a developed maritime nation. Therefore, further initiatives need to be taken immediately with respect to the development of a maritime-specific UAV and the provision of requisite application of RazakSat satellites for monitoring and management of the Malaysian EEZ as well as providing security that protects and bolsters the Malaysian economy.

Malaysia still falls short in providing an effective sustainable management of her EEZ. Thus, in this paper a new type of EEZ management structure will be introduced in the next sections.

5.0 The New Governance Structure for Sustainable Management of EEZ Areas

The exploration and exploitation of Exclusive Economic Zones (EEZs) is diverse and of increasing economic importance, particularly to coastal states. In order to encourage long term economic development in EEZ areas, Malaysian maritime industry policy based on cluster strategy (Othman, 2011) could be developed by focusing on the development of the ship industry sector to ensure the sustainable use of the EEZ.
With reference to the development of the ship industry sector based on the cluster strategy (Othman, 2011), this paper examines the capabilities of Malaysian ship industry sector that includes marine equipments manufacturer, shipbuilding, ship repairs and offshore structures. Evaluate the exploration and exploitation on the potential resources in EEZ areas, proposes the strategies and introduce the new management structure as a key tool for sustainable management of the Malaysia’s EEZ areas. The concept of clusters is related to the “competitiveness” of industries and of nations as described below:

Clusters are a geographically proximate group of interconnected companies and associated institutions in a particular field linked by commonalities and complementarities. Clusters encompass an array of linked industries and other entities important to competition . . . including governmental and other institutions – such as universities, standard setting agencies, think tanks, vocational training providers and trade associations (Porter 1998).

Fundamentally, a cluster is an internationally recognizable competitive advantage in a particular sector of industry (Porter, 1998). Examples include the maritime service cluster in London explained by Fisher Association (Fisher, 2004) and the high technology cluster in the Silicon Valley (Gambardella, 2004).

This paper attempt to examine the capability of the Malaysian ship industry as a main player in exploring and exploiting EEZ resources based on the cluster approach, the way to enhance this sector and introduces the new governance structure for sustainable management of the EEZ Areas.

The EEZ areas are an important, with a tremendous unused capacity. The long term strategy for management of EEZ areas should achieve the following goals:

- A more effective and efficient Government administrative machinery which minimizes the duplication in administrative and jurisdictional functions toward the management of the EEZ resources in a sound and sustainable manner to ensure the continued prosperity of the present and future generations, and

- Abundance of human capital in maritime field and capability in maritime-related science, technology, engineering and management which together form the basis for future economic development of the ship industry sector.

This goals could have been interpreted as a first phase in efforts to develop a new comprehensive maritime industry strategy towards a more competitive and sustainable management of the EEZ areas.

Malaysia’s maritime sector is a multifaceted fabric made up of social and natural parameters. The management of Malaysia’s maritime realm should therefore be based on balancing the need to continue or perpetuate the provision of goods and services from the sea while allowing for development and
economic activities. The development of a maritime industry policy based on the industry approach covering ports, ship industry and shipping sector that can be adequately monitored is an important and increasingly favoured field towards the development of a comprehensive maritime policy toward sustainable management of the EEZ areas. Development of a set of clear and measurable maritime industry policies that can be translated into a concrete program of actions and systematic monitoring of the effects of such actions in relation to the objectives would be essential for the planning, controlling and reporting of progress.

In contrast, approaches such as integrated water resources management, integrated ocean and coastal area management (Cicin-Sain, 1993), and marine spatial planning (Douvere, 2008; Douvere and Charles, 2009) are mainly used for planning activities to ensure the marine ecosystem are sustained in the future. Recent study revealed that the conversion of the maritime industry policy development and implementation from fragmented (sectoral) approaches toward centralised (Cluster Strategy) approaches has shown a very significant success in its implementation process (Cho, 2006).

Roelandt et al. (1999) have shown that, the cluster strategy may encompass intensive links and alliances with various institutions such as universities, research institutions, public authorities, consumer organizations, and so on. Malaysian maritime industry cluster model demonstrated the general distribution of the maritime sectors in accordance to the states by forming three expert groups covering three main maritime sectors: Shipping; Ship Industry; and, Ports & Terminals (Fig. 4.1). Ship industry sector has been left behind and not in a same playing field compared with other sectors due to the lack of government intervention into this sector (Othman, 2011).

Many scholars define and recommend integrated oceans policy that is the opposite of sectoral management for ocean governance (Juda, 1999; Kenchington, 1993; Wescott, 2000; Underdal, 1980; Cicin-Sain, 1993). The international and/or national efforts to new approaches to ocean governance have led the US, Canada (Department of Fisheries and Oceans), Australia (Australian Oceans Policy) and Korea (Ministry of Maritime Affairs and Fisheries) to establish integrated oceans policy.

