

**A REVIEW ON COASTAL CONSERVATION POLICIES AND
INTEGRATED COASTAL ZONE MANAGEMENT (ICZM):
A LESSON FROM FRANCE FOR INDONESIA**

THESIS

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Abstract

Coastal area is a very potential area for a variety of development options. However, with the increasing of population growth and rapid development activities in coastal areas for various utilizations (residential, fishing, ports, tourism and others), the ecological pressure on the ecosystem of coastal and marine resources is increasing. The increasing of this pressure will be able to threaten the existence and sustainability of ecosystems and coastal resources, marine and small islands. Therefore, is required the policy on coastal conservation. Issue on coastal conservation is a basic to realize of management of coastal area in an integrated way, as known as the integrated coastal zone management concept (ICZM).

This research analyses the comparison of coastal conservation policy and ICZM between France and Indonesia focusing on implementation of policy and regulations. The objectives are to get an insight on the coastal conservation policies implemented in Indonesia and France and to learn experiences from other country in this case, France. This research also uses the literatures review and descriptions analytical as methodology. The findings demonstrate that both countries objective for coastal management is to achieve sustainable development. However, after discussing major differences of element on coastal conservation policy and ICZM like the coastal zone condition and other elements of coastal conservation policy it turns out that the condition of implementation for both countries is quite different. The differences in coastal conservation policy toward ICZM is explained by examining: (1) the political will of government on environment issues in France and Indonesia; (2) the policies and regulations to support ICZM implemented in both countries; (3) the institutional capacity context in managing the coastal resources; and (4) the attitudes of the public participation to coastal management.

Keywords: Coastal Conservation, Coastal Management, ICZM, France, Indonesia

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1.1 Background

Coastal ecosystems have a range of natural resources, which has the potential to be developed. One of the potential bio diversity ecosystems includes coral reefs, sea grass, and mangrove. This type of ecosystem is a nursery ground habitat for a variety of reef fish species, gastropods, bivalves, and the mangrove crab. Abundant of oxygen in this zone and as the center of the development of fishing activities and tourism industry will be reduced. While the positive ecological role of coral reefs and the mangrove is balanced as biological, physical and chemical factors (Nybakken, 1993) Criteria of good or bad environment of the beach depend on the interaction among the three factors.

Since the ecosystem has abundant bio diversity, it is possible people to utilize, to exploit, and to cultivate them. Based on the biological productivity perspectives, coastal area is not only getting a predicate as "parabolic domain" because of it has high productivity, but also vulnerable and has the opportunity to receive pressure from land and from sea (Gueloget and Perthuisot, 1992)

Another pressure is come from coastal hazard. As noted by the Intergovernmental Panel on Climate Change (IPCC) (1990) sea level is already rising on average of over 6cm per 50 years, with important regional variations because of local geological movements. Global warming will add to and accelerate this trend, modify ocean circulation and changes marine ecosystems, with socio-economic consequences.

Titus et al.al (1991) summaries the effects of sea level rise as being inundation of wetlands and lowlands, accelerated coastal erosion, increased vulnerability to coastal flooding, the integrity of coastal structures being threatened, raised water tables and increased salinity of rivers, bays and aquifers. Possible changes to coastal ecology include loss of habitat for birds and juvenile fish and a reduction of the production of organic materials on which estuarine fish rely (Titus et al.al., 1991). Rapid increase in a sea level could "reduce or eliminate many coastal ecosystems, drown coral reefs, reduce biological diversity and disrupt the life cycles of many economically and culturally important species" (IPCC, 1990:23).

Nowadays, the issue of conservation has become important for all of us, even in a local, regional, and international level. OECD (Organization for Economic Co-Operation and Development) states that coastal zone management is not purely a local/regional or purely national concern. There are many aspects of coastal zone management, which are of international nature. The damage of coastal resources and sea, the decrease of fisheries production, pollution and climate change has occurred and provide significant impact in many coastal areas throughout the world.

However with the increasing population growth and rapid development activities in coastal areas, for various utilizations (residential, fishing, ports, tourism and others), the ecological pressure on the ecosystem and coastal and marine resources are increasing. The increasing pressure this course will be able to threaten the existence

and sustainability of ecosystems and coastal resources, marine and small islands that are around.

One thing that more concern is that the trend of environmental degradation and the coastal ocean due to the paradigm of development and practices which have not yet applied in accordance with the principles of sustainable development. Tended to be dominated extractives and economic interests take precedence over national economy of the local community (coastal). Should be more participatory, transparent, accountable, effective and efficient, equity and support the rule of law.

While at the implementation level is still found of low awareness of law and regulation enforcement, and the ecological damage to coastal in a serious condition. Therefore, is required the policy on coastal conservation.

