THE LOCAL RECEPTIVENESS OF SUSTAINABLE INTEGRATED COASTAL MANAGEMENT (ICM) IMPLEMENTATION IN INDONESIA:

A Case Study of Bandar Lampung and Lessons Learned From Xiamen, China

THESIS

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For my dad, mom, angel and little hero

ABSTRACT

THE LOCAL RECEPTIVENESS OF SUSTAINABLE INTEGRATED COASTAL MANAGEMENT (ICM) IMPLEMENTATION IN INDONESIA:
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The nature of coastal zone as common property resources has come to the open access exploitation. The rapid development has impacted to the coastal degradation as a tragedy of commons and spread of interest conflicts. The concept of integrated coastal management (ICM) is created as a dynamic process how coastal resources are allocated through a set of institutional arrangements dealing with development and conservation balance. Many literatures have promoted the worldwide guidelines to implement ICM concept. However, in the context of decentralized coastal zone management, ICM will vary on the receptiveness depending on local context. The dependency of ICM implementation on external funds has impacted to the unsustainable of ICM's institutions in most of developing countries. Meanwhile, the enactment of coastal zone management act (Law no.27/2007) in Indonesia has brought the ambiguity whether ICM implementation is local initiative or coercive. This research is aimed to understand the level of local receptiveness that portray how strong ICM is needed and willing to be absorbed, accepted and utilized towards ICM sustainability. It analyzes a case of Bandar Lampung city and lessons learned from successful experiences of ICM in Xiamen, China. Although Xiamen has high receptiveness, the limitation of general public and NGO involvement, Xiamen is indicated to not implement ICM approach as a whole. Meanwhile, Bandar Lampung has medium receptiveness due to scattered ICM development due to the effort to fully adopt ICM concept. Finally, the strategies on ICM's institutions are also elaborated to strengthen the local receptiveness for Bandar Lampung and global context.

Key words: Integrated Coastal Management (ICM), Receptiveness, Receptiveness Assessment, Sustainability

GUIDELINE FOR USING THESIS

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Tri Danny Anggoro
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CHAPTER 1. INTRODUCTION

1.1. Background

Nowadays coastal area development has been intensively delivered with many activities in various sectors, both of government and private sectors, utilizing all resources in this area. This condition is triggered by the status of coastal area as common property in which everyone can utilize all resources in this area. In addition, many cities located in coastal areas have become center of economic growth determined by themselves or national policy. Surely, this situation encourages indisposed competition among users or actors in the coastal area, which in turn produces conflict of interest, unsustainable development and also present intersection in coastal development planning between sectoral activities, local government, community and private sectors.

Managing various activities involving many sectors and actors in coastal area needs an integrated approach of development planning for coordinating and directing all activities from two or more sectors. Integrated planning usually is intended to harmonize, optimize, and coordinate activities between environment interest, public participation and economic development. This approach is called integrated coastal management (ICM). The integration of this approach consists of three dimensions namely sectoral, science and ecological linkages. This approach also considers sustainable development approach consisting of ecological, social, economic, cultural, political, law and institutional dimensions (Dahuri, 2008).

Basically, there are three steps in integrated coastal management (ICM) process, namely planning, implementation and controlling and evaluation. The characteristics of the ICM process include, on the one hand, balancing development and conservation and ensuring multi-sectoral planning, and, on the other hand, participation and conflict mediation. A central purpose of ICM is to create conditions for a sustained effort whose fundamental goal is to reform the objectives, structure and processes of governance that control how coastal resources are allocated. ICM employs a suite of tools including marine protected areas (MPAs), land-use control, marine zoning and permit systems, conflict resolution, planning, and fisheries management (Christie, 2005; Dahuri, 2008).

The main means of ICM implementation within developing countries is generally formed by externally funded projects. It drives the problem that dependency on external financial and technical assistance might create the potential for unsustainable institution and continuation of ICM implementation (Christie, 2005; Christie *et al.*, 2005). This susceptible institutional arrangement may be mainly based on a centralized approach regardless of local interest. In line with the increased awareness of decentralization processes with mandated and delegated power to local government, decentralized coastal zone management has also initiated to give self-development of coastal resources based on local interest. Therefore, it is important to develop an appropriate institutional arrangement together with management policy regarding decentralization process, which will ensure the sustainability of ICM implementation and pursue its goals achievement.

Indonesia has implemented the ICM concept through the transformation of some externally funded projects since 1993 without national framework and guidelines. The projects range from Marine Resource Evaluation and Planning (MREP (1993/1994 – 1998/1999); to Segara Anakan Coastal Development Project (SACDP (1996); then Coastal Resources Management Project or Proyek Pesisir (CRMP (1997-2003); and later on Coral Reef Rehabilitation and Management (COREMAP (1999-2003) (MMAF, 2003). Those projects are mainly implemented by centralized and controlled power from central government directed by externally funded donors. After these three projects (MREP, CRMP dan COREMAP) are finished, ICM projects are continued by a second phase with the modification of an attempt to adjust local needs, which are Marine and Coastal Resources Management Project (MCRMP) and COREMAP Phase II (MMAF, 2003; Darajati *et al.*, 2004). However, MCRMP that represented a comprehensive ICM implementation towards a decentralized approach, finished in 2009. This may brought many experiences rather than ensuring the sustainability of ICM implementation with fragile institutional arrangements (MMAF, 2005). Based on this, starting from national decentralization policy with the enactment Law no.32/2004 on regional autonomy, decentralized coastal zone management has been issued by the enactment of Law no. 27/2007 on coastal area and small islands management. It encourages to develop institutional arrangement for delivering ICM implementation due to the dynamics of local needs and interest.

This research will focus on the institutionalized process of ICM implementation by analyzing the local receptiveness in delivering the ICM concept due to decentralization policy. The local receptiveness will represent the local initiative to absorb, accept and utilize the ICM concept (Jeffrey and Seaton, 2004). Then, institutional development at the local level will be elaborated in order to deepen the understanding of local receptiveness of ICM implementation. Thus, the strong receptiveness on ICM implementation supported by clear institutional arrangements at the local level will depict the enhancement of sustainable ICM implementation. This research will analyze two case studies at the local level responding to the policy of decentralized coastal zone management. Those are Bandar Lampung city, Indonesia and Xiamen municipality, China.

Bandar Lampung city is one of many coastal cities in Indonesia located at a strategic position. It is the starting point to connect Sumatera Island and Java Island. It is also directly connected to Jakarta city due to trading route, meaning that Bandar Lampung city has become important in distributing products and services from Java Island to Sumatera Island. The strategic location and also productive coastal waters have enlarged the intensive use of the coastal zone in Bandar Lampung city. Indeed, coastal zone in Bandar Lampung has become the center economic growth triggering by manufacture industries, seaport and ware housing, fisheries, tourism and transportation (Bandar Lampung Government, 2007a; Bandar Lampung Government, 2009a). These intensive activities are also pressured by wide coastal reclamation, illegal fishing, industrial wastes which have impacted to the coastal degradation (pollution) and spread of conflict of interests (Yudha, 2007). The increased development pressures triggered by the escalation of permit applications from investors and other activities have aroused a self-awareness of local government on managing the coastal zone in an integrated way

(Bandar Lampung Government, 2007a). While facing the intensive use of coastal zone, there was neither regulation nor integrated management on coastal zone until decentralization policy issued in 1999 and the policy of decentralized coastal zone management issued through The Law on Coastal Zone and Small Islands Management in 2007. Parallel with the need of integrated coastal management, recently, Bandar Lampung city has been implementing the ICM concept regarding mandatory policy stated in the law. Hence, Bandar Lampung city has been developing institutional arrangements to respond this policy and the need to overcome local problems in managing the coastal zone.

Meanwhile, China has implemented the ICM concept with the succesful story of a local ICM approach in Xiamen (Chua, 1997; PEMSEA, 1996). Xiamen has a comprehensive decision-making system organized by local government (Lau, 2005). As one of the five special economic zone of China, it is claimed to be the success in ICM institutional development at local level, especially for the establishment of decision-making mechanism based on consensus building among Major stakeholders, and supported by science and technology perpective (Chua *et al.*,, 1997). Xiamen, depicted as coastal city and triggered as a special economic zone, has experienced the intensive use of coastal zone mainly as industrial area and port development that have impacted even for long time ago on coastal and marine degradation (coastal pollution) and also conflict among users. Despite the influence of external funds, Xiamen city has initially created an integrated approach to mainly overcome coastal pollution and other impacts through locally managed approach. Nowadays, Xiamen city has claimed to be as an international experience on delivering integrated coastal management approach on pure locally and sustainably initiated processes (PEMSEA, 1996).

Many of the ICM implementations in Indonesia are mainly based on the ICM projects funded by external donors, in which planning and decision-making mechanism are delivered through centralized approach (MMAF, 2003). The initiation to apply a decentralized framework in ICM implementation has been starting through externally funded projects focusing on capacity building in some local levels until the projects were terminated. While this process has not been comprehensively implemented because of limited projects, it might be ended with instability of institutional arrangements. Bandar Lampung's coastal zone management is also initially developed as part of Coastal Resources Management Project (CRMP) or 'Proyek Pesisir' in Lampung province that only results on coastal profile of Lampung province. ICM projects have given many experiences rather than sustainability of ICM implementation that should ensure the use of coastal resources sustainably. The enactment of decentralized ICM policy is aimed to distribute the authority and responsibility of coastal management to the local level, with closeness to local interest. However, ICM has to face the variance of stability and receptiveness of local government upon ICM (Christie, 2007). It is needed to analyze the receptiveness at the local level by understanding ICM institutional arrangements on the basis of success and sustainable ICM implementation. The local willingness of ICM implementation in Bandar Lampung city should become a national reflection to enhance the self-managing of ICM implementation rather than relying on externally funded projects. It will also support the national strategy on widening ICM implementation in Indonesia (MMAF, 2005).

Moreover, sustainable institutional arrangements should be developed under decentralized policy and legal framework that will ensure the self-sustaining of ICM implementation at the local level. The successful experiences of local and self-managing sustainable institutional development of ICM in Xiamen, China are useful as a basis for reflection on enhancing the ICM receptiveness of Bandar Lampung city in particular nand global in general.

1.2. Research Objectives

This research aims to understand the local receptiveness upon decentralized ICM policy in Indonesia by revealing the performace of institutional arrangement in implementing ICM concept regarding with acceptability and accommodation to local interest. According to the learning process of instability institutional framework with rarely legal binding and weak endorsement of financial mechanism resulted from the external funded of ICM projects and the success experience of decentralized ICM implementation from Xiamen (China), it should encourage suitable institutional arrangements to strengthen the local receptiveness towards sustainable ICM implementation particularly in decision-making process that can be transferred to the Indonesian case. In detail, the objectives of this research are:

1. To understand the difference of institutional arrangements with regard to the local receptiveness on sustainable ICM implementation between Indonesia (Bandar Lampung case) and China (Xiamen case) in the context of decentralized ICM policy.
2. To obtain deeper exploration about the level of receptiveness on success and sustainable ICM implementation due to local interest between Indonesia (Bandar Lampung case) and China (Xiamen case).
3. To identify some lesson learned from the successful experience of Xiamen, China in developing institutional arrangements and ICM planning, which is expected to contribute for the improvement of local receptiveness and ensure the sustainability of ICM implementation particularly in Bandar Lampung and global in general.

1.3. Research Questions

1. **What are responsibilities of institutional arrangements on the translation of ICM concept into practice?**
   The important roles of institutional arrangement will be explored regarding to the delivery of ICM concept into practice. The strong local receptiveness and performance upon ICM implementation determined by stability of institutions will be able to simplify the implementation of ICM into its destination.

2. **How institutional arrangements of ICM implementation are delivered in Indonesia (Bandar Lampung case) and China (Xiamen case) to understand the local receptiveness on ICM approach? What is their level of receptiveness on sustainable ICM implementation?**
   This question tries to give description that understanding of institutions and planning development in ICM implementation can be elaborated by exploring systems of rules and decision-making procedures. These institutional frameworks

then should arrange and guide the ICM implementation until they can describe the level of receptiveness and performance at the local level.

3. **To what extent does the role of institutional arrangements and planning development strengthen the receptiveness on sustainable ICM implementation at the local level in Indonesia based on learning process from Xiamen, China and what general lessons can be drawn?**
   The effectiveness and stability of institutional arrangements will contribute to the improvement of receptiveness on sustainable ICM implementation. The understanding of key strategies in developing institutional arrangements should be helpful in attempting to improve the receptiveness on sustainable ICM implementation towards strengthening decentralized ICM process. The analysis of case studies may derive other perspectives for enriching the strategies in developing institutional arrangements towards strengthened receptiveness on sustainable ICM implementation.

1.4. Research Methodology

This research will be mainly based on literature review, document analysis and comparative case study. The nature of this research will drive to explorative and comparative analysis which reveals on the basis of qualitative data and information. However, some quantitative data will be exposed to strengthen the argumentation that will be elaborated. Data and information will be obtained by relevant reference which comprise of books, journals, report documents, articles, regulation documents and professional experience by the author.

This research will be conducted with four main activities as the framework of analysis development into final objective. Those are:

1. **Framing theoretical and knowledge-based analysis**

   In this section, the research will reveal the frame of knowledge about the institutional development regarding with how local government receive and adopt the ICM implementation policy in the context of sustainability of ICM process. This theoretical perspective will provide the empirical thinking exploring the coastal zone perspective, the concept and principles of integrated coastal management, institutions and governance in integrated coastal management, decentralization of integrated coastal management, and institutions in the context of receptiveness and sustainability of integrated coastal management. This section will conclude on the synthesis of elements and indicators on how to understand and strengthen the receptiveness upon ICM and ensure the sustainability of ICM implementation. This theoretical knowledge will be cultivated from books, journal articles, national and international guidelines, international research reports, project reports, and author' experiences.

2. **Collecting and selecting data and information**

   Based on elements in the theoretical framework and knowledge-based analysis, the data and information will be collected regarding with the institutional development process describing local government receptiveness of ICM implementation in

Indonesia (the case of Bandar Lampung city) and the experience of institutional sustainability of ICM implementation in Xiamen municipality, China in the context of decentralized ICM policy. Data and information will consist of laws and regulation, coastal environmental issues, socio-economic and culture, organizational network, coastal management plans and their process, and financial mechanism.

Information regarding with coastal development in Indonesia in the form of project report, regulation documents and policy documents are directly obtained from Ministry of Marine Affairs and Fisheries (DKP) and National Development Planning Agency (Bappenas). In Bandar Lampung city, laws and regulation documents relating with coastal management, project documents (coastal environmental issues, socio-economic and culture) and policy documents (coastal management plans and their process, organizational network, financial mechanism) are directly obtained from local marine and fisheries bureau, local development planning board (Bappeda) and law and organization bureau of city government. Meanwhile, in Xiamen municipality, laws and regulation documents relating with coastal management are assessed from law database in official website and study visits to Xiamen. Coastal environmental issues, socio-economic and culture, organizational network and financial mechanism in Xiamen are depicted by document report obtained from Xiamen city government, PEMSEA representative office, official website both Xiamen city and PEMSEA and journal articles. Whereas coastal management plans and their process are represented by policy document obtained from Xiamen government and PEMSEA representative office.

3. Exploring and comparing analysis

After synthesizing the theoretical framework and arranging the operational elements for assessing local receptiveness on sustainable ICM implementation, the author will explore the institutional development process in implementing ICM concept in Bandar Lampung City, Indonesia and experiences in Xiamen Municipality, China. Then, the author will compare the institutional development process using the synthesized elements and indicators in assessing the receptiveness on sustainable ICM implementation. In the context of decentralized ICM policy, this section will also argue the strengths and weaknesses of current institutional development strategies in carrying out the increase receptiveness on sustainable ICM implementation in both cases.

4. Constructing strategies and recommendation

According to the comparison between two cases and the experiences of Xiamen municipality in developing institutional arrangement for ICM sustainability, and the theoretical-based analysis the author will propose the strategies that are useful for developing institutional arrangements towards the improvement receptiveness and ensuring the sustainability of ICM implementation at the local level in Indonesia (Bandar Lampung case)

1.5. Report Outline

In order to systemize the analysis, the structure of this research will outline into six chapters which describe as following:

Chapter 1. Introduction

This chapter will provide the research problem reasoning why this research is conducted described in background section, research objectives, research questions, research methodology, report outline and research framework.

Chapter 2. Theoretical Framework

This chapter will provide the exploration the theoretical and empirical framework as a basis of knowledge about institutional development regarding with how local government receive and adopt the ICM implementation policy in the context of sustainability of ICM process. This chapter will focus on providing the empirical thinking about the coastal zone perspective, the concept and principles of integrated coastal management, institutions and governance in integrated coastal management, decentralization of integrated coastal management, and institutions in the context of receptiveness on sustainable integrated coastal management. This section will conclude on the synthesis of elements and requirements on how to understand and strengthen the receptiveness upon ICM and ensure the sustainability of ICM implementation.

Chapter 3. Integrated Coastal Management (ICM) Implementation at the Local Level in China (Case of Xiamen Municipality)

This chapter will generally describe the current institutional development process in implementing ICM concept in China. In the context of decentralized ICM policy, then this chapter will reveal the experiences on how the local government (the case of Xiamen Municipality) receive and adopt the ICM policy described through the institutional development process. Based on this experiences, analyzing the possibility and opportunity of sustainable ICM process in Xiamen Municipality will be conducted through elements of sustainability ICM that have been synthesized in theoretical framework. This chapter will describe the focus of institutional development on regulation framing the legitimacy of ICM process, capacity development both of individual and organizational perspective, participatory approach in ICM process, financial mechanism that fund the ICM process, environmental issues triggering the need of ICM implementation and planning perspectives conceptualizing the ICM program. Those institutional developments will also be revealed on the context of socio-culture perspective.

Chapter 4. Integrated Coastal Management (ICM) Implementation at the Local Level in Indonesia (Case of Bandar Lampung Municipality)

This chapter will generally describe the current institutional development process in implementing ICM concept in Indonesia. In the context of decentralized ICM policy, then this chapter will reveal how the local government (the case of Bandar Lampung city) receive and adopt the ICM policy described through the institutional development process. Based on this description, analyzing the possibility and

opportunity of sustainable ICM process in Bandar Lampung city will be conducted through elements of sustainability ICM that have been synthesized in theoretical framework. This chapter will describe the focus of institutional development on regulation framing the legitimacy of ICM process, capacity development both of individual and organizational perspective, participatory approach in ICM process, financial mechanism that fund the ICM process, environmental issues triggering the need of ICM implementation and planning design conceptualizing the ICM program. As Xiamen's case, institutional development on ICM implementation in Bandar Lampung will also be described in the context of socio-culture perspective.

Chapter 5. Comparative Analysis

This chapter will analyze the comparison institutional development process using the synthesized elements and indicators in assessing the receptiveness on sustainable ICM implementation in both cases. In the context of decentralized ICM policy, this section will also argue the strengths and weaknesses of current institutional development strategies in carrying out the improvement of receptiveness on sustainable ICM implementation in both cases.

Chapter 6. Conclusion and Recommendation

This chapter will propose the strategies and recommendations that are useful to develop institutional arrangements in pursuing the improvement receptiveness and ensuring the sustainability of ICM implementation in Indonesia especially for Bandar Lampung city. The lessons from Xiamen's ICM experience and description of Bandar Lampung's ICM initiatives may enrich the global perspective indicator of local receptiveness on sustainable ICM implementation.

1.6. Research Framework

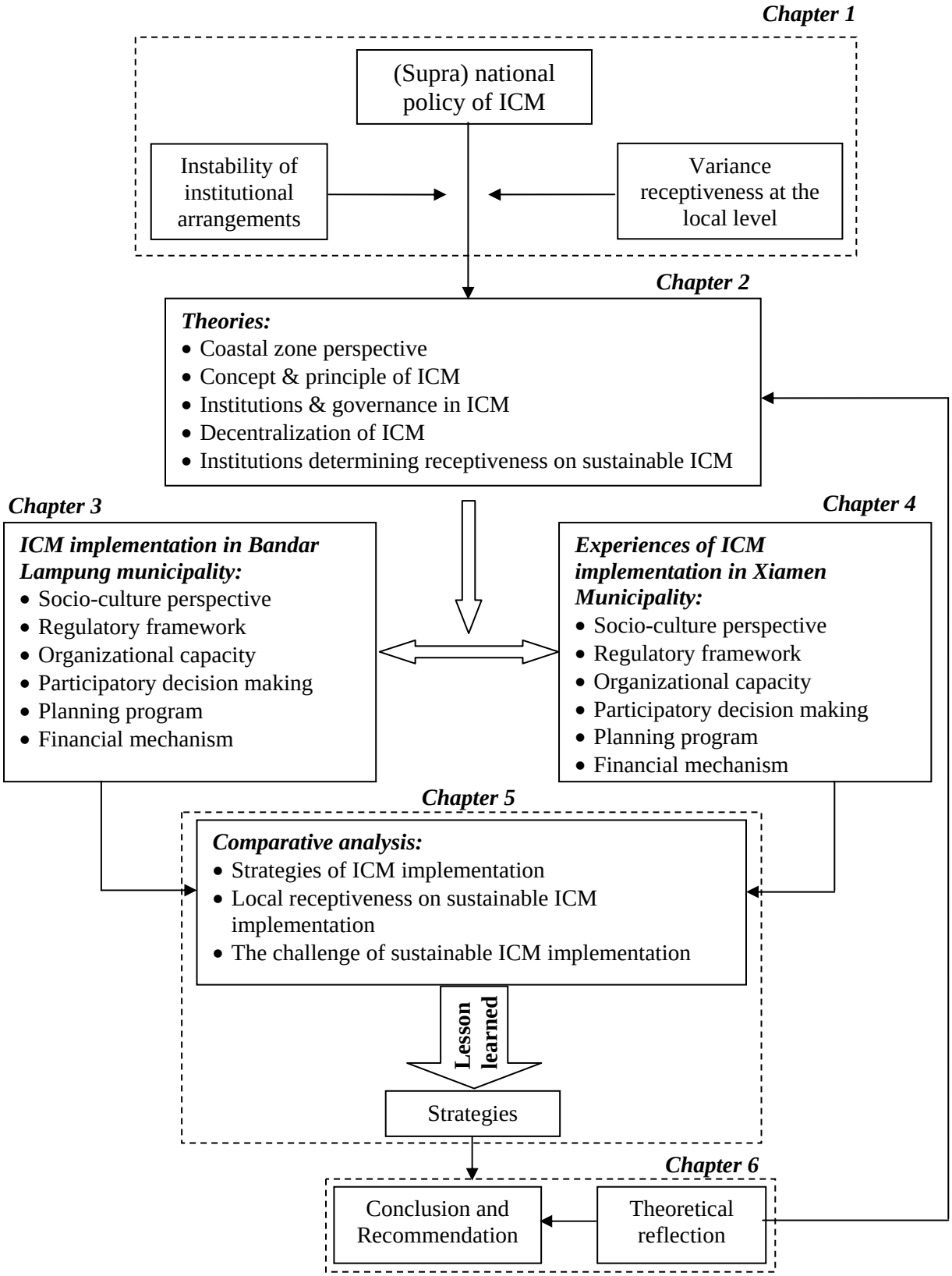

Figure 1.1. Research Framework

CHAPTER 2. THEORETICAL FRAMEWORK

Reflecting from the rapid development in coastal area regarding with its richness and is characterized as common property, systematic management approach become a necessity. The increase of awareness on implementing the integrated coastal management concept has evolved throughout the world. Unfortunately, not of all regions have the same capacity to actualize their receptiveness on implementing integrated coastal management (ICM) meaning that the variety of history, stability and receptiveness may become the impediment in implementing ICM concept. Once ICM concept is implemented, the risk of its instability may be emerged. Therefore, the sustainability has become the important issue in achieving successful of ICM implementation. Developing effective institutional arrangement has become the critical aspect to strengthen the receptiveness and ensure sustainability upon ICM implementation.

This chapter will not only reveal the frame of theory but also construct the operational strategies as a basis in doing this research which elaborates the entities and perspectives of coastal zone, the principle of integrated coastal management (ICM), institutions and governance in ICM concept, the context of decentralization policy in implementing ICM, characteristics of institutions in strengthening receptiveness and ensuring sustainability of ICM. Finally, the fundamental characteristics are synthesized for identifying the possible strategies in developing institutional arrangement towards strengthening receptiveness and ensuring sustainability of ICM. Moreover, these characteristics will also address analytically that applicable for the assessment of local receptiveness on sustainable ICM implementation.

2.1. Perspectives of Coastal Zone

The fundamental requirement to a better appreciation and application of integrated coastal management (ICM) is how to understand of the function of coastal system (Chua, 1993). Since none of rigid definition or boundaries on coastal zone, there are many understanding to define coastal zone from many perspectives. The coastal zone is defined as “the interface where the land meets the ocean, encompassing shoreline environments as well as adjacent coastal waters” in which the limits of the coastal zone are often arbitrarily defined, wide differences among nations, and are often based on jurisdictional limits or demarcated by reasons of administrative ease (World Bank, 1996). In human perspective, the coastal zone is the interface between the land and the sea but concern and interest are concentrated on that area in which human activities are interlinked with both the land and the marine environments as illustrated in Figure 1. Scura *et.al.,* 1992 have characterized the coastal zone as: (1) contains habitats and ecosystems (such as estuaries, coral reefs, sea grass beds) that provide goods (e.g., fish, oil, minerals) and services (e.g., natural protection from storms and tidal waves, recreation) to coastal communities; (2) characterized by competition for land and sea resources and space by various stakeholders, often resulting in severe conflicts and destruction of functional integrity of the resource system.

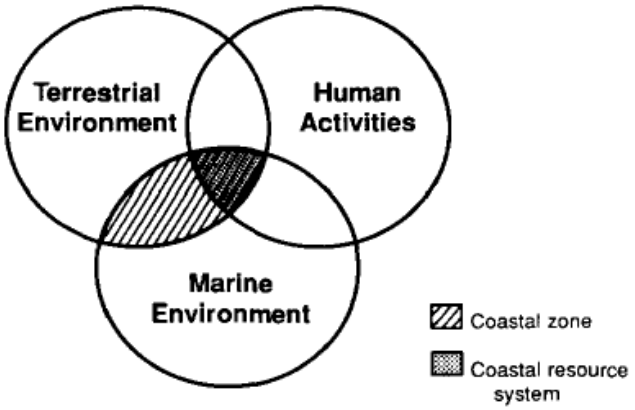

Figure 2.1. Relationship between coastal zone and coastal resource system (Scura *et.al*, 1992).

One perspective of coastal zone definition has the following characteristics (Chua, 1993):

1. Presence of habitats and ecosystems (e.g. estuaries, coral reefs, seagrass beds, mangrove swamps, lagoons, bays, gulfs), which provide goods (e.g. fish, oil, gas, minerals) and services (e.g. natural defences against storms and tidal waves, recreation, transportation) to the coastal communities. These natural productive and defence systems are maintained in ecological equilibrium through the interaction of a set of physical, chemical and biological processes of the coastal systems.
2. Competition of various stakeholders for land and sea uses, often resulting in severe conflicts and destruction to the functional integrity of the resource systems. Stakeholders are groups in the communities having a special interest or involvement in the use of the resources as common property.
3. Backbone of most national economies of coastal states as a substantial proportion of the gross national product depends on the outputs from coastal activities such as the oil and shipping industries, coastal tourism and some primary industries.
4. Usually has a high concentration of human settlements and is a preferred site for urbanization.

In addition, there are delimitations of coastal areas (PEMSEA, 2005). *Firstly*, the geographic boundaries of an ICM initiative should encompass a stretch of coast and adjacent ecosystems that are linked by common natural features and/or by the occurrence of particular human activities, and would include those terrestrial systems that significantly affect the sea, and those marine systems affected by their proximity to the land. It implies those boundaries that i) include those areas and activities within watersheds that significantly affect the coast; and ii) may, in certain cases, extend seaward to the edge of the continental shelf or the EEZ (exclusive economic zone) (GESAMP, 1996). *Secondly*, coastal areas are commonly defined as the interface or transition areas between land and sea, including large inland lakes. Coastal areas are diverse in function and form, dynamic and do not lend themselves well to definition by strict spatial boundaries. Unlike watersheds, there are no exact natural boundaries that unambiguously delineate coastal areas (UNESCO, 2003). *Thirdly,* the part of the land affected by its proximity to the sea, and that part of the sea affected by its proximity to

the land as the extent to which man's land-based activities have a measurable influence on water chemistry and marine ecology (European Environment Agency).

In the perspective of governmental scale, as depicted by World Bank (1996), the boundaries of the coastal zone will be widely defined among nations and commonly use arbitrary definition through their policy and regulation. Therefore, the urgency of coastal zone boundaries will distribute among national, regional, provincial and local scale. This often brings the limitation of coastal zone on the basis of jurisdictional limits or administrative demarcation as simplified reasons. It means that the perspective of coastal zone in this study is mainly based on administrative boundaries, so that the administrative boundaries of coastal zone at the local level should be clearly determined in accordance with national policy. It is important to clarify the role of institutional arrangements on coastal management at the local level that fit with clear boundaries of coastal zone. Therefore, the ability of local level on how to set up the administrative boundaries of coastal zone can reflect the local receptiveness upon coastal zone management. At the same time, the local level needs to understand that its coastal boundaries should become a part of coastal system at the higher level.

2.2. The Concept and Principles of Integrated Coastal Management

The richness of coastal zone resources has become a primary reason to be exploited heavily throughout the world (World Bank, 1996). The increasing of population through the migration to the coast has exacerbated the conflict between the need for coastal resources use and the need to ensure the sustainability of coastal resources (World Bank, 1996; Cicin-sain and Knecht, 1998; Dahuri *et.al.,* 2008). Therefore, it needs to maintain the balance of coastal zone resources through an effective management system called Integrated Coastal Management (ICM). The multiple purposes of coastal zone consisting fisheries, transportation, industries, mining, tourism and communication have become triggers to attract population to live in coastal zone combined with the increase of economic and industrial growth (UNEP, 2001; Siry, 2006). This increased population certainly affects the sustainability of coastal and marine resources into degradation significantly (Pollnac & Pomeroy, 2005). It is caused as a result of inadequate institutional and management capacity (Dahuri *et al*., 1995), lack of decentralization mechanism and ignorance of the role of the community in implementing integrated coastal management (ICM) (Siry, 2005).

Chua *et.al.,* (2006) have described that Integrated Coastal Management (ICM) is an internationally accepted approach for achieving sustainable development of the coasts and oceans. The integrated approach of managing the coasts and oceans has been emphasized in Chapter 17 of Agenda 21, in the Plan of Implementation of the 2002 World Summit for Sustainable Development (WSSD) and in the Paris Conference on Oceans, Coasts, and Islands held in 2003. The importance of ICM was also highlighted in several subsequent ocean-related regional and international forums such as the APEC Ocean-Related Ministerial Meeting, the East Asian Seas Congress 2003, and several conferences organized by the Ship and Ocean Foundation of Japan. In fact, ICM is a viable mechanism for strengthening coastal and ocean governance.

As a new branch of science in the world, Integrated Coastal Zone Management has many different terminology understood in the same meaning as human activities in managing the space, resources, the use of coastal region or the management of coastal area (IPPC, 1993). Those are coastal management, coastal resources management, coastal area management planning, coastal zone management, integrated coastal zone management, integrated coastal zone planning and management, integrated coastal resources management, coastal zone resources management, and integrated coastal management (IPPC, 1993) then other new terminology have emerged as integrated coastal and ocean management (ICOM) (Cicin-Sain and Knecht, 1998) and integrated coastal area management (ICAM) (UNESCO, 2003).

