



UNIVERSITI PUTRA MALAYSIA

***COMMUNITY PERCEPTION ON GOVERNMENT'S NO-TAKE ZONE
MANAGEMENT PRACTICES IN PULAU REDANG, MALAYSIA***

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By

NUR ZASLIN BINTI ZAILANI

**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia,
in Fulfilment of the Requirements for the Degree of Master of Science**

June 2020

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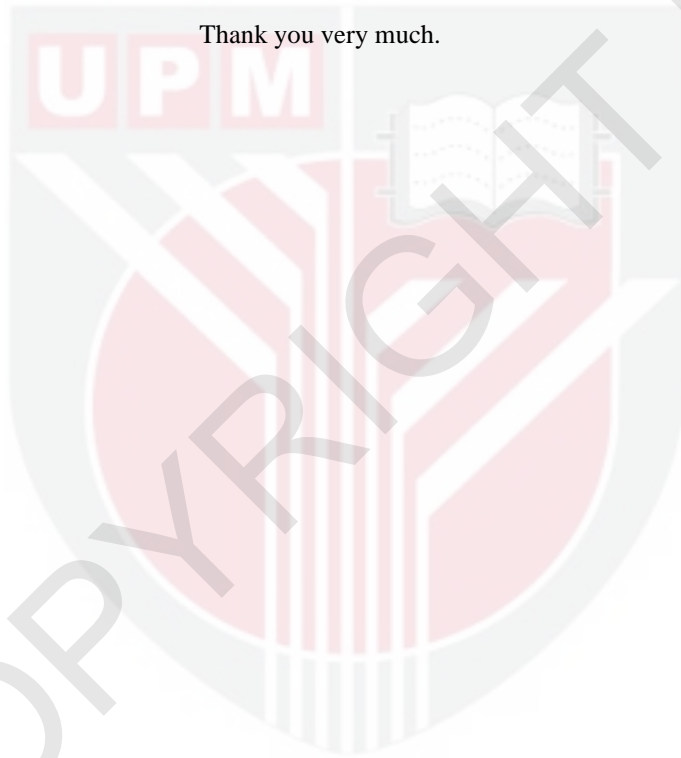
DEDICATION

This dissertation is specially dedicated to the two-special people in my life for their continuous support, love, encouragement, inspiration and motivation throughout my postgraduate study:

My mother, Sharimah binti Abdul Rahman

My Father, Zailani bin Dasuki

Thank you very much.



Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Master of Science

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June 2020

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No-take zones (NTZ) provide an effective implementation for biodiversity conservation and fisheries management. A key element of a NTZ's success in marine and fisheries management is good governance which is important in decision-making. In addition, support from the local communities must also be taken into consideration in achieving NTZ success. Therefore, this study aims to determine the factors that influence the level of public perception of the governance of the No-take zone. The study area selected which is Pulau Redang, Terengganu includes the local community from Redang village (283 respondents). Pulau Redang of Terengganu has been identified as a marine park area including a no-take zone that offers an ecotourism site with its natural beauty and tourism activities. In addition, some of the local community on the island depends on the marine resources as fishermen. The problem statement highlighted is based on personal communication with the leaders of the local community. Lack of perceived benefits after the establishment of a no-take zone faced by the local community is the clear gap of the study. Thus, the general objective of the study is to analyse the perception of the local community on the governance of the no-take zone area in Pulau Redang. A quantitative method was used in this study. Questionnaire surveys were used to determine the level of community perception on the governance of a no-take zone area. Descriptive Statistics, Exploratory Factor Analysis and Multiple Regression Analysis were also performed to complete the data set. The descriptive findings showed positive perceptions of respondents on the governance of a no-take zone but they also have negative perceptions towards the governance of a no-take zone. The findings demonstrated the classification of the local community's perception on the governance of a no-take zone into 16 means factors; 'Equity and Fairness, Education of marine conservation essential for future generation, Efficiency of NTZ Administrative Resources, Awareness programme, Effort for conservation of Marine Park, Participation of Local Community, Information dissemination, Good cooperation between governance and community ,Level of enforcement activity , Disobey the rules and regulation, The changes of main job opportunities, Local Community aware of the

marine park information, Opportunities for outsiders, A privilege for local fishermen, Governance Responsibility' and 'Existing solutions to the problems'. The actual findings of the study showed that two variables were significant in predicting the local community's perception on the governance of a no-take zone; education level ($\beta = -0.188$, $t = -4.799$, $p\text{-value} = .000$) and married of marital status ($\beta = .148$, $t = 2.485$, $p\text{-value} = .014$). This factor is important to ensure that the community always has a positive perception of effective government management. The findings of this study also provided some recommendations and suggestions which can be proposed to the local government especially the Department of Marine Parks and Tourism of Terengganu as the policy makers to formulate better conservation policies for enhanced conservation of marine resources as well as promoting a positive perception of the local community on the governance of a no-take zone.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Master Sains

