THE AWARENESS OF LOCAL COMMUNITIES ON COASTAL MANAGEMENT IN KUALA SELANGOR, MALAYSIA

BY

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A dissertation submitted in fulfilment of the requirement for the degree of Master of (Urban and Regional Planning)

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ABSTRACT

Nowadays, there are many concerns about the environmental protection of coastal areas throughout the developed and developing countries. Malaysia is considered one of the countries, which has the administration of coastal zone management by the Federal Government, and it is also strong in surveillance and enforcement but lacks community-based management. Public participation and local-level involvement are recognized as important components of coastal management. This study will be expected to expose and evaluate the current awareness of local community on coastal management based on both; the provision of coastal management programs and the local community knowledge on coastal environmental issues. Moreover, this study also identified the challenges or constraints impeding effective awareness community practicing coastal management Kuala Selangor are selected to be the study area for this research. Additionally, the study outlined the issues of awareness of local community in coastal management and provided recommendations based on a survey conducted in the study area as well. These recommendations will provide the government agencies, private firms and its associations, with suggestions to improve local community awareness on coastal management, which are vital for the planning of coastal areas and implementing environmentally sound management programs that are involving local communities for effective coastal management.

ملخص البحث

قامت هذه الدراسة على التعريف وتحليل مستوى الوعى لدى المجتمعات المحلية في إدارةِ المناطق الساحلية في ماليزيا. إن المشاركة العامة وتفاعل المجتمع المحلي في إدارة المناطق الساحلية يعتبر عنصرمهما في الإدارة الساحلية. إن المستفيدون من المناطق الساحلية على وجه العموم يجب أن يكونوا على إستعداد تام للمشاركة بالمعلومة وتعريف المشاكل البيئة الخاصة بالمناطق الساحلية مما يؤدي إلى نفاذ المخطط المطلوب في تلك المناطق. إن التعريف والتحليل لماهية الوعي عند المجتمعات المحلية في الادارة الساحلية يعتمد على أمران, أولهما: هو وفرة البرامج التوعوية في إدارة المناطق الساحلية و ثانيهما: هو المعرفة العامة لدى المجتمع عن مشاكل البيئة الساحلية. إن الوعي الغير تام بالإضافة إلى نقص المعلومات عن البيئة الساحلية وإدارتها يؤدي إلى ضعف مشاركة المجتمع المحلية في الادارة المحلية للمناطق الساحلية. لهذا السبب جاءهذا البحث ليقوم على دراسة الوعي على المستوى المحلي لإدارة الساحل مما يؤثر بشكل إيجابي في إتخاذ أي قرار من قِبل ذوي الخبرة في وضع المخططات لتلك المناطق. كوالا سيلانغور أختيرت كمنطقة للدراسة ويرجع ذلك لقربها من كلانج فالي الذي يعتبر أحد اهم المؤثرات الايجابية على المنطقة من خلال عملية التطور الذي يشهدها. في المجمل الدراسة استطاعت وضع الخطوط العريضة لمشكلة الوعي لدى المجتمعات المحلية ووضع المقترحات الملائمة الخاصة بمنطقة الدراسة. إنه لمن المتوقع أن التوصيات الخاصة بالدراسة سوف تزود الوكالات الحكومية والشركات الخاصة بمقترحات عن وعي المجتمع بالإدارة الساحلية والذي يعتبر جد مهم في تخطيط المناطق الساحلية وبيئتها بالإضافة إلى حزمة من البرامج التي تسهم في تفعيل دور المجتمع المحلي في إدارتها بشكل فاعل.

APPROVAL PAGE

I certify that I have supervised and read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Master of Urban and Regional Planning.

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DECLARATION

I hereby declare that this dissertation is the result of my own investigations, except where otherwise stated. I also declare that it has not been previously or concurrently submitted as a whole for any other degrees at IIUM or other institutions.

Mohammed Amer Younus

Signature…… Date……

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Affirmed by Mohammed Amer Younus

....
Signature Date

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I hope that this contribution to the theory and practice of local awareness in coastal management helps to build a road towards a further sustainable approach to coastal planning for the benefit of our coast and future generations and our role as Muslims to fulfill our commitment to Allah by protecting this earth.

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LIST OF ABBREVIATIONS

BP	Planning Block
CB-CRM	Community-Based Coastal Resource Management
CB-ICM	Community-based Integrated Coastal Management
CEC	Coastal Engineering Center
CETC	Coastal Engineering Technical Center
CM	Coastal Management
CRM	Coastal Resource Management
CRMPSJ	Coastal Resource Management Plan for South Johor
CZM	Coastal Zone Management
DID	Department of Irrigation and Drainage
DANCED	Danish Cooperation for Environment and Development
EIA	Environmental Impact Assessment
FAO	Food and Agriculture Organization of the UN
IAPG	Inter-Agency Planning Group
ICM	Integrated Coastal Management
ICZM	Integrated Coastal Zone Management
JSCC	Johor State Consultation Committee
KSNP	Kuala Selangor Nature Park
MDHS	Hulu Selangor District Council
MDKS	Kuala Selangor District Council
MOSTE	Ministry of Science, Technology and Environment
MPK	Klang Municipal Council
MPS	Selayang Municipal Council
NCECC	National Coastal Erosion Control Council
NPP	National Physical Plan
NSC	National Steering Committee
PU	Planning Unit

RFZPPN	Coastal Zone Physical Plan
UNCLOS	United Nations Conference on the Law of the Sea
USAID	United States Agency for International Development

CHAPTER ONE

INTRODUCTION

1.1 INTRODUCTION

This study emphasizes on the awareness and the involvement of community in the management of coastal area at the local level. Despite the fact that, various researches have been conducted out regarding the management of coastal areas, but there are many questions about how the local level such as local communities can be equipped with the practice of management of the coastal area, particularly in Kuala Selangor. With the increase of environmental issues, the need to control the adverse effect of global warming and the uncontrolled activities of the coast have all developed to the interests in studying the awareness and the functions among the local level communities.

More than 60 percent of the globe's population lives within 60 km of the coast (Post et al., 1996), included urban activities such as industrial facilities, agriculture, aquaculture, tourism, shipping, forestry and other various developments. According to FAO,(1998), The damages are happening increasingly not only because of fragility of populations, but mainly due to the development carried out in the coastal areas. Furthermore, there is much attractiveness for development of coastal areas for people, especially cities in coastal areas. The coastal city is the source of development for most of the coastal habitat. Unmindful developments of coastal areas whitin which cities sprawl are more vulnerable to environmental disasters.

The challenges are in some cases vast which vary from environmental exhaustion and degradation to management move toward problems and enforcement.

In addition, the difficulty of implementation, financial restraints and lack of skilled personnel which are being experienced at the district and local level have made it rather difficult at achieving a sound management of the environment in these areas. (Mariana M.O., 2008)

On March 11, 2011, Japan was hit by an 8.9 magnitude earthquake that caused great destruction. As a result of the earthquake, a tsunami broke out as well. A tsunami is caused by an underwater earthquake that happens because of the collision of plates ("Tsunami In Japan," 2011). Environmental degradation plays a critical role in triggering some disasters, and in making others worse. Catastrophes strike hardest the countries encounter by deforestation, erosion, over cultivation and over-grazing of marginal lands. The vulnerability to natural disasters is also growing due to increasing population and inadequately planned urban growth. The number and density of people living in cities within earthquake and tropical cyclone zones have risen dramatically in the past two decades (Programme, 2001).

Looking more specifically at the community dimension of Integrated Coastal Management (ICM), several authors e.g. Clark,(1996); Scura,(1992); and Sorensen,(1990) describe the overall goal of ICM as to improve the quality of life of the communities that depend on coastal resources as well as providing for needed development (particularly coastal-dependent development) while maintaining the biological diversity and productivity of coastal ecosystems in order to achieve and maintain desired functional and/or quality levels of coastal systems, as well as to reduce the costs associated with coastal hazards to acceptable levels (Visser, 2004).

In essence, this study provides a better understanding of awareness among the communities of Kuala Selangor being one of communities faced with economic development as well as its role as important part of State Selangor-Malaysia. Because

of this, there is the need for awareness of management of the coastal area so as to sustain these increasing trends in both the population and development in the area of study.

1.2 STATEMENT OF PROBLEM

Public involvement in decision making for numerous environmental impact is important for both local project issues and strategic planning (Petts, 1999). Cross boundary impacts are of particular concern with coastal processes where local solutions can pass on problems further along the coast or inland (King, 1999). Coastal areas and estuaries have complex dynamics and multiple effects on the natural and human landscapes that they influence. Because of these processes, people living in coastal areas have to adapt to change. Unless local people are aware of the changes, comprehend the processes and can be helped to adapt, there is always the potential for conflict with the powers that want to accelerate or impose changes that are not felt acceptable by the people living in the area (Guthrie et al., 2003).

Firstly, rapid urbanization and development in several of these local communities increase the challenges and necessitate the creation of environmental responsive solutions. Discussion is commonly what is perceived to acquire place at present and is a route that involves giving and receiving information and comments about proposals (Petts, 1999). Because of this active discussions, the range of environmental problems perceived to be major threats to human welfare has expanded considerably over the past two decades, from pollution issues at local, regional and then international scales, technical to widespread natural resource depletion and degradation (Colby, 1991). According to Lo, (1996) the urbanization of Kuala

Lumpur impact several district in Selangor state and that is include Kuala Selangor. Secondly, the key challenges facing local communities in practicing coastal areas management in Kuala Selangor are not only limited to integration, imposition of Federal and State laws, policies and regulations but also in the awareness of the said laws, policies and regulations embedded at achieving a sustainable environment. Coupled with human resources and qualified professionals available to meet the challenges at local level.

Therefore, it is the argument of this research that there is not enough awareness of some stakeholders and the lack of a more responsible approach can be the cause poor participatory approach on coastal management. Participation that allows a quantity of influence on decisions (Htun, 1988), that is perceived, allows greater involvement and a reduction in conflict over the coastal natural resources utilization. A good and successful environmental management exists when the awareness is perfectly presented to accommodate the issues and problems and when the programs and activities set are well implemented and enforced. As such there is the need to study the awareness of local level communities practicing integrated coastal zone management/coastal management in coastal areas. This research aims to suggest ways in which such lack of participation could be avoided and propose some recommendations for better participation which will result in greater involvement in the practice of coastal management in Kuala Selangor.

1.3 OBJECTIVES OF THE STUDY

Based on some of the issues highlighted in the statement of problems, the aim of the study is to analyze the awareness of local communities in practicing coastal zone

management in Kuala Selangor. In order to achieve this aim the following objectives have been formulated:

1. To provide a better understanding of awareness of the local communities in the coastal area of Kuala Selangor.
2. To identify the challenges or constraints on education impeding effective awareness of community practice on coastal management for the purposes of environmental protection.
3. To outline recommendations to improve the role and functions of the awareness on local communities in practicing Coastal Zone Management (CZM) or Coastal Management (CM).

1.4 RESEARCH QUESTIONS

Based on the aim and objectives of the study, research questions have been identified as follow:

1. What are the levels of awareness amongst local communities in managing coastal areas?
2. What are the constraints for local-communities impeding successful coastal environmental management programs initiatives/participation?
3. Which approaches are possible to achieve effective engagement of local-community on coastal management programs?
4. How the awareness of public on coastal management and the participation in coastal management can be improved?

1.5 SCOPE OF STUDY

The study is also based on data and information available, which includes various experiences and areas local people have been involved in over the period of time in Kuala Selangor.

Firstly, the study focused on key aspects regarding the awareness of local communities in coastal areas in Kuala Selangor about the management of its coastal environment. However, because of time limitation and availability of resources, a few areas/zones were focused upon for data collection.

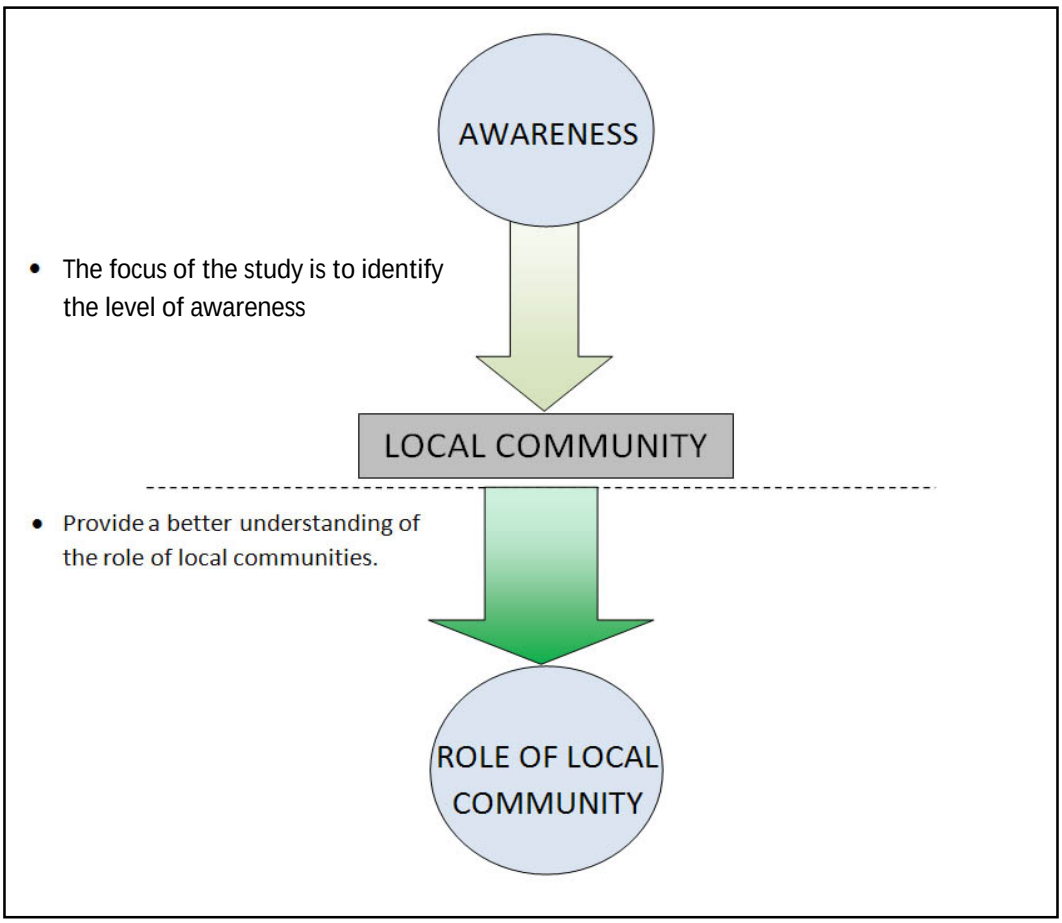

Figure 1.1: The Scope of the Study.

Secondly, the study looks into various roles of local communities coupled with human resources availability which include experience of each area regarding coastal environment, expertise and professionalism and availability of programs and activities carried out in managing the coast. These, together with other information available (level of education of community and local people, awareness on coastal environmental management and availability of training and its frequency among the public) and their various functions and roles, as well as the existing interaction within them, (Refer to Figure 1.1).

1.6 SIGNIFICANCE OF STUDY

There are reasons why I have chosen to focus on the roles played by local communities and their awareness on coastal management. Firstly, the coastal environment issue is a very dynamic one that concerns all. Secondly, the local communities have a very important role to play in the practice of coastal management since the direct consequences of the environmental crisis greatly falls on them. Furthermore, there is a need to find a resolution as to how the awareness of local communities can be improved and cooperation can be gained at solving the coastal environmental problems. This study also looks into impediments to effective awareness and coastal management at the practices of local communities.

1.6.1 Significance towards Planning

Community –based management approaches to planning are rely on the principles observed by local coastal communities in managing the resources upon which they depend. Community participation will help to ensure that the plan not only addresses

the full range of planning issues, but also engages local stakeholder support in implementing site-level activities, all of which contribute to successful short-and long-term outcomes. Coastal area management plays an important role in urban activities. There are many benefits in the planning context, especially on environment and economic sectors to ensure a sustainable development on local communities at coastal areas. In this study, awareness and participation of local community will be discussed to improve the planning process. Additionally, local community participation in planning and managing coastal areas provide a good platform for local community to show their role as effective stakeholder and improve the process of decision making. Hopefully, a partnership between local communities and local government in administrating coastal areas will flourish.

1.6.2 Significance towards Community

The community-based approach to coastal resources management is important for a better understanding of the concept of advancing practices of community's management (TEAM, 2001). Understanding of communities to the natural and dynamics of the coastal system is the right track for a successful coastal management. With community-shared responsibility is providing sufficient resource base for future generations, community based management has greater potential for effectiveness and equity (Ferrer, 1997). A fine implementation and enforcement of environmental related programs and activities also means the creation of a sustainable community and development. This will minimize any side effects of development on these areas and communities. People's participation in the management of resources also provides a sense of ownership over the resource which makes the community far more responsible for long-term sustainability of resources. There are two considerable

components of social sustainability that create its foundation. The first one, is social capital, or the investments and services that create the framework for society (Goodland, 2002). The second one and equally important component is human capital or the health, education, skills, knowledge, leadership, and available resources within a given community (Goodland, 2002). The importance of resources such as social and human capital is invaluable to coastal communities such as Kuala Selangor. The study emphasizes the importance of local community as stakeholder on coastal areas management. Identify the awareness as a major problem to be overcome is rational as local community needs to appreciate the purposes/reasons to attend programs on coastal management.

1.6.3 Significance towards Environment

As a result of the United Nation's Millennium Summit in September 2000, collaboration between American universities, the World Economic Forum, and the Joint Research Centre of the European Commission developed the most inclusive Global Environmental Sustainability Index to date (Peacock, 2008). According to this index, the environmental aspects of sustainability encompasses: environmental systems such as air quality, water quality, and biodiversity; environmental stressors such as human population growth, overfishing, freshwater, and ecological footprint; and environmental stewardship indicators that include greenhouse gas emissions, pollution, and conservations efforts (Peacock, 2008). The environmental components of sustainability are desirable to coastal communities such as Kuala Selangor. Environmental sustainability promotes positive outcomes that are enduring and support all aspects of life and society. An environmentally conservative society is by principle, based on conservation and reduced consumption of natural resources

(Trainer, 1995).

By integrating such components and aspects as those mentioned in the Global Environmental Sustainability Index with coastal natural resource policy and management, Kuala Selangor can ensure through this study a enduring and environmentally sound prospect.

1.7 STUDY STRUCTURE

The study is phased into four levels/parts which include the background and the theoretical studies, data collection and gathering, analysis of data and findings, and the conclusions and recommendations.

1.7.1 Background and Theoretical Studies

This part comprises Chapters One and Two which are mainly in determining the issues and problems that direct to the formulation of the topic of study, the analysis of the problem statements, objectives and scope. Chapter one gives a broad overview and introductory framework to the research problem, purpose, objectives, significance and limitations of the study. The Chapter Two discusses the literature review regarding coastal management in general, in relation to local-communities awareness, roles and practices as well as the education. The purpose of this is to provide a basic understanding and information of the concept underlying coastal environmental management in general.

1.7.2 Data Collection and Gathering

This level involves the collection of data consisting of primary and secondary data. Primary data is gathered through the survey conducted in the study area (Kuala

Selangor) which includes the questionnaires. While secondary data were sourced for through studies, reports, and other relevant information regarding the research. In this study, the questionnaires (Primary Data) were collected on field “face to face” to overcome any complication or misunderstanding that could happened. Furthermore, primary data were conducted for three days covering the coastline areas including Kuala Selangor Nature Park (KSNP). Additionally, the methods for data collection and data analysis will be discussed later in details in Chapter three.

1.7.3 Analysis of Data Findings

This part is related to how the data is analyzed, this is further discuses in chapter five of this dissertation. It discusses the results of the survey based on structured questionnaires and consists of analysis of data that is supported by the literature review. In addition, the primary data were analyzed using the Statistical Package for the Social Sciences (SPSS 17.0). Furthermore, the data were coded for the use of previous software and a scale of weight for answers applied as well for the ease of analysis, more will discuss in Chapter five.

1.7.4 Conclusion and Recommendations

The final part of the research is an outline of several recommendations and proposals as an outcome of the study conducted. It summarizes the awareness and direct involvement of local-communities at achieving best practices in coastal management towards sustainable protection of the environment at the study area. Figure 1.2 shows the structure of the study as previously mentioned.

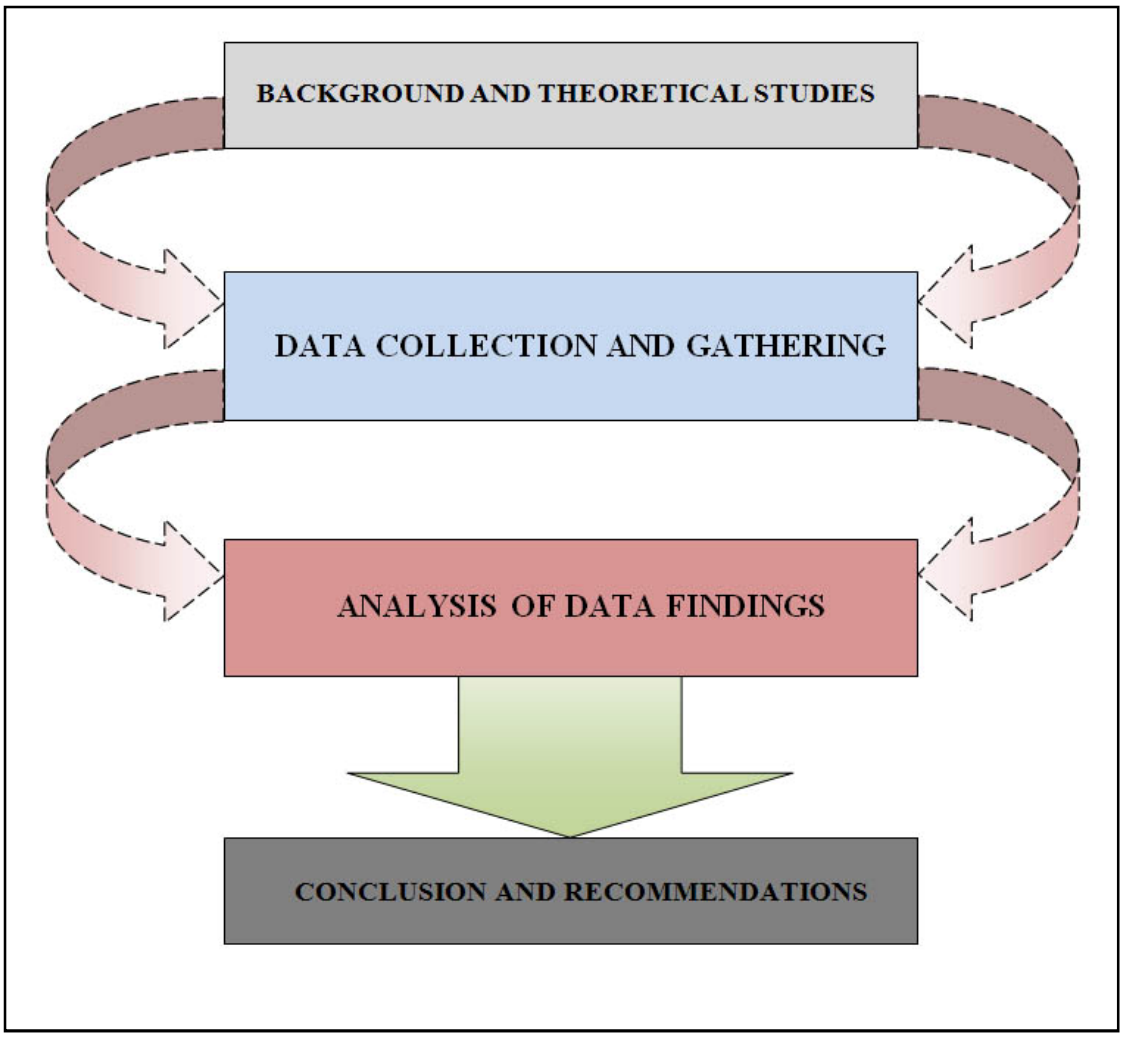

Figure 1.2: Study Structure (The Flow of the Study).

1.8 LIMITATIONS OF STUDY

The aim of this study is to analyze and to provide a better understanding of the level of awareness of local communities in coastal management. The first constraint is time. It is a challenge to complete the research as the study start from March, 2012 the second semester of academic year with five other courses and continues to a short semester with only one month to conduct the field survey in the study area. Yet another constraint is the slow response to questionnaires by the community of each

area; this coupled with manpower constraint affects the scope and width of the study. Nonetheless, the accuracy of the findings could be considered reliable although a larger sample would be more desirable. The density of the study which consumes much time in gathering primary data especially when is a tall order questionnaires are required and engaging longer time with each respondent.