Various perspectives and definitions have been given to the understanding of ICM concept but basically it focused on encouraging sustainable coastal resources use through iterative process of regulation and policy development, institutional arrangement and education (Christie, 2005). ICM is a process by which rational decisions are made concerning with the conservation and sustainable use of coastal and ocean resources and space. The process is designed to overcome the fragmentation inherent in single-sector management approaches, in the split in jurisdiction among different levels of government, and in the land-water interface (Cicin-Sain & Knecht, 1998). ICM is also a broad and dynamic process that requires the active and sustained involvement of the public interest in which how coastal resources are allocated and conflicts are mediated. The ICM process provides a means by which concerns at local, regional and national levels are discussed and future directions are negotiated (GESAMP, 1996). It is a framework for the collaborative efforts of stakeholders integrating all concerns and interests through the application of participatory processes, the adoption of anticipatory and precautionary approaches and by operating on a holistic perspective to coastal management (PEMSEA, 2005). Hence, the characteristics of the ICM process on the one hand, balancing development and conservation and ensuring multi-sectoral planning, and, on the other hand, participation and conflict mediation (Christie, 2005).

In addition ICM is a resource management system which employs an integrative, holistic approach and an interactive planning process in addressing the complex management issues in the coastal area. It could serve as the blueprint for attaining the goals and objectives of sustainable development by maintaining the functional integrity of the coastal systems, reducing resource-use conflicts, maintaining the health of the environment, facilitating the progress of multi-sectoral development (Chua, 1993). ICM is also ecosystem-based in the sense that it requires the analysis of the implication of development, conflicting uses, and interrelationship between physical processes and human activities, while promoting linkage and harmony among sectoral coastal activities (Cicin-Sain and Knecht, 1998). However, an essence, ICM has been defined as a continuous and dynamic process which decision are made within coastal management system for the sustainable use, development and protection of coastal resources (PEMSEA, 2005; Zhang *et.al.* 2006; Christie, 2005).

A central purpose of ICM is to create conditions for a sustained effort whose fundamental goal is to reform the objectives, structure and processes of governance that control how coastal resources are allocated (Christie, 2005). Therefore, it is recognized

that the need of ICM program is triggered by a few different kinds of coastal problem or opportunities (World Bank, 1996) which are: (1) desire to increase the economic benefits flowing from the use of coastal zone resources, (2) serious resource depletion problems, (3) increasing pollution of the coastal and ocean environment, (4) loss of or damage to productive coastal ecosystem, (5) increasing losses of life and property from natural coastal hazards and disasters, (6) perceived economic opportunities associated with new forms of development in the coastal zone, and (7) conflicts of interest among user groups. These trigger factors will pursue the focus operational objectives of ICM (World Bank, 1996) towards: (1) strengthening sectoral management, for instance through training, legislation and staffing, (2) preserving and protecting the productivity and biological diversity of coastal ecosystem, mainly through prevention of habitat destruction, pollution and overexploitation, and (3) promoting rational development and sustainable utilization of coastal resources.

At global perspective, ICM characteristics have been formulated by World Bank (1996) which are:

1. Moved beyond traditional approaches towards a whole ecosystem approach
2. Analytical process that advises governments on priorities, trade-offs, problem and solution
3. Dynamic process and continuous process of administering the coastal management towards democratically agreed objectives
4. Employs a multidisciplinary, holistic systems perspective
5. Maintains a balance between protection and development
6. Operates within established geographic limits
7. Seeks to input of all stakeholders to establish policies for the equitable allocation
8. An evolutionary process, often requiring iterative solutions to complex issues
9. Integrates sectoral and environmental needs
10. Provides a mechanism to reduce or resolve conflicts that may occur
11. Promotes awareness at all levels of government and community on the concept of sustainable development and the significance environmental protection.

Many coastal management experts have attempted to resume the basic principles of integrated coastal management. Sorenson (1997) has done clearly in which:

1. There needs to be “horizontal integration”. This refers to the need, at any particular level of coastal management (local, sub-national, and national), for integration of the activities of all agencies and stakeholders.
2. There needs to be “vertical integration” between various levels of government (and agencies) involved in coastal planning and management i.e. between national, sub-national and local government.
3. Planning and management of the coastal zone requires the linkage of catchment-based approaches with coastal and seabed approaches. The catchment, coast and sea should be seen, planned and managed as an inter-linked and inter-dependant system.
4. There needs to be integration of the disciplines that study specific sections of the coastal area (science, social science, economics and politics).
5. An educational (capacity building) and research program must be integrated into the coastal program.

In addition, ICM has several dimensions of integration consisting of inter-sectoral integration, intergovernmental integration, spatial integration, science-management integration and international integration (PEMSEA, 2005). The integration of this approach consists of three dimensions namely sectoral, science and ecological linkages which considers sustainable development approach consisting of ecological, social, economic, cultural, political, law and institutional dimensions (Dahuri *et.al.*, 2008).

Since the coastal zone boundaries is often distributed among different governmental level both jurisdictional and administrative demarcation, the key role of ICM concept will be prescriptively implemented at the local level. The level of local receptiveness upon integrated coastal management approach should consider to its key principles. In this study, these key principles mainly determine the local receptiveness by understanding the level of horizontal or inter-sectoral integration among all agencies and stakeholders; understanding the level of vertical or inter-governmental integration between various levels of government; understanding the level of disciplines integration among science, socio-culture, economics and politics; and understanding the level of science-management integration between educational program (capacity building) and coastal program. These key principles set up the institutional arrangements towards effective management of integrated coastal management approach.

2.3. Institutions and Governance in Integrated Coastal Management

It is generally illustrated that institutions have been defined as "systems of rules, decision-making procedures, and programs that give rise to practices, assign roles to the participants in these practices, and guide interactions among the occupants of the relevant roles" (IDGEC, 1999 *in* Gupta *et al.*, 2008). In this perspective, institutions describe the involvement formal and informal organizational patterns in formal governmental processes reflecting the translation from traditional/hierarchical government to governance where horizontal network have promoted towards interdependency among actors (Gupta *et al.*, 2008).

Establishing an effective institutional arrangement becomes a Major part of policy development process bridging the formulated strategies and realization desired outcomes (PEMSEA, 2005). In addition, Sorensen (2002) defines institutional arrangement as a composite of laws, customs, budgets, staffing and governance structure that are established by a society to allocate scarce resources among the competing interests of stakeholders. Another perspective define the notion to such government measures which define the roles and functional relationships among the three institutions (social, political and legal) expressed in some formal instrument in order to realize a goal or achieve an objective (Leontine, 1999).

In addition, institutions provide a framework and rules by which a society organizes interactions among its people and governmental and non-governmental institutions regarding with identifying the law inconsistencies and overlapping in mandates or responsibilities. Therefore, in term of coastal management, it is recognize to identify key institutions that together will provide an optimal mix of mandates and functions to carry out an effective integrated coastal management (ICM) programme (GESAMP, 1996).

Principally, a key aspect of ICM is the design of institutional processes of integration/ harmonization to overcome the fragmentation inherent in the sectoral management approach and in the split in jurisdiction between levels of government at the land-water interface. A useful vehicle for achieving integration is an ICOM coordination mechanism that brings together coastal and ocean sectors, different levels of government, users and the public into the ICOM process (UNESCO, 2006). It is understood that ICM is a process of governance and consists of the legal and institutional framework necessary to ensure that development and management plans for coastal zones are integrated with environmental (including social) goals and are made with the participation of those affected. ICZM should be implemented through specific legal and institutional arrangements at appropriate levels of the government and the community which covers the interagency coordinating mechanism, national (central) government, state government, line agencies and ministries, local governments, research institutions, coastal stakeholders, general public (World Bank, 1996).

Thus, coastal governance may be defined as the processes and institutions by which coastal areas are managed by public authorities in association with communities, industries, NGOs and other stakeholders through national, sub-national and international laws, policies and programmes, as well as through customs, tradition and culture, in order to improve the socioeconomic conditions of the communities that depend on these areas and their living resources (UNESCO, 2003). In order to enable successful ICM, governance factors should include (Belfiore, 2000):

1. An appropriate legal authority (e.g., the establishment of a coastal law or decree);
2. Appropriate institutional arrangements, such as a lead agency and an ICOM coordinating body;
3. Clear geographical boundaries of the plan or program;
4. Regulatory powers and instruments for controlling development within the application area;
5. Human, technical and financial resources to implement the plan or program;
6. Procedures in place for monitoring, evaluating and adjusting the plan or program.

There is a notion in which ‘institutions’ sometimes refers to ‘organizations’. It is argued that ‘institutions’ has become synonymous with ‘organizations’ when these are formalized patterns of rules and decision making (Gupta *et.al.,* 2008). However, institutions are not only analogous with organizations as institutions also refer to underlying ideological values and norms (Gupta *et.al.,* 2008).

In frame of ICM effort, Sorensen (1993) illustrates institutional arrangement as a categorization system –indicating the degree of permanence– that needs to be created for this field such as centralization in one agency, one agency with an interagency advisory council, inter-ministerial or interagency council or commission. The variation in combinations of environmental, socio-economic, political and legal factors gives a particular national character to each coastal state's institutional arrangement resulting that opportunities are limited for the international transfer of information on a particular institutional arrangement. However, a great challenge of ICM is to maintain harmony among institutions with respect to their coastal management actions which tend to be strong impediments as most government institutions are guided by different mandates (Zhang *et.al.*, 2006).

There are two dimensions of institutional arrangement in ICM. *Firstly*, the vertical institutional arrangement addressing the organization among levels of governments and *secondly*, the horizontal institutional arrangement dealing with the organization among agencies within the same governments level (Zhang *et.al.*, 2006). This research stands for identifying the institutional development in local government which will more respect with horizontal institutional arrangement while keeping to illustrate the vertical institutional arrangement. There have identified three main models of horizontal institutional arrangements for ICM which are *first*, creating an interagency as the ICM coordination committee; *second*, expanding an existing agency to include the functions of ICM; and *third*, establishing a newly independent agency for ICM (Sorensen and McCreary, 1990; Cicin-sain and Knecht, 1998). Further perspective has been developed by PEMSEA (2005) in which institutional arrangement in ICM should follow the essential elements. *First*, governance measures, which identify the roles and responsibilities of the social and political institutions that aiming to establish norms, accountabilities, mandates and authorities following the principle that all stakeholders are stewards of the coastal resources and have the duty to ensure its sustainability. *Second*, national budget allocation and financing, it would need funds to sustain and operate a functional institutional arrangement.

In the perspective of replacement from traditional/hierarchical governance to horizontal network promoting towards interdependency among actors at appropriate level of government, the principle of horizontal integration (the horizontal institutional arrangement) should be addressed through specific legal and institutions at appropriate level of government including local level due to such differences among local characteristic in which this research will be focused on. It determines the key factors of governance in succeeding ICM at the local level through *first*, governance measures (an appropriate legal authority; organizational structure; clear coastal zone boundaries; regulatory power; and roles of socio-historical institutions that establish local customs, mandates, and authorities), and *second*, deals with human, technical and financial resources; monitoring and evaluation procedures (Belfiore, 2005; PEMSEA, 2005). Meanwhile, vertical integration will position the institutional arrangements at the local level to strengthen the process of overcoming jurisdiction separation problems among levels of government (GESAMP, 1996). Therefore, the level of local receptiveness upon ICM will be determined by these two dimensions of institutional arrangements.

2.4. Decentralization of Integrated Coastal Management

The translation of commitment for integrated environmental management towards more wisely has evolved in respecting to the identified problem of centralized authority including in coastal management (Cicin-Sain and Knecht, 1998; Dahuri, 2001). It has increased since Rio Declaration in 1992 in which many national governments made inventories and plans in integrated environmental management with the participation of local governmental stakeholders and the public. This paradigm has created either formally or informally new processes in governance whether the participation of local groups was minor (e.g., only providing awareness and transparency) or significant (e.g., enabling meaningful participation in decision-making) (Dahuri, 2001; Siry, 2007). However, these processes have come to the critical challenges of budgeting, delegation

and implementation awaited. These processes and the variety of emerging relationships between national and sub-national authorities have become popularized as "decentralization" describing a key governmental reform in most Southeast Asian and West African nations (Agrawal and Ribot, 2000). Hence, decentralizing integrated environmental management promotes the design and implementation of programs that better reflect local needs, conditions, and sensitivities as well as promote improved administrative efficiency.

The form of decentralization has a variety of characteristics. *Firstly*, ***deconcentration,*** the weakest form, happens when national agencies shift responsibilities to their own regional offices basically creating only extensions of the national government. *Secondly*, ***delegation*** occurs when national agencies shift responsibility to lower authorities that are not wholly controlled by the national agency, but whom are still accountable to the national authority and its objectives in some manner, for example through the budgeting process. *Thirdly*, the strongest form of decentralization is ***devolution***, where authority is transferred to independent local governmental units giving them substantial autonomy regarding how environmental activities and functions are to be implemented (Agrawal and Ribot, 1999).

However, the important form of ICM decentralization is the question of how to achieve effective shared management between agencies at different levels of governmental and the issue of mutual and public accountability. In addition, it is recognized to understand the ideal balance between ***cooperative*** and voluntary programs supported with incentives such as increased local funding as a reward for compliance versus ***coercive*** or mandatory programs with sanctions or penalties for non-compliance. There are three most effective approaches to address local resistance beyond sanctions or coercive approaches: a) building a better understanding and awareness of the issue, the central government's approach and the objectives of the program(s), b) building a stronger local constituency for the program, and c) developing collaborative planning and management strategies that involve all levels of staff (Dahuri, 2001).

The term of decentralizing coastal management deals with the capacity at both central and local levels which require not only technical function but also includes other professional skills such as leadership, ability to identify problems and solutions, conflict resolution, decision making, resources mobilization and self-monitoring and evaluation of program results (Dahuri, 2001). Effort to succeed the decentralized ICM will depend on organizational culture in which traditional stream may not wish to translate from working on the national agency to coordinating local activities. On the other hand, local staff may not feel the need to include consideration of national priorities or standards in addressing what are perceived as local problems (Dahuri, 2001)

The rapid globalization and development of information technology which accelerate the form of liberalization, privatization, and reformation of markets have increased community awareness of governance and created more opportunities for local participation and empowerment through a free flow of information and lesson-learned exchange through decentralized management of the governance system (Siry, 2006). Hence, the expansion of the new millennium of globalization, information and technology revolution, post-colonialism, community empowerment, and the

decentralization of governments have challenged the government to respond and redefine their management in coastal zone management (Sorensen, 1993). In fact, it is unavoidable that there is an increasing commitment in transferring decision-making process from central to local government and enhancing the role of local communities in managing coastal zones.

There are three factors that influence the transformation of governance system as well as illustrating the demand to shift the role of the central government to lower government levels and the community (Cheema and Rondinelli, 1983). They include (i) lack of expectation on central planning and control of development activities; (ii) the emergence of growth-with equity strategies; and (iii) the growing realization of the increasing difficulty of managing and planning development activities as society becomes more complex. In addition the huge range in coastal resources, the large variation in the types of coastal zones within a country, varied human populations and diverse regional economies among regions within a country are the main reasons why coastal zone management needs to be decentralized (Dahuri & Dutton, 2000).

However, it is not necessary for decentralization without significant political will in which decentralization is closer with political process involving competition among competing vested interests (Siry, 2006). The tension does not depend on the choice of decentralized or centralized policies but concern with the effective and efficient functioning of government (Siry, 2006). This means that not all functions can or should be financed and managed in a decentralized frame. Central government should play a crucial role to promote the success of decentralized coastal management by providing trainings for all level of government in a decentralized administration, technical assisting required for local governments, private enterprises, and local nongovernmental groups in the planning, financing, and management of decentralized functions (World Bank, 2002). In addition, (Valejjo, 1993) proposed that institution building for decentralized coastal zone management is based on the design of a coordination mechanism at the highest level of government with the task of (i) generating information (ii) carrying out analytical studies for the political decision-makers; (iii) reassessing policies; (iv) undertaking the development of a long-term coastal strategy; (v) strengthening multi-sectoral cooperation by improving linkages among sectors and administrative levels; and (vi) providing overall guidance to the process of planning and implementation.

Decentralized coastal zone management is the combination of decentralization and CZM approaches. This concept intends to maximize performance of delegated responsibilities for managing the coastal zone (Siry, 2007). This means decentralized CZM deals with the design of intergovernmental relationships within a state, evolving civil society in governance, management capacity, accountability issues and commitments (Lowry, 2000). There are five types decentralized CZM according to the administrative arrangements put in place (Lowry, 2000). This division is based on the level of national to sub national engagements and arrangements, which include the level of management capacity, accountability and commitment. The five types are (i) classic deconcentration, (ii) coercive devolution, (iii) cooperation devolution, (iv) devolved experimentation, and (v) local entrepreneurship.

However, implementing decentralized CZM has several challenges. Decentralized CZM should be pursued through systematic and harmonious interrelationships resulting from the balancing of power and responsibilities between central governments and other levels of government and non-governmental actors. It also should strengthen the capacity of local bodies to carry out their decentralized responsibilities using participatory and responsive mechanisms. These challenges in many ways put decentralized CZM in undesirable choice. The issues include "[mis]perception and misunderstanding of the meaning of management authority as mentioned in the [Decentralization] Law", lack of qualified human resources at the district level, unrealistic development targets, limited supporting data and information, and limited technology capabilities (Satria and Matsuda, 2004).

In fact, the identified problems of centralized authority in coastal management have hampered the implementation of ICM concept. This has delivered the paradigm of governance transformation from the role of central government to local participation as an important rule in ICM to equalize the power and responsibility. Although such decentralization policies are implemented in various characteristics and regulation, however, the main objective of ICM decentralization should address the better reflection of local needs. The strongest form of decentralization (devolution) might be useful for an optimal ICM implementation at the higher capacity of local level, because it will give an independent authority to create better institutions and design of ICM programs regarding administrative effectiveness and fitting at the best local needs. Meanwhile, some countries still implement a balanced policy between delegation and devolution regarding weak capacity of human and financial resources to deliver ICM concept. The paradigm of decentralization level can influence the local receptiveness to the need of ICM approach by giving an authority for self-managing coastal zone. Furthermore, receiving a decentralized ICM policy will shape the institutional arrangements at the local level as a mean of ICM implementation.

2.5. Institutions in The Context of Receptiveness and Sustainability of Integrated Coastal Management

The development of receptiveness concept is mainly based on the influences concern with the different ways of conceptualizing or modelling policy instruments. The dissimilarity has been come since the carefulness in transferring any approach or model from one field to another caused by the distinction between the nature of technology or approach and the multi-faceted nature of policy instruments (Cohen and Levinthal, 1990; Jeffrey and Seaton, 2004). It considers policy from the recipients' perspectives as an 'innovation' (Jeffrey and Seaton, 2004). The concept of receptiveness could be useful to analyze the capacity of recipients (local governments) in implementing an approach called integrated coastal management (ICM) as innovation towards sustainable coastal development. According to the process of decentralized ICM process, it is needed to explore an innovative action from local government perspectives in policy making regarding with sustainable coastal zone development.

Receptiveness in the context of innovation and technology transfer can be defined as the extent to which there exists not only a willingness (disposition) but also an ability (or capability) in different constituencies (individuals, communities, organizations,

agencies, etc) to absorb, accept and utilize innovation options (Jeffrey and Seaton, 2004). It could be analogous with the context of coastal zone management in which the instrument of integrated coastal management becomes innovation options to reach the benefit of sustainable use of coastal resources.

The concept of receptiveness suggests a process framework that consists of four components (Jeffrey and Seaton, 2004):

1. *Awareness,* the capability to search for knowledge or approach which is new
2. *Association,* recognition of the potential benefit of this knowledge or approach by associating it with needs and capabilities
3. *Acquisition,* the ability to acquire technologies or learn new model or approach of behaviour which support exploitation of knowledge
4. *Application,* the ability to actually apply knowledge or approach to achieve benefit as judged by the recipient (local level)

In the context of coastal zone management, the knowledge of integrated coastal management (ICM) concept has still come as a new approach for many regions in managing coastal zone especially for regions excluded from such an incentive or external funded of ICM project. The need of ICM implementation has increased in attempt to overcome the negative impact of coastal zone development (Dahuri, 2008). Dealing with decentralization policy, the responsibility of ICM has been mandated to local government while it has to face with the variance of stability and receptiveness of communities upon ICM (Siry, 2005; Christie, 2005). Receptiveness involves the local government innovation performance, aspiration level, and organizational learning in term of recognizing the value of new approach, assimilate it, and apply it to desired ends (Cohen and Levinthal, 1990). In this sense, understanding the level of local receptiveness on ICM implementation could be described by analyzing the performance of institutional arrangement in delivering ICM concept.

In the context of decentralization policy, local receptiveness on ICM can be seen through the attempt to develop stable institutional arrangement in guiding ICM process. It is argued that an attempt to pursue sustainability of ICM process will be determined by effective institutional framework. A success and sustainable ICM process is one that deals with sustainable coastal resources use with adaptive and multi-sectoral as appropriate supported by a stable source of financial and technical resources (Christie *et al.*, 2005). A research done by Christie (2005) defines the factors affecting the sustainability of ICM process which are decentralization of policy development, community-level characteristics and dynamics, the role of legal consistency, ICM derived economic and bio-physical benefit, ICM planning strategies, institutional capacity development, financial mechanism and the use and management information. In detail, considerable factors on ICM sustainability that is important for understanding receptiveness upon ICM are presented as follow:

Tabel 2.1. Factors on ICM sustainability (Christie, 2005)

Factors	Characteristics
Legal	• The creation an enabling legal framework • Harmonization of laws from the international, to national, to local levels which are complementary, not contradictory • Effective compliance of enforcement of laws
Institutions	• Engagement and effective interactions between formal and informal institutions • Long term support and commitment from formal and informal institutions • Capable institutions towards flexibility, participation, teamwork, problem solving, shared professional norms and a strong sense of mission
Socio-cultural	• The level of community participation in the formulation ICM program • Communities trust upon government agencies in providing their needs and useful services
Financial	• Sustainable of financial support cycle in which communities could benefit from improved coastal resources and government agencies benefit from project financial support and taxation schemes
Bio-physical	• The challenge of environmental crisis and the motivation and constituency support for its improvement
Project plans	• Complementary national and local institutional plans • Seek to embed co-management at community level • Utilize the best-available information for planning and decision making • Commit to building national capacity through short and long term training • Complete the loop between planning and implementation as quickly and frequently as possible using small projects to demonstrate the effectiveness of innovative policies

Christie *et al.* (2005) synthesize further that the key factor in attempting to utilize the ICM process and make it to be sustained is the reason to generate of social and environmental benefits that are equitably distributed among constituencies. It needs more attention to legal and institutional frameworks that support integrative planning on local and national scales. In addition, there are critical elements that are necessary for effective coastal management by considering (PEMSEA, 2005): (1) establishment of high-level integrated decision-making mechanism involving concerned sectors; (2) adoption of a legal framework for addressing cross-sectoral use conflicts in coastal areas; (3) integrated coastal and marine land and water-use planning and management as practiced in a number of countries to harmonize the zoning schemes of various resource-use sectors; (4) capacity building for the implementation of relevant international conventions at national and sub-national levels to facilitate resolution of transboundary environmental issues; (5) development of sustainable financing mechanism and options, particularly the involvement of industries and the private sector; (6) development of programs with stakeholder participation for waste management, habitat conservation, biodiversity protection, marine pollution prevention, living resources enhancement, among others; (7) development of multi-disciplinary environmental monitoring, information, research and development programs; (8)

appropriate development and application of market-based instrument and user-fee systems.

Particularly in improving ICM project design to increase receptiveness and foster successfulness and sustainability need to deal with some institutional considerations presented on table as below (Christie *et al.*, 2005):

Tabel 2.2. Institutional considerations to foster successfulness and sustainability of ICM

Sustainability Factor	Indicator
Stakeholder participation in ICM decision making process	• Community involvement and achievement of desired benefit • Mandated by law and convening multi-sectoral planning for policy agreements
Improved economic returns and environmental condition	• Improvement of economic and environmental conditions as motivation to support ICM • Gaining taxes from ICM activities, user fee systems spreading, and opportunities generating new investment • Ecological perspective on local government-led management
Supportive legal and policy framework	• Policy framework for guiding local initiatives • Law supportive in local government
Inter-governmental coordination mechanism	• Inter-governmental coordination and inter-agency coordination • Robust institutions to ensure equitable distribution benefits and conflict resolution mechanism • Integrated planning at multiple governance level • Expansion of ICM process across these institutional boundaries
Capacity for law enforcement	Growing capacity and authority for enforcement at local level
Institutional continuity beyond leadership change	Stable ICM governance while political leaders change
Conflict resolution mechanism	Facilitating at lower levels through the commitment of local government
Capacity development and awareness level raising	• Growing of ICM awareness by providing sustainable training • Clear direction and effective staff • Development of capable staffs and institutional linkages
Long term monitoring and information management system	• Multidisciplinary monitoring and evaluation of both socio-economical and ecological system • Responsive and independent monitoring of impact • Monitoring, collecting and disseminating of data
Stable financial support	• Growing financial support, new authorities for revenue generation • Internally generated financing commitment

A review of existing worldwide experience in coastal management suggests that the more successful programs, in terms of the support they penjoy from a variety of constituencies, all share the following characteristics (Olsen, 1993):

1. They are clearly focused upon a limited set of issues that are considered significant to the societies affected. The challenge in coastal management is to be holistic and

inclusive in how problems are analyzed and strategies are designed, but to focus the work of a program on a few carefully chosen, politically salient topics.
2. Successful programs succeed in involving those affected by the policies and actions of the program in the analysis of issues and subsequently in the formulation and the implementation of the management program.
3. Integrate the best available knowledge about how the ecosystems in question function and respond to change with societal needs and values.
4. The programs provide an equitable and efficient decision making process.
5. Programs are designed and implemented in an incremental manner that promotes learning by all involved.

ICM should be developed in a systematic manner which allows time for soliciting financial resources and institutional building on local managerial and technical capacities to support the identification and implementation of appropriate technological interventions; promoting interagency and stakeholders cooperation; and fostering perception and attitude change among policy makers, resources and economic managers and research scientists (PEMSEA, 1996). It is appropriate to apply ICM at a local level in which ICM initiatives are built on strong public support through the integration of interested and affected parties (stakeholders) into ICM planning and management processes.

ICM initiative is most effective as a proactive planning and management mechanism. Thus the receptiveness upon ICM will depend on the involvement of the development steps of ICM initiative which are (PEMSEA, 1996):

1. *Awareness,*
   - Developing awareness of the value of coastal resources within economic, social, and environment development
   - Developing awareness of the ability of coastal ecosystem to sustain more than one economic or social activity
   - Developing of the common dependence of different groups on the availability of goods and services generated by the coastal systems
2. *Cooperation,* promoting the need of cooperation among the different sectoral institutions to achieve common objectives
3. *Coordination,* developing coordinated policies, investment strategies, administrative arrangement, and harmonized standards by which performance can be measured
4. *Integration,* implementing and monitoring policies, investment strategies, administrative arrangement, and harmonized standards as part of a unified program, and making adjustments, if necessary, to ensure stated objectives are being met

Another perspective has characterized the good ICM practice as following (PEMSEA, 1996):

1. Adopt a systematic, incremental approach in developing and implementing ICM programs
2. Involve the public in the ICM process
3. Integrate environmental, economic, and social information from the very beginning of the ICM process
4. Establish mechanism for integration and coordination

5. Establish sustainability financing mechanism
6. Develop ICM capacity at all levels
7. Monitor the effectiveness of ICM programs

White *et.al* (2005) have resumed the institutional range findings that should be considered in the implementation of ICM sustainably. Then, those findings should be used to describe the characteristic of the receptiveness upon ICM. They are presented in detail in the following table 2.3.

Table 2.3. Institutional prerequisites in implementing sustainable ICM

Prerequisite	Context
Sustainable management results in biophysical changes and benefits to community	Initiative to improve the coastal ecosystem that contribute to benefit to local stakeholders
Stakeholder participation in ICM decision-making process	Awareness to the need of qualified and strategic participation by involving the most appropriate stakeholder in pursuing common objectives
Improved economic returns and income generation	Perception on increasing economic benefit with ICM, then increasing stakeholders support for management
Sustainable projects require an adequate legal and policy framework	Thinking of efficiency, effectiveness and transparency of institutional at local government through mutually reinforcing the national and local legal and institutional structure
Improved capacity for law enforcement	Effective law enforcement by improving participation at local scale and robust institution
Building durable institutions beyond leadership change	Ensuring the continuity of support from local and national institutions through (i) participating stakeholders in ICM planning and implementation will help to build a constituency that government leaders cannot ignore; (ii) building advocacy among stakeholders; (iii) building support among a broad spectrum of community leaders
Role of private sector in building sustainability and performing task	An attempt to design robust plan with accommodating an important contribution of private sector in effective management
Avoiding becoming too dependent on projects vs. government functions	Designing the sustainable ICM program by analyzing what responsibilities and tasks local government and other stakeholders are capable of assuming
Education and raising awareness levels to accomplish tasks	Need of knowledge to perform the rationale and logic tasks supported by heavily information, education and communication

Hence, the mind frame of sustainability of ICM process by local level depends on a number factors of institutional framework including acceptance of ICM program, level of participation in planning design and implementation, compliance with regulations, level of economic benefit received, and how equitable economic benefits are distributed in the community (Pollnac and Pomeroy, 2005).

2.6.Analytical Framework

The close relationship between strong receptiveness upon ICM and constructing mind frame of sustainability on designing ICM program will become important point into the success of ICM implementation. Based on the analyzing of those perspectives I

synthesize the analytical framework in this research. Understanding of many perspectives has derived the synthesis of the extent to which institutional framework will be developed due to the improving receptiveness and ensuring sustainability of ICM at the local level. The synthesis includes the institutional characteristics and indicators for assessing the receptiveness and promoting sustainability of ICM program presented in table 2.4. These indicators are respectively based on five basic steps of the now internationally-accepted process for ICM development and implementation (Olsen, 2003) which are (1) issue identification and assessment; (2) preparation of the plan and funding; (3) formal adoption; (4) implementation; and (5) self-assessment and external evaluation. The scales of measures are referred to the components of receptiveness describing a process framework towards comprehensive ICM implementation (Jeffrey and Seaton, 2004) and also characteristics to enable successful ICM (Olsen, 1993; Belfiore, 2000; Christie, 2005; Christie *et al.*, 2005; PEMSEA, 2006, World Bank, 1996; UNESCO, 2003; 2006 and White *et.al*, 2005).