**PERSEPSI PENDUDUK TEMPATAN TENTANG PENGURUSAN BADAN
KERAJAAN TERHADAP ZON LARANGAN PENUH DI PULAU REDANG,
MALAYSIA**

Oleh

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Zon Larangan Penuh (ZLP) merupakan sebuah pelaksanaan yang berkesan untuk pengurusan pemuliharaan dan pengurusan biodiversiti. Unsur utama kejayaan ZLP untuk pengurusan kelautan dan perikanan adalah penggunaan tadbir urus yang baik di mana pihak tadbir urus adalah orang yang penting dalam membuat keputusan. Di samping itu, sokongan komuniti tempatan juga diambil kira untuk mencapai kejayaan ZLP. Oleh itu, kajian ini bertujuan untuk menentukan faktor-faktor yang mempengaruhi tahap persepsi masyarakat terhadap tadbir urus kawasan Zon Larangan Penuh. Kawasan kajian yang dipilih iaitu Pulau Redang, Terengganu yang melibatkan masyarakat tempatan dari Kampung Redang (283 responden). Pulau Redang di Terengganu telah di kenal pasti sebagai kawasan Taman laut yang menawarkan tapak ekopelancongan dengan keindahan semulajadi dan aktiviti pelancongan. Di samping itu, terdapat beberapa komuniti tempatan yang bergantung kepada sumber laut seperti nelayan. Kenyataan masalah yang diketengahkan adalah berdasarkan komunikasi peribadi dengan pemimpin masyarakat setempat. Kurangnya faedah yang dirasakan selepas penubuhan kawasan Zon Larangan Penuh yang dihadapi oleh masyarakat setempat adalah jurang yang jelas dalam kajian. Oleh itu objektif umum kajian ini adalah untuk menentukan faktor-faktor yang mempengaruhi tahap persepsi masyarakat setempat mengenai tadbir urus kawasan Zon Larangan Penuh di Pulau Redang. Kaedah kuantitatif digunakan dalam kajian ini. Penggunaan soalan kaji selidik telah digunakan untuk menentukan tahap persepsi masyarakat terhadap tadbir urus kawasan Zon Larangan Penuh. Statistik Deskriptif, Analisa Faktor Eksploratif dan Analisis Regresi Berganda juga dilakukan untuk menyelesaikan set data. Penemuan deskriptif menunjukkan persepsi positif responden terhadap tadbir urus kawasan Zon Larangan Penuh tetapi mereka juga mempunyai persepsi negatif terhadap tadbir urus kawasan Zon Larangan Penuh. Penemuan menunjukkan klasifikasi persepsi masyarakat setempat mengenai tadbir urus di Zon Larangan Penuh menjadi enam belas faktor penting; 'Ekuiti dan Keadilan, Pendidikan pemuliharaan marin penting untuk generasi masa depan, Kecekapan Sumber Pentadbiran ZLP, Kesedaran yang diprogramkan, Usaha untuk

pemuliharaan Taman Laut, Penyertaan Komuniti Tempatan, Penyebaran maklumat, Kerjasama yang baik antara tadbir urus dan komuniti, Tahap aktiviti penguatkuasaan, Tidak mematuhi peraturan dan peraturan, Perubahan peluang pekerjaan utama, Masyarakat Tempatan sedar tentang maklumat taman laut, Peluang untuk orang luar, Keistimewaan nelayan tempatan, Tanggungjawab Tadbir dan Ada menyelesaikan masalah. Penemuan analisis regresi berganda menunjukkan bahawa dua pembolehubah adalah penting dalam meramalkan persepsi masyarakat setempat mengenai tadbir urus kawasan Zon Larangan Penuh; tahap pendidikan ($\beta = -0.188$, $t = -4.799$, $p\text{-value} = .000$) dan penduduk sudah berkahwin daripada status penduduk ($\beta = .148$, $t = 2.485$, $p\text{-value} = .014$). Faktor-faktor ini penting untuk memastikan komuniti sentiasa mempunyai persepsi yang positif terhadap pengurusan government yang efektif. Penemuan kajian ini juga memberi beberapa saranan dan cadangan yang boleh dicadangkan kepada kerajaan tempatan terutama Jabatan Taman Laut dan Pelancongan Terengganu sebagai penggubal dasar untuk merumuskan dasar konservasi yang lebih baik untuk mempertingkatkan pemuliharaan sumber laut serta menggalakkan persepsi positif terhadap masyarakat setempat mengenai tadbir urus kawasan Zon Larangan Penuh.

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This thesis was submitted to the Senate of the Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Master of Science. The members of the Supervisory Committee were as follows:

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LIST OF ABBREVIATIONS

CBT	Community-based tourism
CZM	Coastal Zone Management
DMPM	Department of Marine Parks Malaysia
EFA	Exploratory Factor Analysis
FGD	Focus Group Discussion
GNI	Gross National Income
GPRS	General Packet Radio Service
KMO	Kaiser-Myer-Olkin
LGUs	Local Government Units
LOT	Least Operation Tourism
MPA	Marine Protected Area
NKEA	National Key Economic Areas
NOAA	National Oceanic and Atmospheric Administration
NTP	National Transformation Programme
NTZ	No-Take Zone
SKBR	Sian Ka'an Biosphere Reserve
TEV	Total Economic Value
TMP	Tun Mustapha Park
TRNMP	Tubbataha Reefs National Marine Park
WMPA	Weh Island Marine Protected Area
WMRP	Weh Island Marine Recreational Park

CHAPTER 1

INTRODUCTION

1.1 Introduction

Marine protected areas (MPAs) are an important implementation for fisheries management and conservation. The establishment of MPAs helps to protect the structure of ecosystems, habitats, functioning and integrity, flora and fauna, and species diversity, richness, size and density (Lester et al., 2009; Angulo-Valdes et al., 2010; Salm et al., 2000). These benefits to conservation and fisheries are especially obvious in no-take zones (NTZs) of MPAs (Lester et al., 2008). Their proven advantages as a management instrument has resulted in a growing number of MPAs worldwide – with more than 68,000 in existence in 2010 – covering 2.86% of Exclusive Economic Zones (Toropova et al., 2010) and worldwide commitments to increase the coverage of MPAs to 10% by 2020 (Jager & Halpenny, 2012).