1.9 CONCLUSION

This chapter provides an overview of the study regarding the awareness of local communities in the management of coastal area. It has clearly identified the issues and problems that led to the objectives of the study. The chapter also rendered the stages involved in the preparation to complete the study. The capacity of the study was also formulated as well as the formation of the research topic. Additionally, a broad viewpoint that can be derived from the literature review and this is the content of the Second Chapter.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

Based on the main objective of this dissertation, which is to develop a better understanding for awareness of local communities' participation on coastal management in Kuala Selangor, a review of relevant literature was carried out. There are fundamental ethical reasons why public participation should be carried out. Renn, Webler, & Wiedemann,(1995) stated that people learn democracy by being engaged in its workings and that it is an integral way towards admired sovereignty and political equity. Participation provides a level playing field for individual welfare and personal and social development. These ideas are necessary for people to see the justice in decisions made and be concerned in the process. Anyone should be allowed to participate, there is no single public excluded from participation (Roberts, 1995).

The United Nations Conference on the Environment in Stockholm in 1972 assisted, as the basis of awareness, for the need and significance of the environment, hence becoming a major concern for many governments. The conference shaped a situation where the environment emerged as a global issue together with the social and economic implications of resource use, environment, and development. Thereby making environmental programs and legislations to be developed and tailored with the context of creating an enabling environment, this usually involves not only the policy maker but the public being affected as well.

Coastal stakeholders are individuals or groups of individuals occupied in activities

which take place in the coastal zone. In many cases, the economic survival of such stakeholders depends upon the continued health and productivity of the coastal zone. Coastal stakeholders also include individuals or groups who place a high value on the aesthetic, touristic, and recreational value of the coastal area. It is important, therefore, that coastal stakeholders become intimately involved in the development and implementation of the CM process to the point that they feel an "ownership" in the process. Much of the drive and momentum necessary to initiate and sustain CM process must come from this group. The stakeholders must help generate the "political will" to take action among the government policymakers (Post, 1996).

This chapter discusses the literatures that are rational and important to the ideas of the study, it outlines some important considerations that have contributed to some of the approaches that have been useful at realizing a successful coastal environmental management at local level. It also delves into summaries and approaches to coastal management in Malaysia and the steps that have been taking so far at incorporating the practices of environmental management at the local level and some of the efforts at making a viable cooperation amongst the local-communities. A vast analysis and meaning of the 'term' "environmental management", "coastal area and coastal environment" and other various issues of significance and cases were embarked into based on literatures from diverse scholars and experiences.

2.2 THE DEFINITIONS AND TERMINOLOGIES

2.2.1 Coastal Area (Zone)

The definition of the coastal zone varies with each model reviewed. With value to the size of the coastal zone, there is a transaction between comprehensiveness (making it

bigger) versus political suitability and practicality (making it smaller) (Meltzer, 1998). In various cases, the 'functional' definition of the coastal zone bears no relation to the 'legal' definition. Coastal areas/zones are generally defined as the interface (boundary, line, edge) or transition areas between land and sea (FAO, 1998; N. Harvey & Caton, 2003; Kay & Alder, 1999).

Geographically, coastal zones cross social, economic and political borders. On the Caribbean coast of Central America there are significant coastal ecosystems that cross national borders, for instance, the Bay of Chetumal, from Mexico to Belize (Lock, 1997). Social and economic limits also separate the coastal zone where it is shared by villages, districts or individual communities. Planning and management of coastal areas therefore have to be considered at a variety of management scales.

The concept of the ‘coastal zone’ or ‘coastal fringe’ is vaguely defined. It varies not only according to the geographical area, but also according to the point of view of the different specialists. Clearly, the perception of the coastal zone will vary depending on the resource being considered. The standards of coastal zone delimitation vary, depending on different countries and regions. Hence, planners, geologists, ecologists, geographers, engineers, economists and oceanographers may use the similar phrase with different meanings, while they all have the same opinion about the significance of this zone for people. According to (Fabbri, 1998) a group of elements in the definition of coastal zone will be determined by the aim of the use of it as he said: “the boundaries of the coastal zone should extend as far inland and as far seaward as necessary to achieve the objectives of the management program.” (Fabbri, 1998:52). Within the management defined coastal zone there can be a variety of residential, recreational, industrial, commercial, waste disposal, agricultural, fishing, conservation and strategic actions (Ketchum, 1972). Many of these activities

participate for way in to or use of the coastal resources and people compete for priority above resource utilization (Turner, 1996).

Though many of the authors such as Peter (n.d) and Cicin-Sain (1998), agreed that while coastal area can be meant to be an entire area of the coast, coastal zone on the other hand is defined as an area that have been marked out for a particular program. On the other hand, (Kay & Alder, 1999), it explain that while Zone may indicate a geographically defined planning zone which has been known as component of coastal management process, the coastal area may not be defined and identified.

Hence, coastal zone management strategies for one politically-defined coastal area might not have enough jurisdiction over actions impacting on the coastal zone which are generated outside the region (T. Bower, 1998). This might source management problems if there is a big and various groups of coastal zone users acting within and outside the politically-defined coastal zone area (Tompkins, 2003).

According to (Kay & Alder, 1999), a simple definition rather than a complex one and concentrate on the issues of coastal management and its environmental issues are more important the argument on the definition of coastal zone/area.

2.2.2 Coastal (Zone/Area) Management

Definitions vary on what the ICM process is, but all fundamentally describe ICM as a process that recognizes the distinctive character and value of the coastal area (Kenchington & Crawford, 1993b; J. C. Sorensen, S.T. McCreary,, 1990). (N. Harvey & Caton, 2003) defined the Coastal management as "the management of human activities and sustainable use of Australia's coastal resources in order to minimize adverse impacts on coastal environments now and in the future". The coastal area is a dynamic zone of natural alter and of increasing human use. Coastal management

programs and activities commonly permit governmental and private sectors incentives. Open coastal areas are managed to decrease the amount of existence and commodity through such means as setback lines, limits on population densities, minimum building elevations, and coastal hazard insurance requirements . Resilient natural preserving features, much as beaches, sand dunes, mangroves, wetlands, and coral reefs, are preserved and improved, which also maintains life variety, painterly values, and rejuvenation.

Growth of land use planning in the late nineteenth and early twentieth century's also influenced coastal area management in developed and colonial 'new world' countries (Platt, 1991). Whereas coastal management is best as practiced as "place management" and responds to the requirements, priorities, and cultures of individual nations and particular sites, the fundamental goal remains constant and addresses the call to balance increasing human activities with the changes to ecosystem qualities that people make. Management of coastal areas involves quintuple problems, multiple desired (and often contradictory) outputs from and uses of inshore resources, differential productive capacities over space and time within any designated coastal zone, greater or lesser, linkages to upstream areas and beyond, various constituencies, and multiple institutions with varied tasks for aspects of management (B. T. Bower et al., 1994).

In the majority developing countries, the power and the responsibility to control such resources is not only vested in local institutions but in distant governmental agencies and powerful private interests. For development toward the goal of coastal management to occur, there should therefore be empowerment at the local level. In support of development toward the goal of coastal management to occur, there should therefore be empowerment at the local level. This awareness has

led to the strong emphasis on community-based management in a lot of developing countries. Developed countries' coastal areas/zone had been planned and managed with land use planning and environmental management techniques which had evolved within their diverse governmental and cultural settings (Kay & Alder, 1999). Each can be measured as an outline of coastal area management.

Additionally, unplanned urban development along coastal areas has subjected people to a variety of coastal hazards ranging from the slower processes of erosion to rapid storm damage and violent tsunamis. Intense conflicts over coastal resources grow as the dual forces of environmental degradation and population growth result in fewer and fewer resources being available to satisfy ever-increasing demands. Developing countries, in particular, are highly dependent on coastal resources. While the coastal zone covers just one tenth of the planet's surface, it is home to over half of the human population (Thia-Eng, 1993).

Unlike the Integrated Coastal Management (ICM) which will be discussed later, CM do not include any activities that has to do with coastal planning, its major focus is setting at a particular coastal goals or objects. The coastal planning unlike coastal management will include determining aims for what is to be achieved in the future, clarifying the steps required to achieve those aims (Kay and Alder, 2005). Thus, integration of this into the CM will require the participation of other departments that has something to do with the coastal area. However, to effectively manage the uprising problems of the coast there is the need to actively involve all the stakeholders that are into the day to day management of the coast, this is the rationale behind the integrated coastal management.

2.2.3 Integrated Coastal (Zone/Area) Management

Integrated Coastal Zone Management (ICZM) is a management procedure designed to address the complexities of interactions between humans and the coastal zone. More expressly, ICZM governs the interrelationships between human utilizations of coastal natural resources and the resulting environmental, economic, and socio-cultural impacts. ICZM operates according to principles of sustainable development and thus prioritizes environmental, social, and economic facets of coastal resource utilization. Furthermore, it aims to sustain the quality of natural resources for present and future generations of coastal communities (Navarro, 2000). The majority of conflicts and issues arising within the coastal zone are an outcome of resource depletion or degradation, or conflicts between resource users (Zagonari, 2008).

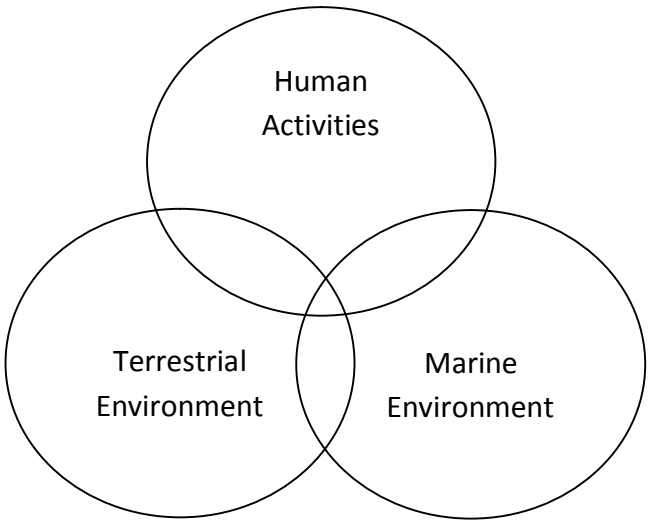

Figure 2.1: The interaction between the Marine Environment and the Terrestrial Environment is understood to be the *coastal zone*.
Source:(Cicin-Sain, 1998)

The concept of Integrated Coastal Zone Management (ICZM) shaped in the 1980s, was first defined properly at the Charleston Workshop in 1989 and entered the international political scene during tile Rio Earth Summit in 1992 (Billé, 2008). There is an interactions between human activities, the terrestrial environment, and the marine environment within the context of ICZM (Cicin-Sain, 1998). Figure (2.1) conceptualizes interactions of the relationships between the coastal zone, its resource system and resource consumers.

ICM is a process that considers and recognizes all the stakeholders involved in the day to day activities of the coast. There have been multiple definitions given by various scholars, the most accepted definition is given by (Cicin-Sain, 1998) the definition is given as "a continuous and dynamic process by which decisions are taken for the sustainable use, development, and protection of coastal and marine areas and resources". A brief history of humans in the coastal zone highlights earlier efforts to define, understand, and manage this complex ecosystem. The process of defining the components of offshore waters, including the coastal zone, began when policy makers and practitioners met at the first United Nations Conference on the Law of the Sea (UNCLOS) in 1956. At the first UNCLOS, terms such as a nation's territorial sea, contiguous zone, continental shelf, and the high seas were defined in an attempt to better utilize and protect the world's oceans (United Nations, 2010b). It is commonly accepted that the first formal effort to manage the coastline was initiated by the United States in 1972. Since then, there has been a worldwide movement through a diversity of approaches to integrate and implement coastal zone management. An official, international organization addressing global issues of oceanic and coastal management does not exist. Nonetheless, there have been many attempts at instituting an organization of such ability. The Global Forum brings governmental and non-

governmental organizations (NGOs), local groups, and individuals to the same table and encourages collaboration and cooperation of these stakeholders (Moksness et al., 2009).

A main part of the formulation of an ICZM agenda is the development of the specific policies and goals that are to be the central objectives of the ICZM program in question. Obviously, there will be a close association between the kinds of coastal problems that set off the need for an ICZM program and the policies and goals selected for that program. Nowadays, there is an obvious need to effectively and sustainably execute the principles and goals indentified by such international organizations to local communities. In an attempt to accomplish this, complexities of ICZM and natural resource management methods will be explored.

2.2.4 Concept of Integration in ICZM

Designing an effective institutional arrangement for ICZM is an important and challenging component of achieving integration. The 'Integrated' in ICZM refers both to the integration of objectives and to the integration of the multiple instruments needed to meet these objectives (European Commission, 1999 b). The integration principle was developed in Agenda 21 as a tool to pursue Sustainable Development in coastal zones. Integration can be seen as one of the tools or methodologies for realizing the goal of Holism -ideally meaning that all aspects of an issue or consequences of a decision are considered (natural sciences, economic, socio-cultural, legal, institutional questions, etc.).

According to Tanja Geis, quoting "If integration occurs at the level of trans-disciplinarily it can help to 'restore the paradox' of differing and contradicting realities, previously evaded by the traditional division of disciplines" (Tanja Geis,

2010). There are several dimensions to integration in coastal management (European Commission, 1999 b):

i. The horizontal integration of policies, management arrangements and development plans amongst different sectors, services and agencies at a given level of government (national, provincial, district and more local) as well as amongst interest groups with common interests in coastal areas and resources;
ii. The vertical integration of policies, management arrangements and development plans from national through to local levels of government, including community based approaches to coastal management;
iii. Geographical or territorial integration**,** taking into account the interrelationships and interdependencies (physical, chemical, biological, ecological) between the terrestrial, estuarine littoral and offshore components of the coastal zone;
iv. Integration over time, the consistent integration of sustainable development plans and management strategies through time;

Kenchington and Crawford, (1993b) differentiate integration from coordination, explaining that a coordinated system is comprised of independent, generally equivalent components working to a common purpose, whereas an integrated system is complete or unified although it will generally have subordinate components (Kenchington & Crawford, 1993a). It is more accurately reflects the political context within which ICZM occurs – that is, the hierarchy of central-local government and strategic policies – area/sector plans.

Finally, there is 'competing use' integration. This is the practice by which trade -offs

between competing uses are rationalized. These categories all overlap to some degree. In the context of ICZM the descriptors for integration are 'vertical' integration and 'horizontal' integration (J. Sorensen, 1997). Horizontal integration is the integration of the separate economic sectors of a nation – what Vander Zwaag refers to as 'external' integration. Vertical integration is integration of the 'levels of government and nongovernmental organizations which significantly influence the planning and management of coastal resources and environments (J. Sorensen, 1997).

Whether integration embraces all categories or is only partial depends essentially on the political nature of the particular government. However, both vertical and horizontal integration is essential for ICZM. For any successful CM program there must be a viable and well planned integration policy or statement which allows all the members and stakeholders involved to participate effectively and efficiently based on the integrated act or statement.

2.3 THREATS, ISSUES AND ENVIRONMENTAL PROBLEMS OF COASTAL ZONES

The three drivers of environmental alter are climate change, population growth and economic growth result in a range of pressures on our coastal environment (Mike, 2008). Globally, the threat of climate change is one of the most concerning pressures on coastal communities. It brings into focus all other aspects of the resilience of coasts, because it potentially affects their economic, social, cultural and environmental assets and processes. Concern about changes in the size and composition of coastal populations has also been growing for several decades. Urbanization and coastal development for farming and industry are a major pressure on terrestrial and marine

biodiversity and environmental quality, water resources, air quality, and cultural and natural heritage.

A particular concern is the incremental nature of coastal development, which reduces the abundance of native vegetation and breaks down connectivity among remnant habitat patches. The cumulative effects of coastal development are rarely considered.

Coastal habitats at the interface of land and sea are subject to threats from human activities in both realms. Researchers have attempted to quantify how these various threats impact different coastal ecosystems, and more recently have focused on understanding the cumulative impact from multiple threats. Many of the associated threats of the coastal cities and areas have been discussed in many literatures with their various adverse effects on both the physical and natural environment. Some of these threats and problems are briefly highlighted as part of the literature review. The major environmental threats and problems are:

2.3.1 Coastal Erosion

Coastal erosion is common phrase referring to the loss of sub aerial landmass into a sea or lake due to natural processes such as waves, winds and tides, or even due to human interference. Coastal erosion is a global problem; at least 70% of sandy beaches around the world are recessional (Bird, 1985). Coastal erosion, or coastal instability, threatens property and businesses and puts people living near cliffs and shorelines at risk. The great concentration of national resources in coastal zones makes it imperative that coastal change is well understood. The character and shape of the coastline is controlled by many factors including: Geology, Climatic and oceanographic processes and Human intervention. Some factors, such as periods of

increased rainfall, storminess, or sea-level rise may increase rates of change. In Malaysia, A total of 1,300km or 29% of the country's 4,800km of coastal areas are facing serious problems of erosion (Anonymous, 2010). Development within coastal areas has increased concern in erosion problems; it has led to key efforts to manage coastal erosion problems and to restore coastal capacity to accommodate short and long-term changes induced by human activities, extreme events and sea level rise (Prasetya, 2006).

It is known for a fact, that coastal forests and trees provide some coastal protection and that the clearing of coastal forests and trees has increased the vulnerability of coasts to erosion. Nearly 30 percent of the Malaysian coastline is undergoing erosion (Othman, 1994). Many of these areas are coastal mudflats, fringed by mangroves. Behind the mangroves there are usually agricultural fields protected from tidal flood by bunds. Locally, mangroves are known to reduce wave energy as waves travel through them; thus, the Department of Irrigation and Drainage has ruled that at least 200 meters of mangrove belts must be kept between the bunds and the sea to protect the bunds from eroding (Prasetya, 2006).

Coastal erosion is natural processes; however, it may become a problem when exacerbated by human activities or natural disasters. Coastal erosion is widespread in the coastal zone of Asia and other countries due to a combination of various natural forces, population growth and unmanaged economic development along the coast.

2.3.2 Flood Risks

Flooding is another key threat to the coastal areas. Floods are one of the types of disasters more frequently occurring, compared to earthquakes, volcanic eruption, drought and landslides. Floods are even occurring more frequently in the present days.

Flooding from coastal waters is a natural phenomenon that cannot be completely prevented. It occurs when the capacity of a watercourse to convey water through an area is exceeded or when the volume of sea water arriving on land exceeds its capacity to discharge it. It may also result simply from the accumulation of rainfall on low-lying ground. The man-made environment can exacerbate the consequences of flooding, for example, where development in a flood plain places buildings and people at risk or by building in areas where existing drainage infrastructure is inadequate (Habitat areas/Urban).

The effects of flooding on human activity are wide ranging, impacting on the economy, social wellbeing and the environment. For individuals and communities the impact can be significant in terms of personal suffering and financial loss and, even where flooding has natural causes, it can have damaging effects on the environment. Climate change is expected to increase flood risk, indeed the experience of recent years suggests that the incidence of flooding in the Region, as at national and global level, is already increasing.

Flooding is the most significant natural hazard in Malaysia in terms of population affected, frequency, area extent, flood duration and social economic damage. However, the cause of the flooding is mainly comes from the rivers as the rainfall increase the level of river water. In Malaysian coastal areas, flooding could be attributed to high tides and occasionally aggravated by heavy rains or strong wind. In the last decade, also of great concern is the increased occurrence of other flood-related disasters such as debris flood flow, mud flow and landslides in mountain streams and hill slopes, not to mention the new threat of tsunami-induced coastal flood disasters. During the extreme floods in Johor in December 2006 and January 2007 recently, a number of unexpected situations arose which are important lessons to be remembered

in flood management (Husaini, 2007).

The fact that coastal flood can be solved by raising the awareness of the community on coastal areas through programs on flooding and flooding mitigations. The community will then realize that this risk must be taken care of and they will be able to determine the action needed to be executed. If community confrontation is improved, flood mitigation can be minimized and the level of damages will be drastically reduced.

2.3.3 Land use Impact and Coastal Population

Since the process of urbanization is a continuous process, these problems of the coast are expected to increase with growing urbanization, industrialization, and transportation, putting even greater pressure on the living and non-living resources of the coastal ocean (Mike, 2008). Dr.Walkden Mike estimated that about 60% of the world's human population lives close to the coast, within about 100 kilometers of the shore. The average population density in coastal areas is about 80 persons per square kilometer, twice the world's average population density (Creel, 2003). The further demands that high population density spaces on the coasts have meant that higher density is associated with enlarged risks to marine ecosystems. In addition, higher population densities may have the most affects on the coastal areas/zone make greater pressure on the coastal environment that ultimately increases levels of environmental contamination. The increasing population of the coast as a result of the economical activities and other development is a major threat rather than benefit to the coastal environment. Most of coastal lands are suitable for more than one use. Hence, many diverse uses of limited land created land use conflict. Many studies have highlighted these conflicts. Coastal zones are a focus of major economic, industrial, recreational,

and social activity. Rapid coastal development has placed greater pressure on coastal resources and presented significant challenges to coastal sustainability. Since local coastal zone land use planning is directly connected to coastal resources and land development, it significantly impacts state and national interests. Local coastal zone land use plans can identify and address critical issues including coastal resources, sensitive lands, hazards areas, coastal access, use priorities, and significant impacts of development on coastal zones (Tang, 2008).

2.3.4 Other Threats

The future threats to coasts are the combination of threats to marine environments, and risks to estuaries and the terrestrial environments that stretch to the sea. Along the coasts, these risks are likely to be additive and sometimes interactive (e.g. pollution coming to the coast via rivers can interact with oceanic weather events). In addition, there are two other major impacts of population increase on coastal areas are tourism and recreation. Interactions between coastal development and tourism can be complex. For example, tourism has the potential to support good management of coastal areas if incentives and regulations are adequate to encourage reinvestment of some revenue in the environment. On the other hand, there can be conflict between tourism development and residential development in coastal areas. Residential and retirement development sometimes undermine tourism appeal or values.

Due to rapid development along the coast together with other natural disaster and man-made activities, the biological components and structures of the coastal zone have disintegrated, according coastalwiki.org on their site "the composition and structure of the fauna, flora and habitats of coastal Seas has been changing at an unusual rate in the last few decades, due to changes in the global climate, invasive

species and an increase in human activities". However, coastal biodiversity is important both globally and nationally. It is important to the world because of its uniqueness and its global significance. Conservation efforts should be encouraged to reduce the impact of coasts rapid development on the coastal biodiversity (Australian State of the Environment Committee, 2011). Furthermore, there are many other threats have impacted the coasts as part of human activities and one of the most important activities is the industrial one. Industrial activities are varied and it creates a conflict along the coasts due to economical benefits to the communities on the other hand, its impact on the coastal environment. One of the most destructive industrial activity on the coast nowadays recognized by the researchers worldwide is a ship-breaking yards Many ship breaking yards in developing nations have lack or no environmental law, enabling large quantities of highly toxic materials to escape into the environment and causing serious health problems among ship breakers, the local population, and wildlife. Environmental campaign groups, such as Greenpeace, have made the issue a high priority for their activities (VolgaFlag, 2002).

2.4 MANAGEMENT ISSUES IN CM AT LOCAL LEVEL

Local level management can both conserve and provide for productive use of natural resources over long periods of time. However, natural resource management has largely shifted away from local communities to centralized government. It is important to start any process on coastal resource management to have political and institutional obligation at the national and local levels from that will develop policies and action plans for more sustainable management of coastal resources (Chua & Pauly, 1989). Local level provides a better understating to the issues and problems on

coastal areas/zones. It is the responsibility of local government to make sure that public expectations meet the larger planning goals of the community. There are many issues on management at local level such as financial problems, jurisdictional overlap, lack professionals and inappropriate mechanism. However, the main challenge at local level is the coordination. Participation on coastal management requires control and flexibility at the community level.

2.5 COMMUNITIES RESOURCES MANAGEMENT

Successful coastal management requires an understanding of the nature and dynamics of a coastal system, i.e. the physical, chemical and biological interactions that take place on and around the coasts, the requirements and perceptions of the coastal users, economic and tourism interests and environmental protection measures. Inevitably, there are conflicts between these elements, although many of these conflicts can be resolved through effective communication at an early stage, through information and, above all, active participation of all parties, particularly the public (Bartram, 2000). The community can take an active role in a variety of practical activities concerned with coastal management. The participation of the public/local-community helps to raise awareness of coastal resource management.

2.5.1 The Concept of Community Management

Management of course is an ongoing system involving data collection and generation, concurrent with studies on the varied aspects of the holistic environment. .The understanding of community dynamics and its link with the management of coastal resources craves for social science research methods that are underemployed in many

coastal resource management (CRM) strategies.