Table 2.4. Institutional characteristics for assessing the receptiveness and promoting sustainability of ICM

Factor	Characteristics/Indicator	Receptiveness & Sustainability Measures
1. Socio-cultural perspective	• Communities trust or public support upon government agencies in sustaining the communities dependency upon coastal resources • Characteristics and dynamics of society to foster perception and attitude change towards community awareness upon coastal values • Harmonization between socio-historical custom and ICM approach	• ***High***, if public supports are involved in ICM process, socio-historical custom accepts to implement ICM concept, society dynamics strengthen the implementation of ICM concept • ***Medium***, if there are efforts to achieve public supports, communication processes to harmonize ICM concept with socio-historical custom, efforts to foster communities attitude and awareness • ***Low***, if there are still awareness upon the need of public supports and socio-historical acceptance to implement new concept of ICM, awareness to recognize the impact of society dynamics to the community's perception and attitude upon ICM • ***No receptiveness***, if ICM concept is rejected by public/communities and also socio-historical custom, the community's perception and attitude upon ICM is weakened by society dynamics
2.Organizational capacity and coordination	• Establishing organizational awareness to coordinate ICM implementation • Need of knowledge to perform and develop capable staffs and organizational linkages by sustainable training • Continuity of coordinated ICM governance while political leaders change in order to function the government and avoid the dependency on projects • Robust organizations for inter-agency coordination by providing a lead agency and ICM coordinating body	• ***High***, if there are robust organizations by applying a lead agency or ICM coordinating body, collective organized coordination, capable and knowledgeable staffs by organizing sustainable training, continuity ICM governance and avoiding dependency on external projects • ***Medium***, if robust organizations are being achieved by mobilizing coordination among stakeholders, initiating trainings regarding benefit to knowledge and skills, efforts to strengthen self-capacities and decreasing dependency on external projects • ***Low***, if there are local awareness to prepare robust organizations, awareness to the need of human knowledge, depending on external projects • ***No receptiveness***, if there are no awareness of collective coordination to prepare robust organizations, lack of the need to increase human knowledge, lack of initiation although external projects are provided

3.Participatory decision-making	• Awareness to the need of qualified and strategic participation by involving appropriate stakeholders in formulating ICM program • Convening multi-sectoral planning for coordinated policy agreement	• ***High***, if cooperative participation and relevant stakeholders involvement are engaged directly in decision making process, convening multi-sectoral planning is applied and becoming common traditions • ***Medium***, if there are efforts to attempt the involvement relevant stakeholders, convening multi-sectoral planning is being acquired and recognized • ***Low***, if there are awareness to explore the knowledge of participative decision making, consciousness to the need of convening multi-sectoral planning • ***No receptiveness***, if there are lack of awareness to deliver participative decision making, avoidance of convening multi-sectoral planning
4. Financial mechanism	• Growing coordinated financial support due to perception on increasing economic benefit with ICM • Internally generated financing commitment with clear authorities • Integrating investment strategies to achieve sustainable of financial support cycle	• ***High***, if self-coordinated financial supports are available without external funds domination, clear mechanism to generate financial sources, clear strategies to integrate investment to sustain financial support cycle • ***Medium***, if financial supports are available by sectoral approach and assisted by external funds, recognizing the benefit and attempting to generate financial sources, designing integrated investment strategies to sustain financial support • ***Low***, if financial support mainly depend on external funds, awareness to generate financial sources, awareness to the need of integrated investment strategies to fund ICM program • ***No receptiveness***, if there is lack of financial support
5. Planning program	• Awareness of harmonization and integration between national and local plans • Utilize the best-available information for planning and decision making • Seek to embed multi-sectoral integration between land and sea use • Focusing on a limited set of clear issues considered significant impact • Designing with a set of clear action programs	• ***High***, if planning and decision making are applied by utilizing the best available information through research studies, clear statement to refer to other plans, clear statement of planning integration between land and sea, focusing on a limited set of clear issues, clear design of action programs • ***Medium***, if there are efforts to conduct research studies as the basis for planning preparation, attempting to refer clearly to other plans, initiating to integrate between land and sea use planning, dealing with many set of issues, efforts to design set of action programs • ***Low***, if planning has not considered to utilize the best information, awareness to harmonize with other plans, recognizing the benefit of land sea use integration, lack of designing action programs • ***No receptiveness***, lack of planning preparation
6.Regulatory Framework	• Responding the awareness of local government upon coastal ecosystem values by delivering political will to create an enabling legal framework • Integration of laws from national to local level in achieving harmonized standards for addressing cross-sectoral conflict • Effective compliance of laws enforcement by integrated monitoring	• ***High***, if there are existing legal framework of ICM implementation at the local level, statement of laws integration from local level to national, availability of integrated monitoring policy • ***Medium***, if there are political will to enact legal framework for institutionalizing ICM, efforts to acquire harmonization of laws, efforts to integrate monitoring policy • ***Low***, if there are still awareness to search legal preparation process, thinking of the need integration of laws, dominancy of sectoral monitoring • ***No receptiveness***, if there are no political will to prepare legal framework, lack of laws integration, lack of monitoring policy

The first factor deals with the socio-culture perspective. It will depict local receptiveness upon ICM approach by understanding the characteristics and dynamics of local coastal community life that have impact to their perception and attitude upon coastal values. However, coastal communities will always rely on the needs of coastal resources. It is important that these characteristics and dynamics should construct the level of their awareness upon coastal values and then determine their support level upon local government policy. This factor also describes the role of socio-historical custom, in which its traditions may influence whether receive or reject upon ICM concept.

The second factor depends on organizational capacity and coordination. In ICM perspective, integration and coordination in local level have become key notions by establishing collective organizational awareness to implement ICM approach. Coordination between formal and informal organizations is needed to ensure the sustainability of coordinated ICM governance when political leaders change. The objective of the establishment of robust organizations for inter-governmental and inter-agency coordination by providing a lead agency or ICM coordinating body should represent the level of local receptiveness upon ICM towards sustainability of ICM process.

The third factor needs to enhance participatory decision making process. From decentralized ICM perspective, the strength of local receptiveness upon ICM will depend on the level of local participatory action in decision making to achieve common goals. The awareness to the need strategic participation and convening multi-sectoral planning among appropriate stakeholders should provide an equitable and efficient decision making process.

The fourth factor is framed by financial mechanism. It will describe the degree of financial support by local authorities to deliver ICM process reflecting the local receptiveness upon it. The growing internally generated financing commitment and integrating investment strategies to achieve sustainable financial support cycle will ensure the sustainability of ICM implementation.

The fifth factor focuses on the need of planning program. To measure the local receptiveness, it needs the degree of awareness to harmonize and integrate between national and local institutional plans. Local receptiveness will also depend on utilization of the best-available information in designing planning and decision making, awareness of land and sea use integration, focusing on a limited set of clear issues, and designing a set of clear action programs However, designing harmonized planning should enhance the sustainability of ICM process.

The sixth factor concerns with the regulatory framework. It describes the degree of political will of local government as local receptiveness to aware upon coastal ecosystem values by creating an enable legal framework dealing with ICM implementation and ensure its sustainability. As stated by most experts, this factor should be the main point to institutionalize ICM concept as guidance coming into practice. It should give a harmonized framework coming from law integration for addressing sectoral conflicts in coastal management. The effectiveness and efficiency of institutional and administrative arrangement in ICM implementation can be achieved by integrating national and local legal and effective laws enforcement.

In order to simply understand the theoretical framework, the research framework is sketched briefly as follow:

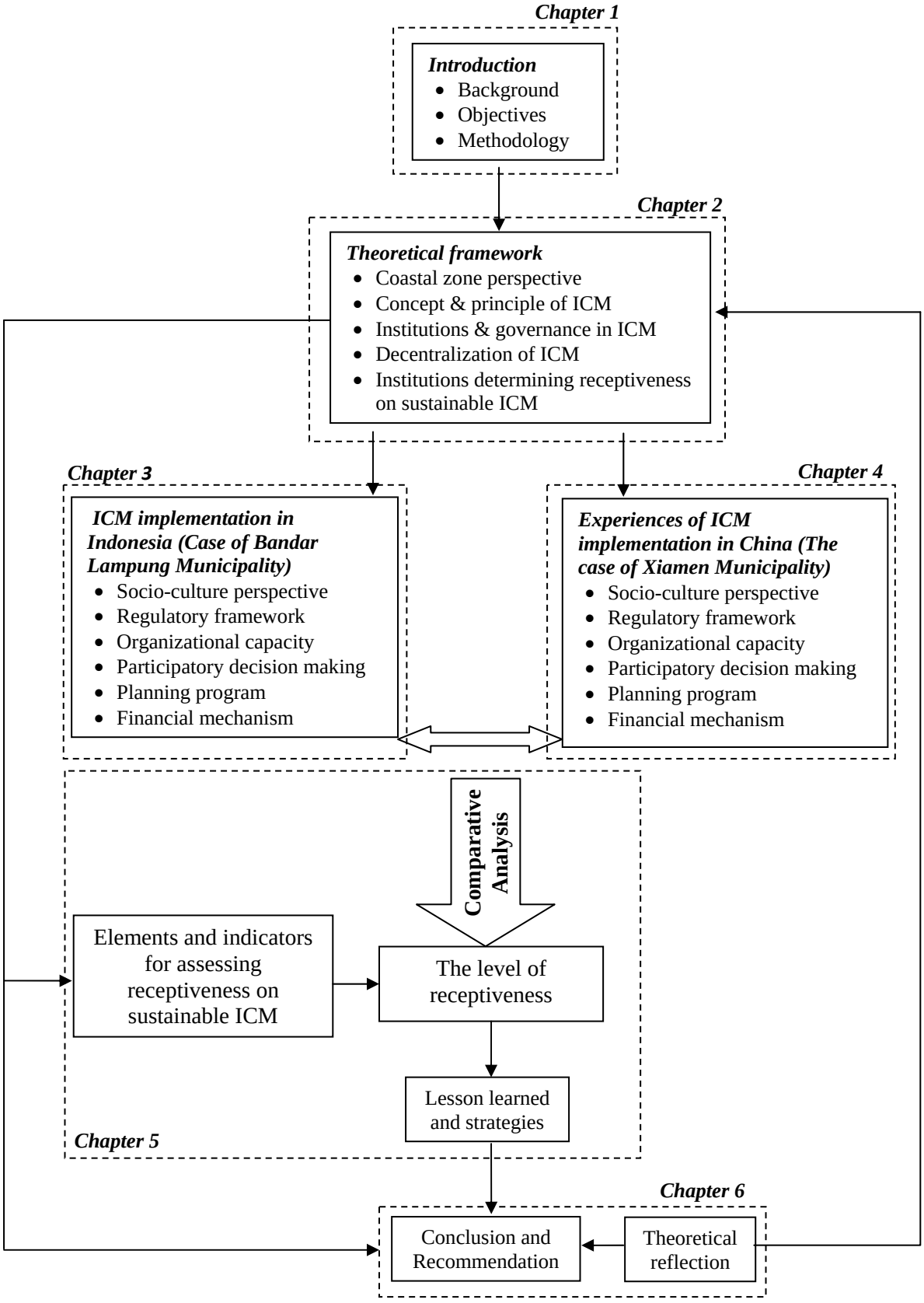

Figure 2.3. Theoretical framework of the research

CHAPTER 3. INTEGRATED COASTAL MANAGEMENT (ICM) IMPLEMENTATION AT THE LOCAL LEVEL IN CHINA
(Case of Xiamen Municipality)

It is important to understand the successful experience regarding with the implementation of Integrated Coastal Management (ICM) approach at the local level. This chapter outlines the successful experience of institutional arrangements with regard to the receptiveness and sustainability upon ICM implementation at the local level in Xiamen municipality, China. Prior to elaborate the successful story of Xiamen ICM program, this chapter provides national framework of institutional arrangements in China for ICM implementation at the local level. This chapter discusses several important factors and characteristics on institutional development that determines the receptiveness and sustainability of ICM implementation in Xiamen municipality. They are socio-cultural perspective which elaborates the community's attitude upon ICM program, organizational capacity and coordination that provide the working structure and mechanism among decision makers, participatory decision making that describes the role of stakeholders in decision making process, financial mechanism that provides the ICM funding system, planning program that determines the strategies and action plan of ICM program, and regulatory framework that provide legal basis in delivering ICM approach.

3.1. Overview ICM Implementation in China

The China's coastal zone covers an area of approximately three million km^2 which more than 70% of large Chinese cities located in the coastal areas. With 18,000 km coastline covering a region of high economic importance and distributing across tropical, subtropical and temperate zone, China's coastal zone have led to contribute to the national economy for about 55 percent of its Gross Domestic Product (Xiamen Municipality, 2006). Since the 1990s, China's coastal and marine sector has experienced very rapid development signed by a 20% annual GDP growth rate in this sector (Li, 2006). Sea-use activities have also intensified and diversified, as a result of both local and foreign investment.

However, the continuing increase of urbanization throughout the east coast coupled with economic growth, rapid urbanization and infrastructure development have resulted in conflicts among multiple groups, especially among terrestrially and marine based industrial sectors, e.g. tideland reclamation and coastal aquaculture, seaport/shipping development and wetland resource uses, coastal mining and protection against erosion, waste disposal and maintaining ecosystem and human health, offshore oil development and fisheries, coastal groundwater extraction and land uses (Yu, 1994). Since there was no standard and effective management system for sea-use activities, there was intense use conflicts referred to no order, no control, and no fee paid for any sea-use activity. As a result, these have led to environmental degradation, e.g. pollution, deterioration of ecosystem health, habitat losses, resource depletion, and invasion of exotic organisms. Since 1990s, China's government has been aware on the need of coastal and marine resources providing energy and food. At the same time, the need of better coordinated

coastal management system with integrated coastal management (ICM) approach can not be avoided to balance rapid economic development and environmental protection of China's coastal zone (Li, 2006).

Previously, due to China's political and socio-economic system with a long history of a very strong central government, the Chinese notion of ICM largely ignores public participation as an important factor of ICM and redefines its status within the whole structure (Lau, 2005). Political system of one-party state that has been traditionally conducted in a hierarchical top-down manner has created slow government bureaucracy. In addition, the legacy of communist political reality and the reliance on relation networks *(guanxi)* that may inhibit the creation of complex policy solutions of ICM (Lau, 2005). Indeed, the general management scheme for the coastal zone in China still remains sectoral whereas high spatial heterogeneity (coastal land, intertidal area and aquatic systems) is complex (Li, 2006). Therefore, jurisdiction overlapping is very common with lack of institutional capacity and domination inter-agency conflicts, so that, formalizing institutional structures has become the first priority. However, since the late 1970s, when the central government began its policy of ''reform and opening up'', there has been a slow progression towards decentralization. The country's four ''special economic zones'' with quite strong municipal governments and has become the key reforms of China's government policy on the decentralization of political, administrative, and economic power in order to create efficient policy making by stimulating economic growth and strengthening local governments. They are more aware of local issues than the provincial or central government, can create and enforce local legislation, and have the financial resources to manage large programs. The harmonization of top-down and bottom-up and local initiatives development has become the main issues to sustainably manage China's coastal zone (Xiamen Municipality, 2006; Lau, 2005). As China moves towards further decentralization and economic development, perhaps public participation will become stronger.

In China, the leading agency who responsible for coastal and ocean policy making including ICM implementation is the State Oceanic Administration (SOA), which is an agency subordinate to the Ministry of Land and Natural Resources (MLNR). The SOA is focusing on supervising activities in coastal and marine environment, and organizing the investigation, monitoring, surveillance and evaluation. It has a primary role in protection against marine pollution and damage caused by coastal and marine construction projects. The MNLR is authorized to oversee the planning, management, conservation and rational utilization of land resources, mineral and marine resources. Overall, there are about twenty or so related ministries and agencies which responsible for coastal areas development. The history of forty years of SOA has proved its acceptance within political hierarchy. The development new agencies like the National Environmental Protection Agency had to face the struggle for acceptance until it slowly achieved power through restructuring as the State Environmental Protection Bureau (EPB) in 1998 with given ministerial status directly under the State Council. As a result, China's government put SOA inside an existing agency rather than a new independent agency (Lau, 2005; Li, 2006; Zhang *et al.*, 2006).

The seas along China's coasts are divided into three regions with its own regional SOA branch on each. Those are the Northern Sea (*Beihai fen*), the East China Sea (*Donghai fen*), and the South China Sea (*Nanhai fen*). It is important to mandate the expertise of SOA in carrying out ICM with international standards in order to recognize the SOA's political power within the government hierarchy. While SOA has roles in prioritizing coastal waters issues through scientific research and marine expertise such as pollution or economic considerations of coastal waters resources, the state Environmental Protection Bureau (EPB) is responsible for directing, coordinating and supervising coastal and marine environmental protection work throughout the nation. It possesses the authority to enforce the law relating to coastal environmental protection against land-based pollutants and pollution from coastal construction projects. The strong role of SOA in coastal waters mandate has brought to the lack of authority to coordinate all affected sectors. Therefore, SOA may avoid coastal zone issues on the shore and limit the participation of environmental, economic, agricultural and other agencies. Such a narrow institutional set-up may inhibit policy integration in the coastal zone meaning that China is indicated to not adopting the comprehensive international standards for ICM (Lau, 2005).

A series of laws and regulations on jurisdictional, zoning boundaries, and allocating use rights for coastal resources have been essentially established (Table 3.1.). The important stage is the enactment of the Law on the management of sea area use in 2001 which provide a sophisticated coastal management concerning with functional zoning and sustainable financing. Such Law on Environmental Impacts Assessment was promulgated in 2002 to prevent environment (including coastal and marine environment) from pollution due to planning and construction. The Law on prevention of marine pollution and damage from marine construction project was promulgated in 2006 which covers the legal monitoring and managing marine construction projects and their impacts.

Table 3.1. Laws and regulations related to the coastal areas in China

No	Name of Laws/Regulations	Date of Promulgation
1	Law on the marine environmental protection	23-08-1982
2	Regulations concerning environmental protection in offshore oil exploration and exploitation	29-12-1983
3	Regulations concerning the prevention of pollution of sea areas by vessels	29-12-1983
4	Regulations concerning the dumping of wastes at sea	06-03-1985
5	Law on Fishery Resources	(Amended on 21-10-2000) 20-01-1986
6	Law on Mineral Resources	(Amended on 29-08-1996) 19-03-1986
7	Law on Land Resources Management	(Amended on 29-08-1998) 25-06-1986
8	Regulations concerning prevention of environmental pollution by ship-breaking	18-05-1988
9	Law on Environmental Protection	26-12-1989
10	Regulations concerning prevention of pollution damage to the marine environment by coastal construction projects	25-05-1990

No	Name of Laws/Regulations	Date of Promulgation
11	Regulations concerning prevention of pollution damage to the marine environment by land-based pollutants	25-05-1990
12	Measures for implementation of the regulations concerning the dumping of wastes at sea	25-09-1992
13	Implementing regulations on the protection of aquatic wild animals	05-10-1993
14	Law on the Territorial Sea and the Contiguous Zone	25-02-1992
15	Measures for implementation of the regulations concerning environmental protection in offshore oil exploration and exploitation	20-09-1992
16	Regulations of natural protected reserves	09-10-1994
17	Measures of management of marine natural reserves	29-05-1995
18	Regulations for the protection of wild plants	30-09-1996
19	Provisions governing the management of coastal forest belts under special state protection	09-12-1996
20	Provisions on the procedure for investigation and handling of accidents of pollution in fishing areas	26-03-1997
21	Measures on the protection of natural reserves of aquatic fauna and flora	17-10-1997
22	Law on the Exclusive Economic Zone (EEZ) and the continental shelf	26-06-1998
23	Law on the Management of Sea Area Use (Measures of management on utilization of sea areas)	27-10-2001
24	Marine functional zonation scheme	22-10-2002
25	Law on Environmental Impacts Assessment	28-10-2002
26	Law on prevention of marine pollution and damage from marine construction projects	19-09-2006

Meantime, the marine functional zonation scheme has been established in 2002 for comprehensive coastal and marine development and protection. With this scheme, improving the coastal environment and the marine functions is determined by zonation, natural resources and environmental condition. The sectoral sea-uses are optimized according to a comprehensive planning. Ten coastal and marine functional types, including seaport areas, fishery conservation areas, mineral resources areas, tourism areas, water use areas, marine energy use areas, natural reserves, engineering use areas, special use areas, and preserving use areas, are categorized to reflect coherent management requirements and dominant uses within the China' coastal areas (Li, 2006).

There are local-level coastal management trends in China that some local governments are pursuing to promote sustainable coastal management by functioning ICM framework (Lau, 2005). However, the stronger area in managing coastal zone in China is local governments who pursue to functions a comprehensive ICM framework although there are limitation of local law and regulation. It is expected by China government that local initiatives will cover China’s coastal zone for the long term. There are some jointly sponsored projects showing the great effort on functioning a comprehensive ICM approach in China. Those are “action plan for cleaning the Bohai Sea”, the Sino-South Korea Yellow Sea cooperation project, and the demonstrated project for integrated coastal management in Xiamen. An important regional attempt is signed by Bohai Sea Project supported by Global Environment Facility (GEF) in 2000

which indicates the acceptance on the obligation for inter-jurisdictional cooperation to protect coastal environment. While regional initiative is rare, however, some local areas especially Xiamen municipality have been delivering an important experience in advancing a comprehensive ICM implementation which is characterized as decentralization approach in decision-making process. While there are various agencies dealing with coastal issues at the provincial and local level, Xiamen is the only local government that explicitly has an office for coastal and marine management (Lau, 2005; Zhang *et al.*, 2006).

Xiamen has been beginning to enjoy improved environmental quality and decreased conflicts between stakeholders and a booming economy. The national SOA plans to adopt experiences from successful local ICM program, such as Xiamen, and gradually implement them in other regions along the coast (Lau, 2005). This strategy harmonizes central and local initiatives that will be partly centrally controlled and implemented top-down and partly initiated bottom-up. This power-sharing model has been used successfully in other policy sectors according to China's economic and political reforms. While China's distinctive top-down and bottom-up, ICM approach has little public participation and does not yet completely meet international ICM criteria (Lau, 2005). To protect the country's vulnerable coastal resources, a foundation is being established by Chinese policymakers and trying to spark local initiatives and broaden commitment to coastal and marine conservation.

3.2. Local Institutional Development of ICM Implementation in Xiamen Municipality

The city of Xiamen, located on the southeast coast of China, has a history dating back over 1000 years to the Song Dynasty, when it was a fishing village. Since the 17th century, Xiamen has been an important international trading port. It was one of the five ports designated for international trade after the First Opium War (ITTXDP, 1996a). Xiamen has 234 km of coastline, 340 km2 of sea water and 31 islands that form a beautiful and scenic coastal city. The sea as the lifeline and a Mayor source embraces a rich resource base for Xiamen's economy to sustain, develop and boom. The Xiamen Municipality consists of Xiamen Island, Gulangyu Islet and the north bank of the Jiulongjian River with six districts in the municipality. Xiamen's coastal waters include the Jiulongjian River Estuary, the West Harbour, the Southern Seas, the Eastern Seas and Tong'an Bay (Figure 3.1.). It is strategically located on the southern coast of the mainland with traditional trade linkages with neighbouring Southeast Asian countries, Hong Kong and nearby Taiwan.

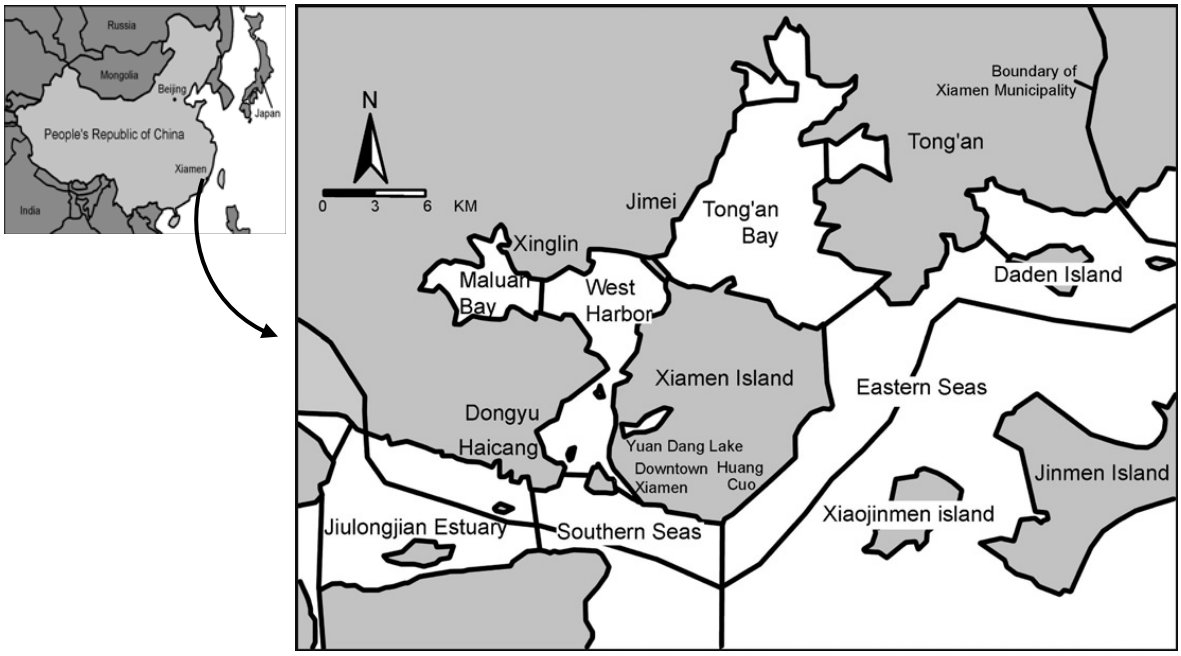

Figure 3.1. Detailed map of Xiamen, China

The establishment of the Xiamen Special Economic Zone (SEZ) and opening the port to the outside world in October 1980, allowed city development to increase more rapidly from a fishing village into a modern and industrialized city port. The living standard has considerably improved over the last decades but, unfortunately, at the cost of increasing environmental degradation. The sea was traditionally perceived as a convenient dumping ground for wastes. Sea-use was never included in resource-use planning and seldom formed part of the government's economic development or environmental management program. Interagency conflicts between users were not uncommon (Xiamen Municipality, 2006; ITTXDP, 1996a). By the 1990s, Xiamen was transformed from a filthy port city into an environmentally cleaner and safer city. In 1994, Xiamen was selected as a national demonstration site for the implementation of a five-year ICM program concerning with the prevention and management of coastal and marine pollution in the East Asian Seas (MPP-EAS) with joint efforts between the Chinese government and the GEF/UNDP/IMO Regional Program (Lau, 2005). This program was aimed to test a working model for the application of an ICM system for mitigating coastal pollution and rapid economic development. In the beginning, the program focused on coastal and marine pollution prevention and the gradual establishment of effective coastal management institutions.

The Xiamen Municipal Government managed this ICM program called the Xiamen Demonstration Project (XDP) until 1999. In between that period, the notable ICM-related achievements under the XDP include the following: development of a coordinating mechanism; establishment of a legislation framework; strengthening of integrated enforcement for marine management; and the establishment of a scientific support structure. The main outputs of the XDP are (Lau, 2005): (1) the development of a coastal environmental profile and strategic environmental management plan (SEMP), (2) the formation of a coordinating mechanism for ICM, (3) the enactment and enforcement of local marine regulations concerning resource management,

environmental protection and transportation management, (4) the establishment of the Xiamen Marine Experts Group, and (5) the improvement of public awareness about marine environmental issues.

In setting up their program the Xiamen municipal government emphasized the interaction of scientists and decision makers, which led to the creation of an advisory group of marine scientists, legal experts, economists, engineers, and urban planners to provide their expertise to local policymakers. The advisory committee has helped the Xiamen government incorporate scientific tools into coastal management policy such as the Integrated Environmental Impact Assessment (IEIA), which was introduced to prevent unfavourable ecological and socioeconomic impacts of planned development projects. Based on one IEIA, a marine zoning scheme was developed to include a water-use permit system to promote water conservation.

Xiamen is the success in ICM institutional development at the local level, particularly the establishment of decision-making mechanisms based on consensus building among major stakeholders, and inputs from science and technology (Chua *et al.*, 1997). In detail, ICM program in Xiamen has established the following approaches:

1. Involving the local government and related agencies in all phases of the activities
2. Strengthening the existing marine management structure in establishing a permanent coordination and management mechanism
3. Utilizing local expertise for information generation
4. Mobilizing local media to enhance environmental awareness
5. Ensuring coordination and integration during all phases of activities
6. Integrating project activities as part of, or as a complement to, existing program of concerned line agencies
7. Developing a mechanism to enable interaction between managers and scientists in order to effectively use research results for planning or for immediate management interventions
8. Following a systematic process in integrated planning, program implementation, monitoring and evaluation of management actions

The main goal of the Xiamen ICM Program has the same as the Xiamen Municipal Government's, which is to promote sustainable economic development. Therefore, the ICM program addresses environmental problems in such a way as to ensure sustainable economic growth. For example, in order to ensure tourism industry development as one of the goals of the Xiamen Municipal Government, environmental quality in the areas designated for tourism must be maintained or improved. Having the same overall goal as the Municipal Government has ensured that the ICM program in Xiamen is not in conflict with other governmental activities and has given the ICM program an important role within the government.

After the XDP ended in 1999, the Xiamen Municipal Government has successfully continued the initiative by formally integrating the ICM program into the structure of the municipal government. Several activities continued while others were strengthened. However, the ICM program in Xiamen has evolved into a self-sustaining initiative (Shijan & Xiongzhi, 2006). The details elements of institutional development that

determines the receptiveness and sustainability upon ICM approach in Xiamen are depicted on the following sections.

3.2.1. Socio-culture Perspectives

Having a strategic position, Xiamen enabled to be an important player in the Southeast Asia trading routes since long time ago. Other excellence factors of Xiamen are familiarity with the Taiwanese investors, as the two had past cultural and economic ties; the island's coastal location was suited perfectly for international trade; Xiamen's physical isolation from the rest of the mainland meant that economic experiments could be performed with relatively little impact on the city's surrounding areas; since little development has occurred in Xiamen during the past thirty years, the city faced fewer problems and Mao legacy to overcome than cities such as Beijing. Because of its key role in the Southeast Asia trade, Xiamen has become a Mayor labor market for the European plantations in Southeast Asia (Xiamen Municipality, 2006; Shijan & Xiongzhi, 2006). In addition to the labor trade, the overseas shipping and commerce industry flourished.

Although the reconstruction of Xiamen began during the 1920s and 1930s, a majority changes have taken place since 1980. The socio-political and economic reform of China has been undertaken in the leadership of Deng Xiaoping since 1979 by establishing decentralized policy and economic liberalization. As a result, in October of 1980 Xiamen was designated as one of the first four special economic zones (SEZs) along with Shenzhen, Zhuhai, and Shantou. It was granted the right to manage its own economic affairs while offering preferential investment policies to foreign enterprises. Initially created as a means of testing capitalism with minimal risk, the SEZs were selected for their relatively small size and isolation from the Chinese economy. The subsequent success of Xiamen and the other SEZs in attracting foreign capital and developing an export-oriented economy led directly to the opening up of other Chinese coastal cities. Thus, Xiamen has played a Mayor role in determining the shape of the Chinese economy. The role of Xiamen as a source of Chinese laborers and the national policy of SEZs have attracted many of Overseas Chinese returned to invest in Xiamen (Chinese transnational economy), and they were instrumental in the city's rapid development.

Since 1980, Xiamen has developed rapidly, with an annual growth rate of more than 20% in both the GDP and the total population. Between 1990 and 1995, the population of traditional residents increased slowly, from 1.1 million to 1.2 million but the immigrant population, from other domestic cities or rural areas of China, increased from 100,000 to 290,000, driven by job creation and the need for additional manpower. The ocean economy, which consists of shipping, tourism, ocean industry and ocean technology, is a Mayor part of the city's economy. In 2000, the value of the ocean economy amounted to 11.5 billion Yuan, accounting for 20% of the city's GDP (Shijan & Xiongzhi, 2006).