The Oceans Act of 2000 of US and the Report of US Commission on Ocean Policy, Australia's Oceans Policy, the Canada's 1997 Oceans Act and Canada's Oceans Strategy (COS) and the Korea’s Marine Development Basic Act (MDBA, Law No. 3983, 1987) results from the need to strengthen ocean governance. The introduction of new concepts, such as “sustainable development” and “integrated management,” into marine environmental management has advanced the changes in the nature and scope of marine biosphere politics (Lee, 1995). It is increasingly clear that governments and stakeholders lack the necessary tools to make an integrated management approach operational in the maritime environment especially in the EEZ areas, with regard to linkages and cross-sectoral integration. One way to do this is through the use and application of the maritime cluster approach.
The government has to facilitate the development of the maritime cluster by giving away the disintegrated approach in lieu of an integrated approach (cluster strategic thinking) that would include all activities relevant to the sector and have a synergistic effect far beyond just integration of the existing policies or programs (see Fig. 1.4).

The objective is to improve policy decision making at the regional, national and local levels, connecting with expertise, research and good practices in diagnosing and managing any differences in the management of the EEZ areas. The cluster strategic thinking is essential to be adopted in the policy to enhance the industry (ship industry) toward a competitive advantage. This would involve creating a new centralised entity comprising all maritime sectors placed under the jurisdiction of one single authority which could appear as a Directorate of Maritime Affairs. The onus for policy integration shall then lie with this agency, well within the Prime Minister’s Office for easy constituency development on maritime industry (ship industry) and sustainable management of the EEZ areas as shown in Fig. 1.4.

**Fig. 1.4** Structure of Malaysian Maritime Cluster Strategic Thinking

![Diagram of Maritime Cluster Strategic Thinking]

Source: Authors
As clearly shown in Fig.3.8, an industrial environment needs a strong legal basis and an effective policy which could be created by a Directorate of Maritime Affairs. The presence of sufficient data on the particular sector will make effective planning possible (Centre of Maritime Knowledge) in order to create the stimulating dynamics and innovation in the maritime industry, i.e. it has to include a variety of suppliers/services, customers and competing business. This will lead to the industry acquiring self strengthening growth, driven by competition, cooperation, learning and innovation to exploring, exploiting, conserving and managing the maritime resources in EEZ areas in a sustainable manner.

In order to respond adaptively to enhance scientific information, socioeconomic considerations must be closely integrated with science findings by MSEP. Both socioeconomic and governance indicators are used in the planning and implementation actions as summarized in Figure 1. Within the context of cluster-based management the integration of data and information for decision making is additive and integrated on annual assessment, move toward the goal of self-financing of the assessment and management process in the near future.

**Figure 1** Planning and Implementation of the Cluster-Based Management

<table>
<thead>
<tr>
<th>Structure</th>
<th>Planning Actions</th>
<th>Implementation Actions</th>
<th>Objective (Outcome)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maritime Spatial Economic and Policy (MSEP)</td>
<td>Provides consensus priorities from analysis and ranking of maritime industry related resources issues, their environmental and socioeconomic impacts, immediate and root causes and possible remedies.</td>
<td>Productivity, ecosystem health, and socioeconomic indicators and assessments.</td>
<td>Toward the goal of self-financing of the assessment and management process</td>
</tr>
<tr>
<td>Directorate of Maritime Affairs</td>
<td>Provides national and regional commitments to policy, legal and constitutional reforms and investments to remedy root causes of priority issues identified in MSEP.</td>
<td>Governance indicators and assessments</td>
<td>Cluster thinking assessment and adaptive management</td>
</tr>
</tbody>
</table>

**Source: Authors**

If the cluster policy succeeds in generating local synergies between maritime companies (industry), researchers and government institutions, it can have long-term benefits (David, 2009). Ideally, Understanding the maritime cluster is a condition for any policy measure and is therefore a basic building block for development of a coherent EEZ management effectively.
6.0 CONCLUSION

This paper designed to highlight the need for Malaysia to become preponderant Malaysian sea power in the near future. Malaysia’s power as a maritime nation depends on its ability to monitor, manage and protects its interests. The Malaysian Coast Guard is the primary guardian of this status.

The maritime stakeholders including the policy makers should help the Coast Guard to take a step back and look at the big picture to inform future investment portfolios. The opportunity to develop long-range technology, including science and technology plan should be welcomed. This plan should broadly outline future investment, capabilities, and requirements. The possibilities include: Design and built a next generation of Ground Effect Craft; Satellite recapitalization; advanced UAVs technologies; and implementation of the new structure for sustainable management of the EEZ.

The management of EEZ resources to facilitate sustainable economic development requires a cluster strategy based on sound information flow, cooperation between maritime industry communities and the strength of the ship industry sector. Ship industry sector has been identified as having a significant role in achieving effective exploration and exploitation of the EEZ areas through the provision of a new proposal on the governance structure that is appropriate for decision making toward sustainably managing the EEZ areas.

A structure for Malaysian maritime strategic cluster thinking via proper management of the information flows, an integrated and centralized maritime related knowledge and information to guide external and internal sector management, correct incentives and effective policies can be introduced to manage the EEZ areas. What is needed is the political will to effect a change to systems-centered thinking and planning the future of the ship industry sector by actively seeking to encourage the development of a competitive maritime cluster.

If Malaysia wants to achieve the goals of industrialization and become a developed maritime nation with a knowledge based economy, productivity-driven growth and enhanced competitiveness, much will depend on how the EEZ areas is managed and protected. A strong maritime enforcement agency is in Malaysia’s long-term interest and essential to the nation’s prosperity. Investment in the maritime technologies especially in the shipbuilding and repairs is very important to maintain its maritime pre-eminence and towards developed maritime nation.

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