The past three decades of development in Asia have seen the growing role of central government on the management of local resources (Korten, 1989). Where once the management of small irrigation systems, forest areas, grazing lands, or coastal fisheries was primarily determined by local custom and control i.e. by the people using the resources, today we see a variety of national laws, policies and programs directly affecting communal resources. Present environment of coastal and marine resources in Southeast Asia indicate a high level of degradation primarily from destructive fishing practices, overexploitation, siltation/sedimentation (i.e., stream bottom deposits), pollution, and habitat loss. These problems often result from a lack of an integrated framework for coastal and marine resource protection at the national and local level, low level of public awareness, and economic hardships in coastal communities (Department of Environment and Natural Resources, 2001a).

2.5.2 Community

The Department of Environment and Natural Resources,(2001b) defined the Community as "A unified body of individuals, often of different economic classes, clans or family groups, ethnic groups, gender groups, and other interest groups bound by a geographical area and sharing elements of common life such as customs, manners, traditions, and language. Community can also refer to individuals and groups linked by common policies and interests not necessarily in a similar geographical area." The idea that communities can somehow provide people a channel through which to engage with each other and to negotiate power dynamics with authorities outside of this space remains crucial to the understanding of the term. The concept of community is the basis for identifying groups granted inclusion or

exclusion responsibilities, rights and privileges in participation and access to resources. Consequently, it is critical to look into how the literature has pictured what a community is made of, how the community is organized and how this information would ultimately lead to identifying ties that attach the community mainly with regard to coastal resource use and management.

Coastal resource users are not fishery community only. There are also tourists, divers and beach resort operators...etc. Additionally, in a particular locality, community members may be composed of both resource users and non-users. Hence, the community is really a complex entity. (Agrawal & Smith, 1997) defined community as one of the following ways: (1) community as physical entity; (2) community as homogeneous," social structures; and (3) community as a set of shared norms.

2.5.3 The Relationship between Community and Stakeholders

The involvement of stakeholders in environmental decision-making is recommended by a number of international instruments. More importantly, it is fundamental to the inclusive, holistic and systemic approach that is inherent in ICM. Experiences in many countries also confirm the importance of taking great care to ensure the early and effective involvement of all parties with an interest in the coast. This may include individuals, public bodies at the national, regional and local levels, businesses, nongovernmental organization, indigenous and local communities, and representatives of user groups such as fishers, tourism operators, and property owners. Stakeholder identification should also be carried out early in the process, (European Commission, 2001). Concerns and values are identified to reduce misinformation. Information should be exchanged at this stage in a two way dialogue that maintains credibility and can improve decision making. There is a need to find a common language and a need

to listen and consider the incorporation of ideas. The process should be proactive not so reactive for greater success (Roberts, 1995).

There may be many different types of stakeholders that must be considered in the CRM process. Identification of stakeholders is an inventory of all persons, groups, and subgroups, organizations and institutions that will be involved in any way in the CRM project or planning process. Not all stakeholders though have the same "stake" or level of interest in coastal resources and thus some may be less active or not active at all. The public involvement of stakeholders in development projects is widely recognized as a fundamental element of the process. Timely, well- planned, and well implemented public involvement programs have contributed to the successful design, implementation, operation, and management of proposals (World Health Organization, 1996). Over the past several decades, traditional top-down, agency-driven decision-making in natural resource management has generally moved toward processes that involve stakeholders (those who have an interest in or are affected by a decision) and acknowledge the importance of public attitudes, perceptions, beliefs, and knowledge. Over the past several decades, traditional top-down, agency-driven decision-making in natural resource management has generally moved toward processes that involve stakeholders (those who have an interest in or are affected by a decision) and acknowledge the importance of public attitudes, perceptions, beliefs, and knowledge.

Identification of stakeholders is an inventory process of all persons, groups and subgroups, organizations and institutions that will be involved in coastal area/zone management or planning process. Not all stakeholders have the same "stake" or level of interest in coastal and marine resources and may be less active or not active at all. But knowing what a stakeholder *is* doesn't always help you to identify the

stakeholders for a given issue or resource. For example, broadly identifying stakeholders in the health of the nation's coasts is particularly formidable because of the seemingly endless list of people who use coastal resources, either directly or indirectly. (Claridge & O'Callaghan, 1997) defined the categories of stakeholders as Table 2.1 shows below.

Table 2.1
Categories of Stakeholders

Stakeholders	Definition
Local User Communities	People of these communities live in and around mangrove habitats, directly using the resources like fishes and other animals as food, wood as fuel, leaves and young shoots as fodder.
Local Community	People of this community do not use the mangroves as resources, but they live within the mangroves to get protection against cyclone, seawater intrusion etc.
Remote User Communities	People of these communities hail from faraway places and use resources *e.g*. swamps and cleared areas for fish/prawn farming.
Government Agencies	They have the responsibility for managing and protecting mangrove resources *e.g*. fisheries, forest, tourism *etc.*
Supporters of Mangrove User Communities	These belong to non-governmental organizations (NGOs) and voluntary agencies.
Research and Academic Institutions	They monitor the state of health of the mangrove forests and their communities on a continuous basis

Source: Interpretation of Author to (Claridge & O'Callaghan, 1997)

In addition, there are many ways to gather data for a stakeholder analysis. Secondary information sources such as Web sites, newspapers, public records, organizational publications, reports of other decision-making processes, and a host of other written materials can offer a great deal of information about groups and

individuals. Furthermore, individuals who are thoroughly familiar with local social and political landscapes may be capable to provide information on stakeholders. Evidently, direct communication with stakeholders through interviews, surveys, attendance of stakeholder functions, or other data collection methods might yield the most accurate and in-depth stakeholder analysis.

2.5.4 Community-Based Coastal Resource Management (CB-CRM)

'Community based' management is a form of participatory management, where the community has the total responsibility of managing the resources (Fisher, 1995). Between 1984 and 1994, 15 CBCRM programs (defined as a large-scale development activity with multiple objectives and sites to be achieved over a long time period) and 28 CBCRM projects (defined as a specific and time-bound set of activities to achieve a given objective within a designated geographic location) were implemented (Pomeroy & Carlos, 1997). Community-based coastal resource management involves numerous types of interventions. All CBCRM activities entail some form of partnership or collaboration between the project initiators, stakeholders and other interest groups.

There is an increasing demand from the public, private, and government sectors for a coastal resource management regime that ensures quality of coastal natural resources while meeting the needs of the people it serves. It is the objective of integrated coastal zone management to meet the needs of the environment and humans by implementing holistically structured coastal natural resource plans. An innovative and locally-based form of ICZM is Community-Based Coastal Resource Management (CBCRM). CBCRM focuses on local resource management needs of a specific community while giving individuals of that community a decision-making role in the

management and use of those coastal resources. Furthermore, CBCRM seeks to implement management practices that simultaneously benefit community members and sustainably manage local coastal resources. A core objective of CBCRM is working towards an ultimately sustainable and prosperous future for the members of a particular community. CBCRM places certain priority on community-level management of the coastline and its natural resources. CBCRM is based on the belief that a local community has the most to lose or gain from a natural resource management plan (Hildebrand, 1997). It is being implemented in coastal settings globally, and is a natural resource management regime operating on the principle that individuals, groups, and community organizations have a significant role, responsibility, and share in the resource management and decision-making process (Hildebrand, 1997). Furthermore, CBCRM looks to build and improve upon the already existing human and natural capital, knowledge, and capabilities of a specific community. It is based upon practices and principles that aim to decentralize and strengthen the management of a coastal community's natural resources (Tulungen et al., 1998).

The principles of community-based management are especially suited to the coastal zone. Therefore, there is an important and pressing need to address small-scale and local problems in order to ultimately find solutions to the larger challenges. As mentioned by (Viles & Spencer, 1995) in their writings on the interactions between society and the physical components of the coastline, many overarching coastal issues are caused by a synergy of smaller scaled problems (Viles & Spencer, 1995). CBCRM"s inherently focuses on local needs and therefore has the potential to address imminent challenges on a smaller scale while generally working to address overall issues. ICZM can be approached in two ways: top-down and bottom-up. These terms refer to the source of leadership and initiative in a coastal management regime.

Because CBCRM is a participatory and community-focused form of resource management, it falls under the bottom-up approach. It should be noted that in many cases, any combination of these two management forms can exists. Namely, there is a continuum between top-down and bottom-up approaches with a corresponding range of government involvement in coastal management (N. Harvey et al., 2001).

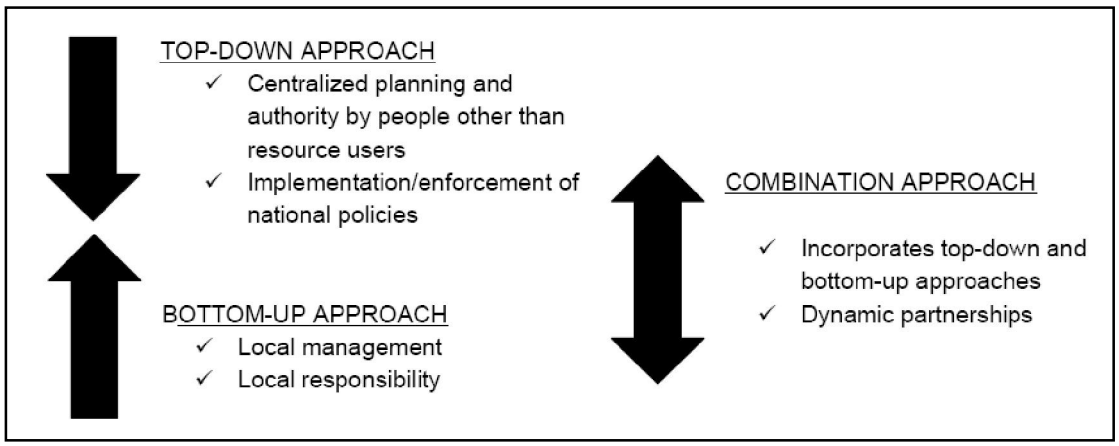

Figure 2.2: The Three Management Approaches to Coastal Management.
Source:(National Oceanic and Atmospheric Administration, 2005)

The most commonly referenced examples of ICZM and CBCRM are from countries such as Australia, Brazil, Norway, the United States, the Netherlands, Denmark, Japan, and New Zealand. Within their ICZM regimes, regional and local initiatives and power sharing exist. A tripartite relationship between government (particularly legislatures), public/private agencies (which ideally ought not be too involved in politics or policy-making outside their areas of expertise), and communities. Government should provide support for the ambitions of agency administrators as well as coastal communities. Politicians in turn draft legislation friendly to the coastal community, provide funding to the public/private agencies, and

may even include "earmarks" for specific projects, often designed to benefit specific political patrons.

In these cases, it is agreed among researchers that in order to encourage local stakeholders to value coastal quality, a bottom-up or participatory based approach should be taken. Community based management approach is argued to be the best approach for the authorities to reach out the local communities yet there are several gaps according to Nurhidayah, (2010):

i. The Implementation gap.
ii. Lack of enforcement (Remote areas).
iii. Financial constraints.
iv. Governmental support.
v. Lack of public awareness.

Community based coastal management should be improved and supported by Government. Bottom-up community based approaches should be supported by Government and top-down approaches should also include local people in its planning and implementation. Many marine protected areas are not successful because local people not included in the planning, implementation, monitoring, and evaluation process. Many local Governments remain confused about the model of management of conservation areas and not sure how to involve local people in management of marine conservation area. Moreover, community based is not only limited to the management of the conservation areas or marine protected areas but also includes zoning; coastal resources management and other problems that need to be address and managed in coastal areas. Last but not least, Table 2.2 shows the summary of features, functions, and challenges of CBCRM.

Table 2.2
CBCRM Features, Functions, and Challenges

Key Features of CBCRM	Function/Result of Key Feature	Challenges
Resource users become directly involved in the management decision-making process.	Delegation of regulatory functions to local organizations resulting in locally collective role of authority (Jentoft, 2000).	Achieving a representative and collective body of decision-makers.
Involves the community as a whole in the management of its resources.	Strengthens sense of stewardship and collective responsibility for the quality of the region's natural resources.	Establishing collective goals and subsequent prioritization of these.
Community level implementation.	Creates a self-enforcing system.	Need for ICZM expertise.
Supports a continued appreciation for coastal natural resources.	Re-enforces already existing direct values that are associated with the goods and services provided by the surrounding ecosystem.	When environmental stewardship is not a priority or destructive behavior is present, a general lack of enthusiasm and cooperation from community members may result.
Supports community integration.	Creates equal opportunity for collective action (Jentoft, 2000).	Pre-existing social divides may present challenges for community integration.
Specific Features		
Maintains the specific needs of a given community throughout the management process.	Ensures that large-scale or long-term projects that may be environmentally degrading are not successfully implemented in developed countries.	Requires stakeholders to associate direct values to coastal improvement projects (Zagonari, 2008).
Reduce government incentives to over-invest in coastal resources such as fish stocks and other marine resources (Govan & Hambrey, 1995).	Increases resource ownership and personal stake in the given resource (Govan & Hambrey, 1995).	Creation and initiation of policy that results in these outcomes.

Seeks to promote viable coastal communities that sustainably manage coastal resources.	Positive outcomes on the local ecosystem health and the quality of social and economic components of the local community.	Environmental, economic, and socio-cultural externalities would prove challenging when attempting to achieve such an intricate and delicate Balance.
Builds rapport, networks, education and social responsibility for natural resources.	Contributes to a larger, collective goal of sustainable community development (Jentoft, 2000).	The actual process of creating such networks and educational initiatives can be costly, complicated, and time consuming.
Partner organizations initially serve as co-managers of ICZM projects, and subsequently withdraw to allow for further empowerment of the community (Alcala, 1998).	Creates a support system for the community during initial implementation and ultimately, places the responsibility in their hands.	Supporting and maintaining (logistically and monetarily) local partner organizations in the co-management of ICZM projects.

Source: Interpretation of verity of literature Review, done by the Author, 2012

2.5.5 Community-based Integrated Coastal Management (CB-ICM)

Community-Based ICM has become a hot topic among policy makers, development workers and academicians in the last 10 years. Community-based ICM is recognized globally as an integral feature of integrated coastal management. There are numerous and varied examples of CB-ICM programs ranging from community-driven models to government-implemented and coordinated ones. CB-ICM has been used to suggest a number of meanings, layers and dimensions, but the common denominator is placing a premium on communities and the central roles they play in coastal management.

The value and wisdom of CB-ICM lies in its recognition that communities are legitimate and important partners, since they have the biggest stake in the sustainability of coastal ecosystems.

However, J. Harvey & Coon, (1997) noted that little objective evaluation has been undertaken on such coastal programs so there is limited information about the performance of these community-based initiatives. the value of and benefits to be gained through government-community collaboration and power sharing in coastal management.

2.6 PARTICIPATION IN COASTAL MANAGEMENT

Anyone should be allowed to participate, there is no single public (Roberts, 1995). Participatory approaches allow greater community (direct or indirect) involvement in the policy formulation and decision-making processes or the technical aspects of the functions of the central authority (Imperial, 1999). Participation in the CM decision-making system by expert and non-expert stakeholders has a broadly acknowledged potential, but in practice the implementation of participatory roles varies greatly from country to country (Moran, 1997). The traditional resource-management systems are often community-based. CB-ICM is growing rapidly in developing countries where there is a reliance on coastal environments for food and livelihoods and where there is increasing pressure of population growth and over-exploitation of coastal resources. Decentralized approaches work better when there is a tradition of local autonomy or where local institutions are already in place. In settings in which there is a history of local collective self-management, these traditions can often be effectively revived and strengthened for contemporary management needs (Lowry et al., 1999).

2.6.1 Community Participation

Community involvement in decision making for environmental impacts is important for both local project issues and strategic planning (Petts, 1999a). Coasts and estuaries have complex dynamics and multiple effects on the natural and human landscapes that they influence. It is due to these processes that people living in coastal areas have to adapt to change. Unless local communities are aware of the changes, understand the processes and can be helped to adapt, there is always the potential for conflict with the powers that want to accelerate or impose changes that are not felt acceptable by the people living in the area (Guthrie et al., 2003).

(Brand, 1983) defined 'community participation' as the practice of involving as many people as possible through consensus building workshops in the planning and implementation of environmental change to a specific area in a community'. Moreover, to guarantee the community's participation there are several keys requirements:

- **Locality:** The project area/site should be poorly-utilized, environmentally- deteriorated and people should be familiar with the problems of the site/area;
- **Participation:** The project should encourage the participation by the maximum number.
- **Expertise:** The knowledge of local people should be recognized and they should be enrolled as potential experts;
- **Design:** Participants should be encouraged to articulate their ideas and the design of the project should be based on such ideas;
- **Economics:** Participants should be made aware of the costs of implementation and the potential for financing implementation;

- **Structure:** The project should be structured so that decisions are implementable and results are perceivable.

The issue of local community participation is complex. There are various forms and degrees of participation. Some forms of participation may be included in consultation, decision making or in program implementation (Mam, 1996). Examples of involving the public in government decisions include public hearings, public surveys, public initiatives, negotiated rule making, citizens review panels, the notice and comment process, providing the public standing to sue, and many others. Researchers have found that managers should not be constrained by mandated methods of public involvement. Rather, they should choose methods appropriate for each situation (Creighton & Hudson, 2001). Participation is described as a process of engagement, where people are enlisted into the decision process to contribute to it (Petts, 1999a). Community's participation is encouraged because of the benefits it produces in the decision making process. Some of these benefits are the possibility to convey information about the development, clear up misunderstandings, allow a better understanding of relevant issues and how they will be dealt with, and identify and deal with areas of controversy while a project is still in its early planning phase (Glasson et al., 2005).

'Participation' was first advocated in the context of development authorization in the 1950's due to failed development policies which were thought to lack integration of public concerns throughout their planning. Thus, participatory methods were encouraged as fundamental measures of development (Rahnema, 1992). 'Participation' has been widely used in the context of environmental management to incorporate public interest in the environmental decision making. Public participation

as key to improving the decision-making processes was further promoted in the early 1990's. Specifically, in the context of risk management and communication, local environmental improvement and sustainable development as translated by Local Agenda 21, following failures in decision-making in these areas, signaled by continuing public opposition to development projects. As a result, participation proposed emphasis being placed on considerations of interests of the affected parties and consensus building among developers and pubic interests (Petts, 1999a).

There are concerns that public participation can be wrongly used as a 'control tool' by governments and private interests to promote greater productivity at low labor cost, while controlling the risks associated with 'unruly participation' such as protests and other violent acts expressing public opposition (Rahnema, 1992). The moral use of participation, as advocated by political and social scientists, attaches morality to democratic governance giving individuals the right to be informed, consulted and to voice their opinions on issues that affects them directly (Petts, 1999b).

2.6.2 Pyramids, Ladders and Wheels of Participation

The fact that the relationship between governments and community-based organizations can take many forms, each with their own implications for collaborative management and power sharing. Furthermore, the nature of this relationship may vary over time and with the needs and expectations of both communities and governments. During the history of its development and in the different contexts where it has been applied, participation has become loaded with ideological, social, political and methodological meaning, giving rise to a wide range of interpretations (R. L. Lawrence & Daniels, 1996). Most students and practitioners of public involvement first became aware of this government-community power-sharing relationship through

a seminal article by American planning theorist Sherry Arnstein (Arnstein, 1969) in which she described a 'typology of citizen participation' that gives citizens varying degrees of power along a 'ladder' of citizen participation. In her ladder, she distinguished eight levels of public involvement that can greatly vary depending on the role and power of citizens in the decision-making processes. (Rodal & Mulder, 1993) Emphasize that these categories are not rigid and there is considerable overlap among them, while (Pretty et al., 1995) and Goetz and (McGarvey et al., 2001) noted that numerous alternative terms have been suggested for the different rungs of these ladders.

Arnstein's (Arnstein, 1969) adapted model (Petts, 1999a), shows participation moving towards more power to the citizen and control of the decisions made. The further up the ladder the more power and control the citizen has. By inference and backed up by some research carried out by (Poortinga & Pidgeon, 2003) there is a tendency for a greater level of participation to lead to a greater level of trust. Lack of power leading to lack of trust was also identified by O'Riordan & Ward,(1997). Trust, like communication between stakeholders, is a two way process .There can be much distrust of government and statutory agencies and developers. The way the discourse is carried out between the developer or planner and stakeholder public can very much affect the success of the participation exercise.

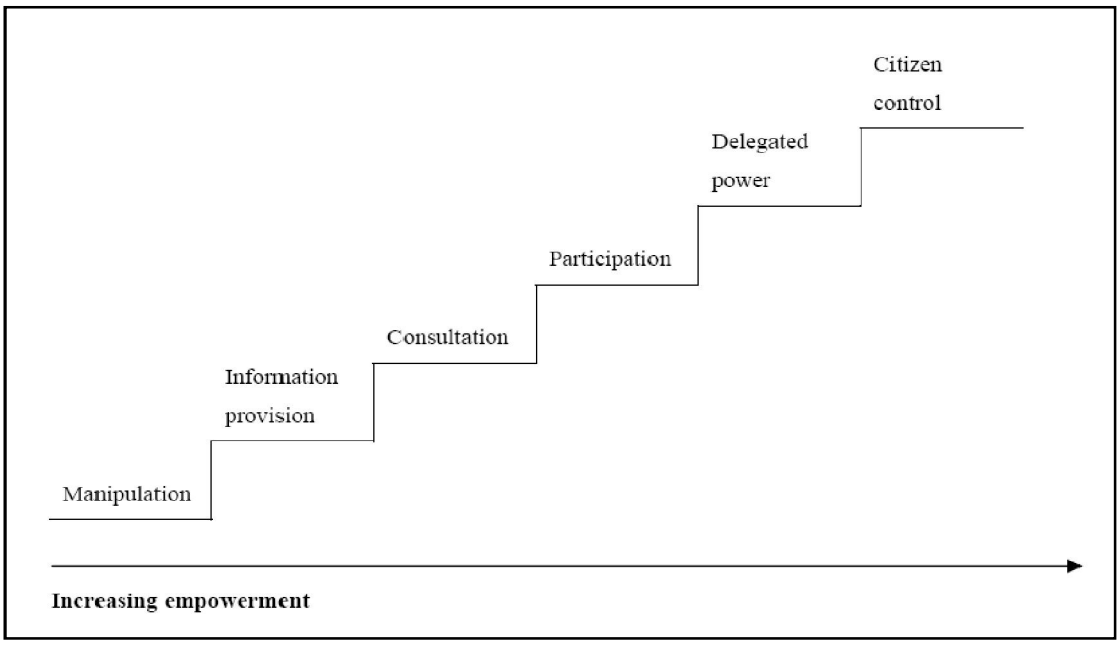

Figure 2.3: The Ladder of involvement
Source: Adapted from (Arnstein, 1969))

Arnstein, (1969) describes in Figure 2.3 a ladder of participation with eight steps. The first step (at the bottom of the step) is 'manipulation', the second is 'therapy' both aiming at education the participants. The third step is 'informing', followed by 'consultation', 'placation', 'partnership', 'delegated power' and additionally 'citizen control' at the top of the ladder. (Arnstein, 1969) describes 'partnership' as the first rung in the ladder where power is in fact redistributed through negotiation between citizens and power holders. The extent to which power is shared by the government increases as you proceed up the ladder through 'delegated power' and 'citizen control' – where all power lies with the citizens; a stage that Arnstein admits is unattainable in reality. Yet she also argued that "participation without distribution of power is an empty and frustrating process for the powerless." (MacGregor, 2000) highlighted her central message - which we need to be able to distinguish between participation that leads to citizen power and the kind of

participation that can be co-opted and manipulated to support the desires of the power elite. Ladder's description of the steps for participatory management implies an increasing degree of control if the participants were empowered enough.

In the ensuing four decades, a plethora of citizen participation frameworks have been developed to help explain and describe the various levels of public participation possible in a democratic society. Each framework uses slightly different terms and positioning to describe the various levels of participation possible. All generally describe a continuum of possibilities ranging from passive, token, or persuasive approaches at one end of the scale, to highly interactive and empowering approaches at the other. Educating, consulting and informing are found in the middle of most scales. All place collaborative approaches such as partnerships and joint planning processes much closer to the empowerment end of the range participation ladders. (A. Lawrence, 2006) Argued that 'transformative' participation as an alternative top rung of the ladder; emphasizing the idea that empowerment should lead to the transformation of the communities who are involved.