Opposed to China's traditional socialistic and central planning systems, Xiamen has successfully adopted market based socialism. Economic transformations derive the ways in which opening China to the outside world have impacted SEZs like Xiamen.

Indeed, development of a Chinese transnational economy has heavily influenced the process of urbanization within the Xiamen SEZ since the late-1980s. Xiamen municipality (2006) reported as of June 2002 there have been 5,510 approved projects in Xiamen, of which 4,462 are currently running. Contracted foreign capital has reached 19.6 billion dollars and paid foreign capital stands at 13.1 billion. Ethnic Chinese have played a critical role in these investments. Actually, 82 percent of the approved projects and 71 percent of the contracted foreign capital are of Taiwanese, Hongkong, or Singaporean origin. These investors focus mainly on manufacturing emphasis on cash crops including fishery. These investments certainly result in providing extensive employment for Xiamen communities.

Xiamen's SEZs adopted special economic and management systems and policies which can do preferential treatment regarding to their land, taxes, and management. For example, during the first three years joint-ventures are tax exempt. In addition, worker and managerial staffs are also independent. Another important characteristic of SEZs is the transformation from state and collectively owned enterprises to that of public ownership. As experiment sites of reform, Xiamen is important places for the introduction of foreign direct investment (FDI).

However, Xiamen's economy depends heavily on its surrounding seas for natural resources, goods and services. The well-being of Xiamen's communities is closely linked to effective management of its coastal and marine ecosystem. Prior to the 1980s, the local economy and community livelihood were heavily relied on agriculture and fisheries with limited industrial activities. Marine pollution from land-based sources was not a Mayor problem, and waters in the Xiamen region were generally considered clean. Since the declaration of Xiamen's SEZs, the rapid economic development was characterized with industrialization, urbanization, and population growth. With many people migrated from other parts of China to Xiamen, the local population increased from less than one million in 1980 to about two million in 2001. The economic development resulted in more diversified and intensified utilization of natural resources. Coastal and marine space competition was severe among different users. There were sharp increases in resource-use conflicts and marine pollution.

In addition, large-scale land reclamation has altered the coastal environment. Pollution and erosion altered natural habitats of various living resources. With the deterioration of environmental and resource conditions, the development in Xiamen was not sustainable. Traditional single-sector oriented management and relevant rules and regulations were inadequate. Although it indicates that there is no specific local custom on coastal management, the Xiamen's communities attitude have strong role on protection coastal and marine ecosystem as their livelihood sources. Therefore, there was an urgent need for improvement in coastal management. Moreover, not only local government initiative but also Xiamen's communities are ready to provide fund for improving coastal and marine environment in order to sustain its productivity and other services.

This community attitude has been strengthened by the net benefit measured both economic and environmental effects. The research of analytical model to Xiamen using empirical data from 1992 to 2001 showed that the implementation of ICM program in Xiamen has led to a significant increase (over 40%) in annual socio-economic benefit

from its coastal and marine sectors (Peng *et al.*, 2006). Thus, the Xiamen ICM program has been effective in achieving sustainable development.

In addition, according to coastal vulnerability index in Xiamen, an indicator of cultural support of coastal communities showed the low index value. The index indicates good value or low level of coastal vulnerability meaning that there are not significant disturbances from cultural perspective on coastal environment. In other word, it indicates that the coastal communities have favourable attitude in protecting coastal zone as their dependence to its resources (Hong *et.al.*, 2006).

3.2.2. Organizational Capacity and Coordination

The Xiamen ICM Program, managed by the Xiamen Municipal Government, has successfully reached integrated coastal management by formally integrating the ICM program into the structure of the municipal government (McCleave *et.al.*, 2003). The structure of Xiamen's ICM program is conducted by the local government with affected sectors involvement and is also characterized as "decentralization or bottom-up" approach in decision making process (Figure 3.2). Initially, when the Xiamen Demonstration Project (XDP) was started, ICM program in Xiamen is empowered by a coordinating executive committee situated directly under the mayor and it has tried to involve all affected sectors in coastal management efforts. In Xiamen, where ICM was both a top-down and bottom-up creation, policymakers accepted input from outside experts and realized that utilizing ICM would strengthen economic development. The Xiamen experience also hints how the private sector, non-governmental, and academic communities will increasingly become involved in coastal management and could become an instrument for raising awareness among the government and general public.

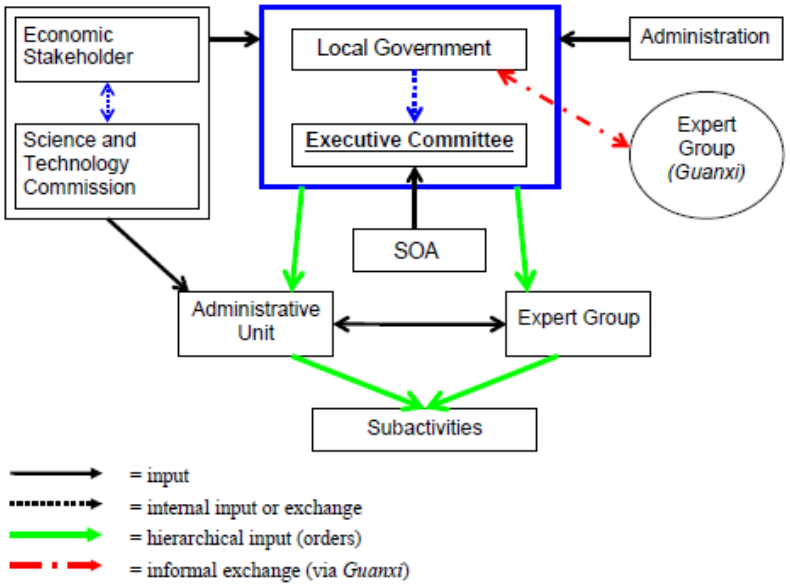

Figure 3.2. Xiamen ICM structure

The coordinating mechanism of ICM activities includes an interagency Executive Committee that was established and chaired by the executive vice-mayor (Figure 3.3). The Executive Committee comprised representatives from twenty two agencies who had specific functions (listed in Table 3.2), and they met periodically to provide policy advice, review progression of planned activities, and consider recommendations.

Table 3.2. Functions of the Executive Committee and its office for ICM in Xiamen

Executive Committee	Office of the Executive Committee
1. Exercise overall leadership over the implementation of the Xiamen's ICM 2. Supervise the activities of the program 3. Review and approve the general project workplan and its annual workplan 4. Review, approval and promote the implementation of project recommendations 5. Coordinate various participating agencies in project activities implementation 6. Appoint members of the Executive Agency consultation with National Coordinator and the Manager	1. Organize and implement project activities 2. Prepare the annual and overall plans including specific and sub-project activities, workplan, budget and oversee the operation 3. Prepare and submit quarterly, annual and terminal reports to project and program 4. Coordinate with the program management and the national program coordinator 5. Receive and disburse project funds and/or equipment for project activities 6. Coordinate and organize training activities 7. Receive, store and maintain a collection of coastal and marine related documents

A leading agency, the Marine Management Division, was designated to manage and coordinate the ICM activities in Xiamen. Meanwhile, a Marine Experts Group, comprised marine scientists, legal experts, economists, engineers and urban planners, was established. The group provided an advisory role to policymakers on scientific, technical and socioeconomic issues and provided the best available information that will minimize the costs and maximize the benefits associated with proposed development projects, and the group facilitated to increase support from local government to environmental projects and application of ICM, and enhanced the institutional collaboration among various sectors.

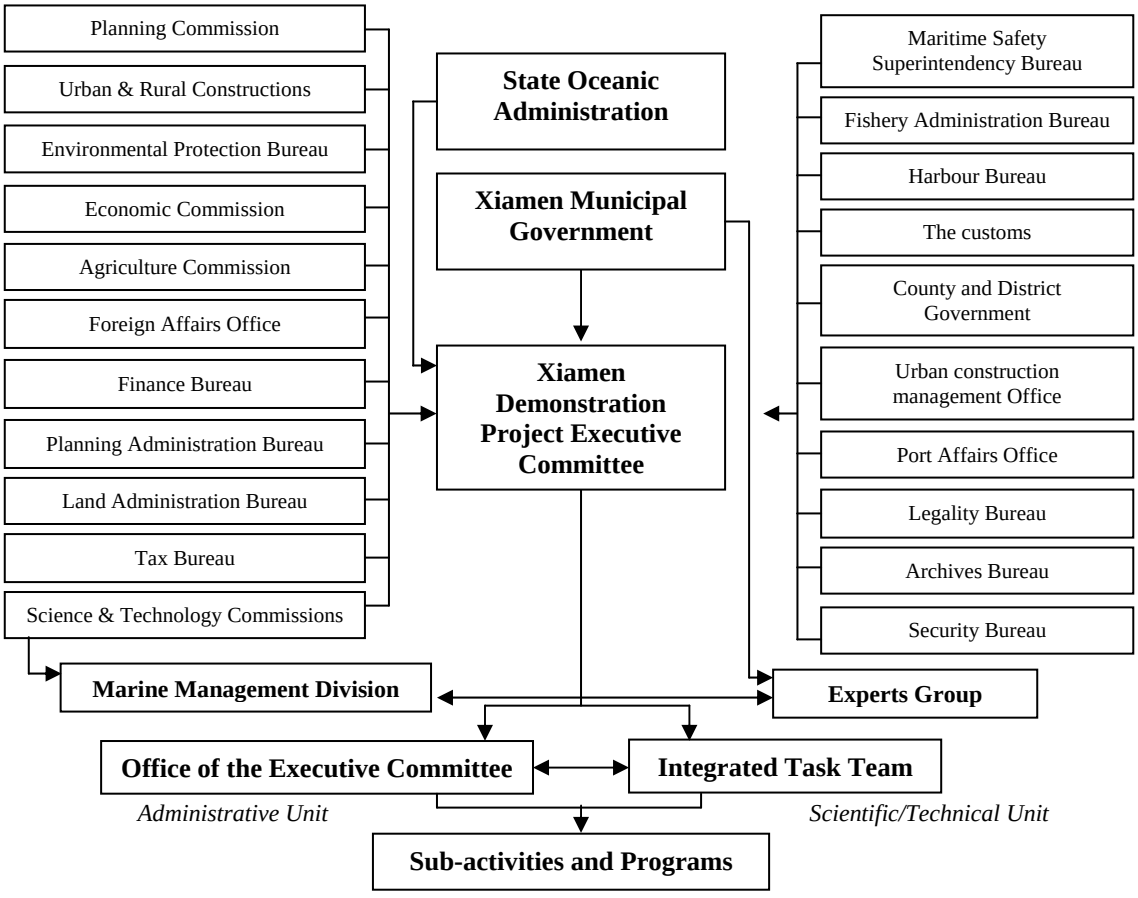

Figure 3.3. The Coordinating Mechanism for XDP (Chua, *et.al., 1997)*

In late 1995, the Xiamen Municipal Government established a Marine Management and Coordination Committee (locally known as the Leading Group) (Figure 3.4). The Committee membership includes essentially the same agencies as those listed under the Executive Committee for the Xiamen Demonstration Project and was chaired by the same Executive Vice-Mayor as director and other vice-mayors served as deputy directors. This committee comprises the heads of twenty departments and agencies. This mechanism included operational offices to implement ICM program that focus on marine issues. A Marine Management and Coordination Office (MMCO) was created upon the existing staff and facilities of the current Marine Management Division with functions under the direct administration of the Municipal Government. Principally, there is not significant change. The main difference are the inclusion of four vice-mayors in charge of agriculture, fisheries, port, city planning and construction, and science and technology and also the roles of the then Marine Management Division, which was formerly under the Science and Technology Commission, were changed from that of a technical nature to that of management and coordination. The significance of these government actions is the creation of an institutional and authoritative mechanism that can effectively address the cross-agency management issues related to the utilization of sea-space and marine resources. It also provides an organizational structure that can implement the adopted recommendations of the SEMP and the forthcoming ICM action program.

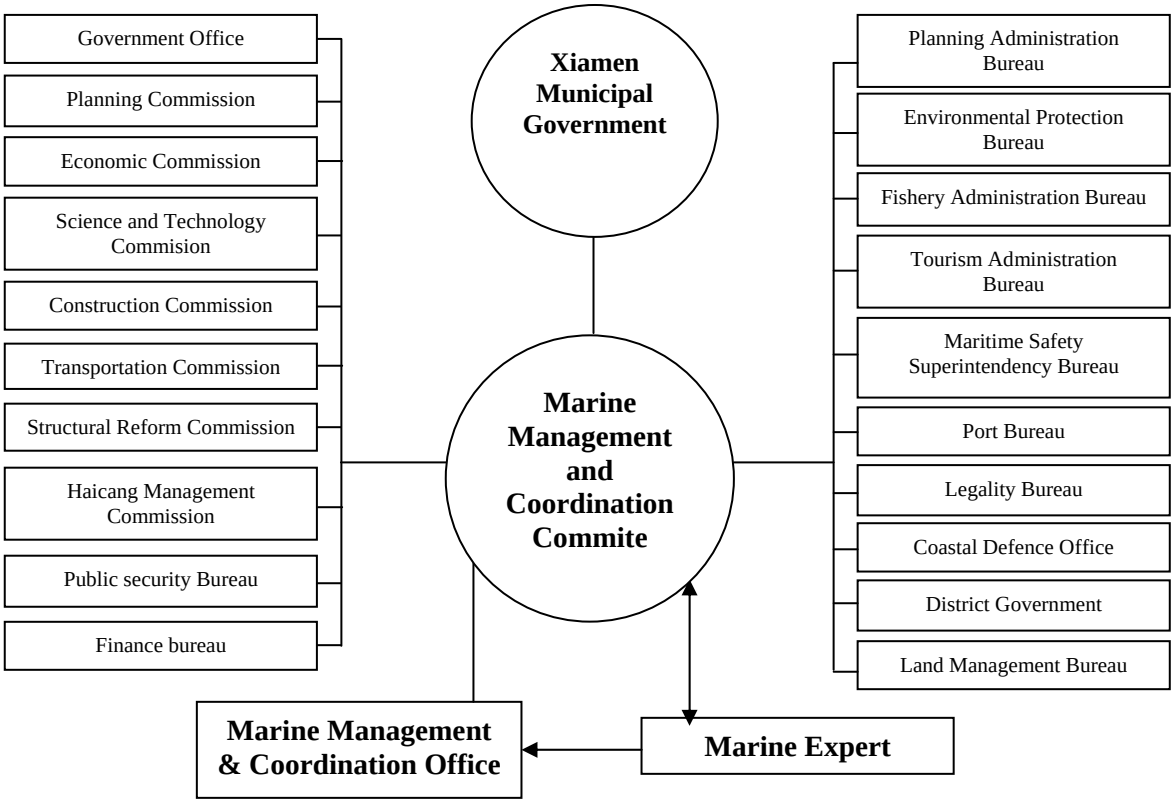

Figure 3.4. The Coordinating Mechanism of Xiamen's ICM Program since 1995 (McCleave *et.al., 2003)*

Xiamen's ICM set-up relies on a system of early professional participation and a problem-oriented structure (Lau, 2005). The main planning and implementing organ is an executive committee closely engaged with the local government. The responsibility

lies with the mayor of the city, who is also supervising the Executive Committee. The input of the local government and the SOA into the Executive Committee can be considered equal. Furthermore, the administration as well as the economic stakeholders cooperation with a Science and Technology Commission has a particularly early input into the planning process. The Science and Technology Commission also has a practical input into the implementing stage. The close interaction between the administrative unit and the expert group is considered very positive as an early scientific input into the planning stage.

Nonetheless, the Xiamen approach can only be generated with significant political will and is depending to a high degree on local initiative. This situation can become problematic with disputed issues. The Xiamen ICM structure would gain more strength with a balanced initial input of the local level represented by the local government, the central and local institutional level represented by the SOA and the scientific component represented by the Expert Group. The danger of the economic sector becoming too powerful and the constraint of varying local power structures in different cities could be lessened by this homogeneous and early impact of the institutional administration in form of the SOA, the local government and a group of independent experts.

In September 2002, during the reform of Xiamen Municipal Government agencies, the original Marine Management Office and Fishery Bureau were united into a new government agency, becoming the Oceans and Fishery Bureau of Xiamen. This agency is the functional sector in charge of marine and fishery affairs for the entire Xiamen city. Its primary function is to integrate the administrative functions of the former Marine Management Office and Fishery Bureau in Xiamen Municipality. In addition, the function has been extended to include planning, protecting, exploiting and utilizing of coastal resources that are endowed by laws and regulations on marine and fishery management. However, with the Xiamen Oceans and Fisheries Bureau, the status of the office fell to a second level position in the agency's hierarchy, typically limiting the ability of integration and coordination.

Creating an interagency coordinating committee under a leading agency in planning and implementing ICM is not encouraging, while expanding the duties of an existing agency is often supported by setting up an interagency coordinating committee for more coordinated effort. Creating a newly independent agency seems to be the most difficult one, but it would have the highest effectiveness to achieve the success of ICM. ICM institutional arrangement in Xiamen was proposed by expanding the administration functions of the marine governing agency and strengthening its coordination and integration capacity to improve the effectiveness of the ICM implementation.

Although great accomplishments have been achieved during the first implementation of ICM in Xiamen, inadequacies still exist that are illustrated as follows:

1. There are unclear jurisdictions over coastal management, such as overlapping in investigations, monitoring, surveillance and scientific research of marine environment, which lead to the unnecessary loss of human, material and financial resources;
2. Administration arrangements are somewhat unreasonable. Due to the traditional management status, land source pollution is controlled by the environmental

protection agency, and the marine governing agency is responsible for the Mayor marine management issues.

3. The office of the steering group for Xiamen's ICM used to be in the charge of the governmental general office, which alters the traditional management approach and to some extent reduces resource use conflicts and some negative impacts on coastal environment.

The Xiamen Municipal Government has successfully continued its ICM Program since the XDP formally ended in 1999. The most important step the Municipal Government took in order to ensure the continuation of ICM activities was to make the Marine Management Coordination Committee, a temporary body during the XDP, a formal agency, the Marine Management Coordination Office (MMCO), within the Municipal Government. The MMCO, still chaired by the Executive Vice-Mayor, continues to coordinate and manage ICM activities. The MMCO, being a formal agency within the Xiamen Municipal Government, has much ability to change and enforce environment or management-related legislation. The MMCO can prepare legislation to be passed by the Xiamen People's Congress, enforce legislation, and coordinate government agencies. Furthermore, if the MMCO decides that certain enforcement measures must be taken it simply makes the necessary changes within its own supervisory force. The establishment of MMCO marked a Mayor organizational change in the history of the management of the coastal area in Xiamen. In the past, there was no single organization or interagency consultative mechanism for resolving use-conflicts, to address adverse environmental problems, or to execute proactive environmental management program. The MMCO now has the necessary mandate and legal authority to coordinate with concerned agencies on the use and management of the coastal and marine areas.

The boundaries of the Xiamen ICM Program are the same as the boundaries of the Xiamen Municipality. However, there are some cases when working within one political jurisdiction is more effective. Having a watershed area define the boundaries of an ICM program is an effective way to address the multi-jurisdictional aspect of most environmental issues. However, sometimes it is more effective to follow jurisdictional boundaries, especially in local-government run ICM programs. This approach may be more effective if the political unit implementing the ICM program has more power and resources to implement the program within its jurisdiction. In Xiamen, the MMCO has jurisdiction within the Xiamen Municipality and, especially since Xiamen is a special economic zone, has more power and resources within the boundaries of Xiamen than if the program included other jurisdictions.

In term of capacity development, Xiamen has served as one of the training sites for the annual regional ICM training course. The highly practice-oriented training course, using experience from Xiamen and other sites as case studies, is highly successful in the dissemination of experience and lessons learned in coastal and marine management. The Municipal Government and Xiamen University jointly established the Xiamen Coastal Sustainable Development Training Center during the XDP in order to promote environmental awareness and capacity building with an emphasis on policy-makers and managers. The Center continues to train domestic and international officials, specialists and managers who engage in ICM. Xiamen University also offers Doctoral and Master degrees with specialization in ICM.

3.2.3. Participatory Decision Making

Public participation in policy development is a new concept to Chinese central and local policymakers, but some government officials are beginning to raise public awareness of policy issues. Such changes will be crucial if China promote an effective ICM. The key characteristic of ICM is the involvement of all affected stakeholders including government, the general population, trade unions, non-governmental organizations (NGOs), and private businesses. However, stakeholders in China, especially NGOs and trade unions, are rarely acting independently of the government. The power of businesses (both private and state-owned) is dependent on their size, as well as the discretion of local policymakers, who are often involved in their management. NGOs, trade unions, and businesses thus represent tools of the government and do not yet reflect an independent stakeholder input, which is a crucial component for ICM to meet international criteria. Nonetheless, even with limited independence, these groups may have a positive impact on implementation of coastal policies.

Some local governments have been active in trying to raise public awareness of coastal issues. Xiamen has begun to recognize the far-reaching effects of involving the public in the promotion of government concerns and management actions and their outcomes. For instance, strong public opinion has resulted in the allocation of close to 300 million Yuan to clean up the Yuandang lagoon, which was heavily polluted with domestic and industrial wastes, and the construction of sewage treatment plants. Hence, the MMCO organized some activities dealt with towards increasing public awareness as part of the Xiamen ICM initiative. The campaigns centered on "*taking good care of the blue coastal and marine territory and building a scenic port city with booming tourism*". The Xiamen MMCC organized several public awareness activities during the XDP through (Shijan & Xiongzhi, 2006):

- A weekly column in a local newspaper was published focusing on the marine environment.
- A book entitled 'The Sea and Xiamen' was published in 1994.
- Articles about the marine environment were published in a book entitled 'We love the sea' and were broadcasted on local TV and radio (Chua et al. 1997).
- A video contest was held for employees of the district governments and the Xiamen Municipal Government about marine issues.
- Educational materials about marine environmental issues were prepared for local middle school students.

In addition, Xiamen developed a marine educational program for students from kindergarten to university. The program even includes special training opportunities such as a summer university, in which older children tutor younger ones about coastal issues. Unfortunately many events only take place in one coastal city each year and have not sparked local governments to create similar awareness-raising festivals. In the long run, if public and NGO participation in coastal policy development increases, ICM in Xiamen could become better coordinated and comprehensive.

These public awareness mechanisms have effectively improved the coastal environmental awareness. As a result, citizens enthusiastically provided their comments and suggestion for Xiamen ICM program through telephone calls, e-mails, radio

broadcasts, newspaper columns and letters. These caused the change of attitude and perception, thus creating a favorable atmosphere for active public involvement in ICM-related activities. Certainly, this level of involvement was necessary to sustain ICM efforts. The MMCO continued to publish newspaper articles and television program in which a newsletter entitled Xiamen Marine Management highlighted current ICM activities and future plans in the city.

Despite there were fewer opportunities for citizen to form groups and NGO compared to other countries, the high environmental awareness of Xiamen residents has become a Mayor influence in creating one of China's most environment-friendly cities. The establishment of environment hotlines that respond to public complaints spurred citizens to pressure city officials to address specific coastal problems. Heightened environmental awareness also resulted to willingness to pay for preservation of endangered species, conservation of fishery resources, and the maintenance of beach areas and sewage treatment.

In recent years, public concerns on environmental degradation and support for a clean coastal environment, as well as increased knowledge on the socio-economic benefits of their sustained use, are contributing to an increase in debates at the People's Assembly and one political consultation conference. The debates cover topics such as strengthening coastal and marine pollution prevention and management, improvement of the health conditions of the sea, improvement of coastal and marine legislation and enforcement, improvement of the legal basis for administration, functional zonation, reduction of use conflicts, improvement of coastal and marine management and coordination.

Although this public involvement may sound not unlike some programs in the rest of the world, the Chinese in general have considerably less possibilities to participate politically, and therefore a change would have to happen in smaller steps than elsewhere. It is argued that one may say the words of community-based management does not exist yet in China and is not feasible for various economic, political and educational reasons. However, within the Chinese present political condition, the participation as practiced in Xiamen represents a clear difference to former mechanism.

As described before, the ICM program in Xiamen is managed by a coordinating office with minimal community involvements, but is still also characterized as decentralization or bottom-up approach in decision making process. However, a community-based model is not used in the Xiamen ICM Program. The Xiamen Municipal Government has kept citizens informed of its activities, through public awareness activities, but has not involved them in the program's planning and decision making. The draft of the SEMP was sent to relevant governmental agencies and experts for review, but other stakeholders, like local fishers, farmers, tourists and local business people were not involved in its preparation. The Government does, however, attempt to address communities' concerns. There are departments within the Xiamen Municipal Government charged with collecting feedback on communities' concerns and people are welcome to express their concerns to the Government. Also, scientists in the Marine Experts Group have often relayed communities' concerns to the Government. In the preparation of coastal and marine planning during XDP undertaken by ITTXDP, the

SEMP preparation process involved only some certain stakeholders, namely government departments and agencies and local experts.

Stakeholder involvement, scientific consultation and the use of a detailed management plan are important components of any decentralized ICM program. In theory, community-based ICM programs, that involve all stakeholders and use a consensus model for decision making, can be very successful. However, in some economic, social and political environments, a local government-run program may be a more effective and realistic approach. As education levels rise and the economic situation improves in these cases, community-based management will become more feasible.

Chinese in general and specifically in Xiamen, until now and in harmony with the national and local level, the formulation of public participation has been theoretically reduced to education and awareness raising. However, in Xiamen practice, there are organized local initiatives in which these are rather informative actions through generally participation. It means that stakeholders are being informed but not asked to contribute to the decision or the public may give feedback accordance with their opinion and perception of certain measures to the government. But, there is no guarantee that this will lead to any input into the decision other than that the government knows that it sometimes acts contrary to the public's concerns.

In term of public awareness raising, there is post-XDP achievements including the continuation of public environmental awareness activities related to the coastal and marine environment. The MMCO has published articles in local newspapers, produced television programs and organized many activities related to marine environmental issues. Every month, the MMCO publishes a newsletter entitled 'Xiamen Marine Management' that highlights current ICM activities and plans in Xiamen. It is distributed to relevant departments, bureaus and agencies within the government as well as local universities.

3.2.4. Financial Mechanism

Limited financing and a lack of technical and institutional capacity hold back local governance of coastal and marine environmental initiatives. Given the competing budgetary requirements among the necessary social services, it is not surprising that few governments have environmental programs at the top of their lists. One way of overcoming this obstacle is to have the international community develop partnership that build the technical, financial, and institutional capacity of local government units (Zhang *et.al.,* 2006).

Xiamen's willingness to finance ICM program to deliver environmental protection projects is a good indicator of the commitment and determination of the local government to actively participate in the efforts. In Xiamen, the ICM program was jointly financed through MPP-EAS and the municipal government (PEMSEA, 2006). Table 3.3 presents the estimated contributions associated with the ICM program implementation. MPP-EAS was officially completed in 1999 and negotiations for the second cycle ICM program in Xiamen began only a year later (2005). In addition, individual agencies that were involved in some ICM-related activities also contributed, either in cash or in kind. Over 89 percent of the MPP-EAS contribution was spent for

research and planning activities, which included capacity building. This implies that the MPP-EAS fund served as a seed fund to finance essential activities that might not have been undertaken. At the same time, the findings from the research became the basis for more concrete of ground activities. While the donor contribution would drops the financial assistance, the activities funded have encourages the more initiation of local government.

Table 3.3. Financial Contribution for ICM Program in Xiamen (1994 – 2001)

Year	MPP-EAS/PEMSEA Contribution (RMB)	Marine Management Office/Local Government Contribution (RMB)	Total (RMB)
1994		3,000,000	3,000,000
1995	2,023,372	4,200,000	6,223,372
1996	2,793,973	5,700,000	8,493,973
1997	1,762,833	13,500,000	15,262,833
1998	1,501,922	10,500,000	12,001,922
1999	116,932	12,000,000	12,116,932
2000	0	3,000,000	3,000,000
2001	448,636	3,800,000	4,248,636
Total	**8,647,668**	**55,700,000**	**64,347,668**

Source: PEMSEA, 2006

According to table 3.3., although there is financial contribution for ICM program in Xiamen from MPP-EAS, the largest financial support comes from local government contribution. Moreover, a large fund from Xiamen Municipality has been released in implementation period of ICM program from 1997 until 1999. This means that there is strong political willingness from local government upon the need of ICM program and high awareness of the benefit of ICM approach to overcome the coastal and marine environment deterioration.

At present, the Xiamen Municipal Government allocates RMB 35 million (about $4 million) annually for the operation the Xiamen Ocean and Fishery Bureau (XOFB) and other coastal and marine environment-related activities such as the enforcement of the marine functional zonation scheme (Zhou, 2005). The local government also spends substantial amounts in providing needed infrastructure, such as urban sewage treatment facilities and construction projects related to coastal and marine environmental protection. The present economic growth enables the government to afford these expenses but in the long run, the government will have to seek other sources of funding for the various environmental activities. According to the Regulations on Management of Sea Area Use, a user fee system has been established and the money generated from the system is put back into the ICM program. In addition, the application of market-based instruments needs to be expanded and new innovative financing arrangements, such as the public-private partnership approach, need to be made. This is one way of further encouraging the participation of the private sector in the ICM program.

3.2.5. Planning Program

Besides the establishment coastal and marine management coordinating mechanism, other strategic activities were undertaken by Integrated Task Team of the Xiamen Demonstration Project (ITTXDP). Xiamen started to increase the capacity of municipal government and other institutions engaged in coastal planning preparation, development and management. The main outputs of a coastal environmental profile and a strategic environmental management plan (SEMP) were issued in 1996.

The ITTXDP, comprised of members from various scientific research and educational institutions and relevant municipal governmental agencies, published the *Coastal Environmental Profile of Xiamen*. The draft of the profile was sent to various government agencies and sectors as well as individual experts of various disciplines. The profile presents relevant information on the socio-economic, political, legal and environmental status of the city for the past 20 years. It is considered to be one of the first and more important steps in setting up an ICM program in Xiamen (Chua *et.al.*, 1997). These findings provided a means to: 1) assess the state of the coastal and marine environment; 2) gauge the severity of environmental stress; 3) identify information gaps, 4) evaluate institutional and management constraints; 5) determine availability of national and local capability to undertake ICM; and 6) identify potential benefits and opportunities for undertaking management interventions.

The coastal environmental profile of Xiamen was based primarily on secondary information collected by the Integrated Management Task Team (Chua *et.al.*, 1997; Mc Cleave *et.al.*, 2003). The Team is made up of 12 interdisciplinary experts and managers from the economic planning commission, and marine related environmental and management agencies. This valuable secondary information was collected from various government line agencies, research institutions and universities. The compilation of the information has enabled the Xiamen Government to systematically analyze past records, publish results and electronically store databases. This information will be used for the preparation of the future SEMP, for the preparation of the IEIA, and for subsequent revisions and formulation of development.