The management and conservation advantages of MPAs have an impact on the results of local communities through the spill over effects to fish resources (Aswani & Farusawa, 2007; Gell & Roberts, 2003; Halpern et al., 2009; Jiang et al., 2008; Roberts et al., 2001; Sanchirico et al., 2002), tourism livelihood benefits (Agardy, 1993; Merino et al., 2008; Oberholzer et al., 2010; Leisher et al., 2007) and climate (MacKinnon et al., 2011). However, MPAs have also been criticised for having a negative financial, social, political and cultural impact on local people and communities. This is problematic because MPAs' funding and effectiveness are focused on optimistic community expectations of socio-economic, environmental and livelihood results in various MPAs (Christie et al., 2003; Agardy et al., 2003; Christie, 2005; Heck et al., 2012). Local community support also depends on their understanding of MPA management and government policies' efficacy and performance (Pomeroy et al., 2004; Lockwood, 2010; Hind et al., 2010; Webb et al., 2004).

1.2 Marine Protected Area

The establishment of Marine Protected Areas (MPA) is seen as a policy to protect marine resources around the world. Some of the largest shorelines and various coral reef ecosystems remain highly threatened in the region. There is a clear need to protect these locations, but establishing an MPA often requires disputes with its stakeholders that are highly dependent on the ecosystem (Kamil et al., 2017). Marine Protected Areas (MPA) is a main term for protected areas of marine ecology and/or biodiversity. The IUCN describes a protected marine region as:

‘Any area of intertidal or subtidal terrain with its surrounding water and related flora, fauna, historical and cultural characteristics reserved by law or other efficient means to protect part or all of the surrounding environment’ (Bolt 2016).

Another definition is 'a clearly defined geographical area, accepted, committed and maintained by legal or other successful means to achieve long-term preservation of nature with associated ecosystem services and cultural values' (Dudley et al., 2013) MPAs gazetted by U.S. Executive Order 13158 in May 2000 are described as:

‘Any marine environment zone protected by the federal government, territorial, tribal, or local legislation or regulations to provide enduring protection to some or all of its natural and cultural assets’ (National Oceanic and Atmospheric Administration, 2011)

Marine protected areas (MPAs) are marine, sea, estuary or big lakes protected areas. These marine regions can range from wildlife shelters to research facilities in many forms. MPAs limit human activity, typically to safeguard natural or cultural assets, for conservation purposes (National Ocean Service, 2019). These marine resources are protected by state, local, indigenous, regional, territorial, national or global authorities and vary widely between countries (National Ocean Service, 2019). This variation implies various restrictions on catch limits, growth, fishing seasons, fishing methods, moorings and the removal or disruption of prohibitions on marine life. MPAs also provide income for nations, possibly equal to the income they would have if companies were to be allowed to fish (National Geographic Magazine, 2014).

A number of names are given to sites that fit this description. They can be called ‘reserves’, ‘sanctuaries’, ‘parks’ or have some other title in common with protected areas on land. To clarify the situation and guide managers of protected areas, IUCN has developed and refined a list of categories of protected areas through its National Parks and Protected Areas Commission. Ten classes have been listed and the list has been reduced to six following the most recent review. Table 1.1 lists out these classes.

Table 1.1 : IUCN Protected Area Management Categories

Cat.	IUCN Protected Area Management Categories:
Ia	Strict Nature Reserve A marine reserve usually connotes 'maximum protection', where all resource removals are strictly prohibited. In countries such as Kenya and Belize, marine reserves allow low-risk removals to sustain local communities.
Ib	Wilderness area
II	National Park Marine parks emphasise the protection of ecosystems but allow light human use. A marine park may prohibit fishing or extraction of resources, but allow recreation. Some marine parks, such as those in Tanzania, are zoned and allow activities such as fishing only in low risk areas.
III	Natural monuments or features Established to protect historical sites such as shipwrecks and cultural sites such as aboriginal fishing grounds.
IV	Habitat/species management area Established to protect a certain species, to benefit fisheries, rare habitat, as spawning/nursing grounds for fish, or to protect entire ecosystems.
V	Protected seascape Limited active management, as with protected landscapes
VI	Sustainable use of natural resources

Source: Day et al. (2012)

1.3 Marine parks

A marine park is a park made up of a region of an ocean (or lake) sometimes protected for recreational purposes, but more frequently set aside to maintain a specific habitat and ensure that the ecosystem is maintained for the species there. Governments label most marine parks as 'watery' national parks.

According to the 1999-2000 Annual Report of Fisheries Western Australia, a Marine Park is a 'government protected area with related regulations and control limitations on activities such as fishing or boating'. Use is controlled by the government in most marine parks/reserves. The reserves normally protect the rare ecosystems or habitats of fish and wildlife. Heavy industrial uses and other possibly damaging uses of wildlife or habitats within the boundaries of a marine reserve are generally limited or forbidden. It is possible to promote recreational uses such as ecotourism and scuba diving or certain types of recreational fishing.

Visitors to marine protected areas have increased significantly in many parts of the globe over the previous 20 years (Thur, 2010; Beharry-Borg & Scarpa, 2010). Marine protected regions or marine parks have emerged as an essential instrument for sea preservation, and managing tourism and leisure operations within marine parks has become a significant problem for marine and coastal resource protection. The reasons for this are twofold: tourism has excellent potential as an activity that can have a minimal effect on the marine ecosystem while generating revenue for societies at its boundaries; and as more visitors pursue more instructional experiences in natural environments and marine parks provide invaluable settings for the dissemination of marine ecological data (Chin, 2016; Kahn, 2007; Homere, 2003).

1.4 Concept of No-Take Zone

A No-take Zone (NTZ) is a permanently protected marine area (MPA) removed from immediate human disruption, where all techniques of fishing and extraction of natural products, dumping, dredging or construction operations are forbidden from removing any resource, living or dead.