Among the many participation ladder typologies reviewed for the purposes of this dissertation, the six tabulated below represent the inherent diversity, each reflecting particular groups of similar typologies. From these we can see that public participation forms commonly used by planners can range from merely informing the public, to an agency's decision to full empowerment, with forms that allow for varying degrees of public impact between these two extremes. Stakeholder collaborative processes are a step beyond public involvement, because they involve the participants in dialogue, education, and understanding of opposing positions.

As the (Table 2.3) showed, there are some recommendations on the participation with different degree of partnership. Different levels of engagement are

likely to be appropriate in different contexts, depending on the objectives of the work and the capacity for stakeholders to influence outcomes (Richards et al., 2004). In any one coastal zone, many different levels and types of participation may be needed to fully satisfy all those concerned (Treby & Michael, 2004). The next step towards a more refined participatory model is a realization that participation is not static or necessarily linear (Treby, 1999).

Table 2.3
Ladders of Public Participation from vary literatures.

	Arnstein (1969)	Rodal & Mulder (1993)		Berkes (2006)	IAP2 (2000)	Harvey et al. (2001)	Ellsworth et al. (1997)
Degrees of citizen power	Citizen control		Devolution (transfer of responsibility)	Community control	Empower	Community control	Self-determination
	Delegated power	Partnerships	Collaborative partnership (shared decision making)	Joint action	Collaborate	Delegated authority	Delegated authority
	Partnership		Operational partnership (participation in design & delivery)	Partnership	Involve	Collaborative management	Joint planning
Degrees of tokenism	Placation	Consultation	Coordination mode (joint decision making)	Cooperation	Consult	Participation in planning (meaningful consultation)	Public consultation / Information feedback
	Consultation		Consensus mode (joint agreement on solutions)	Consultation / Advisory role			
	Informing (One way)		Debate mode (some scope to influence)	Informing / Communication			
Non-participation	Therapy		Briefing mode (listening, no impact on decisions)		Inform	Non-participation (Government decides)	Education and awareness
	Manipulation		Control mode (exclusive government)				

Source: Adopted from (L. P. Hildebrand, 2009)

Figure 2.4 showed a circular model of participation, (Treby & Michael, 2004) posit that it is possible to move around the wheel to represent these changes of participation priority at different times and places, and in accordance with the

prevailing cultural and economic needs or constraints. It can thus be argued that an essential basis for determining the optimum participation option is to recognize the context of the participants with respect to the problem.

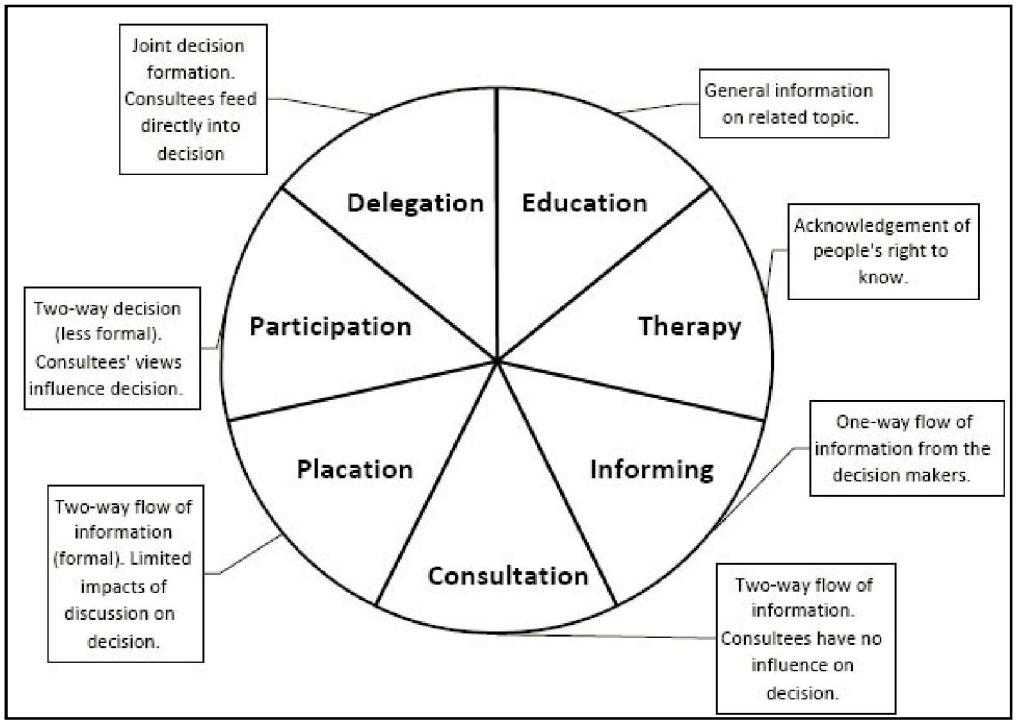

Figure 2.4: The Wheel of Participation by Treby.
Source: (Treby, 1999)

Public participation benefits the public by educating them about the activities, problems, and demands of the government. Increased education makes the public more trusting and tolerant of the government and therefore more likely to comply with its decisions (Kweit & Kweit, 1981). Community participation also benefits the public by providing an increased sense of efficacy – belief that their actions can affect government decisions. Public participation decreases alienation from members of their community, and from the government. When community people realize that other members of their community share their desires, a sense of community develops. Community participation also makes government more transparent and accountable,

and can counter declining public support. Government/citizen interactions include information provision, where information flows in one direction from the government to its citizens in a one-way relationship; public consultation, where the government asks for and receives citizen feedback in a limited two-way relationship; and advanced participation, where citizens are actively engaged in decision and policy making in an advanced two-way relationship (OECD, 2001b).

2.6.3 Community Participation in Coastal Management

Community participation and dedication are necessary for projects concerning natural resources in coastal zones (CIDA, 1995). Community involvement is one of the key elements of coastal management delivery on site. It has been noted that there is a lack of community participation in the preparation of coastal management plans because the public lacks awareness of coastal management initiatives. Community needs must be taken into consideration in planning and implementing projects which influence them and their resource base. Dynamic participation by the affected community in the entire stages of a coastal development project will often have remarkable impact on the sustainability of the project and the protection of coastal resources and habitats. The most important and complicated issue bearing on local level planning is community participation. According to Westergaard, (1986) community participation is "collective efforts to increase and exercise control over resources and institutions on the part of groups and movements of those hitherto excluded from control." Public participation in the management of coastal zones is not always smoothly carried out as it should be. Furthermore, the awareness of local people is not at level to make their participation more effective and that is why the next section discussed the role of awareness as key to the participation in coastal management.

2.7 THE ROLE OF AWARENESS ON COASTAL PARICIPATION

Public understanding and awareness of both the biological and economical importance of coastal and marine resources, and the need for proper management is critical. Awareness rising is one of the pillars on which public participation can be built. The goal of public awareness, sharing of info and education for environment and sustainability is to develop knowledge, understanding and skills to behave and act for the protection of natural and cultural environments and promote sustainable development.

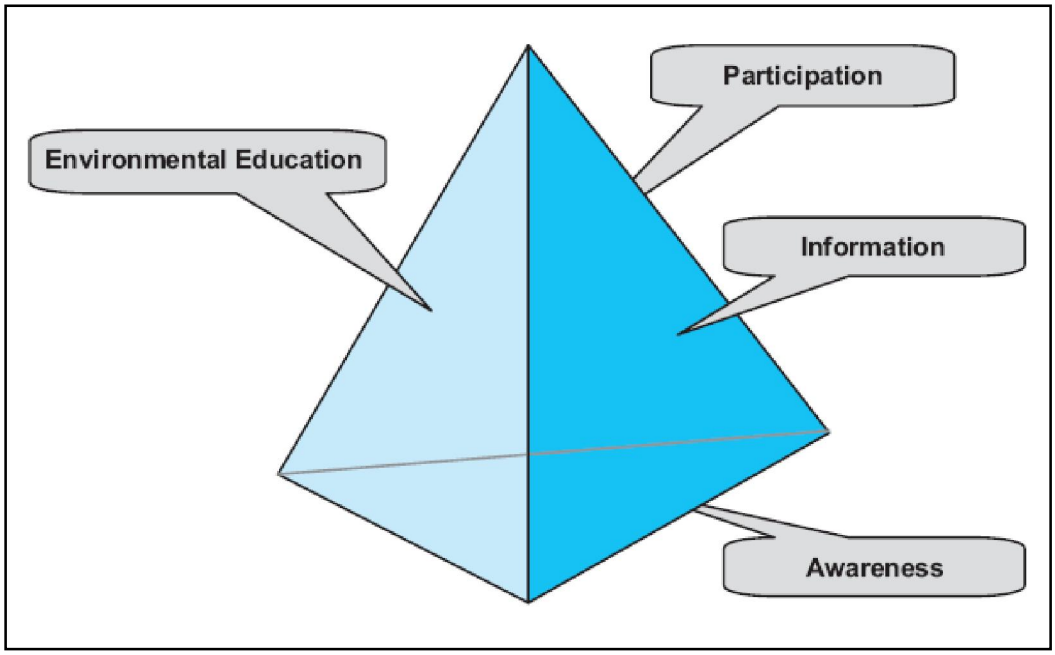

Figure 2.5: The Pyramid of Participation by Scoullos.
Source: (Scoullos & Brouma, 2002)

The best way to obtain this is by respecting institutionalised and voluntary rules agreed by understanding dialogue, participation and partnership (Scoullos & Brouma, 2002). Therefore participation is linked to information, education and

awareness. These are different pillars of the participation pyramid. The process can be built starting on any of these components, which will serve as a basis to advance on the others; however all of them need to be addressed in order to build the pyramid. (Figure 2.5)

To raise awareness is also to inform and educate people about a topic or issue with the intention of influencing their attitudes, behaviours and beliefs towards the achievement of a defined purpose or goal (Sayers, 2006). Awareness-raising is generally considered a constructive and potentially catalytic force that ultimately leads to a positive change in actions and behaviours. However, providing information and creating awareness about an issue does not automatically lead to behavioural change. Awareness-raising is generally considered a constructive and potentially catalytic force that ultimately leads to a positive change in actions and behaviours.

In this study, any awareness rising among the community means influencing attitudes and social norms of communities in such a way that behavior compliant with sustainable development is promoted, and ultimately, understanding by stakeholders for sound and sustainable policies is stimulated. Awareness is important as awareness will provide the education about the coastal environment; like in our case a better understanding to Kuala Selangor coastal areas. Linking educational activities with large public events and awareness raising campaigns is an extremely powerful tool.

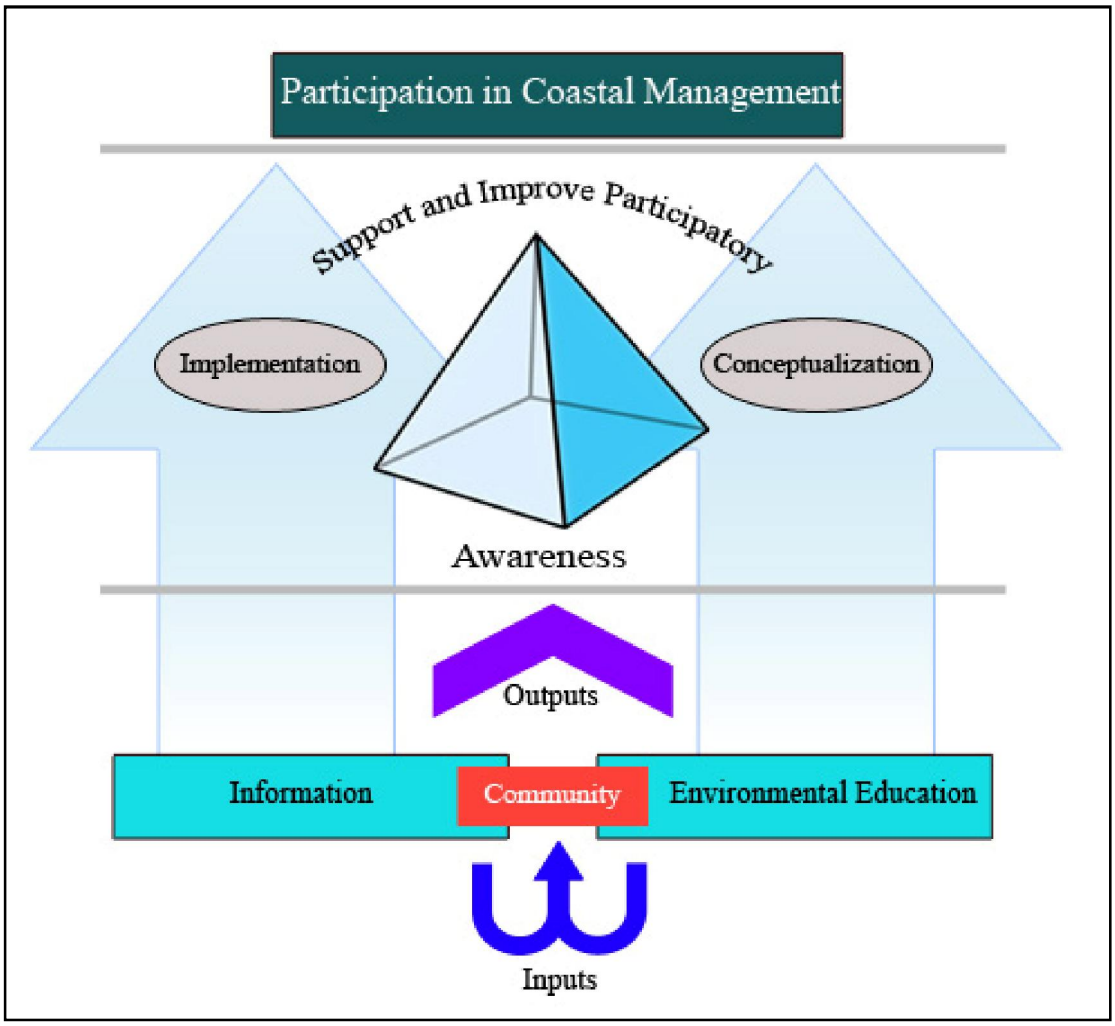

Figure 2.6: Author Interpretation to the theoretical Pyramid of Awareness
Source: Author, 2012

Furthermore, Awareness could supply not only education about the coastal issues rather than gives reasons to participate and improve community participation. The Author interpreted Figure 2.5 to take the theoretical part of the pyramid to the practice by applying relevant information from Kuala Selangor study area. Therefore, Figure 2.6 shows the relations between participation, environmental education and information as well as the input of all to the awareness. It results in effective capacity building and public participation. Many literatures have shown that it is advantageous to involve the public throughout the implementation of coastal programs.

2.8 INTEGRATED COASTAL MANAGEMENT (ICM) IN MALAYSIA

The evolution of coastal zone management initiative in Malaysia is driven by the problem-based and reactive approach to resources degradation and international commitments (Cicin-Sain, 1998). The growing need for coastal zone management in Malaysia began when the federal government responded to coastal erosion caused by a variety of natural and man-made processes (Siry, 2006). The Malaysian government launched the National Coastal Erosion Study to overcome some major national concerns during 1984–1985 (Mokhtar & Ghani Aziz, 2003).

According to Nasuchon (2009), "Malaysia is the only one country with administration of coastal zone management by the federal Government and is strongest in surveillance and enforcement but lacks community based management". Therefore, the questionnaires have to include a question about the responsibility towards coastal planning and management issues. Additionally, two significant institutions related to coastal zone management were established in 1987 (Cicin-Sain, 1998): the Coastal Engineering Technical Center (CETC) and the National Coastal Erosion Control Council (NCECC). Evidently, the response and initiative of Malaysia to manage coastal zones was determined by the engineering and reactive action point of view. Moreover, The Government established the Coastal Engineering Centre (CEC) in the Department of Irrigation and Drainage (DID) in 1987 to implement coastal erosion control throughout the country which include; engineering works for critical erosion areas, providing technical support, providing technical advisory services to other government agencies, and collecting coastal engineering data. The CETC is an important unit for preventing coastal erosion by providing technical input to the national government. This entity is in charge of implementing coastal erosion control, designing engineering works for critical erosion areas, providing technical

support to the NCECC, providing technical advisory services to other government agencies, and collecting coastal engineering data.

The NCECC is a multi-agency council composed of representatives from several federal government agencies, professional institutions, and universities (Cicin-Sain, 1998). According to this guideline, every development proposal in the coastal zone must receive approval and comment before proceeding from the CETC (Cicin-Sain, 1998). In 1992, Malaysia created a National Policy on Coastal Resources Management as the product of an Inter-Agency Planning Group (IAPG) with EPU's Agriculture Section as the secretariat (Siry, 2006).

2.8.1 ICZM in States of Penang, Sabah and Sarawak

The Malaysian government, with the support of the Danish government, through the Danish Cooperation for Environment and Development/DANCED, conducted the Integrated Coastal Zone Management (ICZM) Project in Malaysia in order to build local capability in environmental administration and organization.

The national pilot project in Malaysia and jointly funded by DANCED (Danish Co-operation for Environment and Development) and Sabah State Government established the ICZM projects. The project has also been designed to prepare a complete Integrated Coastal Zone Management system, including updated coastal zone profiles. The project conducted in several institutional strengthening and capacity building initiatives to institute proactive coastal zone management (Siry, 2006). Penang, Sabah and Sarawak are the states that included in the Integrated Coastal Zone Management System. Additionally, federals components have been added to the system to address the policy and strategy development in ICZM at national level.

At the state levels, the projects are considered as independent, full-scale projects addressing management requirements in their respective coastal areas (Siry, 2006). The ICZM Project is particularly recognized for the integration and coordination of all stakeholders-government as well as private- from the early phases of information gathering and planning to the production of coastal profiles and the delivery of strategic recommendations for the future management of the coastal zone. The general approach behind the projects on development of ICZM in the three states should be based on the overall principles of environmental management.

2.8.2 Coastal Resource Management Plan Southern Johor (CRMPSJ)

Between 1986 and 1992, Malaysia, with the assistance from the United States Agency for International Development (USAID) conducted a comprehensive integrated and multidisciplinary coastal resource management enquiry both at federal and state levels using, as a pilot project, a coastal zone management study in the southern part of Johor (Siry, 2006). The result of this study was a formal document and guide in matters relating to coastal reclamation, development of coastal swamp forest, and other development activities in coastal areas and the enhancement of the federal–state coastal resources management planning process and collaboration through the establishment of two committees, the National Steering Committee (NSC) and the Johor State Consultative Committee (JSCC) (ASEAN-USAID, 1991). Collaborative efforts were made through the Ministry of Science, Technology, and Environment (MOSTE) at getting experts drawn from various fields pertaining to environment, coastal resource management and university-based research scientists. These experts together with the staffs of MOSTE help at completing arid making CRMPSJ a success. However, there are still strong centralist political influences in coastal and

fishery management in Malaysia. This has resulted in the lack of coastal community-based management practices in Malaysia (Siry, 2006).

2.8.3 Role of communities in Sabah

The Sabah State Government through its Development Department delegated the implementation of the ICZM project to the Town & Regional Planning Department. The key issue for unsustainable development in the coastal areas in Sabah was found to be a lack of management capacity among public and private development stakeholders. Various management constraints were likewise identified and an analysis of these problems became the basis for the cooperation between the Malaysian and the Danish governments. Furthermore, there was a vision that with the increased involvement of politicians, technical staff, key local persons, local communities and institutions in the ICZM process, awareness of Coastal Zone Management would consequently increase. The Town and Regional Planning Department through this first international joint project, initiated the first public awareness and public participation on the coastal environment (Wong, 2006). In 1997, ICZM Public participation and awareness rising in coastal environment created history in Sabah. The importance of public participation and public awareness in the environment was begun at the launching of the workshop on Integrated Coastal Zone Management. Communities from all walks of life including nongovernment organizations were invited to participate. It was through this project that the environmental local plans for four districts in Sabah were subsequently given attention. The environmental issues on the coastal zone listed the following in the order of pollution, squatters, a need for conservation and a lack of public awareness about the environment. It was a clear need for action to be taken, to increase public

awareness on the importance of the coastal environment (Wong, 2006). Additionally, Community's participation in Sabah represents a first step on the right path to empower the local communities by increasing their awareness toward a better understanding to coastal environment.

2.8.4 National Physical Plan and Coastal Areas in Malaysia

"National economic planning has been practiced in Malaysia since independence and has successfully guided the transformation of the country from an economy dependent on mining and plantation agriculture to one which is diversified and largely industrialized" (Planning, 2005). The National Physical Plan allow for many improvement on the management and protection of coastal areas.

NPP pursues the ecological balances on the coastal environment by provide it with a proper activities. Furthermore, NPP take tourism as the most important economic drive for the western coasts of peninsula Malaysia rather than the eastern one. The tourism industry has a positive impact according to NPP on the villages near to the coasts (Planning, 2005). On the other hand, NPP state out that coastal erosion is a critical issue that even marine park islands are suffering from it. NPP estimated the in numbers areas with erosion risk greater than 150 ton/ha./year, areas experiencing critical or significant coastal erosion and areas between150-300 meters. Policies have been formulated that sensitive coastal ecosystems shall be protected and used in a sustainable manner. National Physical Planning Council in Malaysia has approved instruction that all development more than 20 hectares is compulsory to submit Environmental Impact Assessment (EIA) Report and all laws and rules are enforced immediately. Ultimately, this render Malaysia has given more stress in management of coastal areas towards sustaining the marine life and social coastal habitats.

2.9 CONCLUSION

In this chapter a literature review has been carried out in order to throw better ideas about the topic of the research which is “the awareness of local communities on coastal management”. Therefore, the formulation of questionnaires constructed as a preliminary knowledge on the study gained .The next chapter applies this understanding to a specific methodology that has been used to produce better results for the benefit of the study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter sets out the methodology developed to achieve the research aims described in Chapter one. At each operational step in the research process researchers are required to choose from a multiplicity of methods, procedures and models of research methodology which will help the researcher to best achieve his objectives. Using a mixed method, the research explored the awareness of local communities in Kuala Selangor management efforts on coastal areas. It focused on the perceptions of a diverse sample of local communities from leaders to non-leaders who were widely spread geographically across Kuala Selangor. Using the mixed method, this research was not focused on measurement or prediction, but rather on understanding how "social action in one world makes sense from the point of view of another" (Agar, 1986).

The aim of the study is to examine and understand the awareness of local community in Kuala Selangor for the benefit of participation on the management of coastal environment. Based on the literature reviews, prepared questionnaires, the aims of this research will be extracted. The literature review, questionnaires will support and give a better understanding of the awareness of local community can and will be the major barrier of participation at local level.

3.2 RESEARCH DESIGN

Study/Research design "deals with a logical problem and not a logistical problem" (Yin, 1989). The work plan flows from this. Similarly, in social research the issues of sampling, method of data collection (e.g. questionnaire, observation, and documents analysis), and design of questions are all subsidiary to the issue of "What data do researcher needs to collect?"With no attending to these research design matters at the foundation, the conclusions drawn will usually be fragile and not credible and fail to address the research questions.

Research design is different from the method by which data are collected. Many research methods texts confuse research designs with methods. It is not infrequent to see research design treated as a mode of data collection rather than as a logical structure of the inquiry. But there is nothing intrinsic about any research design that requires a particular method of data collection. Failing to distinguish between design and method will lead to poor assessment of designs.

Whilst designing a mixed methods study, three issues need consideration: priority, implementation, and integration (J.W. Creswell et al., 2003). Main concern refers to which method, either quantitative or qualitative, is given more stress in the research. Implementation refers to whether the quantitative and qualitative data collection and analysis comes in sequence or in chronological stages, one following another, or in parallel or concurrently. Integration refers to the phase in the research process where the mixing or connecting of quantitative and qualitative data occurs.

Most methods have some common characteristics, including the existence of a problem that needs to be formulated, aims and objectives to be met, and a phase where the problem will be investigated(J.W. Creswell, et al., 2003). This research used one of the most accepted mixed methods designs in educational research which is mixed

methods design based on case study.

In this study, the first phase is the quantitative data will be collected first; using a field survey (Questionnaires) and the data will be subjected to a discriminate function analysis using the SPSS software. In the second phase, a qualitative case study approach will be used to collect text data through individual, documents, and elicitation materials to help explain why certain external and internal factors, tested in the first phase, may be significant predictors of community's awareness towards a dynamic participation to coastal management.