The coverage of the Xiamen coastal environmental profile cover comprises natural environment and its relation to development, marine resources and their development status, urban socioeconomics and status of ecological environment, status of coastal water quality, characteristics of marine ecosystem and problems, status of marine environmental legislation, and status of marine environmental management. The profile reports that, the Mayor coastal and marine environmental problems in Xiamen were habitat alteration and degradation, the deterioration of seawater and sediment quality, and the population decline of government-protected species (ITTXDP, 1996a). In detail, the findings are:

1. Since 1956, three causeways have been built across Xiamen's Western Seas, greatly reducing water surface area and tidal influxes. This led to the destruction of coastal and marine habitats. These infrastructures also changed the biological structure of the region and reduced the numbers of species sensitive to environmental change.

2. Marine pollution had degraded seawater and sediment quality in Maluan Bay, West Harbor and north of West Harbor. The main sources of pollution were urban domestic effluents and industrial and mariculture wastes.
3. The population of four government-protected species has declined in recent years. *Mangroves* are now only found in a few areas in Haicang and Dongyu. *Egrets*, once common in the harbor, all disappeared due to pollution. Fishing grounds of *Lancelet*, off Liuwudian in Tong'an, disappeared. Chinese White Dolphins (*Sousa chinensis*), frequently observed in Xiamen's coastal waters in the 1960s, were only rarely seen.
4. There were conflicts among sectoral agencies. These involved those engaged in port construction, mariculture, land reclamation, maintenance of scenic tourism resources and marine environmental protection.
5. There were 12 agencies, from the central, provincial and local governments, that were all in some way engaged in the management of coastal areas. This created a fragmented policy, coastal use conflicts and conflicts between agencies.
6. There was no legal framework in place that considered the interrelatedness of the coastal environment.

After preparing the coastal environmental profile, the ITTXDP prepared a strategic environmental management plan (SEMP). The SEMP document assessed the causes and effects of the identified environmental problems and the associated risks; evaluated existing management measures, and prioritized types of management actions that could be undertaken to resolve them (ITTXDP,1996b). In particular, the SEMP placed special emphasis on developing the necessary coastal and marine policies and management strategies that could be undertaken by the local government. It also developed an ICM management framework within which an ICM program should be developed (Chua *et. al.,* 1997).

The general objective of the SEMP was the same as the Xiamen Municipal Government's vision. The aim is that "by the beginning of the 21st century, Xiamen will become a beautiful, modern, and industrialized city-port". It will have an industrial-based economy with per capita GDP equivalent to that of medium-income countries in the world and a high living standard" (ITTXDP, 1996b). The plan has the overall objective of implementing a series of action plans for the prevention and mitigation of coastal and marine pollution through establishing and strengthening the ICM system; maintaining the harmony between marine environmental protection and socioeconomic growth to achieve the sustainable development of coastal resources ; and making the coastal areas productive, clean and safe (ITTXDP, 1996b).

The SEMP was based primarily on the information gathered from the environmental profile (Chua *et.al*, 1997). The Integrated Management Task Team organized numerous consultation meetings with various line agencies and experts to formulate the SEMP. However, it was the end product of consultations with various agencies and experts. The SEMP is an important document and therefore should be discussed at various levels of government. The document was submitted to the Executive Committee of the Demonstration Project. The SEMP was approved by the Executive Committee and is being prepared for adoption by the government. The main coverage of SEMP are strategic objectives, management organization, marine functional zonation, accident

preparedness and response, monitoring system, human resources development, advanced information system, monitoring and evaluation, management approach and plans, legislation system, protection of the sea area, management capacity, public sense and participation, sustainable financial mechanism, framework for implementation, and estimate of required funding (Chua *et.al*, 1997).

Because the Xiamen Government had already created an overall development policy to serve as their guide in future development of Xiamen, the SEMP was built upon the existing policy. The policy highlighted the local government's development focus and priorities, specifically with respect to industrialization, seaport development, protection of the environment, and development of maritime trade. In other words, it permits economic development without sacrificing the ecological environment. In addition, the use of the existing policy was to provide a conducive policy environment.

The Xiamen's success of integrated coastal planning lies in the integration of management and science and the communication between decision makers and scientists. For several years, the Xiamen Municipal Government has been searching for effective ways of combining management and science. The Mayor components of this mechanism are as follows (Shijan & Xiongzhi, 2006):

1. ***Xiamen Marine Experts Group,*** it comprises marine scientists, legal experts and economists, was established. The responsibility of the group is to provide essential socio-economic, scientific and technical advice to policy-makers, and to provide the best available information that will minimize costs and maximize benefits associated with a proposed development project.
2. ***Xiamen Marine Functional Zoning Scheme (XMFZS),*** it was developed in 1997 by the Xiamen Marine Experts Group and undertaken by MMCO as the basis for coastal and marine management in Xiamen. It defines the dominant function, compatible function and limited function of several marine zones in Xiamen. Functional zones are areas allocated for specific and/or prioritized economic development, and nature preservation and protection in the frame of optimal use. These zones will be based largely on the functional characteristics of the area concerned. For example, in the West Seas, the dominant function is shipping/port, the compatible function is tourism/nature reserve and the restricted function is aquaculture. The integration will determine which activities will have the least impacts on the environment and will help to avoid and/or minimize use-conflicts.
3. ***Comprehensive Marine Economic Development Plan for Xiamen,*** A comprehensive near future development plan was formed for Xiamen by combining the development planning of different industries. The plan covers ports, transportation, fishing, tourism, industry, ocean technology, environmental protection and integrated management. The Xiamen Municipal Government adopted this plan in October 1997 as the guidelines for marine economic development in Xiamen.
4. ***Marine Environmental Monitoring Network,*** During the XDP, a marine environmental monitoring network was set up. The network included local marine institutions, university departments and government monitoring stations. Network members adopted uniform and standard sampling and analytical methods organized

workshops, exercised quality assurance and quality control, and submitted monitoring information to the ICM program.

After the completion of XDP in 1999, there are some post-XDP achievements namely (Mc Cleave *et al.*,, 2003):

1. The establishment of an integrated information management system (IIMS): In May 1999, an IIMS was completed by experts at Xiamen University. It uses a GIS software program to map the sea zone and land areas of Xiamen. The XMFZS is integrated into this program. The MMCO used the IIMS to grant water-use permits and to access information about the sea area.
2. Continuation of the Marine Experts Group: The Xiamen Marine Experts Group, formed during the XDP, is still in operation. The group regularly provides scientific advice to the MMCO and meets four times a year with the Deputy Mayor to discuss marine management issues and provide expert advice to the ICM Program. The Xiamen Municipal Government has increased its funding to local scientists for research projects related to environmental surveying and protection, ocean resources development and protection, the sustainable development of the ocean industry and the application of ICM.

However, the development policy of the Xiamen municipal government has provided economic development directions and goals. This has enabled the integration of marine environmental management in the SEMP to promote a proactive environmental policy, and has allowed the reactive management of strategies to correct adverse environmental impacts. For instance, the adverse environmental conditions of the Yuandang lagoon and the high cost in its clean-up were useful lessons in promoting environmental consciousness and a stronger political commitment to prevent its occurrence (Chua *et al.*, 1997). The political leadership is now more receptive to a proactive approach. In addition, a fundamental management requirement is the availability of a reliable and scientific database that could be used by the coastal managers to develop appropriate coastal policies and corresponding management interventions for mitigating any adverse environmental change. The role of scientists and their contributions in Xiamen have proved to be crucial in the implementation of the ICM program. The Xiamen Marine Experts Group that meets regularly with the management body of the ICM program, is a good approach to providing scientific advice and consultation services to the ICM Program. In term of local government-run ICM Programs in Xiamen, a permanent, coordinating agency within the framework of the local government has given a very good way to coordinate government departments and manage the ICM Program.

3.2.6. Regulatory Framework

Previously, local legislation had been unable to respond to the various issues and concerning with the management of Xiamen's coastal zone. In order to overcome coastal and marine environmental problems, the National People's Congress granted environmental legislative rights to the municipality government, which encourage the local people's congress to promulgate a set of laws and regulations related to coastal and marine development and environmental protection (Li, 1999). Thus, a local coastal legal framework enacted within the framework of the national coastal legal system, which dealt with various agencies (Figure 3.4). Dealing with the problem of sectoral

approach, close coordination has become crucial determinant among actors in proposing and developing regulations.

It is identified that thirteen legislations concerning land-based pollution and environmental protection were enacted from 1994 to 1997. This provide stimulus for the legislative efforts of the ICM framework. For instance, the Regulation on the Uses of Xiamen Sea Areas emphasized the cross-sectoral coordination in coastal project review and permit process, scientific decision making, and use of market-based instruments. It also provided the way for the institutionalization of the interagency coordinating mechanism for ICM. As the most important part of the XDP achievement, the Regulations on Management of Sea Area Use seek to meet several objectives stated in the SEMP: (1) to establish a unified mechanism with coordination responsibility within the government of Xiamen, (2) to re-define the responsibilities of various government departments involved in coastal and marine management, (3) to establish licensing, charging and penalty systems for the use of ocean areas, and (4) to establish an effective law enforcement mechanism.

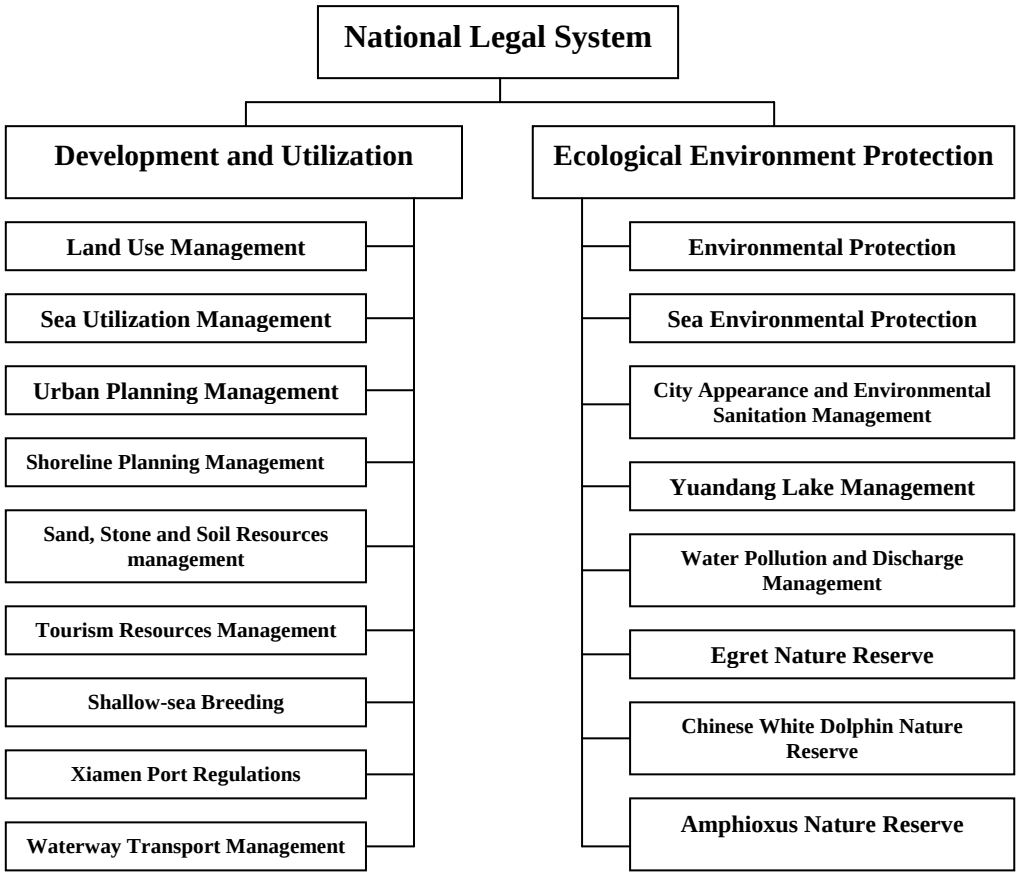

Figure 3.4. Xiamen Coastal Management Legal Framework (PEMSEA, 2006)

Actually, a Mayor focus of the Xiamen's ICM program is to clarify the legislative and jurisdictional issues related to coastal and marine resource and sea-space utilization. A legal group was set up to review related existing national legislation and local ordinances, to determine the areas of conflicts, identify areas that required further clarification and changes, and draft local legislation that could harmonize or strengthen the implementation of national legislation. A reviewed and improved legislation have

emerged according to the prevailing conditions and made them adaptable to change such as the Xiamen Regulation on Environmental Protection of Sea Areas had been revised based on the changes made on the national law in April 2001. The legal group has successfully submitted new or modified ordinances and administrative orders, which have been promulgated by the municipal government. These include legislation on management of water resources, management of aquaculture practices in inter-tidal and shallow coastal waters, management and control of ports and harbors, management of marine environment, management of sea transport, development and management of tourism resources, preservation and management of the egret nature reserves at Dayu Island, administrative orders related to the removal of fish farms in coastal areas allocated for the construction of shipyards, and control and management of eel fry gathering in Xiamen coastal waters. Local legislations which strengthen ICM implementation in Xiamen are described in Table 3.4.

Table 3.4. Local Legislations in Strengthening ICM Program in Xiamen

Year	Mayor ICM Project Activities	Legal Instruments
1994	• Strengthening local government commitments • Public awareness campaigns	• Regulation for environmental protection
1995	• Integrated management committee/office established • Environmental profile and strategic environmental management plan prepared • Marine laws reviewed and new legal instruments proposed	• Regulations for managing the resources of sands, rocks, and soils • Regulations for the management of navigation • Municipal Ordinance for Egret nature reserve in Dayu Island • Administrative rules for strengthening the management of catching marine eel larvae • Regulations for the management of water resources
1996	• Yuandang Lagoon case study • Waste problems and management assessed • Aquaculture impact study • Integrated monitoring system established	• Municipal Ordinance for managing Yuandang Lagoon area • Municipal Ordinance for urban landscaping and environmental health • Administrative rules for aquaculture in shallow seas and tidal flats • Regulations for marine environmental protection
1997	• Integrated environmental impact assessment • Functional zoning scheme developed • Studies on sustainable financing mechanism	• Regulations for the uses of sea areas • Regulations for the protection of Chinese white dolphin • Regulations for the management of Tourism • Government Notice on implementation of Xiamen Marine Functional Zoning Scheme

Sources: Chua et.al., 1999

In order to strengthen integrated law enforcement, a supervisory force was formed within the MMCC. Relevant departments, like the harbor supervisor, fishery supervisor, water police and environment supervisor, were organized into an integrated law enforcement group. A significant achievement of the newly established Marine Management and Coordination Office (MMCO) has been its ability to mobilize the

various law-enforcing agencies to collectively enforce management measures related to illegal activities that fall within the overlapping functional jurisdiction. Two of these successful law enforcement actions were (1) the resolution of conflicts arising from illegal establishment of fish farms in areas designated for shipyard development, and (2) unregulated eel fry gathering in navigational channels. The collective involvement of concerned enforcing agencies has not only improved the effectiveness of law enforcement but also its cost-effectiveness, by sharing interagency resources for the common goal.

PEMSEA (2006) has described that the MMCO has enforcement powers to intervene the management implementation accordance with legislation. An Integrated Coastal and Marine Enforcement Squad, which covers nine marine-related agencies including Xiamen Marine Management Supervision Squad, Xiamen Maritime Bureau, Xiamen Fisheries Administration Division, Xiamen Fishing Port Supervision Bureau, Xiamen Marine Public Security Branch, Xiamen Marine Transportation Administration Division, Environmental Protection Squad and City Appearance Squad of Xiamen Urban Supervision Division, and the Fujian Navigational Channel Bureau Xiamen Branch was formed in 1997. This formation has strengthened law enforcement in xiamen coastal and marine area by providing effective measures to promote the protection of coastal and marine resources. The united law enforcement not only brought about stronger teams and standardized procedures but also compelled law enforcement officers to uniformly apply the law. The law enforcement supervision through assessing the performance of the team by delegation of the Municipal People's Congress and members of the Municipal People's Political Consultative Conference has ensured the team to perform its duties accordingly.

In term of legal framework, at least there are two main post-XDP achievements namely:

- *The enacting and amending of regulations.* For example, the Regulation on the Protection and Management of the Marine Environment was amended to integrate with the central government's Marine Environmental Protection Act. The Development, Protection and Management Regulation for Xiamen's Small Islands was also enacted.
- *Improved enforcement of the Regulations on Management of Sea Area Use.* Those who wish to use the sea area for aquaculture, recreation, reclamation and transportation activities must now obtain a permit from the MMCO. Enforcement of this permit system has improved since the end of the XDP. For example, the coastal area near the village of Huang Cuo was once littered with aquaculture equipment used by fishermen without an MMCO permit. The XMFZS designates tourism as the dominant function in this area and so, in 1999, the aquaculture equipment was removed in order to attract more tourists. In addition, the supervisory force within the MMCO has been given additional manpower and facilities while more departments have joined the integrated law enforcement group.

CHAPTER 4. INTEGRATED COASTAL MANAGEMENT (ICM) IMPLEMENTATION AT THE LOCAL LEVEL IN INDONESIA
(Case of Bandar Lampung Municipality)

This chapter elaborates the on going institutional development of ICM implementation at the local level in Indonesia. This process is being undertaken with regard to the improvement of local receptiveness upon ICM approach towards its sustainability of ICM implementation in Bandar Lampung municipality. The national framework of ICM implementation is outlined to provide the mechanism of ICM formation at the local level. This chapter discusses several important factors and characteristics on institutional development that determines the receptiveness and sustainability opportunities of ICM implementation in Bandar Lampung municipality. They are socio-cultural perspective which elaborates the community's attitude upon ICM program, organizational capacity and coordination that provide the working structure and mechanism among decision makers, participatory decision making that describes the role of stakeholders in decision making process, financial mechanism that provides the ICM funding system, planning program that determines the strategies and action plan of ICM program, and regulatory framework that provide legal basis in delivering ICM approach.

4.1. Overview ICM Implementation in Indonesia

Integrated coastal management (ICM) has been developed in many countries since about 30 years ago. Meanwhile, ICM concept is still newly adopted by Indonesia. Some programs and activities relating with coastal environment have been applied since 1980s, but they have not been designed to implement ICM concept. In 1988, the important milestone of ICM development in Indonesia is started with the cooperation study between National Planning and Development Agency (Bappenas) and Canadian International Development Agency (CIDA) signed by the issuance of "Indonesia's Marine Environment: A Summary of Policies, Actions and Issues (Darajati *et al.*, 2004).

In formal perspective, coastal resources and marine management has been firstly accommodated by national development policy in 1993/1994, stating in five years development plan as marine sub-sector. Since 1993, Indonesia has implemented the ICM concept through the basis of some externally funded projects. From 1993/1994 to 1996/1997, the projects are started with Marine Resource Evaluation and Planning (MREP) which is aimed to evaluate existing Indonesian coastal and marine resources and then preparing future management planning. After MREP projects are terminated, in 1996 there is Segara Anakan Coastal Development Project (SACDP) (MMAF, 2003). Although MREP and SACDP project are delivered in relatively short time, there are many professional human resources resulted from those projects who will be the pioneer of next coastal development.

In line with the United Nations Conference of Environment and Development (UNCED) or earth summit which results 21 Agenda, in March 1997, Indonesian

government cooperated with United Nations Development Program (UNDP) prepared the Agenda 21 in Indonesia, which specifically focused on seven issues, namely:

1. Integrated planning and development of coastal zone
2. Controlling and preserving coastal and marine environment
3. Utilizing sustainable marine resources
4. Increasing coastal communities welfare
5. Sustainable development of small islands
6. Controlling the safety in exclusive economic zone (EEZ)
7. Managing the impact of climate change

According to Darajati *et al.,* (2004) and MMAF (2003), from 1997 to 2003, ICM implementation is continued by the first phase of coastal resources management project (CRMP I) or "Proyek Pesisir". This project is delivered by the cooperation between Indonesian government through Bappenas and USA government through United States Agency for International Development (USAID). The first phase of this project is implemented through Coastal Resources Center (CRC) University of Rhode Island cooperated with Center for Marine and Coastal Resources Studies (PKSPL), Bogor Agricultural University. In this phase, the project is aimed to decentralize and strengthen institutional capacity of coastal and marine resources management which is distributed in North Sulawesi, Lampung, East Kalimantan and Papua province. After that, from 2003 until 2005, the second phase (CRMP II) or named as "Mitra Pesisir" is implemented through International Resources Group (IRG) by focusing on the partnership development with stakeholders. In the first phase, the project is implemented by project consultant solely, while in the second phase, partnership is aimed to mobilize human resources and strengthen institutional capacity.

The next stage is the implementation of Coral Reef Rehabilitation and Management Project (COREMAP) which is initiated by cooperation between Indonesian government and some external donors (AusAid, GEF, Worldbank, and ADB). This project concerns with specific issues on rehabilitating coral reef ecosystem in Indonesia and preparing sustainable coral reef ecosystem management. This project is implemented in Papua, South Sulawesi, Riau, and East Nusa Tenggara province which will be held for 15 years starting from 1998 until 2014. This project is divided into three phases, *the first* is initiation phase (1998 – 2003), the second phase is acceleration phase (2003 – 2008), anfd the third is institutionalization phase (2008 – 2014).

At the same time with COREMAP, there is Marine and Coastal Resources Management Project (MCRMP) which is initiated by cooperation between Indonesian government through Ministry of Marine Affairs and Fisheries (MMAF) and The Asian Development Bank (ADB). Actually, this project is the most appropriate project who implement ICM concept as a whole with the objective to achieve sustainable coastal and marine management and preserve its environment in the framework of decentralization. This project is implemented in 15 provinces and 45 districts/cities that held from 2002 until 2009 (MMAF, 2005).

Besides, from 1998 until 2004, there is a project dealing with the issue of fisheries resources decrease especially on coastal zone. This project named COFISH is implemented by Ministry of Marine Affairs and Fisheries and is financed by The Asian

Development Bank (ADB). The project is aimed to promote participative fisheries resources management and decreasing the poverty level of coastal community in four provinces and five districts/cities.

Although there is effort to deliver decentralization and participative framework, however, those projects are essentially implemented by centralized and controlled power from central government because of externally funded donors financing system. Nevertheless, since these three projects (MREP, CRMP dan COREMAP phase I) were terminated, ICM projects are continued by a second stage with the modification of an attempt to adjust local needs by implementing decentralized and participative framework. They are Marine and Coastal Resources Management Project (MCRMP) and COREMAP Phase II (MMAF, 2003). Although MCRMP has represented a comprehensive ICM implementation towards a decentralized approach, it has brought many experiences rather than ensuring the sustainability of ICM implementation with fragile institutional arrangements. The awareness of national government towards institutionalization of ICM approach, since MCRMP project were implemented, has triggered to prepare decentralized coastal zone management policy by enacting Law no. 27/2007 on coastal area and small islands management. This law has mandated the rule of ICM implementation at the local level. It included the policy of Right to Undertake Business in Coastal Waters (HP-3) that is aimed to provide challenges on coastal resources privatization at the local level by giving business permits with strict regulation. This decentralized coastal management policy was also supported by national decentralization policy with the enactment Law no.32/2004 on regional autonomy. By these two main legal frameworks, they encourage to develop institutional arrangement for delivering ICM implementation due to the dynamics of local needs and interest.

4.2. Local Institutional Development of ICM Implementation in Bandar Lampung Municipality

The policy of decentralized coastal zone management in Indonesia has provided a significant change of coastal management governance towards locally institutionalized development. This means that the contemporary success of ICM approach will be determined by the local government initiatives and self-sustaining ICM implementation at the local level. Therefore, it is crucial to address local institutional development in order to understand the level of receptiveness on sustainable on ICM implementation at the local level.

According to Bandar Lampung Government (2007a and 2009a), Bandar Lampung city is the capital city of Lampung province that administratively consists of 13 districts in which three of them located on coastal area. As one of coastal cities in Indonesia, Bandar Lampung city has coastal area with 27.01 km of coastline length. Meanwhile, the wide of coastal area consist of 5,667 ha coastal land area limited by three administrative boundaries of Teluk Betung Barat district, Teluk Betung Selatan district, and Panjang district and 4,872 ha of coastal waters area that covers coastal waters of Bandar Lampung as far as 4 miles regarding Law no. 32/2004 about regional autonomy. The coastal area of Bandar Lampung city can be depicted as following figure 4.1.

The coastal zone of Bandar Lampung has been becoming the center of economic growth especially on trade sector within the city level, regional, national and even international regarding with the determination of Panjang Port Authority as international seaport (Bandar Lampung Government, 2007a). In addition, local spatial planning has also determined the coastal zone of Bandar Lampung as economic growth source to support Bandar Lampung city growth especially triggered by International Panjang Seaport (Bandar Lampung Government, 2010). It is recognized that local government has defined the coastal zone development becoming one of local development priorities to support trading activities, manufacture industry, tourism, and fisheries industry (Bandar Lampung Government, 2007b).

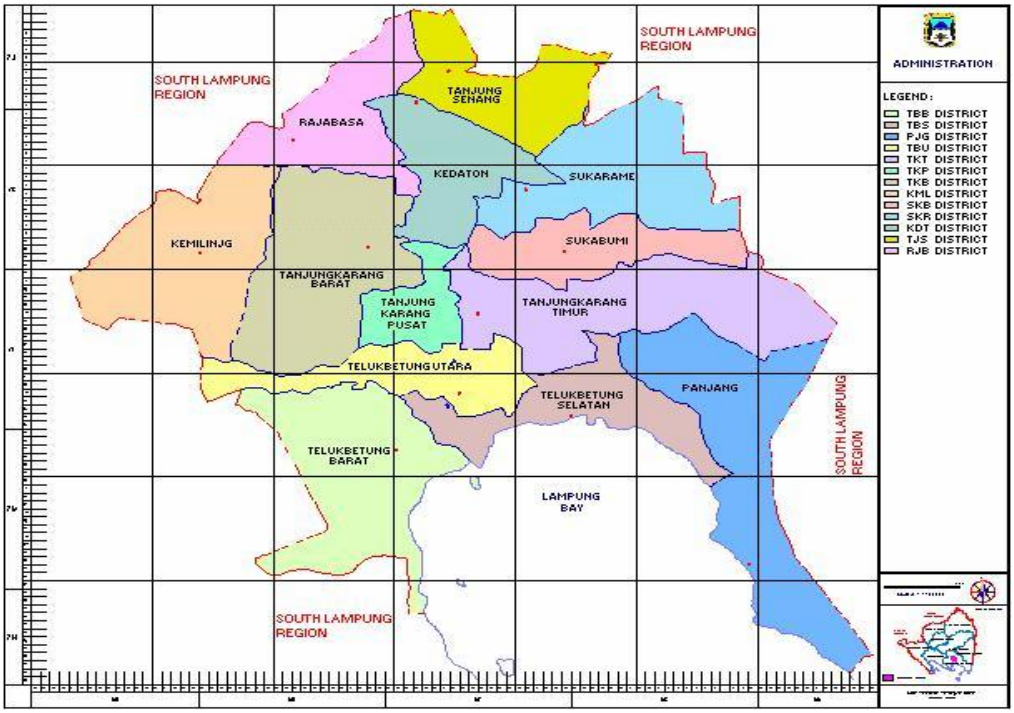

Figure 4.1. Administrative map and coastal area of Bandar Lampung city (Bandar Lampung Government, 2009a)

Unfortunately, the determination of coastal zone as economic growth sources has not been supported by clear rules with the result on strong pressures towards degradation of coastal environment and social conflicts. The strong pressures of coastal area in Bandar Lampung mainly come from infrastructure development, manufacture industries, coastal reclamation, seaport/warehousing, fisheries industry, tourism, settlement development and transportation. As the results, those have impacted to the coastal pollution, widespread of slum area, threat of flooding and coastal erosion, and conflict of interests (Yudha, 2007). Meanwhile, the economic development on coastal area may not impact to the society welfare equally, but profitable for capital owners only.

According to those facts, Bandar Lampung city has increased the local initiative to search an effective management approach of coastal zone. Since the local government of Bandar Lampung has autonomy from the enactment of Law no.32/2004 about regional autonomy, coastal zone development has been concerned by local government. However, the ICM implementation in Bandar Lampung is strongly managed and

conducted by local government. The initiation of coastal zone planning by preparing coastal zone master plan has proven a serious attention of local government towards ICM. This initiation is published with the theme of *water front city* as a coastal planning program and slogan to improve the quality of coastal zone in Bandar Lampung city. Therefore, institutional development of ICM implementation in Bandar Lampung may become a representation of self-initiative ICM program in Indonesia. In line with this initiation, in 2007, national policy on coastal zone and small islands management has been legally issued by the enactment Law no.27/2007. Actually, this law has been mandating the implementation of ICM at the local level by providing the guidelines and frameworks. This law mandates the local government to prepare hierarchical plan document consisting of strategic, zoning, management, and action plan on coastal zone. So that, the integration between master plan preparation with *water front city* slogan and the preparation of hierarchical plan document can not be hindered by Bandar Lampung Municipality. Together with the implementation of this mandate and the awareness of local government to improve the receptiveness on effective coastal zone management, a series of institutional arrangements has been delivering for implementing ICM approach in Bandar Lampung which elaborates in following sections.

4.2.1. Socio-culture Perspectives

Based on local statistic bureau (2006), population number of Bandar Lampung city is 743.109 people and they increase in 2005 becoming 809.860 people. Meanwhile, population number in three coastal sub districts are 217.092 people or 26.81% of total population number in Bandar Lampung city. Teluk Betung district is the densest population of all coastal districts with the number of 92.506 people. According to the document of strategic plan of coastal zone and small islands management and local statistic bureau (2006), some of people in coastal area of Bandar Lampung city are categorized as poor people. These poor people in coastal zone of Bandar Lampung are about 18,962 households. The total poor population in three coastal districts document is approximately 30% of all poor people in Bandar Lampung city in which the highest population of poor people is located in Teluk Betung selatan district with a number of 7,871 households. Most of coastal communities in Bandar Lampung are categorized on productive age with relatively high of education level. Looking at the ethnicity, most of coastal communities are dominated by Javanese ethnic. They have their own land with legal requirement. Moreover, to acquire community support in development coastal zone, local government will develop the policy of evictions avoidance

Bandar Lampung Government (2007a) describes that the settlements on coastal zone are concentrated in Teluk Betung Selatan district and Teluk Betung Barat district. Meanwhile, industrial area and seaport are concentrated in Panjang district. The settlements along coastal zone in Bandar Lampung have become a serious problem because many people are live on coastal waters houses in order to which they have low purchasing power on coastal land. The development of reclamation area in Sukaraja, Kangkung sub district and Pasaran islands has caused the high price of land on coastal zone. Moreover, it has been a main concern of water front city program.

In historical perspective, most of people's livelihood in coastal area depend on fisheries activities as fishermen for a long time ago. There are three centers of fisheries units

which are Gudang Lelang, Gudang Agen and fish production center of Lempasing. Besides, some of coastal communities depend on the activities of Panjang international seaport. The increase of export and import activities has widened the job opportunity for coastal communities. In addition, the establishment of fish production center of Lempasing as the main fisheries port in Lampung Bay has increased fish production in Bandar Lampung. According to the study of socio-culture and coastal community's perception upon ICM program in Bandar Lampung in 2007, in general, most of coastal communities work in fisheries, trading, and services sector (Bandar Lampung Government, 2007a). In fisheries sector, they dominate as fishermen and some of small industries of fish processing, whereas services sector is dominated by private employee, labour and governmental employee. It indicates that there will be an expectation of coastal community upon ICM program managed by local government will support their existing livelihoods towards the increase of their welfare.