No-take zones are typically part of larger protected areas. These protected areas are located on both land and open water, such as lakes and oceans, and are sometimes part of national parks or state parks. No-take areas provide greater protection to the biodiversity, habitats and animals within the limits of those broader, less restrictive, protected areas. No-take zones are marine protected areas (MPA) of a particular type. No-take MPAs completely ban the extraction or destruction of natural or cultural assets, based on the National Oceanic and Atmospheric Administration (NOAA).

No-take MPAs are uncommon. Most nations and states have fisheries that rely on marine life extraction. Sport fishing and commercial fishing in coastal regions are often significant sectors. The fishing industry is the strongest opponent of no-take areas worldwide. However, archaeologists, treasure hunters, and the oil and mining sectors are also often critical of NTZs. Most no-take areas are often components of multiple-use MPAs, where distinct activity concentrations in separate areas are permitted. Multiple-use MPAs control the quantity of extractive activity that can occur in a protected area, as well as recreation and scientific research.

No-take areas within multiple-use MPAs generally safeguard many aquatic species' spawning grounds. They can also serve as outdoor laboratories that enable researchers to compare a no-take region's undisturbed areas with those affected by human operations. Scientists can better understand how human operations influence the marine environment through these experiments.

1.5 Concept of governance

Governance refers to mechanisms/structures and processes designed to communicate with the government and other social organisations, how they relate to the public, and how decisions are made (Findlay & Twine, 2018). Governance is the decision-making system and mechanism by which decisions are or are not enforced to ensure rule of law, accountability, stability, transparency, empowerment, justice, responsiveness, and inclusiveness and broad participation (International Bureau of Education, 2019).

The definition of governance can be specified for direction, control and coordination, which determines the effectiveness of management in various contexts such as international, national, institutional, and community (UNDP, 1997; Eagles, 2007). In a broad sense, governance is concerned with the citizens' and stakeholders' interactions among themselves and the way they participate in public affairs, culture, and institutional environment. This situation can be discovered by more than the organs of the government.

Governance also refers to a specific 'level' of governance associated with a type of organisation like public administration (Bovaird & Löffler, 2003), global governance (Teegen et al., 2004), non-profit governance (Skelcher et al., 2005), corporate governance (Husted, 2003), and project governance. Basically, governance can be regulated by a number of institutions known as governing bodies. The most formal authority is a government. A government is an organisational body whose sole responsibility and authority in a specified geopolitical system is to create binding decisions by establishing laws.

Organisations in both the private sector and the public sector adopt different approaches to governance. It is essential to have 'good' governance for both public and private sector organisations to function properly because good governance can be considered as the heart of any successful business (Buteau-Duitschaever, 2009). The public sector, which is typically aware of its performance, efficiency, effectiveness and direction in the private sector in order to fulfil its financial goals and remain competitive in its sector (Osborne et al., 2013) while governance is responsible for the provision of public goods and vital services in different public sectors.

The private sector still follows the principles of governance, but often puts less emphasis on financial objectives and competitiveness. This is because of the values behind them which place more emphasis on accountability, consensus orientation, strategic vision, responsiveness, public participation, the rule of law and equity (Koliba et al., 2017). Besides, it is vital for an agency or corporation to have a governance body with appropriate good governance principles in order to achieve its goals and priorities to ensure change and to preserve legal and ethical status in the hands of investors, regulators and the wider community.

1.6 Marine parks in Malaysia

Malaysia's geography is concerned with the physical and human geography of the country. There are 13 states in Malaysia covering approximately 329,758 km² in land area. Malaysia is separated into two major parts, Peninsular Malaysia and the two states of Sabah and Sarawak in northern Borneo. The coastal area of Malaysia extends roughly 4,675 km (2,068 km in Peninsular Malaysia and 2,607 km in East Malaysia). Malaysia is a blessed land rich in flora and fauna and beautiful beaches.

The Tun Mustapha Park (TMP) has been declared the largest marine park in Malaysia, covering an area of almost one million hectares (898,762 ha to be exact) with more than 50 islands and islets scattered across the districts of Kudat, Pitas and Kota Marudu (Star2 online, 2019). It was established in May 2016 and is Malaysia's first multiple-use park where certain areas will be set aside as 'No-take Zones' and no fishing is permitted in these areas. There will be community zones where fishermen can only use traditional (non-destructive) methods such as drift nets and commercial areas where trawlers can operate (Jumin et al., 2018). In addition, under a single management system for conservation, sustainable resource use and development co-occur.

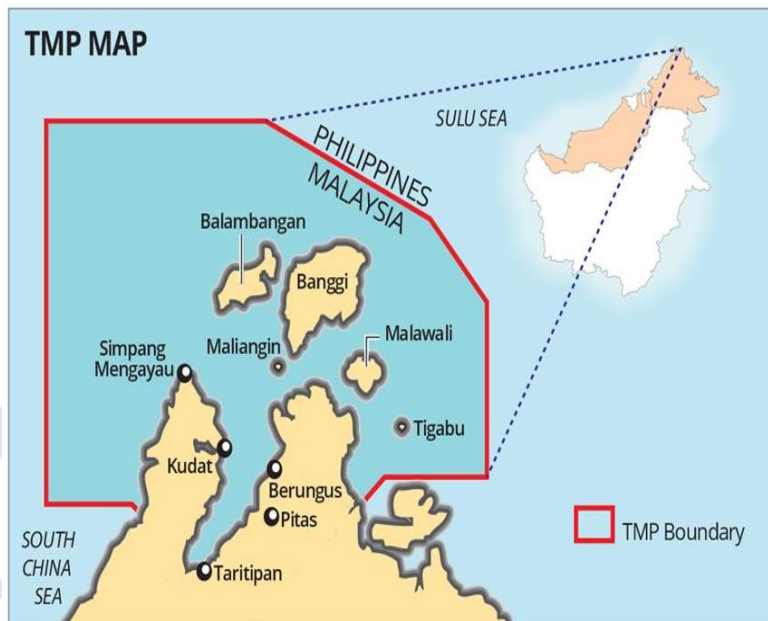


Figure 1.1 : Tun Mustapha Park (TMP), Sabah, Malaysia
(Source: WWF Malaysia 2018)