3.3 MIXED METHODS

There are practical steps through which the researcher must pass in the study journey in order to find answers to his research questions. Mixed methods research begins with the assumption that investigators, in understanding the social worlds, gather evidence based on the nature of the question and theoretical orientation. Mixed methods data analysis uses the quantitative and qualitative basics of each study plan to harmonize each other (Žydžiūnaitė, 2007). According to (J.W. Creswell et al., 2011) mixed methods study, is more than merely collecting qualitative data from questionnaires, or collecting multiple forms of qualitative evidence (e.g., observations and questionnaires) or multiple types of quantitative evidence (e.g., surveys and diagnostic tests). It involves the intentional collection of both quantitative and qualitative data and the combination of the strengths of each to answer research questions. This should consequence in a diverse addition to gaps in the data base. Moreover, (Johnson, 2007) imply three reasons that researchers merge qualitative and quantitative research into a mixed methods approach:

1. Using mixed methods gives researchers the opportunity to support a hypothesis or theory with the evidence from both quantitative and qualitative methods.
2. Merging quantitative and qualitative analysis through mixed methods can generate a more productive analysis of data.
3. Using mixed methods enables the possibility for new ways of thinking that materialize from the two different types of data.

Mixed methods research as well is a way working with different kinds of data. For these reasons mixed method research is often referred to as multi-strategy research (Bryman, 2001) implying the application of a number of different research strategies related to a complex range of research questions and a complex research design. It may also involve with diverse investigators sometimes different research teams working in different research paradigms. Alternatively, mixed methods could form part of a long term strategy as in the case of a research plan that is pursued over time by a group of researchers applying different methods and approaches repeatedly. Currently it seems that mixed methods studies strategies are being increasingly engaged.

Mixed methods research provides more comprehensive evidence for studying a research problem than either quantitative or qualitative research alone. In addition, mixed methods research encourages the use of multiple world views or paradigms rather than the typical association of certain paradigms for quantitative researchers and others for qualitative researchers (J.W. Creswell, et al., 2003).Although its value, conducting mixed methods research is not easy. It takes time and resources to collect and analyze both quantitative and qualitative data. It complicates the procedures of

research and requires clear presentation if the reader is going to be able to sort out the different procedures.

Mixed methods research also way working with different kinds of data. For these reasons mixed method research is often referred to as multi-strategy research (Bryman, 2001)implying the application of a number of different research strategies related to a complex range of research questions and a complex research design. It may also engage using diverse investigators sometimes different research teams working in different research paradigms. On the other hand, mixed methods may form part of a long term strategy as in the case of a research program that is pursued over time by a group of researchers applying different methods and approaches repeatedly.

With related characteristics like the one in this particular research in terms of, the purpose, context, or research question particular, mixed methods have shown to be successful in avoiding threats to validity (Berndtsson, 2007). Due to researchers running on similar problems often interact with each other and form a community, where certain practices and norms evolve and become established. The rationale for mixing is that neither quantitative nor qualitative methods are sufficient by themselves to capture the trends and details of the situation, such as a complex issue of community's awareness on coastal environment. Whilst used in combination, quantitative and qualitative methods balance each other and allow for more complete analysis(Greene et al., 1989; Tashakkori & Teddlie, 1998).

Quantitative research requires from an investigator relies on numerical data (Mertler & Charles, 2005). On the other hand, qualitative research is "an inquiry process of understanding" where the investigator develops a "complex, holistic picture, analyzes words, reports detailed views of informants, and conducts the study in a natural setting"(J. W Creswell, 1998). In a mixed methods approach, the

researchers construct the data on pragmatic grounds (J.W. Creswell, et al., 2003; Maxcy, 2003) asserting fact is "what works" (Howe, 1988). Researchers choose approaches, as well as variables and units of analysis, which are most appropriate for finding an answer to their research question (Tashakkori & Teddlie, 1998).

The rational for choosing mixed methods in place of both the qualitative and quantitative methods is because of its strengths, which include:

- Words, pictures and narrative can add meaning and context to numbers.
- Numbers can be used to add precision to words, pictures and narrative.
- Answer a broader and more complete range of questions.
- Use the strengths of an additional method to overcome weaknesses in another (complementarily).
- Stronger evidence for a conclusion through convergence and corroboration of findings (triangulation).
- Add insight and meaning that might otherwise be missed in mono-method approaches.
- Produces more complete knowledge to inform practice & policy.

And the weakness:

- Practically more difficult.
- Relatively new and therefore good models to guide are difficult to find.
- Complexity in relation to data collection and analysis.

Moreover, there is compatibility between quantitative and qualitative methods. Consequently, together numerical and text data collected in order or concurrently, can

aid well understand the study problem. Mixed method approach in this study is the one in which the researcher collects, analyzes, and integrates both quantitative and qualitative data in a single study or in multiple studies.

3.3.1 Data Collection Methods and Sampling

The research had two separate, but complimentary, components. The first was a comprehensive literature review with the objective of finding examples of public science in ICZM/CM, community participation, public awareness and resource management in general. The literature review was carried out to form the theoretical basis of the study and to aid interpretation of results. It was completed through a process of literature linkage, i.e. articles were searched through science journal databases, read and assessed on their respective merits and subsequently used as points of departure to access studies aligned to the parameters being studied.

The second component in the study based on the research questions and objectives, questionnaires were formulated by the researcher, the first one being a mix of open ended and close ended questions, while the majority of the questions asked in the second questionnaires were primarily close ended questions (Appendix I). The questionnaires are consist of three main parts: the first part is the respondents details, the second one is covering the environment issues on coastal areas and the third part covers the Environmental Issues Awareness on Local Level (Local Participations). The questionnaires designed to measure the existing of awareness about coastal environment degradation amongst the local at this particular coastal area (Kuala Selangor) and if there are any programs related to the issue of coastal environment?

In the sampling method process there are two main selection options and they are well-known amongst the researchers which are probability and non-probability. In

probability samples, each part of the population has a recognized non-zero probability of being chosen. Probability methods contain random sampling, systematic sampling, and stratified sampling. In non-probability sampling, members are chosen from the population in some nonrandom manner. These include convenience sampling, judgment sampling, quota sampling, and snowball sampling. The advantage of probability sampling is that sampling error can be calculated. Sampling error is the degree to which a sample might differ from the population. When inferring to the population, results are reported plus or minus the sampling error. In non-probability sampling, the degree to which the sample differs from the population remains unknown.

For the purposes of this research the non-probability sampling has been used and a convenience sampling applied. Convenience sampling is used in exploratory research where the researcher is interested in getting an inexpensive approximation of the truth. As the name implies, the sample is selected because they are convenient. This non-probability method is often used during preliminary research efforts to get a gross estimate of the results, without incurring the cost or time required to select a random sample.

Onsite surveys were administered to people through face-to-face Questionnaires conducted from July, 2012 and continued for 4 days (response rate ≈ 100%). The total sample was 271, representing Kuala Selangor with population of 202 000. Sampling calculation has been done using an online institution called (Raosoft, Inc). (Figure 3.1)

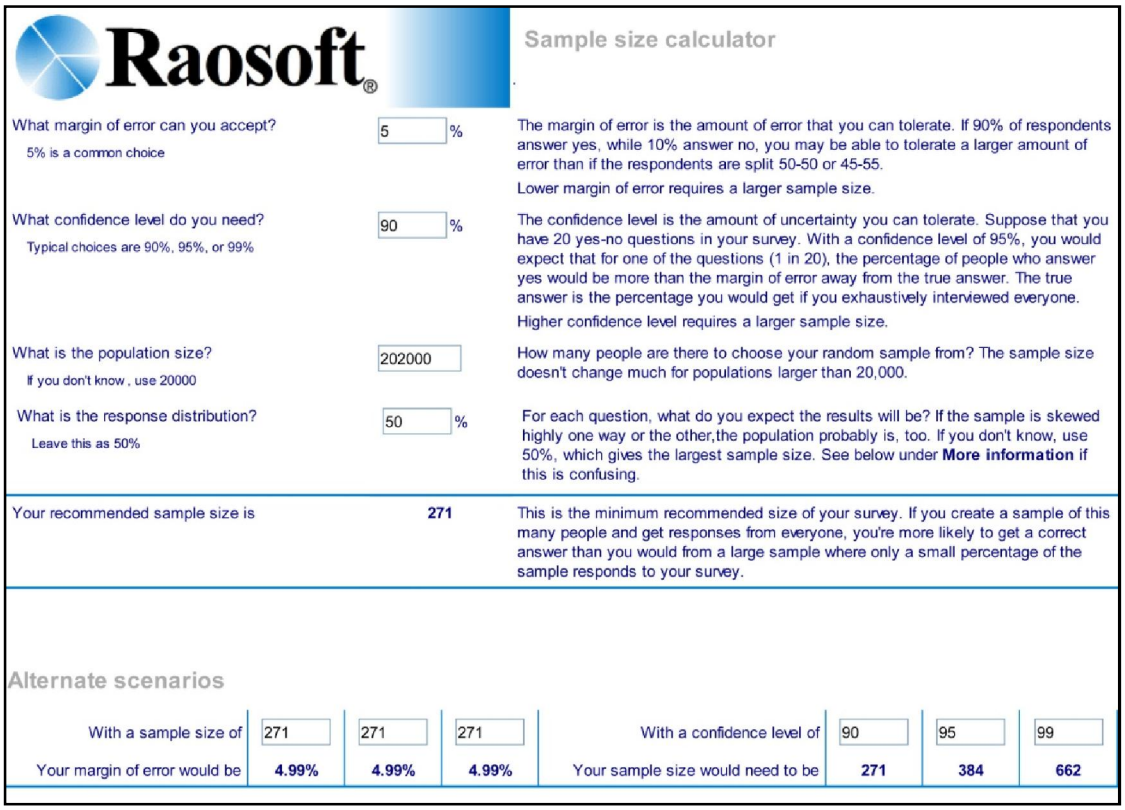

Figure 3.1: A Screen Snapshot of Raosoft.Inc, Sample of the Study Made Based on this Calculation
Source: Done Using Raosoft Calculation.

The target populations for this study are the people who live on the coastal areas/zones of Kuala Selangor district. The respondents asked to choose more than one answer on a particular question and "Yes" or "No" for the other ones. Questionnaires was translated from English to the local dialect of Malaysia, this to make it clear for the local and more convenient. However, the questionnaires were spread near to markets areas such as TESCO and other relevant markets. Additionally, from the observation for four days some people were very keen to give their opinion and others were very glad to help not only by opinion but offer lunch and soft drinks.

Figure 3.2 shows the points for the locations of conducting this study's survey throughout the coastal areas of Kuala Selangor. Due to the language barrier, the researcher faced a lack of understanding from the local people to some of the questionnaires clauses.

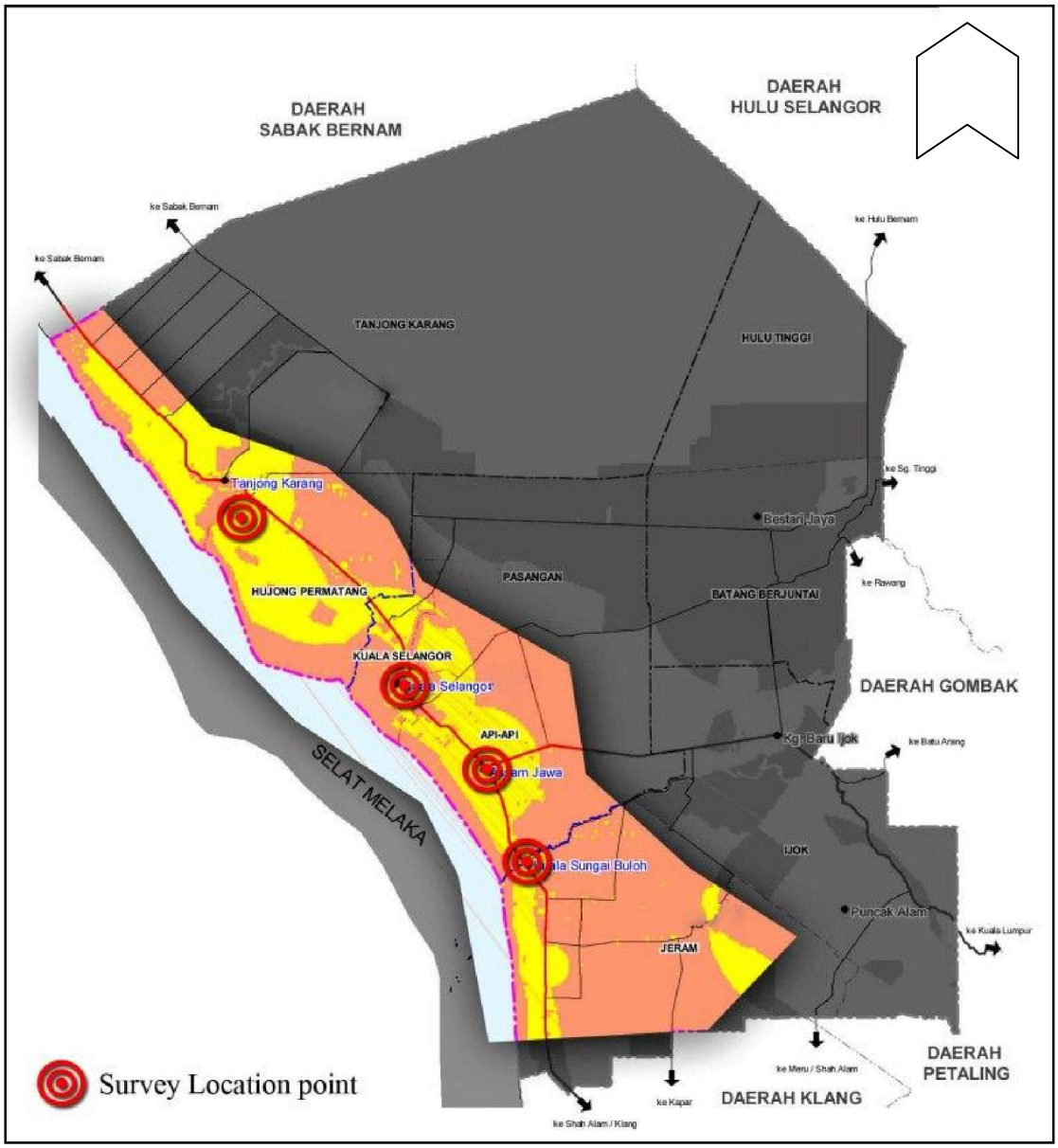

Figure 3.2 Location points of questionnaires survey. (Edit: Done by the Author)
Source: (Kuala Selangor Sub-District Council, 2012), Kuala Selangor District Council

Notwithstanding, Surveys for the questionnaires was successfully carried out in the study area (Kuala Selangor Coastal area). Whereas, the researcher covers a portion of the whole population, however, the results will provide a better understanding of the issues of awareness and provision of coastal programs.

3.4 Data Analysis

Data Analysis is the process of systematically applying statistical and logical techniques to describe and illustrate, condense and recap, and evaluate data. According to (Shamoo & Resnik, 2009) various analytic procedures "provide a way of drawing inductive inferences from data and distinguishing the signal (the phenomenon of interest) from the noise (statistical fluctuations) present in the data".

The selection of data analysis method is an important aspect to achieve the research aim an objectives successfully. There are several methods, which could be used by a researcher to analyze the data obtained through the different data collection methods. As the data was gathered, it was entered into the Statistical Package for the Social Sciences (SPSS 17.0) for analysis. After the complete data was entered, frequencies were run for the generation of descriptive statistics. For every question or variable in the survey, the overall percentages, averages, modes and ranges (where applicable) are presented in table and/or chart form. The use of SPSS tools, statistical analysis and descriptive analysis is some of the methods that are used as per the needs and demand of the research objectives and research data. Apply of SPSS tools helps the researcher to render the findings in quantitative manner, which increases understanding about the research outcome. The make use of this method requires more information from the quantitative methods.

Regression test (ANOVA test) ran for prove of relations between the dependent variable and the predictors. As the awareness question is dependent variable and the predictor is the provision of programs on coastal environment management. In this method, themes are offered to analyze the pre and post research conditions, which assist to determine what exactly is achieved from the study.

In this study, tests ran to find the relation between the awareness in coastal management which considered as independent value and other questions were considered as dependent values.

3.5 CONCLUSION

This chapter investigated the methodology used to conduct this study on coastal management and local community's awareness which will yield clearer results about the issues and problems, eventually, better solutions and recommendations. Additionally, this chapter includes number of respondents or the questionnaires and the method of collecting the data. The next chapter will present data and information about the study area that have been chosen to conduct the research.

CHAPTER FOUR

THE STUDY AREA

4.1 INTRODUCTION

This chapter discusses the study area and its regional context. The chapter starts from the location of the study area end up with coastal profile and conclusion.

4.2 KUALA SELANGOR

Kuala Selangor is selected to be the study area for this research. Kuala Selangor District position neighboring to the Kelang Valley is expected to have significant and positive impacts on this area in the foreseeable future. There are many developments going under in Kuala Selangor such as, Coast Expressway. Kuala Selangor district has a large area of coastal land as it is a continuation of Kelang Port coastal area and in a way or another this led to fast development in that particular area.

The coastal area of Kuala Selangor has also a natural park fall on the north part of its coastal shoreline and these results in greater challenges in the management of these natural resources. The study design adopted for the research is a mixed-method using the case study approach as it will provide a framework that can be assessed as well as opinions of the stakeholders on the awareness of coastal zone management and the provision of programs in Kuala Selangor district.

4.2.1 Location

The chosen study area is Kuala Selangor, one of the northern districts of Selangor, 64 km northwest of the city of Kuala Lumpur with an area of 1192.9 km² (see map in figure 4.1) (Wikipedia, 2008).

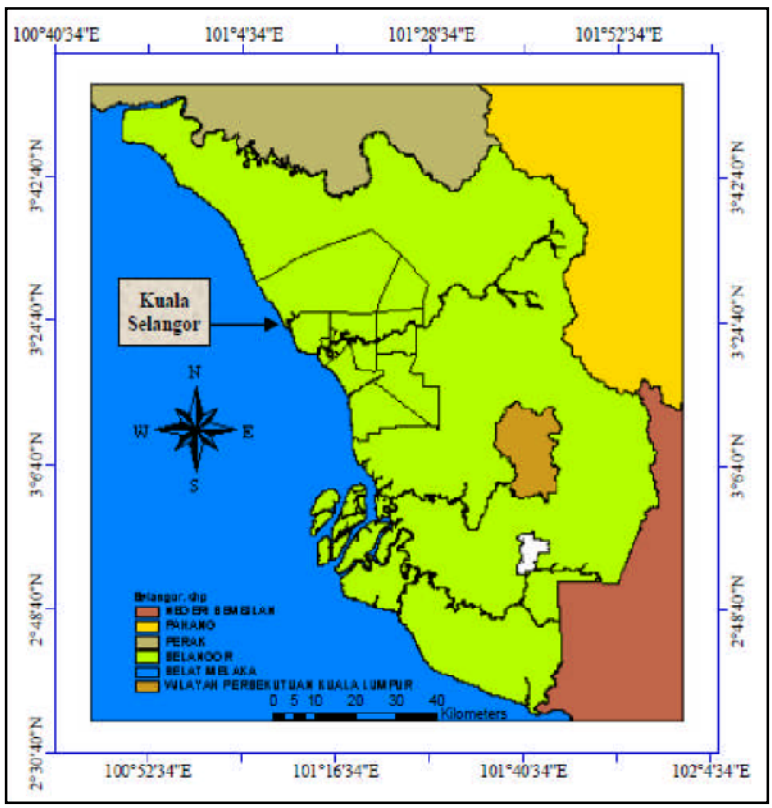

Figure 4.1 Location of the Study Area
Source: (Nedal et al., 2007)

4.2.2 Historical Background

Kuala Selangor was named in conjunction with the name of a riverside town in Selangor and the Selangor river estuary. Moreover, from the combination of the name of a town and a river, a set of Kuala Selangor name is believed to have existed ever before the 15th Century AD as Kuala Selangor was once conquered by the Portuguese who conquered Malacca in 1511. There are a variety of sources and the verbal

tradition of the historical existence of the district. Among the well-known source is from writing elect. Hj. Yusoff bin Hassan - History of Kuala Selangor (2002).

Kuala Selangor is initial population consists of people who work, at sea as farmers and fishermen. In terms of governance, before the reign of King Lumu known as Sultan Salahuddin Shah (1743 - 1778), Selangor is believed to have ruled been led by a woman from the Bugis community who was known as benama Chendera Bird. Her rule resulted in a fair and considerate indigenous (local) government vowed will only appoint chiefs from Bugis descent. These factors cause the arrival of King Lumu (Sultan Salahuddin Shah) who was well received by local residents.

Kuala Selangor Sub-District Council was built in 1978 and is now 33 years old. It comprises the collaboration of 5 Sub-District Councils which are:

- Kuala Selangor Sub-District Council
- Tanjong Karang Sub-District Council
- Bestari Jaya Sub-District Council
- Ijok Sub-District Council
- Jeram Sub-District Council

According to the book History of the Malay V (Buyong Fair) and The Adobe of Grace, Oxford University Press 1979 issue (Barbara Watson Andaya) and Souvenir book Selangor, Sultan Salahuddin Shah became the first Sultan of Selangor and he was crowned by Sultan Muzaffar Shah III as the legitimate government of Selangor. After the death of Sultan Salahuddin, Sultan Ibrahim was the eldest son of Sultan Salahuddin Otis was appointed Sultan of Selangor he was directly involved with the Dutch war (1784).

4.2.2 Kuala Selangor Nature Park (KSNP)

Kuala Selangor Nature Park was opened in 1987. It covers an area of 296 hectares which is divided into two main parts, namely covering 201 hectares of tropical rainforest and the rest is a Mangrove Forest. The park is under the management of the Malaysian Nature Society. As a result its natural beauty remains without any interference to destroy the habitat of the inmates loyal here. Its Nature Park concept includes a Bird Park where tourists can see many different species of birds in the wild. Habitat is often used by scientists to study material and also captivate tourists. There are 156 different species of birds among others, 57 of these birds from countries like Russia and Siberia. Some birds of the inmates of the park are the winter birds from the northern hemisphere in search of food in warmer areas in the southern hemisphere (Harinder Rai Singh, 2010).

The park is located on the southern side of the Sungai Selangor near the town of Kuala Selangor in the state of Selangor. The park is currently gazetted as reserved for a public purpose under the National land Code 1965. The park's northern boundary is the Sungai Selangor estuary while on its western side it faces the Straits of Malecca. Its eastern boundary is adjacent to the old Kuala Selangor Township while its southern boundary borders the new Kuala Selangor Township. The park consists of an excavated shallow lake with islands to enhance its wildlife habitat .It is housed within a 324 hectare of land comprising to coastal mangroves (104 hectare), secondary forest (200 hectares), a brackish water lake (20 acres) and coastal mudflats. Besides its diverse habitats, the park plays a significant role in, mangrove conservation (Harinder Rai Singh, 2010). Some pictures have been taken during the site visit to Kuala Selangor Nature Park (KSNP), (Figures 4.2 and 4.3).

Figure 4.2: In front of the Natural Park Lake
Source: Field Survey, 2012

Figure 4.3: Mangrove at Kuala Selangor Nature Park (KSNP)
Source: Field Survey, 2012

Malaysia's marine protected areas (MPA) provide important natural resources, as evident from their enormous economic, environmental and social values and functions. The dynamic nature of the ecosystem needs to be duly considered and an integrated management approach on a sustainable basis, under the umbrella of a total coastal zone management plan for the country concerned, needs to be initiated with the creation of effective mangrove reserves to conserve biodiversity at large. There is a well-equipped and informative visitor centre (known as a Kuala Selangor Nature Park) where you can get detailed educational programs and displays, which focus on the importance of safeguarding and conserving the mangrove ecosystems and a large number of resident and migrant bird species (Harinder Rai Singh, 2010).

Currently, eco-tourism activities are getting popular in Kuala Selangor especially, at the nature park. Approximately 18,000 visitors came to Kuala Selangor Nature Park in 2009 (Harinder Rai Singh, 2010). The reliance of human on this natural ecosystem will carry on for generations to come. In fact, not only tourists enjoy Kuala Selangor Nature Park rather than Mudskipper fish this relatively small creature whom is the reason of livable mangrove in (KSNP), (Figure 4.4).

Figure 4.4: Mudskipper fish at Kuala Selangor Nature Park (KSNP)
Source: Field Survey, 2012

4.2.3 Kuala Selangor Coastal and Planning Profile

The main land use in the study area is still agriculture. Oil palm and rubber estates have been established here through forest conversion. Presently, many of these estates are being converted into urban, residential, recreational and industrial areas (Nedal, et al., 2007).

Figure 4.5: A View from Kuala Selangor Coast
Source: Field Survey, 2012

Figure 4.5 showed a portion of Kuala Selangor coastal areas which has waste from coastal engineering construction. Coastal waste management is one of the issues in Kuala Selangor. There are other figures which has been taken from Kuala Selangor as Figures (4.6 and 4.7), showed other issues such as Mangrove damages and buildings construction waste.