The result of preliminary study on socio-culture perspective has also described the positive perception of coastal communities on the benefit of infrastructure provision, safety and conducive in daily activities either for religious, education, society life, or working. This condition will support the promotion of water front city theme as part of integrated coastal management approach. In addition, according to the survey on coastal community perception upon the implementation of integrated coastal management concept through promoting the water front city theme, the result is described on table 4.1. This survey has involved the community figures, religious figures, and the elders who have strong influences on communities.

Table 4.1. Perception of coastal communities of Bandar Lampung city upon ICM approach in 2007

No	Districts	Perception upon ICM		Response	
		Understand	Not understand	Agree	Not agree
1	Telukbetung Selatan	54.55%	45.45%	61.36%	38.64%
2	Panjang	32.50%	67.50%	92.50%	7.50%
3	Telukbetung Barat	13.89%	86.11%	86.11%	13.89%
Average		**33.64%**	**66.36%**	**79.99%**	**20.01%**

Source: Bandar Lampung Government, 2007a

Based on the table 3.1, most of coastal communities especially for Panjang and Telukbetung Barat districts, do not understand the term and conception of ICM including the promotion of *water front city* slogan. It can be argued that Panjang and Telukbetung Barat district are far from the center of governmental activities. This affects to the low of knowledge upon ICM concept in these districts. However, after the explanation of ICM concept, most of them agree to support the implementation of ICM approach in Bandar Lampung city and show the willingness to involve in the programs that will be delivered by local government. The high percentage of agreed response, indicates that there is opportunity of community's receptiveness to support the ICM program managed by local government. Conducting this study indicates the awareness of local government that the ICM receptiveness will be achieved by using community participation approach.

It is recognized that coastal zone management process need to involve government, private sectors, and an active role of community. Another study also result positive response of the community response upon the important role of local government agencies (Table 4.2). Indeed, the two important local governmental agencies are the local planning and development bureau (Bappeda) and the local marine and fisheries agency. The Bappeda is responsible for coordinating of planning authority including coastal zone planning. While, the role of local marine and fisheries agency is coordinating the implementation of ICM program and also together with the Bappeda prepare the coastal zone planning. However, communities hope a bottom-up approach that may engage in programs delivered by local government.

Table 4.2.Community perceptions about the role of local government in delivering ICM

No	District	Perception upon the role of government				
		Very good	Good	Sufficient	Less	Not good
1	Telukbetung Selatan	2.27%	29.55%	61.63%	6.82%	0.00%
2	Panjang	2.50%	40.00%	50.00%	2.50%	5.00%
3	Telukbetung Barat	0.00%	30.56%	55.56%	13.89%	0.00%
Average		**2.39%**	**34.77%**	**55.68%**	**4.66%**	**2.50%**

Source: Bandar Lampung Government, 2007a

Meanwhile, the roles of private sector have been criticized by communities in which private sectors more concern with the continuity of their business rather than communities viability (Table 4.3). Private sectors in Bandar Lampung are mainly dominated by fisheries industries, tourism enterprises, and manufacture industries. They should have roles not only provide income for local government through corporate tax and employment but also participate to protect the sustainability of coastal ecosystem. The indication of negative community perception is caused by the lower awareness of private sector in protecting coastal ecosystem by producing coastal pollution that influence the balance of coastal resources.

Table 4.3. Community perceptions about the role of private sectors

No	District	Perception upon the role of private sectors				
		Very good	Good	Sufficient	Less	Not good
1	Telukbetung Selatan	2.27%	4.55%	6.82%	4.55%	81.82%
2	Panjang	0.00%	0.00%	7.50%	0.00%	92.50%
3	Telukbetung Barat	0.00%	0.00%	0.00%	5.56%	94.44%
Average		**0.76%**	**1.52%**	**6.62%**	**1.52%**	**89.59%**

Source: Bandar Lampung Government, 2007a

According to visual surveying and information reported on the document of zoning plan (Bandar Lampung Government, 2009b), coastal communities in Bandar Lampung city consist of various ethnics consisting of Bugis, Banten, Lampung, Cirebon, Javanese and Chinese ethnic. The survey has also reported that there is not information about the significant ethnical conflict or disturbance among them. In case of conflict emerged, the mechanism of conflict resolution depends on the decision of community figures, religious figures, or the elders who have strong influences on communities. It is recognize that ethnical perspective may relate with the local custom and culture. As resulted from the survey, it is indicated that there is no special local custom law, norms

or local wisdom affecting the coastal zone management in coastal communities of Bandar Lampung.

4.2.2. Organizational Capacity and Coordination

Previously, the awareness of local government of Bandar Lampung upon coastal zone management had been triggered by the emergence of coastal environmental degradation and conflicts of interest affected by imbalance between utilization and carrying capacity of coastal zone. By 2007, initiated by The Mayor of Bandar Lampung, local government promoted the program of coastal zone realignment through master plan preparation. This initiation is mainly based on integrated process orientation involving all stakeholders who engage in coastal zone of Bandar Lampung city (Table 4.4). Hoping the synergy of coastal management between government, private sectors and communities has been developing to provoke economic growth from coastal resources while preserving the sustainability of coastal environment.

There are five kind players that have important role in managing coastal zone in Bandar Lampung city which are government, private sector, university, non-governmental organization, and communities. According to the document of strategic plan, zoning plan and local regulation no.3/2008 about organization and working procedures in local government of Bandar Lampung city, organizations who may engaged in coastal zone completely describe on following Table 4.4.

Table 4.4. Organizations in coastal zone management of Bandar Lampung city

Stakeholders	Organization	Roles
Government	Planning and Development board	Coordinating general spatial plan and development of Bandar Lampung city
	Marine and fisheries agency	Organizing marine and coastal resources utilization
	Environmental impact control board	Controlling the quality change of environment and ecosystem
	Land administration board	Organizing land ownership on coastal zone
	Transportation agency	Organizing the sea transportation
	Culture and tourism agency	Organizing and promoting coastal and marine tourism
	Public work and settlement agency	Organizing spatial development for housing and settlement in coastal area
	City planning agency	Designing and organizing the detailed plan of city
	Revenue management agency	Organizing and exploring local revenue sources
	Trade and industry agency	Organizing the development of industry and enforcing the mechanism of trading system
	Navy military forces	Involve in specific zone of coastal area as military function
	Water and air police department	Engage in law enforcement upon criminality on marine and coastal waters such as illegal fishing
	Port authority (PT. Pelindo II unit of Panjang port)	Authorizing the exit and entry of goods both domestic and foreign transportation
	Local House of Representative	Together with the Mayor of Bandar Lampung designing and legitimating the local regulation
Private sectors	About 18 company utilizing coastal resources	Dealing with fisheries industries, tourism development, and mining

Stakeholders	Organization	Roles
University	University of Lampung	Center for scientific and knowledge sources on coastal management
	Bandar Lampung University	
Non-governmental organization	Mitra Bentala	Dealing with and focusing on the conservation interest of coastal environmental
	Walhi	
Communities	Indonesian fishermen community/HNSI,	Dealing with coastal society interest mainly played by fishermen
	Local farmer-fishermen forum	

Source: Bandar Lampung Government, 2009a

According to strategic plan and master plan of coastal zone, the initiation of coastal zone realignment program with the theme of water front city firstly come from the Mayor of Bandar Lampung city. Then, this program is mandated to marine and fisheries agency as the key player to deliver the program by designing master plan of coastal zone. At the same time, parallel with the national policy on article 7 (3) of Law of coastal zone and small islands management, there is mandatory policy for local government to design hierarchical plan of strategic, zoning, management, and action plan respectively. It is clear that the article 7(2) and 23(2) of Minister Regulation no.16/2008 has mandated the chairman of working team on strategic and zoning plan preparation has to be submitted to local planning and development board (Bappeda) and vice chairman is marine and fisheries agency.

To implement the ICM that accommodate multi-sectoral planning, the local government issued the Mayor Bandar Lampung decree no. 47/16/HK/2007 about the formation of working group on the draft preparation of strategic and zoning plan. In line with the national direction, therefore, this working team is chaired by head of local planning and development board (Bappeda) and head of marine and fisheries agency as vice chairman. Meanwhile, the representative of other stakeholders becomes the member. This working team has roles as:

1. Collecting the data and information about potency and problems in coastal zone
2. Preparing the draft of strategic and zoning plan of coastal zone management
3. Convening cross sectoral meeting
4. Convening public consultation
5. Finalizing the draft of strategic and zoning plan of coastal zone management
6. Reporting the result of activities to the Mayor continuously

The working team is divided into three small working groups focusing on coastal resources issues, spatial concerns, and socio-economic and culture issues. In order to enrich and balance the perception of integrated coastal management knowledge, the training and workshop are held for them. Especially for working group of spatial concerns, there is training on utilizing the geographical information system that will be used on the preparation of zoning plan.

Therefore, the working team is limited by its role that concern with only preparation of strategic and zoning plan of coastal management and small islands. Indeed, its role and function has been finished when the document of strategic and zoning plan have been enacted by the end of 2007. While the process of integrated coastal management still remain a lot of works, it is recognized by the Mayor, driven by marine and coastal agency and also local development and planning board to formalize the working team of

coastal zone management by issuing the Mayor decree no.233/02.2/HK/2008. This working team has roles to continue and implement next programs of integrated coastal management in Bandar Lampung regarding national policy direction and accommodating local interest. This working team consists of all related stakeholders that completely describes as following organizational structure.

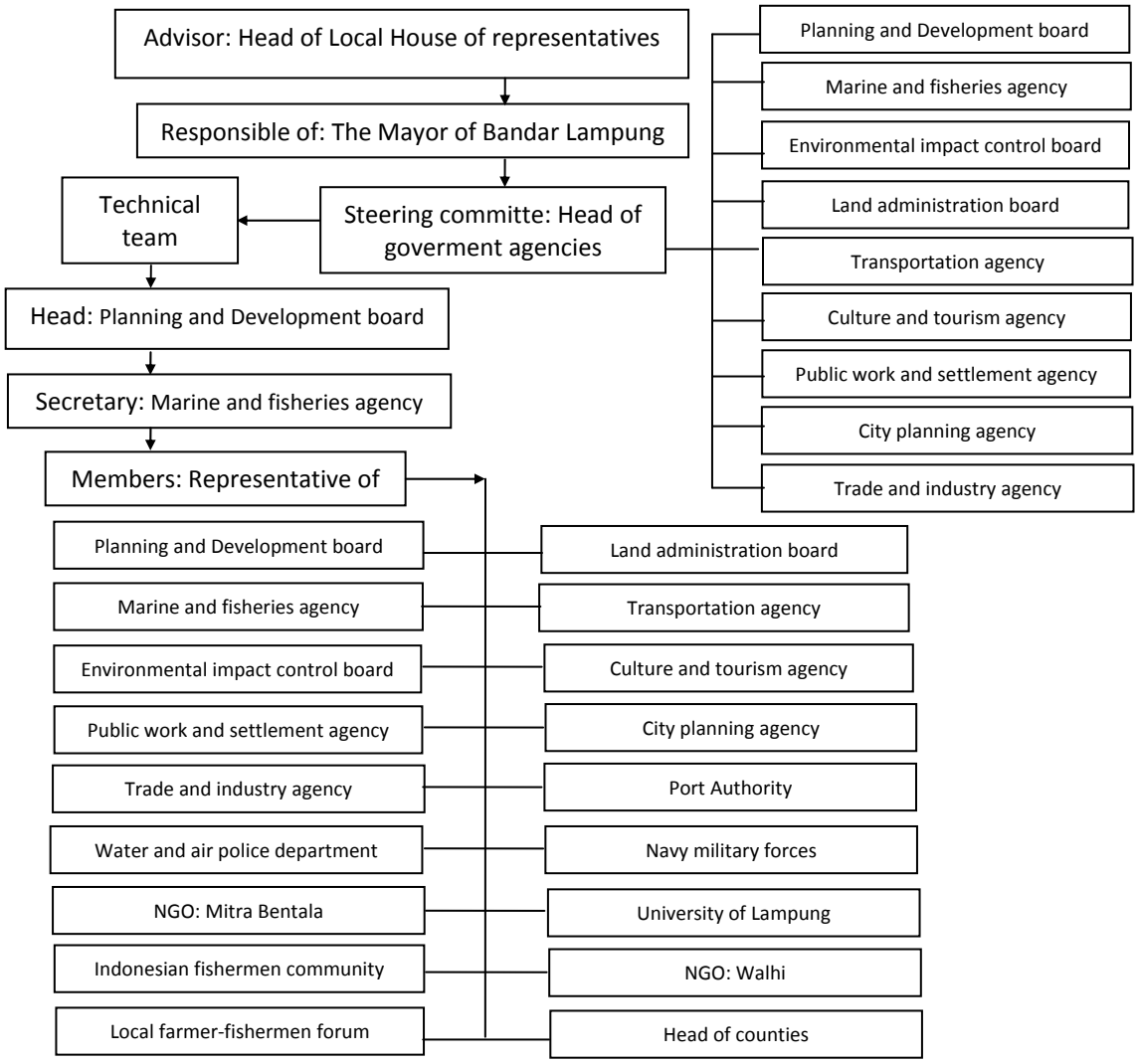

Figure 4.2. Organizational structure of ICM implementation in Bandar Lampung

However, the establishment of organizational structure of ICM implementation in Bandar Lampung still remains a weakness, in which the structure is dominated by the Mayor and depends on strong hierarchical system. Meanwhile, the robust organization needs equal position among stakeholders that will ensure the continuity of the organizational structure when the Mayor is changed. An indication describes that coordinated mechanism has not fully functioned because there is still unclear role of each of stakeholders. Although the Bappeda has a role as coordinating authority in planning preparation, the local marine and fisheries also play a role of coastal zone master plan. This vagueness of the lead agency may inhibit interagency coordination in ICM program. The weak of knowledge development signed by limited training and low

roles of science and technology agency may hamper the institutional capacity including capable staffs.

4.2.3. Participatory Decision Making

Since 2001, the national policy of strategic plan on coastal zone and small island management have mandated the paradigm of coastal management approach by promoting the requirement of participative approach in planning and decision making of coastal management that becomes essential and mandatory rather than before in which program and action plan mostly tend too sectoral and top-down process. The enactment of Law 27/2007 is the culmination of implementing ICM through organizing participative approach in decision making. According to article 7(4) of Law no.27/2007 and article 3 of Minister Regulation no.16/2008, it is mandatory to involve community participation in coastal zone management planning. In Bandar Lampung, the local initiation of integrated coastal zone management is started by designing coastal zone master plan in 2007. At the same time, Law of 27/2007 has mandated local government to prepare document of strategic plan and zoning plan of coastal zone and small islands in participative approach. Although master plan of coastal zone is then become part of zoning plan, essentially, the process of coastal zone master plan design is mainly conducted by local marine and fisheries agency cooperating with experts to design the master plan without strong public involvement. These documents preparation of strategic plan and zoning plan has proven a shifting paradigm of coastal management in Bandar Lampung that participative approach is implemented.

The first initiation of ICM in Bandar Lampung had been begun by strategic plan and zoning plan preparation in 2007. Simply the processes of these plans preparation are delivered through coordination, integration, and synchronization involving all relevant stakeholders (Minister Regulation no.16/2008). The main activities are focused on collecting data and information both of surveying existing condition of coastal ecosystem and surveying community perception upon coastal development. These data are obtained through field survey, face to face hearings, discussion, and public consultation with all stakeholders (government agencies, non-governmental organizations, university, and society groups).

Preparation process of strategic plan and zoning plan are started by socializing the ICM program as a whole consisting of strategic, zoning, management, and action plan preparation involving all related stakeholders that engage in coastal resources. These documents actually are not only needed for local coastal development but also fitting with the national mandate. Socialization involves all related stakeholders in Bandar Lampung consisting of government agencies (local development and planning board, marine and fisheries agency, environmental impact control agency, transportation agency, culture and tourism agency, public work and settlement agency, urban planning agency, local revenue agency, industrial agency, military forces, police department, and port authority), Local House of Representative, non-governmental organization (Mitra Bentala, Walhi), University of Lampung, and society groups (Indonesian fishermen community/HNSI, local farmer-fishermen forum) (Bandar Lampung Government, 2009a).

According to the report of strategic and zoning plan, in detail the process of strategic plan and also zoning plan preparation are depicted in following Table 4.5.

Table 4.5. The stages of strategic plan and also zoning plan preparation

Stages	Strategic plan	Zoning plan
I	Socialization of ICM program through strategic and zoning plan preparation	
II	Formation of preparation team of strategic and zoning plan draft legalized by Mayor decision No.47/16/HK/2007	
III	Training and workshop to develop the capability of team with science and knowledge for coastal management consisting of coastal zone management conception, techniques of strategic plan preparation, field trip, group discussion as initial draft of list of problems and issues in Bandar Lampung coastal zone	Training and workshop to develop the capability of team with knowledge and techniques of zoning plan preparation including spatial mapping and geographical information system
IV	The first focus group discussion meeting (FGD) with consolidating data and information from each of stakeholders regarding problems and issues. This meeting divided into three groups which are concerning with natural coastal resources group, coastal spatial group, and socio-culture and economic group	The first focus group discussion for preparing and providing thematic baseline map and drawing the location of plan area
V	The second focus group discussion meeting to explore the causes of those problems and issues. This meeting also discuss the vision, policy direction and implementation process of coastal management in Bandar Lampung for next 20 years	The second focus group discussion to prepare decision making rule for zone determination
VI	After collaborating the result of those three groups in draft of strategic plan, then it is published through public consultation with all stakeholders to get input, correction, consideration and advices in order to accommodate all interest in coastal zone management	The third focus group discussion to determine the objectives of zone utilization and identifying activities that fit with each determined zone
VII		public consultation with all stakeholders to get input, correction, consideration and advices in order to accommodate all interest in coastal zone management

There are two methods that are used in searching the data, and the formulation of main issues, vision, policy direction in strategic and zoning plan preparation which are *Participatory Rapid Appraisal (PRA)* and *metaplan. Participatory Rapid Appraisal (PRA)* is the quick method of condition and issues assessment with participative action. Meanwhile, *metaplan* is the identification process of issues, condition, coastal resources utilization potency based on individual and group opinion. Then, the result of identification are prioritized through consensus agreement about issues, vision and policy direction as a reference and basic framework for implementing ICM in Bandar Lampung as a whole and especially for detail action plan preparation.

Especially for organizing public consultation of zoning plan draft, there is not only public meeting with involving all related of stakeholders, but also other approaches to get inputs and advices for improvement. They are limited public report to invite and accommodate written community opinion, experts working group, advisory group, and

seminar and workshop. Although there are some efforts to deliver participative approach in decision making, however, there is an indication to involve all stakeholders without a clear role from each of them. Transparent public report do not provide since the initiation of policy making. It may cause an immature of coordinated policy agreement.

4.2.4. Financial Mechanism

It is understood that implementing ICM in Bandar Lampung need much of financial support. For long time before the enactment of Law no.27/2007, many efforts have been delivering by local government to compile all possible financial sources to support the implementation of ICM approach in Bandar Lampung. The awareness of the Mayor on the important of coastal development for increasing economic benefit, has given more concern upon coastal management from the highest tier of power in Bandar Lampung. Therefore, there is chance from the Mayor to provide the willingness on financial support for coastal management.

Referring to the strategic, zoning plan document, and annual report of marine and fisheries agency, there are some sources of funds financing the implementing process of ICM approach, which are local government funds (APBD), national government funds (APBN), and governmental enterprises. Local government budget mainly comes from local revenue such as tax and retribution. Local taxation sourced from coastal and marine activities comes from retribution such as fisheries port services in Lempasing, center of fishery markets in Gudang Agen, fisheries industry, and tourism services in coastal and marine area. However, these sources of funds and other taxation sources are collected by local revenue agency. Thus, each local governmental agency proposes kind of activities including ICM programs that will be financed by those sources of funds. Meanwhile, provincial government budget are formed as financial support named deconcentration funds to accelerate the development in district/city level.

According to the Law no.25/1999 about financial balance between central and local government, and central government regulation no.38/2007 about affairs distribution among central, provincial and local government, there are scheme of financial distribution from central to local governmental. They are formed as general allocation funds, specific allocation funds, and deconcentration funds. Besides those schemes, there is non-distributional scheme, but rather pure central government funds that are used for financing activities in specific location such as strategic and zoning plan preparation in Bandar Lampung city. Determination such activities in specific areas are based on the national strategic plan of coastal development.

However, the preparation of strategic and zoning plan is mainly financed by national government funds. These activities are also supported by local government funds including the preparation of master plan of coastal zone that is fully financed by local government funds. In detail, the budget allocation for implementing integrated coastal management approach in Bandar Lampung can be seen as following Table 4.6.

Table. 4.6. Budget allocation on coastal management in Bandar Lampung

Year	National government funds (Rp)	Provincial government funds (Rp)	Local government funds (Rp)	Governmental enterprise (Rp)	Total local government funds/APBD (Rp)
2007	802,950,000	-	1,042,950,000	-	5,232,750,000
2008	-	-	4,603,700,000	800,000,000	9,490,700,000
2009	-	-	1,510,600,000	-	7,333,000,000
2010	-	-	1,829,000,000	-	7,406,250,000

Sources: Bappeda; Marine & Fisheries Agency

Based on Table 4.6, there is strong willingness from local government to allocate financial support for ICM program. This funding is mainly come from Bappeda and local marine and fisheries agency budget determined by the Mayor and local people's assembly. It indicates that local budget for ICM program depend on the Mayor decision. Meanwhile, there is not generated financing mechanism from ICM activities that is used for ICM program itself. The initiation to apply permit system designed by coastal zone master plan may provide opportunities for investment development and user fee mechanism towards sustainable financial support.

4.2.5. Planning Program

Until 2005, spatial arrangement in Bandar Lampung city is merely referred to general spatial plan that has not focused on coastal zone development optimally. According to the development pressures and their uncontrolled impacts to the sustainability coastal ecosystem, local government of Bandar Lampung city has been initiating to re-orientate the policy framework of coastal zone management and also to address the decentralization policy mandated by Law of regional autonomy No.22/1999 (revised by No.32/2004) that every local government (district/city) has own authority to manage their region by themselves including coastal zone with the boundaries of 4 miles coastal waters. Until now, there are at least three main document plans that regulate coastal zone management in Bandar Lampung which are master plan of coastal zone, strategic plan of coastal and small islands management, and zoning plan of coastal and small islands management. While there are at least three main document plans that should underlie coastal zone management whether these document plans concern with coastal zone or not which are local long-term development plan, local medium-term development plan, and local regulation on general spatial plan.

Since the rapid development in coastal zone because of its potencies, local government thinks the need of comprehensive and detail regulation focusing on coastal zone utilization in Bandar Lampung city. This initiation, at once aimed to address the lack of coastal zone regulation in general spatial plan. Starting from 2007, local government provoked by the Mayor, promotes the paradigm of Bandar Lampung city as *water front city* supported by the establishment of master plan of coastal zone (Bandar Lampung Government, 2007c). This master plan has initiated firstly the need of general guidance for integrated coastal zone management because of:

1. Various problems caused by lack of certain regulation as guidance in coastal zone management
2. Too sectoral approach in managing coastal zone

3. Coastal ecosystem cannot be approached by merely governmental administrative boundaries perspective
4. Considering to pay attention on regional autonomy policy from national government in order to develop and manage local coastal zone by themselves.

Meanwhile, this master plan is aimed to regulate permit mechanism in building construction, other spatial utilizations and their environment on coastal zone; to issue the location of all activities and building size; to establish building design and other activities; and to provide legal certainty in delivering coastal zone development. Therefore, master plan of coastal zone is hoped will provide the benefits as:

1. Guidance to create spatial plan of coastal zone in accordance with the pattern of spatial growth mandated by general spatial plan (RTRW).
2. Reference to develop and control coastal zone by providing the detail conditions and facts for minimizing interest and authority conflict based on community participation.
3. Basis of policy in utilizing and cultivating coastal resources towards sustainable and integrated management
4. Reference to determine the allotments of coastal zone utilization by understanding the potency and its problem
5. Information sources in determining and deciding investments upon coastal zone resources conducted by government, private sector and community.

According to the enactment Law of Coastal Zone and Small Islands Management no.27/2007, local government of Bandar Lampung city has been trying to systemize coastal zone management accordance with the mandate of this law by using comprehensively integrated coastal management approach. In article 7 of this law states that every local government both provincial and district/city level is compulsory to establish four hierarchical document plans of coastal zone starting from strategic plan, zoning plan, management plan, and action plan. Based on this, since 2007 Bandar Lampung government has re-constructed the systematic paradigm by starting to establish the long-term policy upon coastal zone management and utilization called strategic plan of coastal and small islands management. This strategic plan is aimed to provide the general framework of reference in managing coastal zone resources for the next 20 years that accommodates integrated and sustainable management principles to optimize the benefit for all stakeholders in Bandar Lampung city.

Through assisting from central government both of technical and financial support, in 2007, local government of Bandar Lampung has finished the strategic plan of coastal and small islands management for period from 2007 to 2027 (20 years). Guiding by the Regulation of Marine and Fisheries Minister no.16/MEN/2008 about Planning on Coastal Zone and Small Islands Management, the document of strategic plan has been revised in 2009. This planning document has been trying to legitimize by issuing the Mayor regulation in order to provide legal force as basic guidance in coastal zone utilization. Basically, this strategic plan is intended to meet the mandate of article 7 paragraph 3 Law of Coastal and Small Islands Management and comply the standard and norm mandated by Regulation of Marine and Fisheries Minister no.16/MEN/2008 about Planning on Coastal Zone and Small Islands Management. While it is aimed to (1) identify and analyze the potency and problems that might be appeared in coastal

development process, (2) develop integrated and strategic planning by reviewing, modifying, and improving existing strategies, (3) develop measures and indicators for effective management, and (4) provide best information for creating action plan of coastal zone development. As for the benefits are (1) availability of integrated and sustainable policy and strategy for coastal zone development, and (2) availability of consistent base for constructing next hierarchical plans namely zoning plan, management plan and action plan.

The scope of planning area in strategic plan covers both of coastal waters of Lampung Bay and land area on three sub-districts of Panjang, Teluk Betung Barat, and Teluk Betung Selatan. Regarding with the Law of Regional Autonomy that mandates the boundaries of coastal waters at city level as far as 4 miles, Bandar Lampung city has 48.72 km2 (4,872 ha) of coastal waters, while land area has 5,667 ha including two small islands namely Pasaran and Kubur islands.

This document focuses on determining vision and mission as long-term paradigm of coastal development, management issues, strategies, target, program direction and indicator. Based on integrated perspective, this document has considered the harmonization with other document plans especially for determining program direction. Program directions in this document have conformed with local long-term development plan (RPJPD) and local medium-term development (RPJMD) of Bandar Lampung city. In order to clarify the constellation among document plans in Bandar Lampung city, the position of this strategic plan of coastal and small islands can be seen in following Figure 4.3.

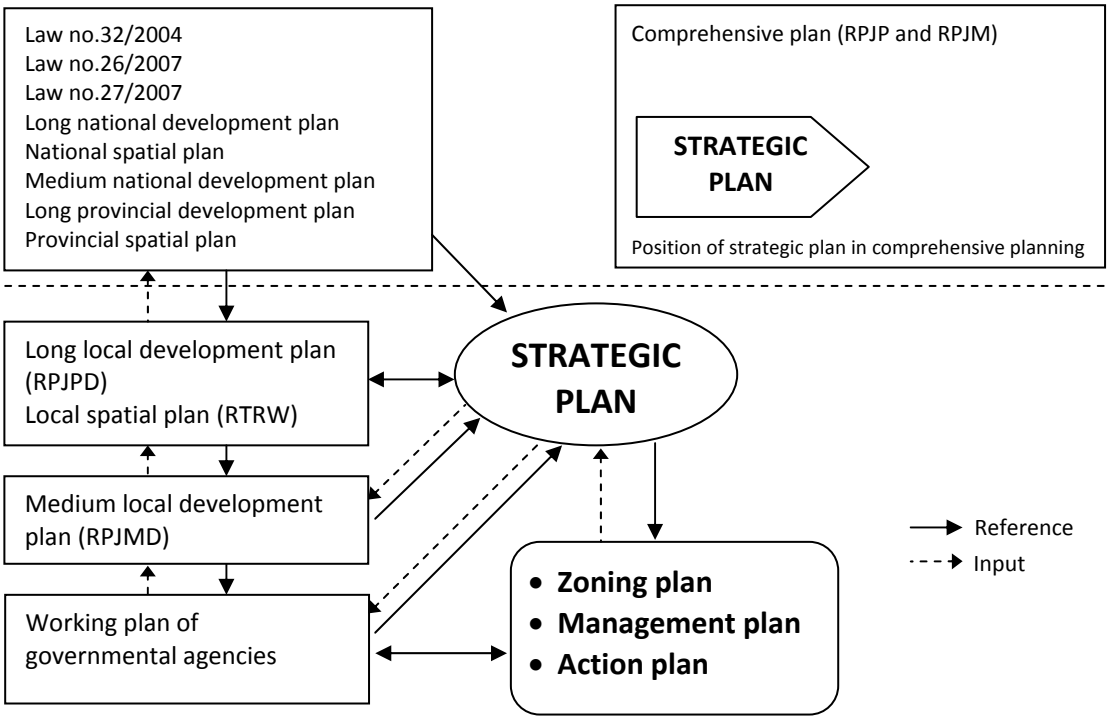

Figure 4.3. The structure of planning document in Bandar Lampung

The preparation process of this strategic plan is conducted through scientific studies consisting of field study to provide real condition about potencies and problems, collecting data and information about perception and issues through discussion,

consultation and public hearings with all relevant stakeholders. In short, the process consists of coordination, integration, and synchronizing with all stakeholders.

Through scientific approach, this document has stated that the vision of coastal development in Banda Lampung is “Coastal zone of Bandar Lampung as trading center, marine tourism, and fisheries industries with environmentally perspectives”. While the missions are:

1. Arranging spatial use of coastal zone and small islands
2. Increasing the quality of human resources
3. Building infrastructure on coastal zone and small islands
4. Developing the resources potency of coastal zone and small islands
5. Increasing the environmental quality of coastal zone and small islands
6. Increasing effort of disaster mitigation

According to scientific research of identification and public hearings, there are some issues relating with coastal zone development which are:

1. Lack of spatial arrangement on coastal zone that may trigger the conflict
2. Low of human resources quality causing the increase of unemployment
3. Limited of basic infrastructure affecting the continuity of production and distribution
4. Not optimal program of economical use of coastal zone resources
5. Coastal zone pollution that may affect environmental quality degradation
6. Seawater intrusion and lack of clean water that may affect community health
7. Ecosystem degradation that may decrease fishermen production
8. Not optimal program of fisheries management that may decrease fish productivity
9. The threat of natural disaster such as earthquake, floods, and tsunami
10. Not optimal program of tourism development

Zoning plan of coastal zone and small islands has become an important document in coastal zone management in Bandar Lampung because of its role in arranging the spatial use of coastal zone. Zoning plan is intended as guidance the use of coastal resources by arranging spatial use of coastal activities in order to avoid conflict of interest. Beside that, this document also provides use directives upon all part of coastal zone and small islands. Overall, the objectives of this document are:

1. Allocating the space of coastal zone into general use zone, conservation zone, national strategic zone, and sea lanes regarding their function and supporting each other to avoid conflicting activities.
2. Dividing coastal zone becomes utilization zone and sub-zone which is limited by development priorites.
3. Preparing zone and sub-zone of resources potency, carrying capacity of ecosystem, use function, conservation function, and defence and safety function
4. Determining zones that consider inter-relationship among ecology, economy, and socio-culture including the development of historical relationship and local custom.
5. Optimizing spatial use in the perspective of invest development through permit mechanism and providing Right to Undertake Business in Coastal Waters (HP-3)

Actually, there is local regulation of spatial plan that arrange spatial use Bandar Lampung city. However, this regulation is mainly focused on land use plan without

concern with coastal zone as spatial unitary with land area. Hence, zoning plan deals with spatial arrangement of coastal zone and small islands which impact to permits issuance in utilizing the space of coastal zone both coastal land and coastal waters area. However, according to document of zoning plan, its substantial analysis is intended to provide use and designated directives which is aligned and harmonized by spatial plan (RTRW). Use directives are elaborated into area, zone and sub-zone, while designated directives are elaborated into activities and programs. In perspective of Law no.27/2007 that mandates hierarchical coastal zone planning, master plan of coastal zone should not include in this system. Therefore, master plan of coastal zone then is become detail zoning plan accordance with the mandate of Law no.27/2007.