1.6.1 Development of Marine parks

Other marine parks in Malaysia such as in Terengganu, Pahang, Johor, Kedah and Labuan face similar challenges ahead, as it is often difficult to balance commercial and environmental interests. Human activities in the ocean and on land threaten marine ecosystems (Halpern et al., 2015). In combination with increasing overfishing, human populations and economies (Jackson et al., 2001; Lotze et al., 2006; Worm et al., 2006, 2009), pollution (Vitousek et al., 1997; Syvitski et al., 2005), and degradation and habitat modification (Halpern et al., 2008, 2015; Burke et al., 2011) are the main threats. Furthermore, the impact of climate change on marine ecosystems is reflected in changes in sea level, aragonite concentrations, and temperature (Jackson et al., 2001; Hughes et al., 2003; Hoegh-Guldberg et al., 2007). Marine protected areas are a major regional initiative in which marine ecosystems and coastal resources can be preserved (Gaines et al., 2010; Hughes et al., 2010; Mumby & Harborne, 2010; Edgar et al., 2014).

Most of Malaysia's marine parks are home to people who rely on marine resources for their livelihood and well-being. For example, fishing is the main economic activity for the local community in Tun Mustapha Park, contributing 22% of Sabah's total marine production in 2008. Trawling and purse fishing are the largest fisheries in the region; other important fishing activities include live reef fishing, long-line and small-scale hook and line fishing, and gill net fishing (Teh et al., 2005). Fishing trawlers are not allowed to operate within three nautical miles from the shore. The other problem faced by marine park were many used of destructive fishing activities (Weeks et al., 2014), the boundaries of the different zones are still being finalised and the authorities do not have enough boats and manpower.

However, various efforts have been and will be undertaken by the authorities to ensure that the marine park ecosystem in Malaysia is protected and will benefit everyone. The participation and decision-making by government bodies, NGOs and local communities as the stakeholders are crucial given the need for consensus and cooperation to preserve Malaysia's vast marine parks.

1.6.2 Tourism development of marine parks in Malaysia

Tourism is now listed as one of the fastest growing and largest industries in the world based on the increase in tourist arrivals to marine parks (Sharpley & Telfer, 2014). The industry has numerous potential benefits to the population of a destination country (Doh, 2006). For a number of years, tourism has been an important industry in Malaysia (Musa, 2000; Kunasekaran, 2014). Furthermore, Malaysia has become a very popular country for tourists from all over the world as their holiday destination (Mosbah & Khuja, 2014). As Malaysia aims towards achieving high income status in future, tourism has been identified in the National Transformation Program (NTP) of 2010 as one of the strategic industries in the National Key Economic Areas (NKEA).

The offshore islands along Malaysia's coast are rich in fishing and coral reefs (Islam et al., 2017). Communities living in the coastal areas are heavily dependent on the sea for their livelihoods; for the majority, fishing is the only source of income and food, especially for people who live on the islands. However, there are several tourism activities that can be carried out in the marine park area such as recreational fishing and some local handicraft products that can be sold to tourists to generate income (Masud et al., 2014).

The establishment of marine protected areas including no-take zones vary in sizes and are set at different locations depending on the diversity and abundance of resource biomass and the needs of potential users. The government through the Department of Fisheries has formulated a set of rules and regulations in order to protect and conserve the marine biodiversity by ensuring sustainable healthy conditions and to avoid being over exploited. However, the implementation of fishing restrictions and the gazettement of areas as no-take zones have resulted in a negative impact on the livelihoods of the traditional coastal fisherman (Agardy et al., 2003; Christie et al., 2003; Christie, 2005; Heck et al., 2012).

1.6.3 Benefits of tourism developments

Over the past two decades, the government has encouraged the growth of tourism in marine parks, generating significant revenue mainly through various tourism activities. The results from the tourism promotions are development around the tourist areas, employment for the local people and job offered in various parts of the tourism sector (Islam et al., 2017). The World Travel & Tourism Council report for Malaysia in 2016 showed that the travel and tourism industry directly resulted in 639,500 jobs. This was about 45% of total employment and was projected to increase by 1.9% in 2017 and rise by 3.9% per annum to 956,000 jobs (5.4% of total employment) in 2017 (Tourism Malaysia, 2016). However, the majority of hotels, chalets and diving shops are owned and run by outsiders and not the locals (Islam et al., 2017).

The tourist sector is a significant source of foreign exchange earnings and a driver for economic growth. About nine percent of Malaysia's Gross Domestic Product is contributed by tourism (Sivalingam, 2007). According to Dato' Sri Idris Jala (2016), the tourism industry is facing a greatly growing speed of tourist arrival. In 2015, tourism ranked second highest as a private investment contributor at RM24.5 billion and reached RM67.1 billion as the third largest contributor to Gross National Income (GNI) (Table 1.2).