Figure 4.6: The Damaged Mangroves in Kuala Selangor Coastal Area
Source: Field Survey, 2012

Figure 4.7: Buildings Constructions Materials Waste in Kuala Selangor Coastal Area
Source: Field Survey, 2012

The development of Selangor state has extended into its surrounding districts, whose natural resources are coming under increasing pressure. The chosen area still has several patches of upland forest, swamp forest as well as some mangroves. The other major land use in the study area is agriculture, especially oil palm, paddy and coconut plantation.

Sungai Selangor (Selangor River) is one of the main rivers in the state of Selangor. It is an important source of water supply for domestic and agriculture use as well as fishing industries for communities along the riverbanks. The Selangor River is still in a pristine and natural state in most places especially in the upstream reaches. It also provides recreational opportunities as well as posting challenges to the intrepid travelers, eco-tourists and the adventure-seekers (i.e. river tubing, whitewater rafting and kayaking). Kuala Selangor's mangrove forests are identified as having a potentially high value for wildlife conservation and ecotourism.

Local plan study area Kuala Selangor District (RT MDKS 2025) involving a total of Kuala Selangor District covering nine (9) *Mukim* (County) with an area of 119,452.46 hectares (295,172.3 acre / 1,194.52 km2). For purposes of control and management of development planning activities, four (4), Block (BP) has been identified in the Terms of Reference 2025 RT MDKS where BP 3 shows the highest acreage with 42.30%, (Table 4.1).

Table 4.1
Mukim (Counties) Total Area Sub-District and Block

Planning Block (BP)		Sub-District	Area (Hectare)	Percentage %
1	Planning Block 1 (BP 1)	Kuala Selangor	20,755.89	17.38
		Pasangan		
		Api-api		
2	Planning Block 2 (BP 2)	Jeram	28,677.62	24.01
		Ijok		
3	Planning Block 3 (BP 3)	Tanjong Karang	50,533.65	42.30
		Hujong Permatan		
4	Planning Block 4 (BP 4)	Batang Berjuntai	19,485.30	16.31
		Hulu Tinggi		
Total			**119,452.46**	**100.00**

Source: (Kuala Selangor District Local Plan, 2025)

In terms of position, Kuala Selangor District bordering Sabak Bernam District Council (I) in the north, the Hulu Selangor District Council (MDHS) and Gombak (Selayang Municipal Malis (MPS)) in the east, the Klang Municipal Council (MPK) in the South and West in the Straits of Malacca. Figure 4.8 shows the study area of Kuala Selangor District Local Plan (Selangor, 2012).

Areas District Council administration is covering generally according to plan PW1414 Gazette - February 28, 2006 the entire area of Kuala Selangor District 119,452.46 hectares. It focuses on all the main settlement centers covering all the small towns like Kuala Selangor, barrels, rafting, Assam Jawa, Cane Hill, Oyster Seri Setia, Puncak Alam, Saujana Utama, Desa Coalfield, Tanjong Karang, Beard River, river catfish, Smart Jaya, Kampung Kuantan, Sungai Buloh and Pasir Penampang, (Figure 4.8).

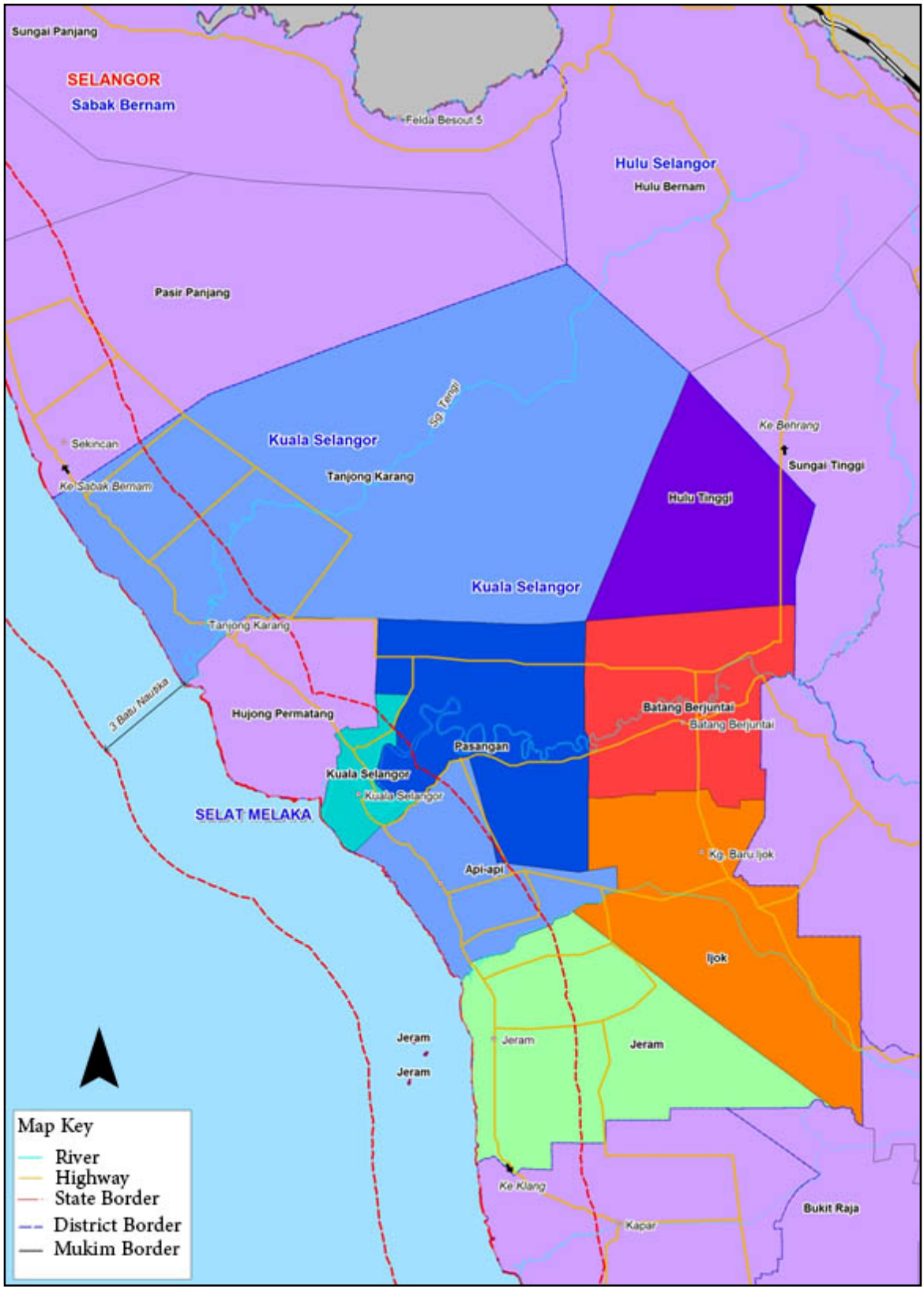

Figure 4.8 Study Area of Kuala Selangor Sub-District
Source:(Selangor, 2012)

In Kuala Selangor Local Plan 2015, there are two settlement areas which have been identified as the Central Regional Semi Smart City of Kuala Lumpur and Selangor. Bandar Puncak Alam in barrels is amongst the areas of operation of the new urban development and the effects of spillover border area.

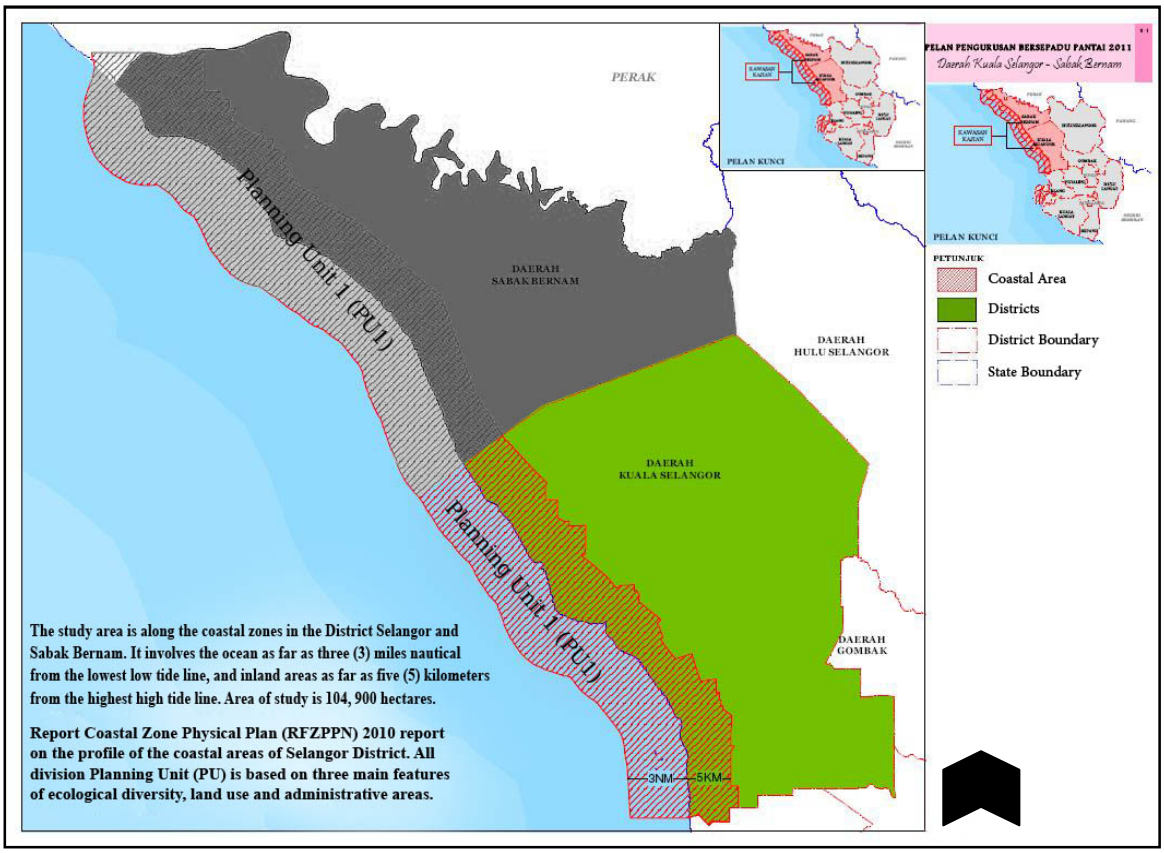

Figure 4.9 Study Area, the coastal zones in the District Selangor and Sabak Bernam
Source:(Selangor, 2012)

Natural resources such as coastal wetlands, mangroves, estuaries, land alluvial soils, flora and fauna to be preserved in the interests of balance of the ecosystem. Most of the socio-economic activities such as agriculture, fishing and tourism are located in coastal areas and depend on the natural resources. Coastal Zone Physical Plan (RFZPPN), (2010) reported on the profile of the coastal areas of Selangor District, Planning Unit 1 (PU1), (Figure 4.9). All division Planning Unit (PU) is based

on three main features of ecological diversity, land use and administrative areas.

Coastal Use Zoning Plan for the District of Kuala Selangor and Sabak Bernam is a replication of the study Coastal Zone Physical Plan Countries (RFZPPN). Integrated Coastal Management Plan (ICM) was developed through cooperation between Selangor Water Management Authority, District Council (MDKS) and Sabak Bernam District Council. District Council Selangor (MDKS) and District Council Bernam slate was elected as Stakeholders base to ensure ICM project's run smoothly (Selangor, 2012).

The role and intervention of both local planning authorities is very important because they are parties who have contact directly with local communities. Both local authorities also have important information to use the ICM project, so that the results of Integrated coastal Management (ICM) Kuala Selangor District is precise and better. The coastal zones in the District Selangor and Sabak Bernam involve the ocean as far as three (3) miles nautical from the lowest low tide line, and inland areas as far as five (5) kilometers from the highest high tide line.

For the district of Kuala Selangor, it included a planning unit (Planning Unit) from three coastal planning units for the state. Planning Unit 1 covers range from the beach to the northern boundary of the Perak River Mukim Kapar. The area from the town of Tanjung Karang to rafting area is covered by mangroves and muddy coastal. It is part of the Northern Forest and Banjar Banjar North (supplementary).

4.3 CONCLUSION

The chapter gives a background of the study area. Kuala Selangor has one of the most important coastal resources such as mangrove, fisheries, etc... On the other hand Kuala Selangor is facing many challenges due to the rapid development in nearby districts. Kuala Selangor coastal area is very unique from the environmental aspect. The next chapter will analyze and discuss the primary data from the survey that has been done on this area regarding its environment and Local community.

CHAPTER FIVE

DATA ANALYSIS AND FINDINGS

5.1 INTRODUCTION

This chapter renders both inputs obtained from Chapter two (Literature Review) and the findings from the survey. The conducted survey is mainly the structured questionnaire. However, the local community is the main target of the questionnaires that was conducted in Kuala Selangor. The analysis has been done through these questionnaires in order to measure and understand the awareness of local community and their participation in the management of the coastal areas and its environment.

As this chapter presents the analysis and findings, so it is necessary to bring back to mind the basic information such as the objectives and the questions raised through this research. This study emphasizes on the awareness of local community in the management of coastal area at the local level in Kuala Selangor district. There are three objectives of this study and they are:

I. To provide a better understanding of awareness of the local communities in coastal area of Kuala Selangor.

II. To identify the challenges or constraints on education impeding effective awareness community practicing coastal management for the purposes of environmental protection.

III. To outline recommendations to improve the role and functions of the awareness by local communities in practicing Coastal Zone Management (CZM) or Coastal Management (CM).

Within the outline of these objectives, four main research questions were formulated which was believed to have helped at realizing and achieving the aim and objectives of the study; these questions are:

I. What are the levels of awareness amongst local communities in managing coastal areas?
II. What are the constraints for local communities impeding successful coastal environmental management programs initiatives/participation?
III. What are the possible approaches and recommendations to achieve effective engagement local community in coastal management programs?
IV. What are the Recommendations for improving the awareness for public participation in coastal management?

Consequently, the indicators used in achieving the study questions were constructed based on the awareness and participation activities of the coast, coupled with the provision of coastal management programs at the study area. This however is in conformity with the international acceptable indicators for measuring integrated coastal area management as sets by United Nation. The next part will introduce the profile of respondents followed by the analysis of determining the level of awareness in local community towards coastal management and environment. It is worth noting that, the provision of coastal awareness programs is a dependent variable identified as a threat that effected the coastal management at local level in coastal areas.

5.2 RESPONDENTS' PROFILE

5.2.1 Occupation

A total of 271 questionnaires were distributed among the local community of Kuala Selangor district. Mainly, 271 questionnaires respondents were used in assessing the level of awareness, understanding and knowledge on coastal management and environment amongst local community.

The table 5.1 below shows the number of questionnaires conducted and respondents from different occupational background:

Table 5.1
Respondents Occupation Sectors

Job Status	Questionnaires	Percentage
PUBLIC AGENCY	70	25.83 %
PRIVATE AGENCY	139	51.30 %
UNEMPLOYED	62	22.87 %
Total	271	100 %

Source: Field Survey, 2012

5.2.2 Level of Education of Respondents

The questionnaires also seek information to evalute the level of education of respondents. Out of 271 total surveyed respondents, 149 of the respondents were found to be SPM graduates, 74 were found as Diploma graduates, 47 were Bachelor degree holders while 1 of the respondent has his/her PhD. The pie chart below shows the numbers and percentages of respondents' education level (Figure 5.1).

A percentage of 55% of respondents held the SPM, Diploma Certificate and Bachelor Degree holders were 27.3% and 17.3% respectively. Additionally, only one respondent held the PhD.

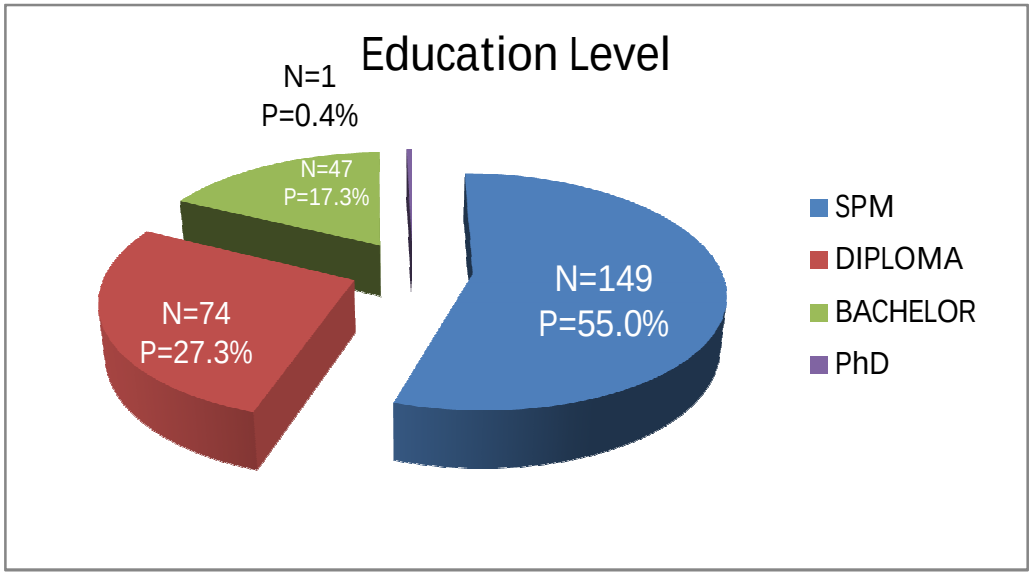

Figure 5.1: The numbers and percentages of respondents' education level.
Source: Field Survey, 2012

This indicates that the level of education in Kuala Selangor is in general between poor to moderate. Awareness on coastal management requires a certain level of education but there is not a single level of education considered to be the desired one. As the literature review section 2.6 showed that the education of individuals helps to improve and increase the awareness on coastal management which will lead to more effective participation.

5.3 ANALYSIS ON THE DISCUSSION OF KEY RESEARCH QUESTION AND FINDINGS

The following analysis is based on several key questions and the results of what was developed base on the data collected and its analysis. Moreover, the literature review has been used to provide solidity and to strengthen the survey results and arguments.

Additionally, Statistical package for Social Sciences (SPSS) version 17 was used for data entry and analysis. In this descriptive analysis, a single variable was analyzed

at a time. For nominal or ordinal (categorical) variables frequency and proportion used, for continuous or discrete (numerical) variables mean described. After processing the analysis by SPSS, independent variables will be described using table, pie chart and bar chart. Distribution of study sample by socio-demographic characteristics, environmental and natural resource issues knowledge and environmental issues awareness on local level (Local community participation) were analyzed using this method.

5.4 DETERMINING THE LOCAL COMMUNITIES PARTICIPATION (AWARENESS ON LOCAL LEVEL)

The public can take an active role in a variety of practical activities concerned with coastal management. The participation of the public helps to raise awareness of the condition of the coastal use area and provides a method of gathering large amounts of data which can then be acted upon by vary coastal management bodies. Involvement of the public in special interest groups, such as voluntary lifeguard organizations, helps to educate the public for self protection.

There are a variety of methods for communicating with the public, such as through flags, signs, and literature or coastal awards. Whichever method is used, it is imperative that the public understands clearly the message being conveyed depending on the local conditions such as culture, income levels, and settlement patterns. The degree and range of community participation activities varies. On the whole, three broad categories of community participation issues with respect to coastal management can be discerned:

a. Changing lifestyles,
b. Interaction with oceans and coastal regions, and

c. Awareness building and education.

Only through public involvement can a program assure that its policies and objectives incorporate community and cultural values (Urban Harbors Institute, 2003). A continuing mechanism for public involvement in ongoing program assessment can bring in fresh perspectives and opinions from the program's constituency. A consequence of continuing public involvement is that public interest in the program increases, a better understanding of its goals and purposes is reached, and the likelihood of opposition is reduced. One of the challenges of inviting and encouraging public participation throughout program refinement and implementation is to effectively manage the process so that a proper balance is maintained between the role of the public and the role of the responsible agency (Urban Harbors Institute, 2003).

A number of community participation schemes have been developed worldwide. An example is the "Officer Snook Program" which was initiated in 1992 at Miami Beach and was sponsored by the United States Coast Guard. This scheme includes videos, slide shows, competitions, cleanups and recycling programs involving 25,000 elementary schools (Faris, 1995). In Glacier Bay, Alaska the prevention of marine debris is an integral part of the visitor management and education program (Clary, 1995). Some schemes are aimed at specific types of marine debris. In southern Africa, the Dolphin Action and Protection Group launched a national campaign in 1987 entitled "Save our Sea life: Prevent Plastic Pollution". The scheme targeted shipping and fishing companies, industry, schools and the general public, and involved the distribution of pamphlets, the initiation of beach-cleans and the raising of the issue in Parliament. The scheme has now been extended to Antarctica, Namibia and islands in the Southern Atlantic and Indian Oceans (Rice, 1995). In Tasmania, Australia the use

of television advertisements was an integral part of a community awareness program initiated in response to the growing entanglement of marine mammals and seabirds in marine debris (Slater, 1995).

It is enormously helpful for the public to have access to guidelines and suggestions for effective participation. Many public agencies and programs issue user-friendly guidance to help the layperson better understand program amendment or regulatory processes and the specific opportunities for public involvement.

Any awareness rising among the general public means influencing attitudes and social norms of communities in such a way that behavior compliant with sustainable development is promoted, and ultimately, understanding by stakeholders for sound and sustainable policies is stimulated.

Moreover, the question aims not to identified the most or the least benefit beneficiaries rather than scaling the local community about their comprehension of valuing their coastal environment in Kuala Selangor district.

The data gathered were analyzed using the SPSS software, using the descriptive statistics analysis. Furthermore, the coded data analyze in details to find out the Mean of respondents' answer on this particular question. In order to compare differences for response by region data were analyzed using One-way Analysis of Variance (ANOVA) tests for variables with multiple responses. For variables with various responses (typically "Yes" or "No") Pearson's Chi-square was used to denote the significant differences.

Participants were asked about how the benefit of rising awareness is significance towards a list of beneficiaries using a 4-point scale of significance with 1 = "Not Significance" to 4 = "Very Significance". Participants gave strong benefits for "Nature Beneficiaries on Local Coastal awareness" with 257 respondents stating it

was “Moderate Significance” to “Very Significance” to them with Mean=3.7 (Table 5.2). This benefit to the nature was (very – extremely) significance to respondents from Kuala Selangor as they rated this beneficiary higher than other beneficiaries in the survey. However, 255 respondents agreed that “People, Nature and Government” as the second most important beneficiaries on local coastal awareness. “People” and “Government” as beneficiaries, recorded 247 and 245 respondents to them respectively with least benefit from the awareness (Table 5.2).

Table 5.2
Beneficiaries of Awareness of Coastal Management in Kuala Selangor (P<0.001)

Beneficiaries	Not significance	Minor significance	Moderate significance	Very significance	Mean
People (N=271)	8	16	54	193	3.5
Nature (N=271)	0	14	42	215	3.7
Government (N=271)	1	25	96	149	3.4
People, Nature and Government (N=271)	3	13	74	181	3.6

Source: Field Survey, 2012

The Figure 5.2 shows the bar graph for the table 5.2 to elaborate more about how significant is the results as the value of P = (P< 0.001) hence, the data is up normal according to this test (Descriptive Statistics Analysis).