Regarding with the mandate of Law no.27/2007, zoning plan has to be legalized into local regulation which is agreed by the Mayor and local house representative. Since 2008, local government of Bandar Lampung has been trying to legalize zoning plan into local regulation (Perda). Since the increase of requests from private sectors in utilizing coastal resources, local government initiated to issue the Mayor regulation for legalizing the zoning plan which is applicable for investment.

It is recognized that there is awareness on utilizing the scientific information and knowledge as a basis for coastal zone planning preparation. The integration between national and local plan by following the national regulations as guideline has proven the centralized system of ICM planning. Meanwhile, the initiation of land and sea use integration by collaborating land-based plan (RTRW) and zoning plan of coastal and small islands has not implemented yet. On the other hand, ICM plan has not focused on a clear issue with regards to the coastal problem in Bandar Lampung, but tend to deal with overcoming all issues.

4.2.6. Regulatory Framework

According to the problems on coastal zone of Bandar Lampung city, triggered by sectoral and exploitative activities, have become the main attention concerned by Local government of Bandar Lampung city since 2005. One of negative impacts caused by those exploitative activities is threat upon sustainability of coastal zone ecosystem itself such as marine pollution caused by domestic and industries waste, non procedural coastal reclamation for housing, industries and tourisms, unsustainable fishing, and conflict interest in utilizing coastal space. Addressing this problem, since 2007 Bandar Lampung city government through local marine and fisheries agency has been initiating the regulation of coastal zone master plan of Bandar Lampung city with the theme of *water front city* which is aimed to guide the coastal spatial planning by issuing building permit and other coastal space as legal certainty regarding with the growth of Bandar Lampung city. This initiative regulation was initially created to address the shortages of general spatial plan regulation which has not dealt with coastal zone comprehensively.

The common problem of coastal management in Bandar Lampung city is lack of integrated and optimal coastal management caused by exploitative and destructive utilization and sectoral approach. Each sectors has own planning and targets. Therefore, parallel with the national policy on implementing decentralized ICM approach issued by The Law of Coastal Zone and Small Island Management No.27/2007, local government

of Bandar Lampung city has been starting to reconstruct policies of coastal zone management pattern by considering all relevant legal framework with coastal zone development. An important legal framework is the Mayor Regulation of Zoning Plan of Coastal Zone and Small Islands Management of Bandar Lampung City that integrate with coastal zone master plan. Indeed, this regulation scheme has not been appropriate with national guidelines. It indicates the strong political willingness of Bandar Lampung municipality although there is obstacle on national legal framework on ICM program.

There are some legal frameworks influencing the process of ICM implementation in Bandar Lampung city both of national legal scale and local legal scale. Principally, these legal frameworks will shape the pattern of coastal spatial management and utilization in Bandar Lampung city that are depicted on following Table 4.7.

Table 4.7. Legal frameworks of coastal management in Bandar Lampung city

No	Regulation	Scale	Content relating with ICM implementation
1	Law of Coastal Zone and Small Island Management No.27/2007	National	Arranging the general rule of coastal management at the local level including planning, implementation and monitoring
2	Law of Spatial Planning No.24/1992 revised by No.26/2007	National	Providing the rule of general spatial planning at the local level
3	Law of Regional Autonomy No.32/2004 revised by No.12/2008	National	Providing the rule of distribution authority especially on coastal zone boundaries at the local level
4	Government Regulation of National Spatial Plan No.26/2008	National	Providing national framework on spatial arrangement as guidance and direction for local spatial plan
5	Government Regulation of governmental distribution between national, provincial and district/city level No.38/2007	National	Arranging the rule of power distribution determining the relationship between national, provincial and local government
6	Regulation of Minister of Marine Affairs and Fisheries No.16/2008 about Planning on Coastal Zone and Small Islands Management	National	Providing the rule of coastal management planning process as guidance for local government
7	Regulation of Minister of Home Affairs No.10/2010 about guideline on sea area resources management	National	Providing the authority of local government on exploration and exploitation of sea area resources
8	Local Regulation No.10/2007 on local long term development plan of Bandar Lampung (RPJPD) 2005 – 2025	Local	Providing guidelines and directions on long term development of Bandar Lampung city from 2005 to 2025
9	The Mayor Regulation No.54/2007 on local medium term development plan of Bandar Lampung (RPJMD) 2005 – 2010	Local	Providing guidelines and directions on medium term development of Bandar Lampung city from 2005 to 2025
10	The Mayor Decree No. 47/16/HK/2007 about the working group on draft preparation of strategic and zoning plan	Local	Formation of working group to prepare draft of strategic and zoning plan on coastal zone and small islands management
11	The Mayor Decree No. 233/02.2/HK/2008 about coastal zone planning team	Local	Formation of coastal planning team who arrange the policy on coastal zone development

No	Regulation	Scale	Content relating with ICM implementation
12	Draft of Local Regulation on General Spatial Planning of Bandar Lampung City 2011-2016	Local	Providing the regulation of general spatial arrangement as a framework for spatial utilization in Bandar Lampung
13	Draft of Mayor Regulation on Strategic Plan of Coastal Zone and Small Islands Management of Bandar Lampung City	Local	Providing the general mainframe of coastal management in Bandar Lampung for the future
14	Draft of Mayor Regulation on Zoning Plan of Coastal Zone and Small Islands Management of Bandar Lampung City	Local	Providing the detail spatial arrangement in coastal zone including permit mechanism

Due to the national policy upon the ICM implementation at the local level and strong political willingness, Bandar Lampung municipality has begun to enact legal framework with regard to the ICM program. However, the immediate need of legal framework to arrange coastal zone especially on the regulation of zoning plan is hampered by centralized system of national ICM framework. In term of laws enforcement, unfortunately, Bandar Lampung municipality has not designed the integrated monitoring policy on strengthening law enforcement with regard to the ICM implementation.

CHAPTER 5. COMPARATIVE ANALYSIS ON THE LOCAL RECEPTIVENESS OF SUSTAINABLE INTEGRATED COASTAL MANAGEMENT (ICM) IMPLEMENTATION

This chapter will outline the comparative analysis on the assessment of local receptiveness and sustainability of ICM implementation in two cases of Xiamen, China and Bandar Lampung, Indonesia. There are some elements of comparison and discussion due to strategies on implementing ICM approach, the level of local receptiveness on ICM implementation, and the challenge of ICM sustainability. Eventually, the last section will provide the lesson learnt from successful experience of Xiamen ICM program for improving the receptiveness and sustainability of ICM program in Bandar Lampung context. Based on the practical experience from Xiamen case, there will provide the lesson learnt for improving the ICM receptiveness in Bandar Lampung case and enriching the notion of local receptiveness and sustainability of ICM implementation in general.

5.1. The Strategies of ICM Implementation

In general, the local government of Xiamen and Bandar Lampung implement the ICM approach through legalized framework. However, there are differences in formulating the legal system between them. The decentralized ICM in Xiamen was firstly triggered by the enactment of special economic zone (SEZ) which provides authority for Xiamen to increase economic development. The impacts of SEZ to the environment have encouraged the municipality to prepare environmental protection law and initiating the implementation of ICM for overcoming marine pollution. The strong initiative of local government on ICM is proved by the formulation of Xiamen regulation on sea area use in 1997 before the enactment national law on the management of sea area use in 2001. Meanwhile, the ICM implementation in Bandar Lampung is initiated by preparing coastal zone master plan which based on the conflict among coastal resources users with regard to the unregulated economic development. At the same time, the law no.27/2007 on coastal zone and small islands management was enacted to provide not only authority but also the mandatory policy to implement ICM at the local level by following the national guidelines.

Actually, the point of departure of ICM implementation in both case studies is specifically driven by economical reason of coastal resources uses. However, Xiamen ICM program focuses on overcoming coastal and marine environmental problems to ensure the economical benefit by setting up strict regulation on sea area use management and environmental protection. Xiamen has strong initiatives and confidences that coastal resources will be economically productive and sustainable unless it protects the coastal environment as the mainstream of ICM implementation. Meanwhile, Bandar Lampung focuses on spatial arrangement of coastal zone to drive economical benefit of coastal zone rather than setting up clear priority of environmental problems. There has not been strict regulation on coastal environmental protection.

Delivering ICM approach into practice needs to determine clear boundaries of coastal zone in order to provide certain management area. In general, the boundaries of coastal zone in ICM implementation between Xiamen and Bandar Lampung have the same definition. Both countries define the management area of coastal boundaries with regard to the administrative boundaries of municipality. The difference lies on determining the coastal land and coastal waters boundaries. Xiamen defines all administrative boundaries as the coastal management area covering the land area of six districts and 340 km2 of marine area (ITTXDP, 1996; Lau, 2005). While Bandar Lampung defines the coastal zone boundaries based on the article 2 of Law No.27/2007 about coastal zone and small islands management and article 18 of Law No.32/2004 about regional autonomy in which the scope of coastal zone and small islands includes the transitional area between the land and marine area ecosystems which is influenced by the changes at land and sea; landward includes the administrative area of three districts and seaward up to four nautical miles measured from the coastline. Nevertheless, many potential economic activities are located in these three districts as central of economic growth such as manufacture industries, seaport and warehousing, tourism, fisheries, and transportation (Bandar Lampung Government, 2007a).

However, the institutional arrangements of ICM implementation in both Xiamen and Bandar Lampung are held on the influence of decentralized framework. They implement the ICM approach through local government-based management with strong role of local government in determining the ICM governance. Actually, the role SOA branch at regional scale in Xiamen characterize a delegation form of decentralization of ICM implementation which is not wholly controlled by the national agency, but whom are still accountable to the national authority. Although the special economic zones policy tends to characterize a devolution form of ICM process which transfers independent authority to Xiamen municipality but there is still role of national authority to supervise ICM action in Xiamen. Besides that, Xiamen's ICM program is recognized as cooperative form of shared management of inter-governmental level in which Xiamen's model has become a model applied at regional and national level. Meanwhile, the case of Bandar Lampung indicates a combination between delegation and devolution form. According to decentralization policy (Law no.32/2004 about regional autonomy), a devolution form of coastal and marine management agency has been implemented that transfers independent authority without responsibility to the national authority. Yet, Law no.27/2007 mandates a delegation form of decentralized ICM process in which coastal zone planning at the local level should be approved by national authority. This decentralized ICM policy also provide mandatory program and a coercive form of shared management of inter-governmental level in which local governments have to prepare coastal planning guided by national authority with the threat of sanctions if they do not perform.

5.2. Local Receptiveness and The Challenge of ICM Sustainability

At primary element, the determination of ICM success will be defined by how strong the ICM receptiveness and the sustainability of ICM performance at the local level. In frame of decentralized policy in both of Xiamen and Bandar Lampung, local receptiveness and sustainability on ICM can be depicted by the strength of institutional

development towards stable ICM governance dealing with clear coordinated mechanism among actors and legal certainty. It is important that the analysis on comparative discussion between Xiamen's ICM success and Bandar Lampung's ICM program will elaborate the essence of local receptiveness and sustainability of ICM. The discussion of institutional development in both cases should provide some perspectives of effective efforts to pursue receptiveness and sustainability of ICM process. According to the analytical framework, the discussion of local receptiveness and ICM sustainability between two cases is elaborated by the elements of socio-culture perspectives, organizational capacity and coordination, participatory decision making, financial mechanism, planning program and regulatory framework.

5.2.1. Socio-culture Perspectives

Essentially, there are positive supports from the community towards ICM implementation in both case studies. Xiamen as part of the People's Republic of China situated with one political party system may provide widespread support from communities that comply with the policy of local government. However, the long historical dependence of communities upon coastal values and scientific approach has become a basis for policy formulation conducted by local government. For instance, the relocation of mari-culture zone mandated by marine functional zoning scheme may prove the strong support and trust from communities without conflict because such scientific reasons have always been a basis of local government policy making. The attitude of communities to hang on the conflicts to the local government may reflect the community trust upon the role of local government. The strong support of communities has shown the high receptiveness of Xiamen upon ICM program. Meanwhile, there is limitation of community's trust upon ICM initiative from Bandar Lampung government. It depends on the reliability of ICM program that will improve their livelihood and provide job opportunities. Indeed, some of communities support the ICM initiative by the requirement that their welfare will be improved while the rest is in doubt that ICM program will only strengthen economic growth but marginalize their life. However, the local government effort to promote communities support indicates the medium receptiveness on ICM approach.

The attitude and perception of communities upon the awareness on coastal value both of natural resources and environmental services will be determined by the characteristics and dynamics of society. Coastal communities in Xiamen strongly depends on the coastal resources quality especially for fishermen, mari-culture and tourism activities. The high educational knowledge of coastal community may strengthen the awareness upon coastal value. It has been proved by the strong initiative from community to finance the marine pollution at Yuandang Lake. In addition, the sense of belonging among them simplifies each other to cooperate in protecting coastal and marine ecosystem that will sustain their life. The characteristic of community that assure to the government facilitate the coordination for changing the attitude towards community awareness upon coastal protection. Those facts assume the high receptiveness of Xiamen towards ICM success. In fact, the characteristic of coastal community in Bandar Lampung particularly for fishermen community describes the low of knowledge capacity on coastal zone management. It may affect their attitude that tends to be

indifferent to the coastal problems. It can be assumed that the local government efforts to promote ICM programs through mass media have not been distributed properly to all communities. However, these efforts on fostering perception change have indicated the medium receptiveness on ICM.

The role of socio-historical practice should relate with the coastal community's attitude towards receptive on ICM approach. In frame of socio-historical context, it indicates that both of Xiamen and Bandar Lampung are lack of specific traditional custom or informal regulation which strictly portrays coastal zone management. However, there is difference characteristic of historical perspective on coastal society's life between Xiamen and Bandar Lampung. The long history of society's dependency on coastal and marine resources provides a strong awareness to protect the productivity of coastal and marine area. The long history of Xiamen as a port city and its development as one of the biggest port in Asia has shaped the society's behaviour as a main actor to determine coastal and marine development. This historical willingness assumes the high local receptiveness of Xiamen on ICM development.

On the other hand, the history of coastal community's behaviour in Bandar Lampung has not indicated the strong awareness on coastal zone protection. It is indicated by the short orientation of merely economical perspective on utilizing coastal values done by both of community and private sectors. The illegal fishing behaviour done by fishermen communities has impacted to coastal and marine environment degradation. In addition, the negative attitude of manufacture and tourism industries on illegal waste dumping has caused coastal pollution. This mechanism could be also supported by the lack of strict regulation on coastal resources use both of local wisdom such as regulation or agreement initiated by local community's leader and formal regulation for a long time. However, the coastal resources degradation has driven the growing awareness of coastal communities to sustain their livelihood by restricting illegal fishing initiated by local community's leader. Furthermore, it is also supported by the initiation of local government to pursue coastal environmental protection accompanied by coastal zoning regulation. Indeed, efforts from local government to harmonize the socio-historical attitude towards strengthening community's awareness such as publicizing the reconstruction of coastal environment through ICM approach has assumed the medium receptiveness of Bandar Lampung upon ICM.

5.2.2. Organizational Capacity and Coordination

It is recognized that local receptiveness upon ICM approach depends on the collective awareness to the need of ICM approach rather than individual initiative. Both cases have different formation to embody the awareness into practice. In Xiamen, the widespread deterioration of coastal environmental quality particularly in marine pollution has become the main trigger of collective awareness among local government agencies and also general public. The lack of national framework on ICM implementation did not become an obstacle for Xiamen to implement ICM approach for overcoming coastal degradation. Thus, the initiative of local government to coordinate how the ICM should be applied into practice has been managed collectively by the Mayor of Xiamen municipality towards institutionalized process together with relevant agencies. This collective awareness on marine pollution depicts a high receptiveness of

Xiamen on ICM implementation. On the other hand, Bandar Lampung through the formation of local fisheries and marine agency has been initiating to overcome the environmental problem and conflict of interest in coastal zone use by promoting ICM approach. This initiative is mainly dominated by the Mayor delegated to the local fisheries and marine agency. It indicates that the initiative has not depicted as collective awareness to the need of ICM. Then, efforts from local government managed by the Mayor to promote a collective awareness of all agencies on ICM through enabling coastal planning team indicate a medium receptiveness of Bandar Lampung on ICM implementation.

Performing ICM approach needs capable staffs that functions the organizational linkage due to implement ICM successfully. There is significant difference between Xiamen and Bandar Lampung with regard to the capacity building trough knowledge development. Xiamen has developed sustainable training program cooperated with Xiamen University as a center of knowledge. By this mechanism, the sustainability of ICM implementation will be achieved by providing capable staffs continuously and the process of organizational linkage based on knowledge development will ensure the ICM performance. Therefore, this process put Xiamen into high receptiveness on ICM. Meanwhile, ICM implementation in Bandar Lampung depends on current staffs who are generated from temporary training. Because of the lack of sustainable mechanism on developing staffs capability, the process of organizational linkage in implementing ICM approach can not be ensured continuously. The lack of sustainable knowledge for staff capability may remain uncertainty on ICM performance and situate Bandar Lampung in low receptiveness on ICM approach. However, an initiative to improve the capability of coastal planning team by organizing a set of training cooperated with Lampung University and national government has provided the opportunity of ICM sustainability and medium receptiveness upon ICM.

However, the ICM implementation depends on the willingness of political leader. In case of both Xiamen and Bandar Lampung, the main player is the Mayor who managed the ICM program. There are differences due to the process of ICM governance between them. The Mayor of Xiamen municipality has directly participated to the system of ICM process by delegating the Vice Mayor in a permanent function of coordinated team among relevant agencies. The system has been established permanently legalized by the People’s Council who supervise the team. It indicates that the function of coordinated ICM governance will be sustained by the system not a person. Thus, the change of political leaders may not stop the ongoing ICM program so that Xiamen can be categorized with high receptiveness on ICM. Meanwhile, the coastal planning team does not involve the Mayor of Bandar Lampung directly. The Mayor only surrender the ICM process to the Bappeda as planning coordinator and the Local Marine and Fisheries Agency who responsible for coastal development. The Mayor decision on coastal planning team formation remains the possibilities to be changed when political leaders are replaced. As long as there is no permanent involvement of the Mayor directly to the ICM governance system, the coordinated mechanism may not be sustained. However, the initiation of the Mayor decision to position the political leader on ICM process has categorized as medium receptiveness of Bandar Lampung on ICM.

In term of organization structure, a coordinated team has been a mindset of ICM initiative in both cases. However, there are several differences on the application of coordinated mechanism in implementing ICM approach. The role of State Oceanic Administration (SOA) as an ICM lead agency in China has merely concerned on coastal waters that may neglect the integration with other agencies which concern on landward activities. Although there is influence from SOA, however, Xiamen is a unique model of ICM implementation in China that shows a self initiative to deliver ICM approach at the local level. Xiamen has formulated different model by formulating a new permanent coordinating body which allows to carry out the integration process between seaward and landward activities. A new permanent coordinating body depicts a robust organization that indicates the high receptiveness of Xiamen upon ICM. Meanwhile, Bandar Lampung has implemented an ICM approach by formulating a vague organization. In fact, a lead agency in implementing ICM at national level is Ministry of Marine Affairs and Fisheries (DKP). On one hand, as a mandate of national policy, an ICM coordinating body at the local level is local planning bureau (Bappeda) which responsible for coastal zone planning. On the other hand, besides having a role to implement ICM plan, local marine and fisheries agency has initiated to prepare a coastal zone master plan. This condition suggests the possibility of strong competition not only between them but also among other agencies. Although coastal planning team has been established, unfortunately, Bappeda has a strong role in planning and policy decision which put it on the domination of ICM policy decision. Such a domination indicates the medium receptiveness of Bandar Lampung upon ICM.

5.2.3. Participatory Decision Making

Essentially, the decision making process of ICM program in both Xiamen and Bandar Lampung has involved public participation. However, Xiamen has not directly engaged general public and non-governmental organization on ICM decision making. They are engaged when the draft of planning design is published to the public for getting public responses. However, the final decision is determined by Xiamen Demonstration Project Executive Committee (during XDP) and MMCC (after XDP). While there is a single political system in China, there is indication that Xiamen intends to limit actor involvement in decision making. Although there is lack of general public, private sectors and NGO participation in final decision making, they are provided to engage in giving suggestions that may affect the policy design. However, the limitation of participation in policy making may indicate the high receptiveness of Xiamen on ICM. It means that the requirement of all actor involvement may not always be fitted in practice. On the other hand, Bandar Lampung has directly involved public participation in decision making of ICM program. Almost all of actors related with coastal zone activities are involved in decision making including NGO and general public represented by community organizations in which they are engaged in a series of meeting to achieve such a policy agreement. But, this process may contain the risk of unrelated actors who has a counter-productive role such as local NGO and local community's leader who do not represent real community's aspiration, so that choosing relevant actors should be delivered in the future. Despite the risk on lack of selecting relevant actors, however, the initiation of local government to gain aspiration from all

actors in decision making process could position on medium receptiveness upon ICM implementation.

The need of appropriate actor involvement for ICM should be enhanced by convening coordinated policy agreement to pursue multi-sectoral planning. However, coordinated meeting in Xiamen has been regularly convened by the role of Marine Management and Coordination Office. The clear role of each agency may provide clear coordination to produce policy agreement describing multi-sectoral planning. It indicates a high receptiveness of Xiamen in implementing ICM approach. Meanwhile, the coordinated mechanism to pursue multi-sectoral planning is played by coastal planning team who meet unregularly driven by the project. However, the process of convening coordinated policy agreement still dominated by the Bappeda and local marine and fisheries agency. This condition could inhibit the agreement of multi-sectoral planning because the role of each sector could be weakened. Therefore, it indicates the medium receptiveness of Bandar Lampung upon ICM approach.

5.2.4. Financial Mechanism

The strength of local receptiveness upon ICM approach will be determined by the willingness to allocate an amount of funds to finance the ICM program. The local government of Xiamen has strong willingness to spend the budget for implementing ICM program. That the local government budget exceeds the external funds, Xiamen has shown a high receptiveness upon ICM program. The role of coordinated team to manage financial support has indicated to be achieved successfully by allocating the funds accordance with the scientific requirements not based merely on the Mayor decision. Indeed, in case of Yuandang Lake restoration, general public also have willingness to spend money for restoring the environmental quality which is expected to give them economic benefit. Meanwhile, the willingness of Bandar Lampung is still depending on the Mayor decision. A coordinating team that is being developed has not been able to make coordinated decision because it only receives decisions given by the Mayor. The policy on budget allocation for ICM program is still dominated by the Bappeda and local marine and fisheries agency. It indicates that financial support will be determined by political leaders in which the replacement of political leader may change the decision of financial support for ICM program. The domination of natural budget on coastal planning preparation may also indicate the medium receptiveness on ICM approach.

Financial support for ICM program certainly will depend on the availability of funds sources. ICM program in both cases is mainly financed by local government sourced from taxation mechanism. However, besides the financial support allocated from taxation, Xiamen has implemented a user fee system which is collected for ICM program by establishing the regulation of sea area use management. All enterprises who will use a piece of sea space have to obtain the permit and pay the user fee periodically to the MMCO managed by finance bureau. Indeed, by 1999, Xiamen has implemented ICM program by fully self-financed system. It indicates a strong commitment of internally generated financing system with also clear authorities that put it on high receptiveness upon ICM approach. On the other hand, ICM implementation in Bandar Lampung is mainly driven by local government income coming from tax. Tax income,

which is partly used for ICM program, has to compete with other sectors and is also determined by the willingness of political leader. Although the preparation of regulation on zonation plan has provided user fee mechanism, however, internally generated financing has not been fully established because ICM process still depends on national budget. However, these characteristics and the attempt to establish user fee system indicate the medium receptiveness on ICM.

In fact, the possibilities of financial support for ICM program should not be generated only from user fee system but also other sources such as local investment on coastal and marine activities. An investment on tourism development managed by Xiamen's government has contributed to the continuity of financial support for ICM program. While tourism investment will generate income, it is believed can also contribute to the protection of environmental quality. This indicates the integrative initiation to obtain financial support cycle and environmental protection which position Xiamen on the high receptiveness upon ICM. However, an effort of Bandar Lampung government to develop tourism in Bukit Kuning has initiated an investment strategy to generate income for financing ICM program. Unfortunately, a clear authority has not been established to manage investment strategy. Indeed, there is no clear statement in strategic plan of coastal management with regard to investments development for generating financial support cycle. These facts may indicate medium receptiveness upon ICM approach.

5.2.5. Planning Program

Although there is decentralization policy, the centralized system in both cases still plays a role in establishing ICM governance forming the relationship pattern between national and local government. The system of one political party in China has shown a strong centralized system in ICM governance by formulating the State Oceanic Administration (SOA) from national to local level. In fact, since the enactment of SEZ as decentralized policy which determines Xiamen as one of special economic zones has reconstructed the balance between top-down and bottom-up approach. Xiamen together with other special economic zones has been provided authority to manage economic development by themselves. The impact of economic development on environmental quality has triggered Xiamen to implement ICM approach before the enactment of national guidelines. Indeed, the establishment of Xiamen as demonstration site of ICM implementation, Xiamen has initiated to develop coastal and marine planning without national guidelines. Moreover, the Xiamen's initiation on establishing the regulation of sea area use management has become a model for national level. In term of coastal planning, coastal environmental profile and strategic environment management plan (SEMP) are prepared by Xiamen as self initiative. The mainstream of marine environmental protection in SEMP is intended to harmonize with the law of environmental protection. Such a self initiation on coastal planning preparation and law harmonization indicates the high receptiveness of Xiamen.

In Indonesia, the enactment of Law no.27/2007 has provided national guidelines for coastal planning preparation at the local level including Bandar Lampung. The preparation of hierarchical plan of coastal zone in Bandar Lampung is not only intended for harmonization to the national policy but also a mandatory policy in which local government have to prepare coastal zone plan and is approved by national level. Indeed,

the mandatory policy on harmonizing between coastal zone planning and spatial planning indicates an enforcement to integrate coastal zone planning with other plans that has been described on the statement of strategic plan to harmonize with spatial plan. However, such a mandatory planning harmonization indicates a medium receptiveness upon ICM. In case of Xiamen as part of China's centralized system, there is indication that hierarchical harmonization from national to local plan may not be a significant indicator of local receptiveness, because local government may develop self initiatives with regard to ICM approach.

The quality of coastal planning is determined by accurate information provided by scientific analysis. Thus, the policy direction should be based on scientific reasons. The preparation of coastal and marine plan in Xiamen and Bandar Lampung actually has been based on a series of study. However, the strong role of experts in Xiamen case has differentiated with Bandar Lampung. The decision making of coastal and marine planning in Xiamen is mainly determined by expert group analysis. The Coastal environmental profile and SEMP are produced on the basis of scientific analysis done by ITTXDP consisting of marine experts. Indeed, the Marine Management Coordination Office who responsible for setting ICM planning will not make a decision without scientific suggestion from marine expert groups. This mechanism has been sustainably systemized on ICM planning process in Xiamen. Therefore, the strong dependence of ICM planning on marine experts group indicates the high receptiveness of Xiamen upon ICM approach. On the other hand, the strategic and zoning plan of coastal zone in Bandar Lampung has included scientific analysis providing the coastal profile and coastal zoning scheme analysis using GIS. The roles of experts are mixed with policy maker in the task team of strategic and zoning plan preparation which may influence the objectivity of scientific analysis. Indeed, the involvement of general public, local house representatives and also NGO in decision making may indicates that political and unreliable interests may exceed scientific analysis. In addition, the lack of experts group independently and their role that are limited by the project causes the unsustainable of scientific analysis on ICM planning. However, the involvement of expert has indicated the medium receptiveness on ICM approach.

ICM approach is actually seeked to embed multi-sectoral integration between land and sea use. There is a unique case of Xiamen, in which the authority of sea use management is separated with land use management. Sea use area management has the responsibility of State Oceanic Administration (SOA) and Environmental Planning Bureau (EPB) deals with land use management. Nevertheless, a controlled environmental protection in land area to avoid marine area degradation indicates an integrated coordination between land and sea use authority lasted in the MMCO. Although there seems separation between land and sea use planning, however, the planning policy making in coordinated and cooperative-shared mechanism may provide integration of interest between land and sea use planning mainly driven by environmental concern. This may indicates the Xiamen at high receptiveness on ICM. Meanwhile, an ICM policy framed by the law number 27/2007 in Indonesia has mandated a boundary of coastal zone management containing synergy between land and sea use area that must be implemented at the local level. In term of policy direction, Bandar Lampung has developed to construct an integrated planning between land and

sea use planning. Unfortunately, since there is no clear cooperative-shared action and clear environmental concern, this mechanism will tends to run on single-sector management. Instead of the indication of medium receptiveness on ICM planning integration, there is opportunity to prove an integrated action on a practical level.

An effective of ICM implementation is also determined by planning paradigm that focus on a limitation of clear issue and design a clear action program. There are significant differences on the planning structure between Xiamen and Bandar Lampung. Xiamen has prepared a planning focus on a limited set of clear issue. The SEMP contains a clear issue of how to implement ICM with regard to marine pollution. Thus, a set of clear actions programs has been determined to overcome marine pollution. Integrating between issue formulation and action program determination in one document plan indicates an effective system of ICM planning positioning Xiamen on the high receptiveness upon ICM. Otherwise, coastal planning preparation in Bandar Lampung deals with wide issues rather than formulating a clear issue. This may result difficulties to design a set clear of actions program which will be prepared on the action plan. However, initiating to design action plan on wide issues in Bandar Lampung may indicate the medium receptiveness on ICM program.

5.2.6. Regulatory Framework

It is important to understand political will of local government to regulate ICM implementation on legal framework. Both cases have developed the legal framework to regulate the ICM implementation. Xiamen has established a set of regulation with regard to environmental protection including marine pollution issues as mainframe of ICM implementation. It also arranges the environmental protection on landward activities meaning that all activities both on landward and seaward have strongly protected environmental quality. Although there is not a notion of coastal zone management regulation, the regulation of sea area use management has become the main rule on ICM implementation. Indeed, the separation between land based and sea based regulation may not contradict but complement one another. This assumes a high receptiveness of Xiamen on ICM approach. Meanwhile, the notion of coastal management act (Law no.27/2007) in Indonesia has set ICM governance including regulation at both national and local level. Therefore, ICM implementation in Bandar Lampung and other local governments should refer to this rule. Because of an urgent need and such a long bureaucracy of ICM governance, Bandar Lampung initiates to enact the Mayor regulation on coastal zoning plan which is supposed to be the local regulation as mandated by Law no.27/2007. Although, ICM legal framework in Bandar Lampung has not been established, its initiation can be categorized as medium receptiveness in ICM implementation. Actually, legal formal framework may not become an important indicator for local ICM receptiveness instead of informal regulation such as local traditions and agreement. However, in frame of local government-based management in both cases, formal regulation has become the mainstream of ICM governance.