Table 1.2 : International tourist arrivals and receipts in Malaysia (2006-2018)

Year	Arrivals/Million	Receipts/MYR billion
2006	17.55	36.3
2007	20.97	53.4
2008	22.05	49.6
2009	23.65	53.4
2010	24.58	56.5
2011	24.71	58.3
2012	25.03	60.6
2013	25.72	65.4
2014	27.44	72.0
2015	25.72	69.1
2016	26.76	82.1
2017	25.95	82.1
2018	25.83	84.1

(Source: Tourism Malaysia 2019)

Usually, the increase in the number of tourists is associated with the alternative attractions in certain tourism areas. Marine parks offer beautiful marine resources that can attract tourists to participate in various tourism activities such as island hopping and scuba diving to see the beautiful coral reefs and colourful coral fishes. In addition, the WWF, a global conservation body, has contributed their effort from an early stage in the establishment of the Tun Mustapha Marine Protected Area to promote eco-tourism. The promotion's purpose is to replace the fishing activity of the locals as their livelihoods or as 'alternative livelihoods' (Blackledge, 2018). For example, the estimated total marine turtle economic value (TEV) is USD 23 million per year, varying from USD 21 million to USD 25 million (Teh et al., 2018). In addition, the protection of marine turtles could potentially generate USD 469,000 in employment income per year, equivalent to 1146 tourism jobs. It is expected that over 30 years, the TEV of marine turtles could reach up to USD 716 million if full protection of turtles was properly implemented.

The number of tourist visits to marine ecosystems, particularly marine parks, has increased significantly on a yearly basis. This has become a challenge to the tourism marketers to understand the needs of the different segments of the market and satisfy these needs. Besides, it challenges the authorities to cater to the needs of communities including their economic livelihoods and well-being, and at the same time ensuring the ecosystem is well preserved due to this increasing trend.

1.7 No-take zone management in Malaysia

Malaysia is a country that has been implementing Coastal Zone Management (CZM) through the Federal system (1957). Malaysia has three levels of government: federal, state and local. The Department of Marine Parks Malaysia (DMPM) has 53 coral reef MPAs. From this number, 42 are in Peninsular Malaysia. Eight coral reefs are found in Sabah under the Sabah Wildlife Department and three in Sarawak under the Sarawak

Forest Department (Department Marine Park Malaysia, 2019). However, only five states have been gazetted as Marine Parks, namely Terengganu, Pahang, Johor, Kedah and Wilayah Persekutuan Labuan (Figure 1.2)



Figure 1.2 : Map of Marine Parks in Malaysia
(Source: Department Marine Park Malaysia 2019)

Historically, in the early 1980s, awareness that fisheries resources were being overexploited began to rise. In order to increase fish stocks, coral reef areas with different species of commercialised fish must be maintained and protected. Coral reef areas are also a type of habitat that is easily exposed to various natural disasters or human activities.

Realising these facts, former Prime Minister Y.A.B. Tun Dr. Mahathir commissioned the Fisheries Department to set up marine parks in Malaysia in 1983. By 1994, 40 islands were established in Malaysia as marine parks. However, to ensure the efficiency of the management, on 14th June 2006, a cabinet meeting approved the establishment of a new department that is responsible for the management and administration of National Protected Marine areas especially Marine Park Malaysia areas. The administration of marine parks changed from the Department of Fisheries to the Department of Marine

Parks Malaysia (DMPM). This means all fishing activities beyond the NTZ water area are regulated by the Fisheries Department, while all coral reef and tourism activities in the NTZ are controlled by the Marine Park Department. Marine park management in Malaysia is based on a top-down governance management (Figure 1.3).

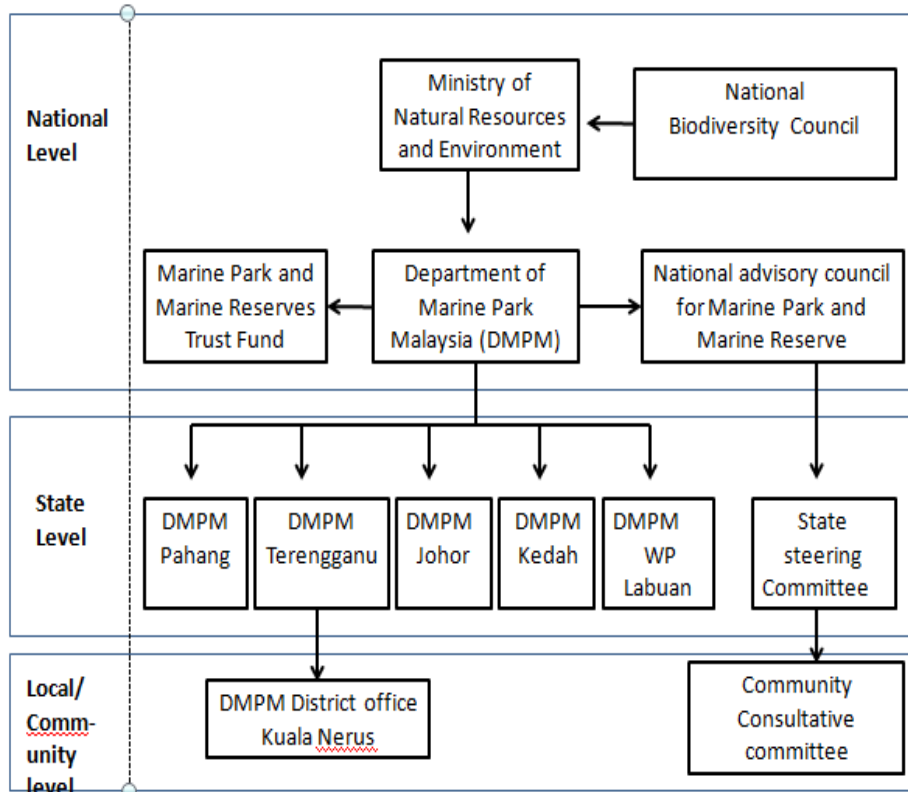


Figure 1.3 : Institutional Arrangement of Marine Parks in Malaysia

(Source: Department of Marine Parks Malaysia 2019)