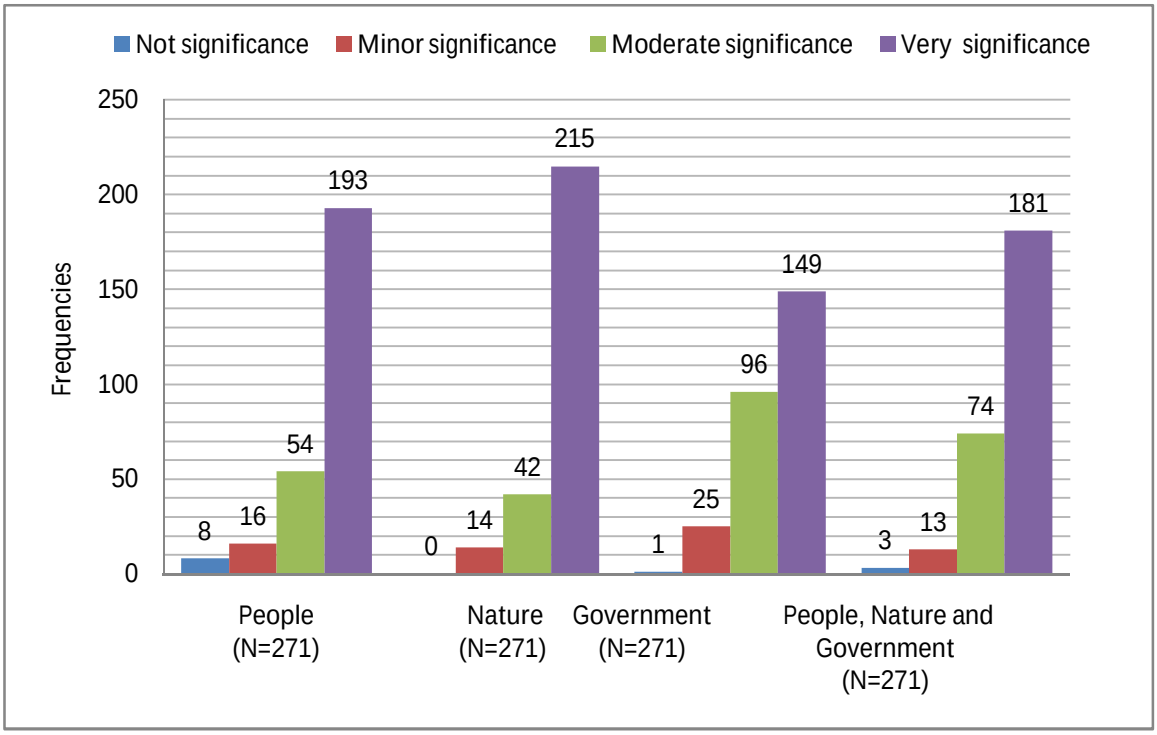

Figure 5.2: Beneficiaries of Awareness of Coastal Management in Kuala Selangor (P<0.001)
Source: Field Survey, 2012

The local people in responding to this question were able to identify the beneficiaries from the awareness of coastal management. A more significant number went for both the nature and people of Kuala Selangor. The literature review refers to section 2.6 and the importance of awareness and how this could benefit all of stakeholder in coastal areas. This survey showed that the people in Kuala Selangor do care about their coastal environment; that is why local people recognized nature as the highest beneficiary from the coastal management than even themselves. (Refer to Figure 5.2) In that context, another question has been forwarded to the local people through this survey about whether the local will attend a program about their coastal management done by local authority. For variables with responses coded (typically "Yes" or "No") Pearson's Chi-square was used to find out the relation between the

desire of local people to attend coastal programs and the awareness on coastal management. Table 5.3 showed there are 137 respondents who indicated a desire to attend any coastal programs conducted in the Kuala Selangor and those respondents are poorly aware about the coastal management. Successfulness participation of local people in coastal management needs well participation on attending coastal awareness programs in Kuala Selangor District.

Table 5.3
The relationship between the awareness on coastal management and the desire to attend program on local coastal management (Chi-square test), ($p < 0.001$)

Are You Aware on Coastal Mnagement?	Desire to Attend Coastal Programs		Total
	NO	YES	
VERY WELL AWARE	1	0	1
QUITE AWARE	0	36	36
POORLY AWARE	17	137	154
NOT AWARE AT ALL	14	66	80
Total	32	239	271

Source: (Field Survey, 2012)

Moreover, local people who are “Not Aware At All” (66 of them) are willing to attend on coastal programs in Kuala Selangor. This question was presented in order to determine the relation between the awareness and the desire of attending coastal programs. Additionally, the local community has a basic awareness on coastal management whilst there are 80 respondents whom admit not aware at all about the coastal management, although, 239 respondents desired to attend programs about the

coastal management. In General the results showed a normal trend of people curiosity to attend programs on coastal management yet, people need motivations to encourage local to attend these programs.

5.4.1 Awareness on Coastal Management

In this study, the idea of community awareness is used to empower the role of community in the planning process and make active involvement in coastal management. The concept also includes community activities which support and improve the people's awareness and ability to participate in the education efforts. Awareness should be raised for coastal protection to lower the risks for residents on coastal areas. Creating public awareness and fostering public participation may mean that more time is required for decisions to be taken, but it may show that such an approach is ultimately more cost-effective. Public awareness is a key element in the reduction of coastal debris. Low public awareness and participation act as negative factors in improving the management of coastal areas.

The ICZM process starts with the awareness of issues of common concern, which facilitates a dialogue and exchange of views among interested and affected parties, which in turn supports cooperation amongst the parties, and this is the basis for coordination of action, which – in time fosters integration of management (EC, 1999a). The absence of public awareness and the loss of confidence in management decisions and the regulatory process can create enormous constraints to reach coastal development, restoration and maintenance objectives towards full implementation of ICZM. Additionally, decentralized policy gave more awareness and opportunities for local communities to be actively involved in local Government activities (Siry, 2006). Awareness-raising is generally considered a constructive and potentially catalytic

force that ultimately leads to a positive change in actions and behaviours.

Through understanding and awareness, it can determine the scale of local management capacity in fulfilling the mandates. Involvement, awareness and information availability have become part of democratic theory, encouraged by the United Nations (UNCED, 1992) as well as being part of the concept of sustainable development ((WCED), 1987).

Providing information in usable formats to decision makers and local citizens is essential in raising people's awareness. First of all, it is important to know about the existing awareness in Kuala Selangor so later on can be assessed accordingly. Survey participants were asked to provide their awareness on coastal management.

However, Figure 5.3 renders the percentage of awareness amongst the survey respondents. In addition, 56.8 percent of the respondents are poorly aware on coastal management while 29.5 percent of the respondents are not aware at all. The result of this simple statistics analysis is providing a strong evidence of lack of awareness.

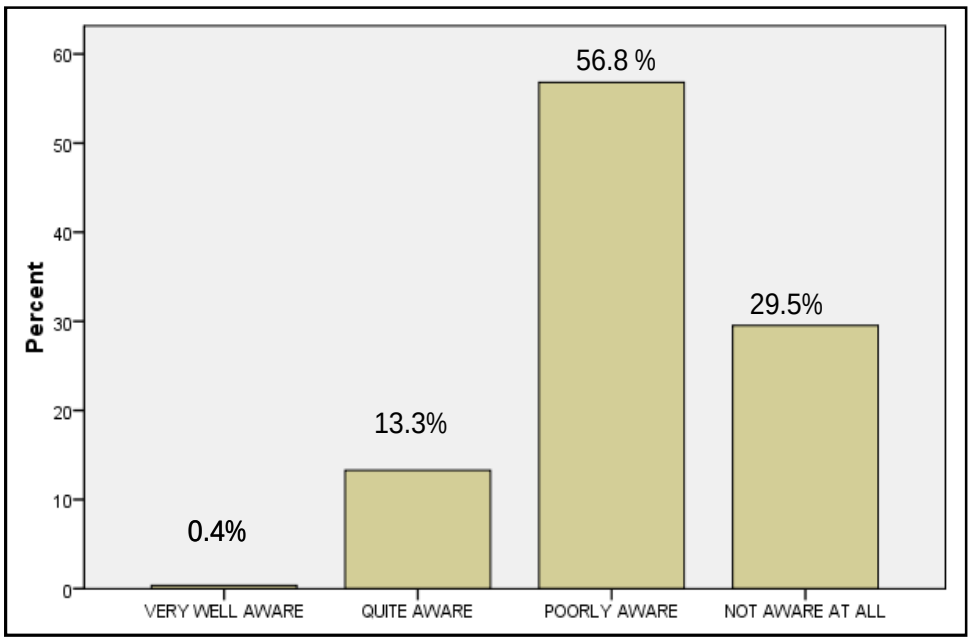

Figure 5.3: Local Awareness Percentages on Coastal Management in Kuala Selangor. Source: (Field Survey, 2012)

Lack of awareness is not acting alone in this case it is a result of lack of programs. Therefore, educating local community about their coastal area and the coastal management are critical and there is a need of improvement. Education is very important and the provision of coastal management programs help a lot to mitigate this issues as literature review section 2.5 support these claims.

5.4.2 Importance of Coastal Education

In order to be successful in the face of significant complexity and uncertainty, management initiatives need to be flexible and adoptive and must have a built-in learning capacity. The education and public awareness program must also support the CZM Institute programs in conducting workshops/seminars, training, and in delivering presentation to stakeholder groups. Furthermore, a new consciousness of coastal management could be achieved through education programs which increase public awareness of biodiversity, environmental impacts, ecological processes and sustainable development.

In this research, there was a necessity to pose a question about the coastal management education within awareness framework. Respondents were exposed to a question whether they think educating people about coastal management is important or not. It is not an easy question as it's connected cohesively to the level of awareness of local people. Participants were asked to indicate the level of importance had to them using a 3-point scale with 1 = "Important" to 3 = "Not Important".

In this Survey, 80 percent of respondents confirm the important of educating the local people on coastal management while only 3 percent of them thought that it is not important to educate the local. In these results, though there is a lack of awareness on

coastal management in Kuala Selangor yet the public believed that it is important to educate people about it with a significant percentage. (Figure 5.4)

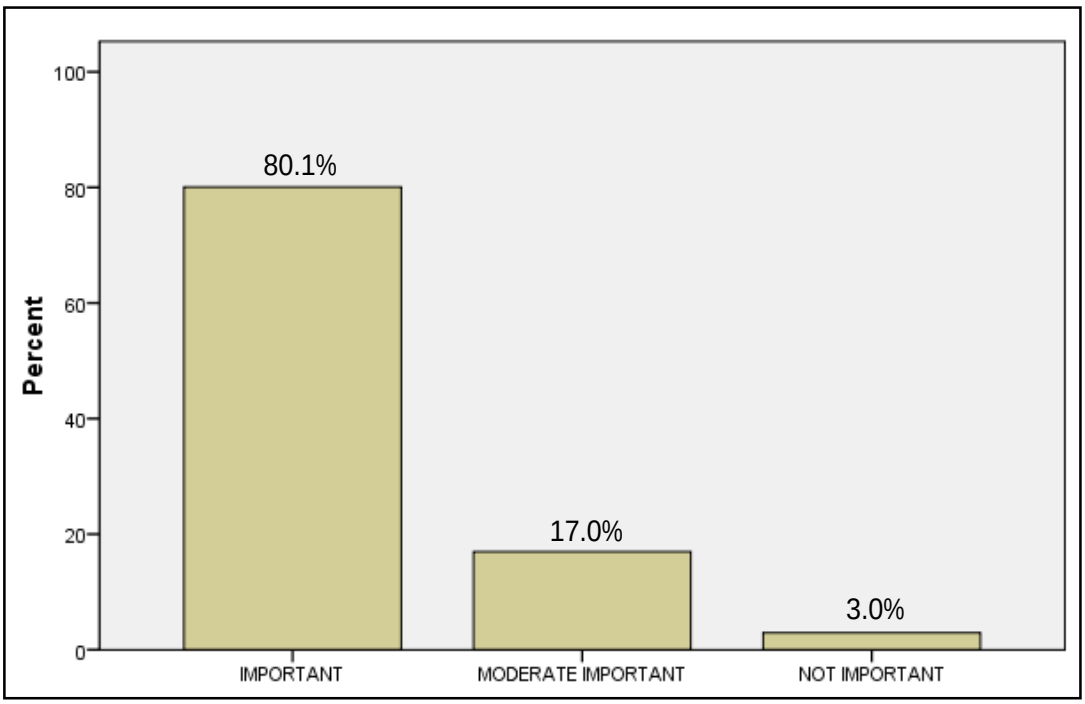

Figure 5.4: Public Opinion on Educating local people about Coastal Areas Management. (In Percentages)
Source: (Field Survey, 2012)

The involvement of people and community in coastal zone management programs all around the world can be strengthened by coastal zone education. Lessons from citizen environmental involvements in a significant part of coastal policy-making process in industrialized democracies can provide useful example.

The public support for realizing transparency and consensus building in integrating coastal development is vital. The coastal zone management at local and regional level is in the transition stage of environment and development mix and national-local power delegations while the emerging local growth and environmental politics is becoming an important influence. Involving the educational sector provides other great opportunities, since it is a system already focused on learning. Training

local people in coastal management issues and incorporating coastal environment issues in regular curricula is very effective. The Education Program on any coastal areas should produce various brochures, booklets, reports and audiovisual material for dissemination to the public to create awareness of issues affecting the coastal zone. Any type of public education tools is important nowadays.

5.5 DETERMINING THE LEVEL OF AWARENESS TOWARDS COASTAL ENVIRONMENT

As the number of people moving to the Coastal area increases, so the risk of exposure to floods, hurricanes, and other environmental events does. Additionally, it has been noted that natural disasters, such as hurricanes, can develop into a larger crisis, becoming for example an economic disaster (Telg et al., 2008). These results are particularly alarming for coastal managers and decision-makers. In their part as community leaders, decision-makers would like to boost their communities' capacity to bounce back from stressors, reducing immediate impacts and long-term environmental losses. Nonetheless, to overcome this issue requires having a baseline data detailing the current condition of local community awareness in terms of its resilience to future environmental disasters. In this study, the level of awareness amongst the local community towards the coastal environment is considered one of the key to a resilience coastal community. The following discussion takes environmental issues impact, responsibility, environmental causation and programs provision as indicators for local community awareness on coastal management .The community awareness assessment may identify problems/issues the community should address to join the decision-makers or be part of mitigation coastal programs where resources should be allocated.

5.5.1 Environmental Issues Impact

The questionnaires survey provided the possible coastal environmental issues and problems in which the local people have to pick and/or in addition to write those they feel are not included in the list provided in the questionnaires. They are encouraged to pick or write those that are unique to the area in which the local community may likely experience and to list this in order of importance.

Table 5.4 is the analysis of the result obtained from the respondents on the perception of coastal environmental issues. From the analysis however, it can be concluded that local community is likely to form an identification of coastal environmental issues based on their area. The major area of concentration amongst most of them is Water Pollution, Deforestation, Waste & Waste Management, Erosion, Land Degradation and Flooding. Additionally, respondents believed that coastal environmental issues have a moderate impact on their coastal environment. To be relevant to the context of awareness that considered as a basic knowledge due to, no significant numbers showed a strong impact regarding a real coastal environmental issue that exist in the study area.

Table 5.4
Respondents Perceptions on Coastal Environmental Issues

Coastal Environmental Issues	Order of Impact			
	NO IMPACT (1)	WEAK IMPACT (2)	MODERATE IMPACT (3)	STRONG IMPACT (4)
FLOODING	36.90%	15.50%	38.40%	9.20%
WATR POLLUTION	15.50%	16.30%	43.50%	24.70%
EROSION	20.30%	23.20%	34.30%	22.20%
DEFORESTATION	21%	15.90%	39.10%	24%
WASTE & WASTE MANAGEMENT	19.60%	22.50%	29.50%	28.40%
LAND DEGRADATION	25.10%	22.10%	37.60%	15.20%

Source: Field Survey, 2012

From the graph shown in Figure 5.5 after coding in the data collected, by assigning different weight to the result. Weight four shows a strong impact, three being moderate impact, two for weak impact and one as no impact at all. This is further summed up according to how various respondents picked them in order of impact using the frequencies as a unit of weighted.

The Figure 5.5 shows the significant environmental issues weighted by respondents. The analysis thus showed that water pollution is the most common environmental problem in the coastal area in Kuala Selangor with a total weight of 185; this is followed by occurrence of deforestation having a total weight of 171, waste and waste management problem as a result of increasing urban activities along the coast with a total weight of 157. This is followed by erosion and land degradation with a total weight of 153 and 143 respectively and flooding having a total weight of 129.

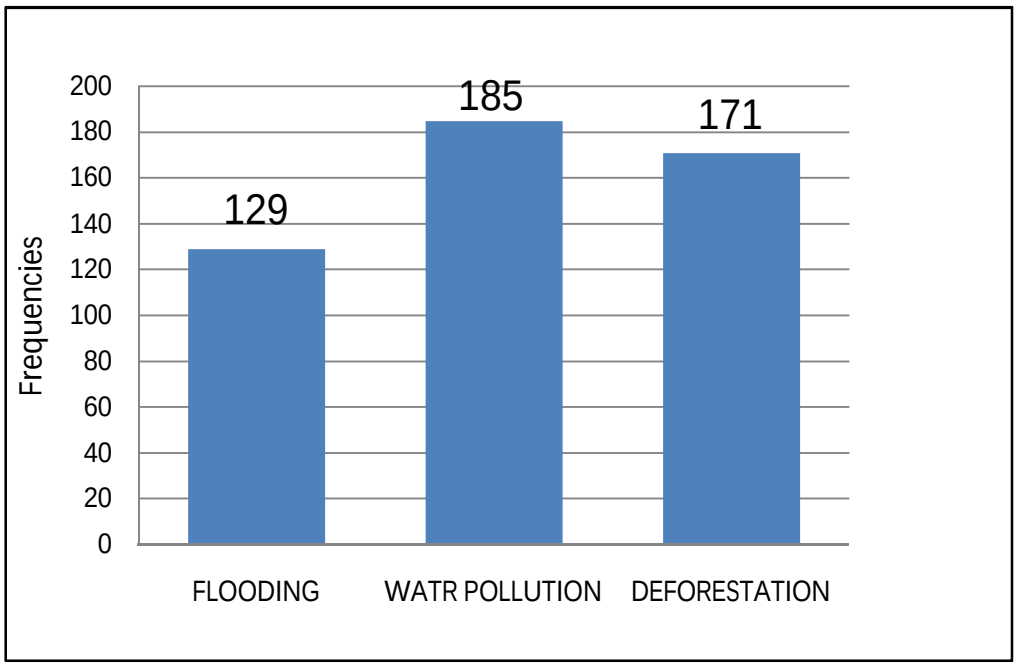

Figure 5.5: Analysis of Coastal Environmental Issues.
Source: Fieldwork, 2012

In addition, the majority of respondents gave more impact to the water pollution followed by deforestation and the least one is flooding. Therefore, these answer and referring to section 2.6 from chapter two, consider the basic information or general answer could be provided anywhere but comparing this weighted with the real status of Kuala Selangor there are a lack of awareness in this regard.

5.5.2 Environmental Factors

In the questionnaires provided to local people the question number 4, part B designed to know if the local people have ever exposed to the causes of coastal environmental issues/problems before and what is their perception in classifying the causes of coastal environment degradation. On the other hand, the causes have been selected from a long list of things that have a negative factor or increase the coastal environmental issues. In the questionnaires these causes have sorted randomly to give more reliability to the study as many respondents kept ask about if they are sorted according to their importance. Nonetheless, if the respondents select any answer the answer consider 'Yes' and if they did not selected the answer will be 'No', as 'Yes' means it is a cause of coastal environment issue and vice versa.

The figure 5.6 shows the results after the data has been coded and analyzed. The list of coastal environmental issues causes include the following without any order of priority:

a. Industrialization
b. Population growth
c. Policies and law
d. lack of proper management
e. Financial constraints

f. Urbanization

g. Lack of programs for local participation

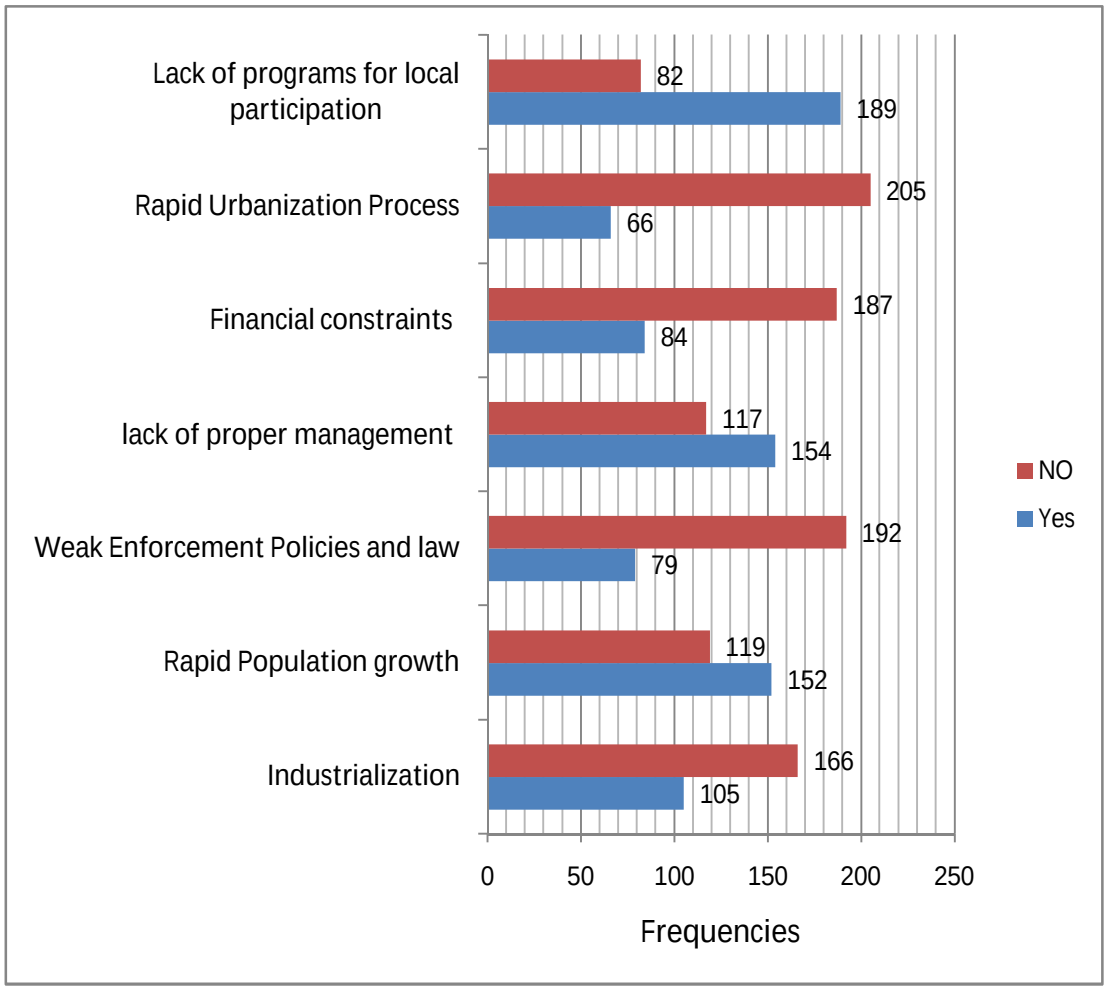

Figure 5.6: Causes of Coastal Environment Issues in Kuala Selangor.
Source: Fieldwork, 2012

According to data analysis, Industrialization has achieved 166 'No' answer out of 271 as it is not a major cause whilst, the population growth reached only 119 for a 'No' Answer. In Kuala Selangor District, 79 participants out 271 agreed that policies and law is one of the causes of environmental issues. However, Lack of proper management and financial constraints achieved 154 and 84 'Yes' answers respectively. Furthermore, Urbanization scored 205 of 'No' answers; make it the least

cause of coastal environmental problems in the opinion of local people. Lack of coastal programs for local participation has the highest score of 'Yes' answer with 189 respondents. (Refer to Figure 5.6)

Every second the environment is being damaged. The majority of these damages are caused by man-made by-products and its related issues causing serious environmental degradation. Therefore, some of the man-made products that cause this degradation have similar on coastal environmental degradation. Since preventing or repairing environmental damages is often beyond the scope of individuals or even community actions, problem-focused coping becomes difficult. Every environmental problem has causes, numerous effects, and most importantly, solutions. One possible way to overcome this situation consists of assigning responsibility for the outcome to a cause which can be controlled. Incidental and situational effects can affect anyone, whereas effects of intentional human actions can be avoided if brought under control.

5.5.3 Responsibility

The responsibility of managing the coastal areas is not limited to one governmental body. At present, government agencies are organized by sectors and serve primarily to administer their respective assigned responsibilities, especially as detailed in enabling legislation. The problem is compounded by the federal structure of the Malaysian and government resultant fragmentation between the Federal and State governments (Nordin, 2006).

The respondents asked to set their opinion about the responsibility weight on coastal planning and management in Kuala Selangor. Additionally, using the weighting system with range between 1 to 4 and starting from the weight 1 which labeled as not responsible at all, followed by 2 which is weak responsibility, 3 is

representing the moderate responsibility and number 4 as strong responsibility. The respondents would have to weigh the following selected bodies/department: Federal government, Local authorities, Town and country planning department and Local communities. Furthermore, the responsibility is not limited to those previous mentioned bodies/department but emphasis is made on the suitable ones for this study.