In the context of harmonization of regulation, Xiamen shows various regulations which contribute to the ICM implementation. However, the Xiamen's regulation of environmental protection (1994) and marine environmental protection (1996) refer to

the national law of environmental protection (1989) and marine environmental protection (1982). The relationship between Xiamen's regulation for the use of sea area (1997) and China's law on the management of sea area use (2001) indicates the harmonized ICM regulation. In addition, the specific and related network among regulation on marine protection context provides a harmonized regulation in Xiamen and also China that indicates a high receptiveness on ICM. Although the effort of Bandar Lampung to establish the Mayor regulation on coastal zoning plan does not fit with the mandate of law no.27/2007 may reflect a self-initiative action to fasten the bureaucracy process. In addition, the effort to harmonize coastal zone plan with spatial plan describes a medium receptiveness upon ICM in Bandar Lampung.

Finally, the most important part of regulated system on ICM governance is the capacity of law enforcement. In fact, there are significant differences of law enforcement efforts between Xiamen and Bandar Lampung. However, Xiamen has had a systemized mechanism of monitoring policy on law enforcement. An integrated law enforcement group in MMCO consisting of law supervisor from each of agencies has shown the high receptiveness of Xiamen on succeeding ICM implementation. On the other hand, a law enforcement system on ICM regulation has not been strategically existed while Bandar Lampung was initiating to enact a series of ICM regulation. While the role of coastal planning team is being defined clearly, the law monitoring of ICM regulation is tackled by the coordination between Bappeda and local marine and fisheries agency.

As conclusion of this chapter, several lessons can be drawn from the experiences of the Xiamen ICM Program and the institutional development for ICM implementation in Bandar Lampung with regard to the level of local receptiveness and the challenge of sustainable ICM implementation evaluated from socio-culture perspectives, organizational capacity and coordination, participatory decision making, financial mechanism, planning program, and regulatory framework (Table 5.1).

Table 5.1. Local receptiveness and sustainability of ICM implementation in Xiamen and Bandar Lampung

Factor/Indicator	Xiamen, China	Bandar Lampung, Indonesia
1. Socio-culture perspectives • ***High***, if public supports are involved in ICM process, socio-historical custom accepts to implement ICM concept, society dynamics strengthen the implementation of ICM concept • ***Medium***, if there are efforts to achieve public supports, communication processes to harmonize ICM concept with socio-historical custom, efforts to foster communities attitude and awareness • ***Low***, if there are still awareness upon the need of public supports and socio-historical acceptance to implement new concept of ICM, awareness to recognize the impact of society dynamics to the community's perception and attitude upon ICM • ***No receptiveness***, if ICM concept is rejected by public/communities and also socio-historical custom, the community's perception and attitude upon ICM is weakened by society dynamics	High receptiveness and sustainability on ICM considering: • The long historical dependence on coastal values • Historical willingness strengthen the awareness on coastal zone protection • The collective needs strengthen the sense of belonging on coastal values • Trust upon government policy on the basis of scientific reasons	Medium receptiveness and sustainability on ICM considering: • Limitation of community's trust depending on the reliability of ICM program • Some indifferent attitude to the coastal problems • The weakness of traditional custom (informal) regulation • Promoting the slogan 'water front city' to improve community's awareness on coastal degradation

Factor/Indicator	Xiamen, China	Bandar Lampung, Indonesia
2. Organizational capacity and coordination • ***High***, if there are robust organizations by applying a lead agency or ICM coordinating body, collective organized coordination, capable and knowledgeable staffs by organizing sustainable training, continuity ICM governance and avoiding dependency on external projects • ***Medium***, if robust organizations are being achieved by mobilizing coordination among stakeholders, initiating trainings regarding benefit to knowledge and skills, efforts to strengthen self-capacities and decreasing dependency on external projects • ***Low***, if there are local awareness to prepare robust organizations, awareness to the need of human knowledge, depending on external projects • ***No receptiveness***, if there are no awareness of collective coordination to prepare robust organizations, lack of the need to increase human knowledge, lack of initiation although external projects are provided	High receptiveness and sustainability on ICM considering: • Collective management towards institutionalized process together with relevant agencies • Sustainable training program cooperated with Xiamen university as a center of knowledge • Direct participation of the Mayor to the ICM process in a permanent function of coordinated mechanism • A permanent coordinating body legalized by the local house representative • Self-sustaining ICM implementation by institutionalizing ICM governance into the system	Medium receptiveness and sustainability on ICM considering: • Coastal planning team portrays the effort to achieve coordinated mechanism on ICM • Depends on current staffs who are generated from temporary training • Uncertainty on ICM performance because of lack of sustainable training • No permanent direct involvement of the Mayor to the ICM governance system • A vague ICM organization (Bappeda has a strong role in planning and policy decision)
3. Participatory decision making • ***High***, if cooperative participation and relevant stakeholders involvement are engaged directly in decision making process, convening multi-sectoral planning is applied and becoming common traditions • ***Medium***, if there are efforts to attempt the involvement relevant stakeholders, convening multi-sectoral planning is being acquired and recognized • ***Low***, if there are awareness to explore the knowledge of participative decision making, consciousness to the need of convening multi-sectoral planning • ***No receptiveness***, if there are lack of awareness to deliver participative decision making, avoidance of convening multi-sectoral planning	High receptiveness and sustainability on ICM considering: • The limitation of stakeholders involvement in decision making but participating all actors in ICM process • General public are engaged when the ICM programs are published for getting public opinion and inputs • Regular coordinated meeting and clear role of each agency enhance multi-sectoral planning	Medium receptiveness and sustainability on ICM considering: • All actors related with coastal zone activities are involved in decision making without limitation • Coastal planning team's meeting only based on the project • The risk of inappropriate actors involvement may inhibit multi-sectoral planning
4. Financial mechanism • ***High***, if self-coordinated financial supports are available without external funds domination, clear mechanism to generate financial sources, clear strategies to integrate investment to sustain financial support cycle • ***Medium***, if financial supports are available by sectoral approach and assisted by external funds, recognizing the benefit and attempting to generate financial sources, designing integrated investment strategies to sustain financial support • ***Low***, if financial support mainly depend on external funds, awareness to generate financial sources, awareness to the need of integrated investment strategies to fund ICM program • ***No receptiveness***, lack of financial support both from self-generating and external funds	High receptiveness and sustainability on ICM considering: • Strong willingness to spend the budget managed by coordinated team without external funds domination • Funds allocation refers to the scientific requirements not merely based on the Mayor decision • General public willingness to spend money on ICM program • Self-financed system sourced from taxation and a user fee system • An investment on tourism development as financial support cycle and environmental protection	Medium receptiveness and sustainability on ICM considering: • Depending on the Mayor decision mandated to Bappeda and local marine and fisheries agency • Political leader may change the decision of financial support • Mainly sourced by tax while initiating a user fee system • Depends on national budget • Initiating an investment strategy by tourism development • A clear financial authority has not been established • No clear statement of investment strategy

Factor/Indicator	Xiamen, China	Bandar Lampung, Indonesia
5. Planning program • ***High***, if planning and decision making are applied by utilizing the best available information through research studies, clear statement to refer to other plans, clear statement of planning integration between land and sea, focusing on a limited set of clear issues, clear design of action programs • ***Medium***, if there are efforts to conduct research studies as the basis for planning preparation, attempting to refer clearly to other plans, initiating to integrate between land and sea use planning, dealing with many set of issues, efforts to design set of action programs • ***Low***, if planning has not considered to utilize the best information, awareness to harmonize with other plans, recognizing the benefit of land sea use integration, lack of designing action programs • ***No receptiveness***, lack of planning preparation	High receptiveness and sustainability on ICM considering: • Self initiative of coastal and marine planning without national guidelines • Aiming to promote sustainable economic development (the same goal as Xiamen Municipality) • The regulation of sea area use management has become a model for national level • Strong role of experts group in ICM planning • A controlled environmental protection in land area bridging the lack of integration between land and sea use • Focusing on a limited set of clear issue and integrating clearaction program in one document plan	Medium receptiveness and sustainability on ICM considering: • The roles of experts are mixed with bureaucrat and politicians • Coastal planning decision is still influenced by political interest rather than scientific analysis • An ICM policy mandates synergy between land use (RTRW) and sea use planning • Dealing with wide issues rather than formulating a clear issue • Running on a bureaucratic hierarchical system of coastal planning • Designing action plan under complex issues
6. Regulatory framework • ***High***, if there are existing legal framework of ICM implementation at the local level, statement of laws integration from local level to national, availability of integrated monitoring policy • ***Medium***, if there are political will to enact legal framework for institutionalizing ICM, efforts to acquire harmonization of laws, efforts to integrate monitoring policy • ***Low***, if there are still awareness to search legal preparation process, thinking of the need integration of laws, dominancy of sectoral monitoring • ***No receptiveness***, if there are no political will to prepare legal framework, lack of laws integration, lack of monitoring policy	High receptiveness and sustainability on ICM considering: • The regulations of sea area use management has become a national model providing integration between economic and environmental benefit • Land based and sea based regulation are complementary • Harmonizing regulation managed by related network in MMCO focusing on environmental protection • An integrated law enforcement group systemizes monitoring policy mechanism	Medium receptiveness and sustainability on ICM considering: • Initiating to enact the Mayor regulation on coastal zoning plan as part of self-initiative to fasten the bureaucracy process • The national mandatory policy on harmonizing local regulation to the national laws • While initiating to enact a series of regulation on ICM, a law enforcement system on ICM regulation has not been strategically existed

5.3. Lessons Learned

In fact, institutional development in the frame of decentralized ICM policy in action, both the ICM Program in Xiamen, China and Bandar Lampung, Indonesia describe different perspective on the level of local receptiveness and sustainability of ICM implementation. Although there are some weaknesses on different context of local receptiveness and sustainability assessment, in general, Xiamen's ICM program provides a high level of local receptiveness. On the other hand, Bandar Lampung's ICM program provides strong initiation to develop institutional arrangement for ICM action towards high receptiveness and sustainability. As discussed above, the strategies of institutional development are different in many ways towards receptive and sustainable ICM implementation. Some lessons can be learned from discussing and comparing these two cases study that can be implemented not only for improving ICM program in Bandar Lampung but also for other decentralized ICM cases. The differences of local context, the notion of ICM receptiveness and sustainability at the local level can be enriched by these two discussions and comparisons. These Lessons learned are provided as following:

1. ***Sustained political action and strong commitment and cooperative-shared action legalized by regulation ensure the achievement of sustainable ICM implementation***

   The role of coastal management system that functions the Mayor of Xiamen municipality as a leader of ICM process will ensure the sustainability of ICM governance while political leaders change. It is recognized that the initiation of Xiamen municipality to established sustained political action has been legalized by local house representative through regulation and supervision mechanism. Indeed, the strong ICM receptiveness of Xiamen has been defined by formally integrating the ICM Program into the structure of the municipal government. However, the direct participation of the Mayor provides a strong willingness of political leader in delivering ICM program. A permanent function of the Mayor managing ICM program describes the sustained ICM governance through the system enforcement not to depend on a person.

   In fact, strong commitment in Xiamen has been emerged as collective action. The main issue of coastal pollution has raised the awareness of local government and Xiamen's people. This collective power is accompanied by the strong political willingness of Xiamen's leader to establish a robust and permanent organization for implementing ICM approach. The collective awareness among government agencies who engage in Xiamen's ICM structure encourages cooperative-shared action that effectively drives ICM action. It is recognized that cooperative-shared action will also derive an effective coordinated mechanism. Indeed, coordinated mechanism is supported by the availability of sustainable training that provides staffs capability performing the ICM process and sustaining organizational relationships.

2. ***Clear regulatory framework linked between economic development and environmental concern***

   In frame of local government-led ICM program, the ICM implementation will effectively run on the basis of clear regulations that arrange the use of coastal and marine area resources. As discussed in theoretical framework, the essential objective of ICM is pursuing the economic benefit while balancing sustainable environmental quality. Enabling legal framework describe strong awareness upon coastal ecosystem value that sustain the process of ICM program. The strict regulation of coastal area use accompanied by environmental protection may provide an effective way to sustain coastal and marine use. Besides that, the link of environmental concern between land use and marine use regulations that concerns with strong environmental protection may achieve the sustainability of coastal and marine resources. However, the experience of Xiamen on enacting the regulation of sea area use management has shown a local initiation rather than integration from national to local laws even in centralized system. At last, the compliance of laws enforcement will be achieved by integrating monitoring policy. The experience of Xiamen in organizing an integrated law enforcement group consisting of a supervisory force from each agency has effectively implemented to enforce the management measure with regard to illegal activities.

3. ***Selected appropriate actors involved in decision making process and focusing on clear coastal issue as mainstream of ICM policy making***

   A clear role of each actor in coordinated framework will strengthen the ICM governance that brings an effective decision. It is important part of decentralized ICM to involve appropriate stakeholders. Because of economical and socio-political reasons in centralized system, limiting stakeholder involvement in local government-led ICM program could bring effective decision-making process rather than involving all stakeholders. By this, a coordinated policy agreement will be achieved by the qualified and strategic participation in decision making. It can be achieved by selecting relevant actors who directly affect the ICM process. However, the way of involvement through transparent information and the right to convey comments and suggestions for other actors who are not engaged in decision making process may become an effective way.

   In term of planning preparation, it is important to define clear coastal issue that determines the mainstream of ICM policy making. Focusing on clear coastal issue will ease the decision making on clear action program. Clear coastal problem can also encourage to selects appropriate actor and provide clear role of each actor.

4. ***Earmarked funding system that sustainably finance ICM program***

   The awareness of collective perception to coordinate financial support has become a crucial requirement in succeeding ICM action. The increase of economic benefit perception with ICM generates internal financing commitment coordinated by the local leader (the Mayor) together with coastal management team. Besides the user fee system as financial sources, the opportunity of investment development in coastal and marine activities such as tourism industry will provide sustainable financial support cycle. A clear management system on the use of financial sources that is sourced and earmarked on coastal and marine activities ensure a sustainable financial support for ICM implementation.

5. ***Coherent capacity development through providing a sustainable knowledge center and marine experts involvement***

   The success of ICM process that provides effective institutional arrangement will be determined by capable staffs who implement ICM program. With capable staffs the ICM process will run on the scientific based of ICM concept. The capable staffs on ICM of course will be available by encouraging sustainable training in which the knowledge and skill are transferred to the ICM actors. The availability of a knowledge center may provide the sustainability of capable staffs support. Indeed, this knowledge center will also provide qualified marine experts who convey the development of ICM scientific knowledge. However, the role of scientific knowledge that provides objective information becomes an important part in ICM policy making in order to justify the authenticity of decision making. This means that the role of experts group becomes crucial and should portray independently. The experience of Xiamen on strong involvement of marine experts group has determined the decision making of ICM policy.

CHAPTER 6. CONCLUSION AND RECOMMENDATION

This chapter will provide conclusion based on the frame of theoretical approach due to the concept of local receptiveness and sustainability of ICM approach and the analysis among two cases which have been compared and discussed on the previous chapters. According to the lesson learned discussed on chapter 5, moreover, this research provides several recommendation for improving the local receptiveness on ICM approach and ensuring the sustainability of ICM implementation especially for Bandar Lampung municipality. The local case of Bandar Lampung municipality is hoped can provide general lessons that can be implemented in other local cases in Indonesia in the frame of decentralized ICM policy.

6.1. Conclusion

Bandar Lampung municipality is one of cities in Indonesia that is located and interacted with coastal zone boundaries. The coastal zone of Bandar Lampung has a strategic position as a trading center within the city level, provincial, national and international according to the establishment of Panjang Port as international seaport. Indeed, Bandar Lampung's coastal zone has been a center of economic growth which will determine the city growth. However, the intensive use of coastal zone on manufacture industrial activities, wide coastal reclamation to extend other economical, and also illegal fishing have impacted to the large of coastal and marine degradation (Yudha, 2007). In addition, the lack of such a coastal management brings to the strong of sectoral and scattered development impacted to the wide of interest conflict on coastal zone use. Meanwhile, the implementation of "Proyek Pesisir" in Lampung province has not influenced significantly for coastal management in Bandar Lampung municipality. Therefore, the threat of intensive use on coastal zone for the next long period has driven the awareness to the need of ICM implementation towards sustaining economic development and environmental balance in Bandar Lampung's coastal zone.

Essentially, ICM approach is a resources management process dealing with a holistic and integrative approach and interactive planning process in addressing rational decisions for sustainable use of coastal resources and space by designing a set of regulation and policy development, institutional arrangement, and education (Christie, 2005). On one hand, this approach is intended to pursue multi-sectoral economic development coping with single-sector fragmentation, conflict interest through participatory process and conflict mediation, and government's level splitting. On the other hand, ICM employs a balance development concerning with conservation, land and sea ecosystem integration, and future direction. However, an effective of ICM implementation is determined by the initiative action at the local level to deliver ICM approach. This initiation affects the framework of institutional development concerning with ICM implementation which then defines the level of local receptiveness upon ICM approach. Understanding the receptiveness may determine the success of ICM implementation as well as the challenge towards sustainable ICM implementation at the local level.

In general, both of Xiamen and Bandar Lampung have been implementing ICM concept through local government-based management approach. However, there are several different characteristics of coastal management system between Xiamen (China) and Bandar Lampung (Indonesia). ICM concept has been institutionalized in the governance system of Xiamen government while it has not been existed in Bandar Lampung. The single-sector management in Bandar Lampung's coastal zone has impacted such fragmentation and coastal degradation that drives a strong awareness of local government to implement an integrated coastal management (ICM) approach. The relative freedom of fisheries culture without strong monitoring system which has decreased coastal environment quality has reconstructed the growing awareness. Unfortunately, the strong willingness of ICM implementation still mainly comes from local government with limited community's support. However, the national policy through the enactment of Law no.27/2007 has set this initiation in providing a local framework of institutional development for ICM implementation in Bandar Lampung as local government-based management. Its development has tried to fully adopt ICM approach as implemented in democratic countries through involving all stakeholders in decision making. The influence of sectoral and political interest tends to exceed scientific knowledge-based interest that may cause to the scattered of decision making.

In fact, the coordinating body in Bandar Lampung employs in such a domination of Bappeda and Local Marine and Fisheries Agency in ICM implementation that can impact to the counter-productive action such as difficulty to get commitment from other sectors and ambiguity between fully adopted participatory approach and hierarchical power system. The weakness of regulatory framework on ICM has retarded the integrative process of coastal management towards scattered of institutional arrangements in ICM implementation. Indeed, unclear problem determination and financing system has impacted to scattered and spread kind of ICM action program. The focus of Bandar Lampung's ICM program on spatial planning still remain scattered economic development that have not been connected well into environmental concern. However, the initiation of Bandar Lampung to establish coastal zoning plan regulation implementing user fee system, develop marine tourism, and engage in participatory approach has generally depicted a medium receptiveness and sustainability upon ICM.

Meanwhile, the successful of ICM program in Xiamen, China is based on the different characteristics of coastal management system that fits with the contextual condition of Xiamen. The strong collective awareness to overcome marine pollution has driven on the need of ICM implementation towards beneficial economic development. The local government-based management of ICM implementation has run together with governance system in Xiamen municipality accompanied by such a regulatory driven ICM. The strict regulation dealing with environmental protection and sea use management shows an impressive and coherence case of environmental concern that has connected to economic development on coastal and marine zone. However it is argued that the limitation of general public and NGO involvement in decision making indicates Xiamen to not implement ICM approach as a whole. In fact, the way that general public and NGO are involved through transparent information and given feedback mechanism upon planning policy has been effectively implemented. Although the fact of one political system in China, however, the strong influence of scientific

knowledge through involving marine expert group in formulating ICM policy provides community's trust upon government policy of Xiamen municipality. Indeed, a robust organization and strict regulation on ICM governance has strengthened the high receptiveness of Xiamen upon ICM approach. In addition, the internally generated and earmarked financial mechanism and sustainable training for strengthening capable staffs ensures the sustainability of ICM process.

Improving the local receptiveness upon ICM for Bandar Lampung needs to reflect from other experiences that has successfully implemented ICM approach. Despite there are several different context on implementing ICM concept between Bandar Lampung and Xiamen, some lessons are possible to be considered and adopted as alternatives for local government of Bandar Lampung in improving receptiveness and the challenge of sustainability upon ICM approach. These lessons are hoped to be useful not only for Bandar Lampung but also generic international lessons for local government in the world.

6.2. Recommendations

As the last section, this research is closed by several recommendations that are hoped can provide the answer upon the research question of to what extent does the role of institutional arrangements improve the local receptiveness and sustainability of ICM implementation in Bandar Lampung and other local cases in Indonesia based on the learning process from Xiamen case. According to the research analysis in chapter 5, it has been synthesized that there are some recommendations to contribute the improvement of receptiveness and sustainability of ICM implementation in Bandar Lampung, which are:

1. ***Establishing Strong Regulation to Sustain Political Action for ICM Implementation***

   According to the previous analysis, the ICM approach will succeed on the basis of strong political action from local leader. It will encourage the ICM governance process in daily action that determining the effectiveness of ICM implementation. It is crucial to establish sustained political action in order to ensure the sustainable ICM program in which it is not only depending on current political leader (the Mayor) but also the future. It can be achieved by establishing strong regulation initiated by the Mayor and local house representative that mandate a sustained system of ICM governance including coordinated mechanism.

   In case of Bandar Lampung, it needs strong political action to provide regulation that enforces clear ICM governance and avoids scattered institutional arrangements. Reasoned by financial limitation and national regulatory mandate, it is not crucial to establish new organization for ICM process in Bandar Lampung, but it may be effective by regulating the coordinated mechanism among local agencies chaired by the Mayor. This mechanism should provide regular meeting among agencies and experts in the frame of formal regulation. It should also provide the method of achieving collective agreement. Determining the Head of Bappeda as chairman of coastal planning team has impacted to the domination rather than provide coordinated action because of sensitive issues on local power. This recommended

framework will provide an active role from each of related agencies that has the same power level with Bappeda towards the balance of coastal planning process. In addition, this regulation should also provide the control mechanism from local house representatives on sustaining the effectiveness of ICM implementation.

2. ***Strengthening the Regulation of Coastal Area Use Management and Its Law Enforcement***

   The essential objective of ICM approach is pursuing the sustainability use of coastal and marine resources. Coastal environmental protection should be the mainframe of ICM with regard to the economic development on coastal zone. However, the economic potency from coastal zone resources should provide benefit for coastal communities. It needs strong willingness to design economic development scheme on the basis environmental quality protection. Coastal zoning plan in Bandar Lampung as the main planning in hierarchical system of coastal zone planning has determined the economical scheme of coastal use and environmental protection. Unfortunately, the initiation of the Bandar Lampung's Mayor Regulation on coastal zoning plan that arranges the detail spatial use of coastal zone and permit mechanism may still remain the weakness. It should be strengthened by enacting the Local Regulation to provide binding rule and arrange sanction mechanism controlled by local house representatives. Another way may be effective by requiring such an environmental impact assessment on economic development to balance with the environmental protection. In addition, the compensation mechanism on the impact of economic activities could bring an alternative way in sustaining the use coastal resources.

3. ***Selecting Relevant Actors and Clear Coastal Problem***

   The requirement of participatory approach on ICM program becomes important in term of conflict interest avoidance and collective decision making. Single-sector management has usually come to the competition between economic development and environmental problem that impacted to the spread of conflict interest. However, it is not always effective by involving all actors in decision making process that may result in counter-productive from unrelated actors. Bandar Lampung should limit the relevant actors who may affect in collective decision making. The local government of Bandar Lampung should consider the way of participation of private sector, local people, and NGO in ICM process. However, it is not possible to avoid general public and NGO involvement in the context of socio-political culture in Bandar Lampung or Indonesia. Otherwise, the local government should provide transparent and qualified information continually and also providing feedback mechanism that may become an effective way rather than involving all stakeholders in decision making.

   The lesson of Xiamen case describes that community's trust upon government policy depends on the strong involvement of coastal and marine experts in ICM policy design. The role of current coastal planning team in Bandar Lampung still remains ambiguity between scientific knowledge and political interest. The strong willingness of Bandar Lampung is needed to adopt objective analysis from experts group to encounter the political interest. It is recognized to involve important role not only

from hard science such as coastal and marine technology and GIS but also economist, local culture expert or sociologist, and legal expert.

In term of planning preparation, it is important for ICM success to focus on coastal problem as the objection of ICM implementation. It provides clearer target on designing action plan rather than dealing with many issues. In case of Bandar Lampung, there are at least three issues that can be mainstreams of ICM implementation which are port city development, fisheries, tourism development and overcoming coastal degradation. It is wise to prioritize the coastal degradation problem as mainstream of ICM that will strengthen tourism and port city development and also sustain coastal community's livelihood. In fact, current coastal planning policy still remains too wide of issues. It means that local government should de-prioritize other issues that do not fit with those four issues

4. ***Developing Earmarked Funding System for Coastal Management***

   The ICM implementation strongly depends on the availability of funding system. However, ICM process needs much financial support not only for current situation but also for the future development. It means that the sustainability of financial support will strengthen the ICM implementation towards the sustainability of ICM program itself. In case of Bandar Lampung, the initiation of user fee system policy through coastal zoning plan regulation and the development of coastal and marine tourism provide challenge of funding sources for ICM program. It is important to guarantee that these funding sources will be used for only coastal development. In addition, the local tax sources and national budget coming from coastal activities should be distributed appropriately on coastal management.

   The establishment of those funding sources from coastal and marine activities should be accompanied by the clear authorities that manage the use of financial support in order to ensure the reliability of financial use on coastal and marine activities. The way of coastal planning team establishment may provide a clear authority in which financial bureau will engage as financial manager. This mechanism will also be controlled by the Mayor and supervised by local house representative to ensure the effectiveness of financial management for ICM program.

5. ***Developing Sustainable Knowledge Center to Improve the Coherency of Capacity Building***

   The implementation of ICM approach in practice needs of capable human resources who understand the ICM process should be delivered. This mechanism can only be accommodated by providing sustainable training that spreads the knowledge and skill for strengthening capacity building of ICM staffs. Providing comprehensive training especially for coastal planning team and other ICM actors will sustain an effective ICM process.

   As discussed above, ICM policy making needs a basis of scientific knowledge to encourage the objectivity of decision making. It becomes important to establish a center of ICM knowledge that is not only develops scientific information but also sustainable training. In case of Bandar Lampung, it is considered that the University of Lampung can be developed as ICM knowledge center in which the role of expert

especially coastal and marine experts, economists, local fisheries tradition/sociologists, and also legal experts are collected as an important power of ICM implementation.

6.3. Theoretical Reflections

According to the discussion and finding in these cases research, however, there are some reflections on the theoretical framework of ICM receptiveness and sustainability at the local level. The lesson from Xiamen case on the ICM implementation has provided implications and nuances to the literature enrichment reflecting the theoretical reconstruction of the concept of ICM receptiveness or success for global framework. They elaborate the theoretical inadequacy that may to be changed for practice concern. In fact, theoretical literatures often too general that there may few things in theoretical frameworks are not used in practice. Indeed, reflecting from these cases, there are new theoretical ideas that need to be added and adapted. Otherwise, there are new facts in practice that do not adopt from theoretical framework. These new theoretical ideas describe the comparison between practice and theory which are:

1. ***The limitation or selectiveness of integration in decision making process***

   Some experts expressed that successful ICM program succeed in involving the qualified and strategic participation from those affected and the most appropriate stakeholders (Olsen, 1993; White *et.al.,* 2005). Meanwhile, other literatures state general remark that the critical element for effective ICM should consider stakeholder participation or public involvement (PEMSEA, 2005; World Bank, 1996; Christie *et.al.,* 2005). Xiamen case portrays the need of limitation or selection of actors rather than involving a lot of participation and integration in decision making that will provide strong commitment on ICM implementation. It is recognized that all actors who deal with coastal zone activities are not avoided to participate by providing transparent information and feedback mechanism to the ICM policy design. It assumes that more participation in decision making may not always be better than limited participation without avoiding the role of all actors in ICM process. In term of planning preparation, the multi-sectoral integration between land and sea use planning should not always be interpreted as one planning document, but more concern on coordinated action between them.

2. ***The concern of economical benefit on the basis of environmental protection***

   ICM approach needs to be implemented in achieving economical benefit rather than merely environmental concern. Most of theoretical literature on ICM concept mandate that ICM is tended to deliver for environmental protection because of massive economical activities on coastal and marine zone resources. Theoretically, the environmental concern tends to be the Mayor stream on ICM approach. Meanwhile, in practice, the environmental concern of ICM approach often limits the economical benefit of coastal zone resources in which the balance between environmental and economical concern often does not exist. It means that the environmental concern on coastal and marine zone resources should be part of economical development.

3. ***The strong role of scientific knowledge for ICM policy design***

   The success of ICM implementation should be based on strong role of scientific knowledge in addition to political reason. This scientific knowledge should cover not only coastal and marine science and technology but also economic, legal aspect, local tradition knowledge, taxes and finance. The scientific knowledge based management on ICM policy making will bring to the objectivity of ICM action goals dealing with economical benefit and environmental protection. In addition, the role of scientific knowledge independently will provide public trust on ICM policy decision. It means that the separation of scientific knowledge independently from political interest should become the mainstream on ICM policy design that exceeds the political purposes.

4. ***The earmarked funding scheme on ICM implementation***

   Christie (2005) has stated that the sustainability of ICM process depends on sustainable of financial support cycle. Meanwhile, PEMSEA (1996) characterizes the good ICM practice by establishing sustainable financing mechanism. Another perspective, sustainable ICM requires improved economic returns and income generation. These perspectives may provide general remark rather than practical framework to achieve high receptiveness on ICM implementation. Xiamen case has provided a nuance that high receptiveness on ICM implementation does not only depend on sustainable financial support but also the earmarked funding scheme in which the cost for ICM program are derived from coastal zone activities and income from coastal zone activities are only used for ICM programs. By this scheme the competition of financial sources may be avoided.

5. ***Setting up the political knowledge and institutional arrangements at the local level***

   The success of ICM implementation will be strongly determined by local political knowledge. The notion of harmonization between national and local institutional plans and also integration between national and local laws will be exceeded by strong political action at the local level on ICM approach. In decentralization context, institutional arrangements for ICM should be defined by local leader initiation that the vital role of the Mayor may bring a creative approach dealing with local characteristics. Local initiative will also bring the realistic of local democracy that frames the institutional arrangements including participation scheme on ICM implementation.

According to the recommendation and theoretical reflection, there are some potential researches that can be conducted to achieve more clearly about the local receptiveness on ICM approach. For instance, research on understanding effectiveness of economic and environmental benefit from ICM program with regard to the community's welfare by assessing the income and cost distribution in ICM program. Another research is designing organizational model that portrays how to select the most appropriate actors and achieving power balance issue among actors including intra-governmental and inter-governmental level.

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