Under Section 45 (Table 1.3) of the Fisheries Act 1985, the Marine Park Gazette was allocated under Section 41:-

‘Officers at DMPM have been empowered to enforce Section IX Marine Parks and Marine Reserves, the Fisheries Act 1985 (Act 317) on Marine Parks and Marine Reserves. According to Section 25 (b) of the Fisheries Act 1985, any person who contravenes or fails to comply with any of the provisions of this Act shall be guilty of an offence and in the absence of special penalty in the provisions relating thereto, In all other cases, the person may be liable for a fine not exceeding 20 000 ringgit or imprisonment for a term not exceeding two years or both’

The establishment order of the Malaysia Marine Park 1994 clearly stated that 40 islands are protected areas, comprising Kepulauan Pulau Redang and Kepulauan Pulau Perhentian located in Terengganu, Kepulauan Pulau Payar in Kedah, Kepulauan Pulau Tioman in Pahang, Kepulauan Pulau Tinggi in Johor and the Kepulauan Wilayah Persekutuan Labuan. On 4th February 2008, Pulau Yu Kecil and Pulau Yu Besar in Terengganu were also gazetted as Marine Parks, taking the total number of islands that have been gazetted to 42 throughout Malaysia.

Table 1.3 : Laws and Regulations of Marine Parks

Section	Items
Section 41	Establishment of Marine Parks and Marine Reserves.
Section 41A	Establishment of National Advisory Council for Marine Parks and Marine Reserves for Membership.
Section 41B	Functions of the National Advisory Council for Marine Parks and Marine Reserves.
Section 42	Authority and Responsibility of the Director General.
Section 43	Offence for performing certain acts without the written permission of the Director General.
Section 44	The absolute prohibition against certain weapons
Section 45	Ministry authorization to make regulations.

(Source: Department of Marine Parks 2019)

The entire island of the Marine Park in Malaysia covers 2 nautical miles from the outer point of the island measured at low tide (Except Kapas Island in Terengganu and Kuraman Island in Sabah which are 1 nautical miles). Due to MPA rules including NTZs being difficult to enforce, other related government agencies such as Ministry of Natural Resources and Environment (NRE) and Department of Forestry comprising other related NGOs also assist in enforcing and protecting Malaysia's Marine Protected Areas.

1.8 Problem Statement

In the 1990s, before Pulau Redang was gazetted as a marine park area, the main source of economic activity for the people of Pulau Redang was marine-based occupations (fishing activities) at 56% while the tourism sector occupied second place at 17.6% (Salleh et al., 2011). It was concluded that the majority (90%) of the community were fishermen (Salleh, 2011). In the same time the fisherman was free to carry out fishing activities anywhere in the Pulau Redang area.

Recognising that Pulau Redang has the potential in tourism sector and valuable natural assets if developed, the state government in collaboration with a private (non-local) company has approved a proposal to develop Redang as a tourist destination (Yacob et

al., 2007; Yacob et al., 2009). In conjunction with the Ninth Malaysia Plan (2006-2010), the policy thrust of the Malaysian government was 'to strengthen the country's status as a major worldwide tourist destination and to encourage local' (Shabudin et al., 2017). The impact of this development was a sharp and significant increase in the value of land in Pulau Redang which skyrocketed from 1991-1993, reaching RM200,000-RM250,000 per acre in the coastal areas and RM125,000-RM150,000 per acre for inland lots (Salleh et al., 2011). The increase in price was based on high market demand from outside buyers, resulting in all the land in the area formerly owned by the locals being sold to outside investors (Islam et al., 2017). As a result of this, none of the strategic land lots along the coast belongs to locals; all that remains is a lot of interior lots with little potential for development. According to En Roki, the village head of Pulau Redang, in a personal communication dated 11th April 2018, most of the land on the coast of Pulau Redang is owned by outsiders and locals live in the inland areas. As a result in the villagers have fewer opportunities to economic growth as tourists are more likely to stay in chalets or resorts close to the beach. In addition, many young people in Pulau Redang who work in the resorts owned by outsiders only hold lower level jobs and do not receive high pay.

Malaysia's national Marine Park system was created in 1983 by the Ministry of Agriculture through the Department of Fisheries. The objectives of the Marine Parks in Malaysia are (Ramli et al., 2002): first, to protect and conserve the biological diversity of the ocean habitats and its community, second, to conserve and upgrade the natural habitats of endangered species of marine life, third, to develop specific management zones for the conservation of marine fauna and flora. Last, to develop zones of recreational use consistent with the carrying capacity of the area. The purpose of its establishment came from the realisation that fisheries sources from the sea had begun to decline. In the meantime, efforts were made to improve fisheries resources and coral reefs as breeding grounds were conserved and protected to ensure future marine life. Thus, an estimated 40 islands throughout the country were gazetted as marine parks in 1994 including Pulau Redang. However, the reporting on laws and regulations of marine parks as provided for under Sections 41 to 45 (refer Table 1.3) has created a socio-economic conflict towards fisherman in Pulau Redang.

Limitations on space for fishing activities have led to socio-economic conflicts for local fishermen in Pulau Redang's no-take zone. The traditional fishermen of Pulau Redang have expressed concern over their future due to the deterioration in catches as the area that used to be the focus of fishing around the island has now been zoned as a restricted area for net fishing. Based on Bennett et al. (2014) the use of NTZs has been criticised because it leads to a decline in people's incomes, especially among fishermen. This has resulted in fishermen having to search for other areas away from the beach or outside the designated NTZ to carry out fishing activities. The use of NTZs has forced many fishermen to quit fishing and look for other jobs due to the lack of technology knowledge to fish on deep sea. Lack of employment or other skills causes household income to decline. The implications on a local fisherman's life are becoming increasingly complex.