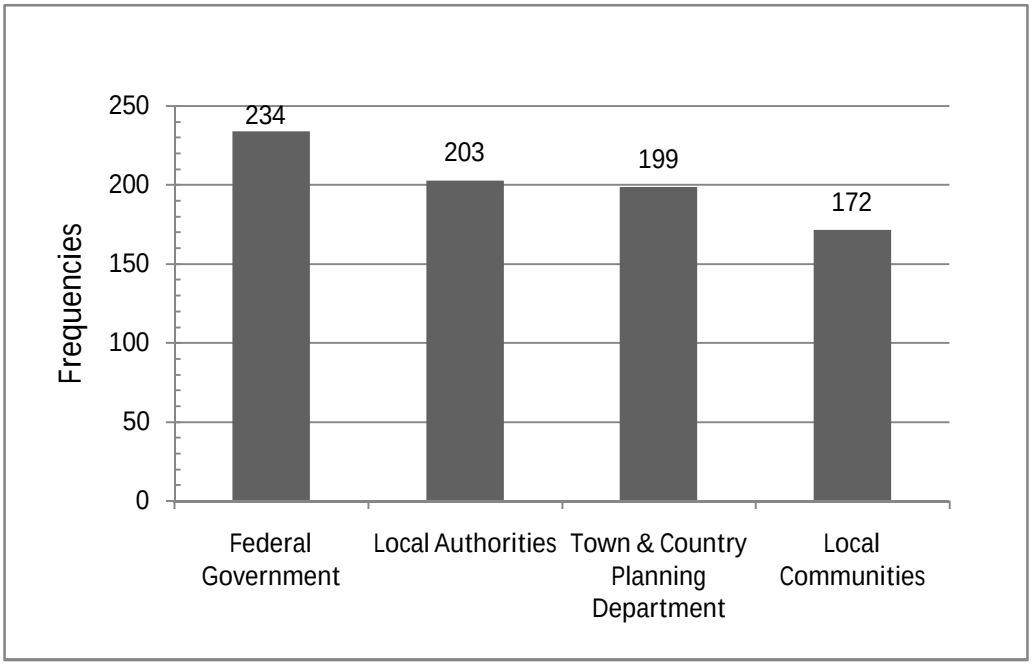

Figure 5.7: Responsibility of managing and planning the coastal areas in Kuala Selangor district (Local Community, frequencies opinion).
Source: Fieldwork, 2012

Figure 5.6, renders the analysis of the coded data that have collected from the survey and it shows results of local community opinion about the responsibility of managing and planning the coastal areas in Kuala Selangor district. The data stand for the frequencies of local community in Kuala Selangor. In addition, the results reflect the opinion of community and the most responsible according to them is the federal government with 234 of respondents' weight. The second most responsible entity is the local authority as its weighted 203. On the other hand, the town and country

planning weighted 199 leaving the least responsibility on local communities as is weighted 172. (Figure 5.7)

Moreover, there is no proper coordination procedure to facilitate respective government agencies to identify coastal zone problems that do not plunge within immediate jurisdictional responsibility of a single agency. Implication of lack of communication between planners, managing government agencies and stakeholders restricted opportunities for local participation in decision making and development planning.

5.5.4 Programs Provision

Coastal management is a continuous and dynamic process by which decisions are made for the sustainable use, development and protection of coastal areas and resources. Coastal management requires understanding complex, dynamic ecological systems and creating governance systems capable of addressing issues of concern to society.

In developing countries, coastal governance systems address not only environmental and natural resource management, but also environmental justice, poverty alleviation, developing a work flexibility, and strengthening of social capital.

In Kuala Selangor, the respondents were asked about the availability of any programs or activities on coastal areas. However, the results show around 77% of the participants agreed there are no programs or activities regarding coastal areas. (Refer Figure 5.8)

Building a framework of coastal programs such as awareness programs and promoting decision making process amongst local community will increase the sense of “Ownership” and these incentives encourage local people to participate effectively.

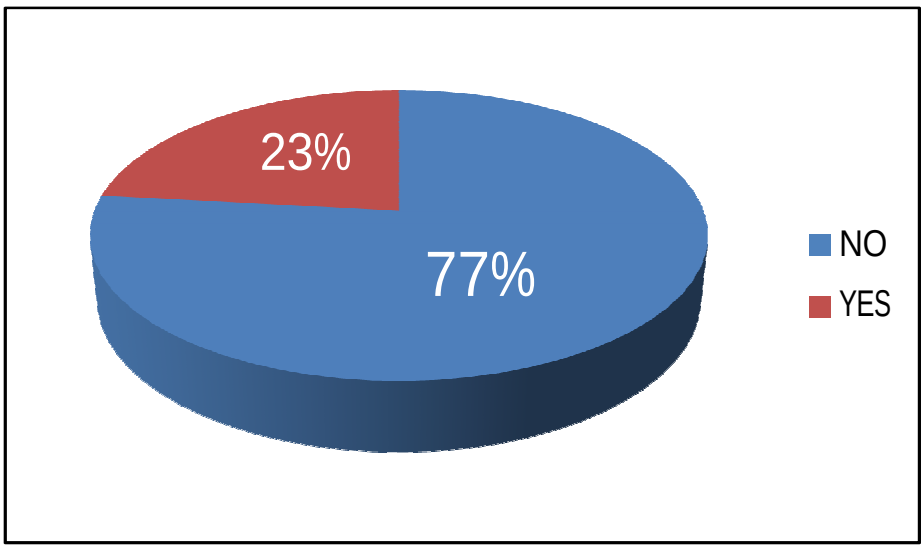

Figure 5.8: Provision of Coastal Programs in Kuala Selangor. (Local Perceptions)
Source: Field Survey, 2012

The world population is concentrated in coastal areas, where communities and natural resource-based economies are especially vulnerable to accelerated sea level rise and lake level changes, shoreline erosion, increased storm frequency or intensity, changes in rainfall, and related flooding. Preparing for and coping with the impacts of climate change has been termed “adaptation” by the coastal research and management community. Many of these impacts will require adaptation solutions that cross federal, state, regional, and local agencies, programs, policies, and political jurisdictions. In addition, coastal management should adopt more active participatory process in order to engage local people in management practices.

5.6 RECOMMENDATIONS BY RESPONDENTS

The respondents from the questionnaires showed that raising awareness and conducting more programs on coastal management and its benefits on coastal environment are very important. In part C of the questionnaires question number five,

the local asked to identify elements that could improve the coastal environment in Kuala Selangor coastal area.

The results as render in Figure 5.9 showed significance of both conducting programs regarding coastal management and educating people about their coastal environmental issues with 180 and 175 respectively. In this study, awareness is the main focus and as recommendations put together, the local people believe that education is the right path as one of the elements to improve the coastal environment as well as the coastal management. Moreover, 159 respondents weighted the enforcement of coastal policies as the third most significant element to be improved in coastal area of Kuala Selangor.

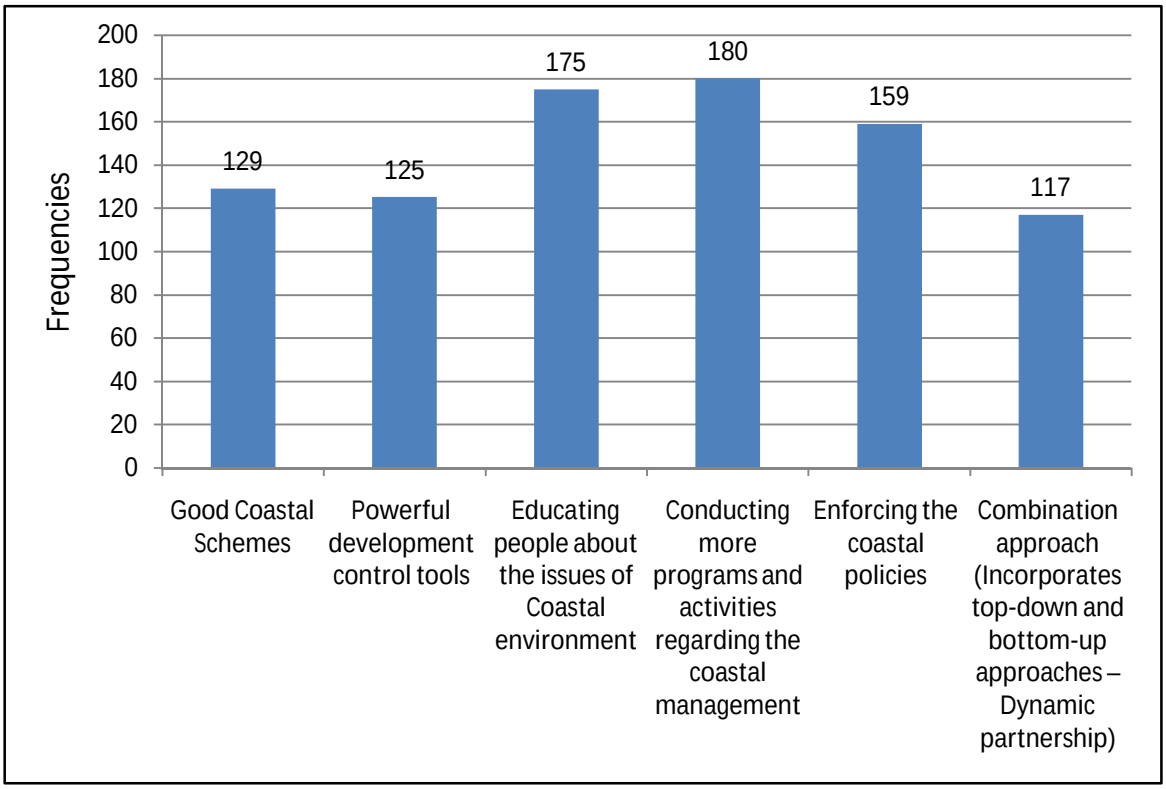

Figure 5.9: Analysis of Recommendations.
Source: Field Survey, 2012

On the other hands, local people and through this survey identified the main problem as the researcher anticipated, lack of awareness due to the lack of education in coastal management. This should be highlighted as well as the lack of programs in Kuala Selangor regarding coastal management. Ultimately, local community in Kuala Selangor has recognized the issues of awareness and provision of programs and addressing these issues could play a crucial role in making a difference in improving the coastal environment in Kuala Selangor. (Refer to Figure 5.9)

Coastal management education according to the respondents should be given a significant priority. Additionally, recommendations precisely identify the lack of programs and the awareness as the main issues to be addressed to improve the local community engagement on coastal management.

5.7 CONCLUSION

The overall data analysis and presentation render that local community of Kuala Selangor has insufficient knowledge of coastal environmental management. Although their level of awareness is poor, local people are keen to participate in education programs on coastal management as many respondents have confirmed. There is greater need on awareness of coastal management at local community level. The next Chapter will discuss the summary of findings and recommendations of study outcome accordingly; the findings will serve as main thrust of recommendations.

CHAPTER SIX

RECOMMENDATIONS AND CONCLUSION

6.1 INTRODUCTION

This final chapter of the thesis brings together the summary of the research in order to provide final conclusions about the awareness of local communities in coastal management in Kuala Selangor and hence make suitable recommendations as a result of the study. The chapter begins with a summary of the findings of the research and ends with final conclusion.

6.2 SUMMARY OF THE FINDINGS

The researcher was able to come out with some of the findings were discussed previously, the following shows the summary and points notes of the findings outcomes of data analyzed in this chapter:

6.2.1 Coastal Management

Firstly, there is no unified legislation or Administration that tries to bring the stakeholders of coastal areas in Kuala Selangor under one umbrella of partnership. In addition, there is no proper coordination procedures to facilitate respective government agencies to identify coastal zone problems that do not come under immediate jurisdictional responsibility of a single agency. Implication of lack of communication between planners, managing government agencies and stakeholders restricted opportunities for local participation in decision making and development planning is clear.

Secondly, Local Community did not clearly address the responsibility of coastal issues in Kuala Selangor; yet the local people give in general the causes of environmental issues that are not necessary on the coastal environmental issues causations. Local community identified the coastal environmental issues from what they got in the media and happening to neighbor countries such as “Flooding” although the fact is Kuala Selangor is less likely to have any flooding in the foreseeable future. The people however, recognized it as a cause of coastal environmental issues in Kuala Selangor and that shows a poor awareness regarding these matters.

6.2.2 Awareness and Education on Local Level

First of all, as section 2.6 (Literature Review) discussed the importance of individual's education level in raising the awareness of coastal management which will lead to more effective community participation. This can be improved by increasing the educational level of the public, as the more educated the local people become, the more awareness be gotten.

The second one, the local people were unable to fully identify the beneficiaries from the awareness of coastal management and more significant number went for both the nature and people factors only. On the other hand, the awareness in coastal management benefits all of stakeholders in coastal area, including the government, which the local people fail to address as part of coastal management process in decision making and funding.

The third one, Local people in Kuala Selangor were willing to attend programs about coastal management, however, they need greater motivation to encourage them to participate in these programs. The motivation should come from greater publicity of

the programs; build a connection between the local community and these programs should be established. In literature review section 2.2.4, the management of coastal areas by the community is identified as one of the ways to motivate the local to join these types of programs as it gives the sense of involvement and ownership to them. The results showed a strong evidence of lack of awareness as this question asked directly to the local community. In general coastal environmental management awareness is very poor in the study area amongst the local people. There is weak training and programs conduction on awareness of coastal management. Most of the programs conducted within and for only Kuala Selangor Natural Park in Seasonal Events.

Furthermore, the majority of respondents painted out more impact on the water pollution followed by deforestation and the least one is flooding. Therefore, these answers in reference to section 2.6 from chapter two, emphasis the basic information or general answers results on provided comparing with the weighted the real status of Kuala Selangor seems to show a lack of awareness in this regard.

The last finding, majority of local people agreed there are no programs or activities regarding costal area recently conducted in Kuala Selangor. Building a framework of coastal programs such as awareness programs and promoting decision making process amongst local community will increase the sense of “Ownership” and these incentives encourage local people to participate effectively.

6.3 RECOMMENDATIONS

Based on the analysis of data collected, the literature reviewed and the experience from the field of study, recommendations are herby suggested to improve the awareness and the education in coastal management amongst local community. Action

can be taken in a variety of areas to increase coastal environmental awareness and education. Some of the categories recommended are: environmental legal rights and responsibilities and associated consequences, use of the media, awareness raising campaigns, incorporation of environmental issues in mainstream education, increasing awareness and education in target groups and encouragement of public participation in environmental matters.

It is believed that these recommendations will be able to deal with the problems of awareness in coastal management and benefit the whole coastal management system. There are seven main recommendations proposed and divided to two main aspects. First aspect is the management and the second is awareness and education.

6.3.1 Management Aspects

The recommendations on management aspects are the following:

I. The first recommendation is an establishment of coordination amongst various sectors of society in order to get them involved in developing and delivering educational courses and public awareness campaigns. This include setting involvement of Governmental institutions at the national, regional, and local levels; domestic and international NGOs; primary, secondary, and post-secondary schools; journalists and the media; celebrities; and other individuals and institutions. Educational and awareness efforts can target practically any sector of society. Local community can seek to raise public awareness broadly on coastal environmental issues (e.g., through the media) or may be through a targeted campaign or educational effort focused on a specific sector (or target

audience) on a specific coastal issue.

II. Secondly, Build consensus and support for sustainable management initiatives, and help engage the public in the decision-making process while also ensuring that the government is responsive to coastal environmental needs. The public in this region is generally poorly informed concerning the value of healthy and sustainably managed coastal environments, or the possible impacts that various activities can have on their well being and the health of the environment. It is crucial in this region to build such a consensus to lead to more effective discussion and evaluation of coastal environmental issues by local community, but this could be one significant positive outcome in the future.

III. The last recommendation from the management perspective is to turn to participatory aspects, as the coastal area of Kuala Selangor rich with natural resource such as mangrove. Therefore, community-based coastal resource management (CB-CRM) is a potential development option in order for Kuala Selangor to address problems of rural poverty and environmental degradation. A variety of CB-CRM approaches have been tried in several developing countries during the last decades and there are working models which exist in India, Nepal, Indonesia, Philippines, Thailand, and other countries (mentioned briefly in Chapter two). Legislation should be established to empower the community by defining their rights over the community property rights; next, support needs to be given to the grassroots initiatives; finally, trust needs to be built in the community, and between the communities and the government in Kuala Selangor.

6.3.2 Awareness and Education Aspects

The recommendations on awareness and education aspects are the following:

I. Firstly, awareness and education on rights, responsibilities, and impact between environmental law and social responsibility in the context of enforcement can best be illustrated through coastal environmental education and public awareness initiatives. Public awareness and participation is important in all aspects of enforcement, not only in understanding basic environment and human rights, but also in fostering a sense of responsibility and proactive environmental citizenship.

II. The second recommendation is focusing on the awareness raising campaigns which are often most successful when they are targeted at specific groups because information can be tailored to the activities, needs and challenges of the group. Involving organizations and communities in environmental protection and enforcement can create a sense of stewardship towards the environment, ease hardship through the collaboration and provide a forum for new ideas and greater participation. Examples of such collaboration and stewardship can be seen in the initiatives of some NGOs and organizations in the private sectors in countries around the world. They have been active in raising public awareness of coastal environment development issues and mobilized people to take actions that have contributed to positive changes for the coastal environment.

III. Implementing the “Mainstreaming” environmental education programs into schools as a regular part of the curriculum increase public environmental awareness and demonstrates a commitment to environmental protection. Coastal environmental education can be integrated into existing disciplines

or it can be taught as a subject in its own right. It can be taught as early as primary school as well as in adult education programs. Coastal environmental education should include the young people as Agenda 21 suggests the responsibilities and roles of the State in integrating of youth's role in the field of environment and development and recommends the establishment of national organizations to evaluate development, coastal environmental policies and programs related to youth. The involvement of today's youth in environment and development decision-making and in the implementation of programs has been internationally recognized as critical to sustainable development.

IV. Lastly, funding for awareness and education initiatives may come from a variety of sources. Often, it comes from the budgets of specific agencies or Ministries; it is uncommon for such initiatives to receive funding directly from the central budget. Some States have accessed their national Environment Funds to provide partial funding for environmental awareness and education. The recommendation here federal government to provide the headset responsible as it is held the responsibility for coastal areas and it is one the main stakeholders and party in coastal environment protection process. It should be noted that financial viability needs to be ensured. This research reveals that the lack of financial support is a major constraint of sustaining innovations in the field. Cost effectiveness suggests that ways be found to assist existing institutions and agencies in order to ensure sustainability of their environmental awareness activities. The researcher observation comes from the visitation to Kuala Selangor Natural Park; the researcher observes the poor level of educational facilities and its services.

6.4 AREA FOR FUTURE STUDIES

The recommendations of this thesis as discussed above mitigated some of the issues regarding coastal management of Kuala Selangor due to the constraints and short duration of research. The study has not been fully able to explore some vital areas which may have been used in measuring the viability of coastal management in the study area. Due to this limited area of scope of this study, further possible areas, which may better understand and enhance the quality of such study is anticipated as follows:

I. That the contribution and importance of 'leadership' in coastal environmental protection awareness be examined as a critical component to successful implementation of coastal awareness programs.

II. That a national review of monitoring and data collection on the coastal environment awareness be undertaken to respond to the recommendations of Environmental Sustainability.

III. That the wider influences of power and politics be examined in relation to coastal development as a possible reason why coastal environmental awareness programs are not being implemented.

IV. The higher role of coastal education programs conducted by Kuala Selangor Natural Park in promoting coastal environmental protection in Kuala Selangor.

V. A similar study should be conducted on other states within the country as this will give more extended for analysis of the problem of awareness in depth and help the coastal stakeholders to mitigate this problem as soon as possible.

6.5 CONCLUSION

Throughout the thesis it has been argued that the lack of local community awareness is considered the main problem in weakening the local community participation in coastal management. The lack of programs also partly contributes to poor coastal management. The outcomes of this research demonstrate clearly that the lack of programs lead to little information being received by the public which eventually cause poor participation in coastal management at local level in Kuala Selangor. Public understanding and awareness of both the biological and economical importance of Kuala Selangor coastal resources, and the need for proper management is critical to sustainable use and development of these resources.

Collaboration and policy making are providing foundations for more effective coastal governance. As the recommendations of this thesis have already stated, developing a deeper understanding of the nature of the problem to be addressed can facilitate greater engagement of coastal stakeholders in the decision making processes. This sense of ownership in the decision making process can thus help to maintain shared consensus and encourage learning between coastal stakeholders, thus helping to increase the combined powers of stakeholders in collaborative arrangements.

In order to bring about the necessary conditions to foster CB-CRM in Kuala Selangor, relevant government agencies such as the Forestry and Fisheries Departments, the Ministry of natural resources and Environment, and other agencies must support appropriate policies related to coastal management. This implies that authorities must clearly and explicitly delegate to communities and community groups some degree of management authority over the resources. Resource dependent communities need to be given legal access and user rights that are recognized by the government and that will empower the awareness programs as information on coastal

areas environment provided. Community organizing is the process of building awareness, promoting new values, developing leadership capabilities, and enabling communities to take action. Good community organization is at least as important to success as good technologies.

It is more than just setting up organizations. It facilitates the process of change, which promotes more equitable and life sustaining conditions. The concepts and tools of environmental education can help empower communities to determine their economic and social problems and needs within an environmental management framework. Environmental education should draw upon local knowledge and scientific aspects of resources. Local environmental knowledge is usually not standard but is passed on over generations through daily life experiences.

Finally, the recommendations proposed based on primary and secondary data were obtained from the site and various literature reviewed, as well as from the recommendations of respondents. Knowledge that the author gained throughout the entire course program also contributed much to the study. A final statement in conclusion by the researcher is that stewardship of our coastal environment and the accountability for its good management rests with this generation and the generation to come. The younger generation must therefore take head and show interest and concerns for coastal environment preservation and management for a saver and healthier future.

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APPENDIX I

Questionnaire:

Part A: Respondent details

Age: ☐20-30 ☐ 31-40 ☐ 41-50 ☐ 50 and older

Current Occupation: _____ Village/Town/ City: _____

Highest level of education:_____

Job Status: ☐ Employed, ☐ Public agency ☐ Private agency

☐ Unemployed

Length of stay in Kuala Selangor:

☐Less than 5 years ☐ 6-10 Years ☐ 11-15 years ☐16-20 Years ☐ More than 21 Years

Part B: Environmental Coastal Issues

1. Which of the following has impact on the environment of Kuala Selangor coastal areas: (Opinion based question and it indicates the respondent awareness & knowledge about the environment of coastal areas).

Environment Issues	No Impact	Weak Impact	Moderate Impact	Strong Impact
a. Flooding.				
b. Water Pollution.				
c. Erosion.				
d. Deforestation.				
e. Waste & Waste Management.				
f. Land Degradation.				
g. Others, Please specify:_____				

2. Who is responsible for planning Kuala Selangor coastal areas? (You may tick more than one).

Bodies/Departments	Not responsible at all	Weak responsibility	Moderate responsibility	Strong responsibility
a. Federal Government.				
b. Local Authorities.				
c. Town and Country Planning Department.				
d. Local Communities.				
e. Others, Please specify:_____				

3. Is there any program or activity regarding your coastal areas recently conducted? (Kindly, Name at least one of these programs and if there is nothing leave the blank empty)

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2. In your opinion what are the causes of coastal environmental issues in Kuala Selangor coastal areas? (You may select more than one)

   a. Industrialization
   b. Population growth
   c. Policies and law
   d. lack of proper management
   e. Financial constraints
   f. Urbanization
   g. Lack of programs for local participation

   Others, Please Specify,

   _____

   _____

Part C: Environmental Issues and Awareness on Local Level (Local Participation).

1. Are you aware of the Integrated Coastal Management (ICM) or Coastal Management (CM)?

☐Aware ☐Poorly Aware ☐Not Aware at all

2. Do you think educating people about coastal area management is :

☐Important ☐Moderate Important ☐Not Important

3. Do you think raising the awareness of coastal management in Kuala Selangor areas will benefit:

Beneficiaries	Not significance	Minor significance	Moderate significance	Very significance
a. People				
b. Nature				
c. Government				
d. People, Nature and Government				

4. If your local authority conducts a program about coastal management, will you attend? (Participation).

☐ Yes.
☐No,explain,_____
_____
_____
_____
_____

5. In your opinion, what are the elements that could improve your coastal environment?

Elements of Improvement	Not significance	Minor significance	Moderate significance	Very significance
a. Good Coastal Schemes				
b. Powerful development control tools				
c. Educating people about the issues of Coastal environment				

d. Conducting more programs and activities regarding the coastal management				
e. Enforcing the coastal policies				
f. Combination approach (Incorporates top-down and bottom-up approaches – Dynamic partnership)				
g. Other (please specify)				

6. What is your recommendation on community's participation on the coastal management to sustain Kuala Selangor coastal environment?

~~~~~~~~~~~~ Thank you for your co-operation ~~~~~~~~~~~~
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