Discussion with En Roki, the village head of Pulau Redang in a personal communication dated 11th April 2018, enforcement of the law prohibiting fishing within the marine park area is the main issue or conflict which cause dissatisfied among the fishermen. The fisherman community in Pulau Redang felt that the benefits which cause with the establishment of NTZs are more tilted towards the tourism sector rather than towards the local fishing community. In addition, the invasion of foreign fishermen from Vietnam and Thailand have been rampant in Pulau Redang (Bernama, 2017). The dilemma faced by the majority of these community members is also among the issues that aroused their dissatisfaction with their socio-economic future and led them to question the governance effectiveness of the NTZ at Pulau Redang.

The main goal of establishing NTZs is to protect marine resources that are significant sources of livelihood for coastal communities. However, there are arguments among the stakeholders such as fisheries agencies, researchers, scientists, local communities and even among policymakers about the efficacy of the NTZs effectiveness. Communities are confused about effective government management features to ensure efficient management of NTZs so that natural resources in the sea are in good condition. The concept of a NTZ's governance is generally misunderstood by different stakeholders due to the complexities and ambiguities of the interrelationships between socio-economic and political variables that make up the organisations and institutions that implement governance tasks (Noh, 2018). Thus, Kooiman et al. (2008) described governance as 'all interactions taken to address societal issues and generate social possibilities; including formulating and applying values that guide those interactions and caring for organisations that allow and regulate them.

In governing the MPAs, the approach should not only focus on the technical or economic and socio-political issues but also to emphasise the relationships of the players or actors who have interests in the realm of MPAs (Noh, 2018). As suggested by Noel and Weigel (2007), in order to meet the multi-purpose resource management requirements of the MPAs, it is necessary to adhere to the rules and regulations formulated in the MPAs. Thus, this research will present the views of local communities and stakeholders on the Marine Protected Area governance indices at Pulau Redang.

1.9 Research questions

1. What is the community's perception on the government's effectiveness of the No-take Zone in Pulau Redang?
2. What are the new main group of the local community's perception on the government's effectiveness of No-take Zone?
3. What are the factors influencing the government's effectiveness on No-take Zones among local community in Pulau Redang?

1.10 Main Objectives

The main objective of this study is to assess the community perception towards the government's effectiveness of the No-take Zone areas in Pulau Redang Marine Park.

1.11 Specific Objectives

1. To determine the community's perception on the government's effectiveness of the No-take Zone in Pulau Redang.
2. To form the main groups of local community perception on government's effectiveness of No-take Zone.
3. To determine the factors influencing the government's effectiveness on No-take Zones among local community in Pulau Redang.

1.12 Significance of the study

This study will benefit stakeholders who are connected with Pulau Redang Marine Park's involvement framework. The findings can provide guidance for marine parks and help develop management policies that enhance the contribution of ecotourism to sustainable development and conservation in Pulau Redang Marine Park. It is hoped that policymakers will be able to formulate better marine diversity policies and improve the socio-economic status of the community in Pulau Redang.

This study also will be utilising the findings with the wider community including residents of host communities, government planners, the corporate sector, academicians and non-governmental organisations. Besides, studying the perceptions and values of people can help managers to: i) identify what is important to various users; ii) determine outreach and educational needs; iii) justify decisions on management; iv) encourage resource protection; and, v) identify potential areas for conflict (Measham, 2011). All of the findings and information from this research will hopefully contribute to the existing literature in the governance of MPAs including the no-take zone field that could enhance the quality of marine park establishment into more profitable marine resources and economy for the community. Any additional or new factors found, which affect and can improve the conservation activity and community well-being would be a unique contribution to literature on marine protected areas including no-take zones.

This study also will provides academicians updating the information related on the effectiveness management of NTZ such as data on socio-demographic on local community in Pulau Redang. The result can be used as the guide for researcher that want make a sampling activity.

1.13 Operational definition of Concepts

Several concepts need to be defined and explored to orientate the readers and provide a foundation for the study.

Local Community: All community in Pulau Redang which are origin people or people that are stay in Pulau Redang (not tourist) including working in business sectors, tourism sectors, fisherman, government sectors, private sectors and local people.

Local fisherman: All local fisherman in Pulau Redang that are stay in Pulau Redang (not commercial fisherman), they captured fish in small quantity for their family and local community only.

Marine Protected Area: Any area of the marine environment reserved by federal, state, tribal, territorial, or local legislation or regulations to provide enduring protection to some or all of its natural and cultural assets.

No- Take zone: Marine Protected Area (MPA) permanently removed from immediate human disruption, where all techniques of fishing and extraction of natural products, dumping, dredging or construction operations are forbidden from removing any resource, living or dead.

Perception: impacted by an assortment of factors, firstly, the intensity and physical dimensions of the stimulus (ex: activities of the sense organs, as effects of preceding stimulation), seconds is the subject's experience; third is attention factors (ex: readiness to respond to stimuli) and lastly is motivation and the emotional state of the subject.

Governance: decision-making method and the process through which decisions are implemented or not implemented to ensure accountability, transparency, rule of law, stability, empowerment, responsiveness, equity and inclusiveness and broad-based participation.

1.14 Summary

The first chapter briefly introduced the study and the purpose of the research. It also explained the problem statement in this study and clarified the research questions and objectives of the study. The second chapter will expand further on the literature of each topic of the community perception on governance.

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