Issue on coastal conservation is a basic to realize of management of coastal area in an integrated way, as known as the integrated coastal zone management concept (ICZM). It more specialized in sustainable ecology of coastal areas (Meur-Ferec, 1997), which states that coastal management should be integrated across sectors.

This study will discuss about coastal conservation issue to support of ICZM concept in Indonesia. However, it is worthwhile in this study to know the experience of the European countries especially in France, because they have better management policy on coastal conservation and better enforcement on regulation such as CELRL (Meur-Ferec, 1997) in implementing coastal conservation toward ICZM into their national policies in order to seize valuable lessons for coastal conservation practice in Indonesia.

The approach that I will describe for a rational ICZM is based on the implementation of coastal conservation through comparative analysis between France and Indonesia. In order to practice ICZM, planners need to understand the ways in which the natural environment and human activities are inter-connected to form a system. ICZM and its aim are to develop sustainable development of the coastal zone and its resource (Pergent-Martini, 2002). So, it is important to get insight coastal conservation and ICZM.

This will be followed by an overview of the main issues in coastal conservation for both the France and Indonesia.

1.1.1 France

France as member of European Union has clear rule and regulation of coastal conservation. Since 1960s and 1970s, all European Countries including France has more pay of attention to coastal conservation because of pressure and utilization of coastal as economic generator for European countries (Meur-Ferec, 1997).

Like in most European countries, the institutional framework for coastal zone management in France is comprised of two elements are: a land use planning system administered by territorial authorities at one or more sub-national territorial levels, and sectoral laws which are usually reflected in sectoral administrations within the national government (Henocque, 2003).

Specific policy for coastal areas is provided under the Coastal Development, Protection and Enhancement Act (1986) known as the Coast Act, mainly devoted to land use planning for control of urban expansion in coastal areas. Planning instruments established under the Coast Act and other laws (Water Act, 1992 ; Spatial Planning and Development Act, 1995) such as the Marine Area Zoning Plans (SMVM), the Regional Nature Park (PNR), the Bay Contracts, or the Territorial Planning Directives (DTA), represent for the local decision-maker a complex combination of broad rules at different scales and quite cumbersome administrative procedures that do not facilitate the setting up of a coherent and integrated coastal zone management approach. No local planning tool prevails for the implementation of integrated coastal zone management, but where there is a real dynamic between local stakeholders with a strong leadership, partnership agreements are combined with regulatory and highly centralized planning instruments like the Marine Area Zoning Plan. Capacity building for integrated coastal zone management is just beginning and is starting to happening first at the local level (Henocque, 2003).

France is one of good model on Implementation of coastal conservation policy for Indonesia. The work of Conservatoire de l'Escape Littoral et des Rivages lacustres (CELRL) is presently the most important estate owner in France (Meur-Ferec, 1997). The CELRL is a body specialized in the conservation of natural coastal sites. This is important to Indonesia to adopt a good example and success on policy implementation especially on how collaboration between administrative and financial autonomy (Meur-Ferec, 1997).

1.1.2 Indonesia

Indonesia is the largest archipelagic state in the world with 17,508 islands, from which 6,000 islands are inhabited. Comprising 14 per cent of the Earth's about 81,000 km, Indonesia has the longest coastline in the world. It also has a sea area of about 5.8 million square km, representing approximately 70 % of its total territory.

Indonesian coastal areas are famous and rich with natural diversity resources and it has the biggest sea biodiversity in the world because of its coastal ecosystems like mangrove forests, coral reefs, and sea grass is very broad and diverse.

In Indonesia coastal ecosystem has a strategic role and bright prospects for national development. However, currently the development of resources in Indonesia is still not optimal and sustainable. Planning and implementation of the development of coastal resources in dichotomy and by sector is one of the main factors. Planning and management of coastal areas are usually related to the sector is only one kind of resource utilization or coastal space by one of the government institutions to meet certain goals, such as fishing, pond, tourism, ports, or oil and gas industry. It can create conflicts of interest among the sector in the development of activities in the same of coastal region. In addition, the sectoral approach in general does not care the impact on others, so that they can kill other business sectors. For example, the disposal of waste by industries to the coastal environment can shut off pond business, fisheries, coastal tourism, and endanger human health.

Now coastal resources are under pressure, either as repositories for the effluent of industrial processes and domestic waste, or as prime sites for reclamation to create

land for industry or agriculture or settlement. Moreover, during the course of last century, especially in Java, large cities have continued to expand at an accelerating pace; and this growth has become enough to disturb the coastal zone. On the other hand, Indonesia's population is increasing at an alarming rate, approaching 218.8 million by the year 2005 (Statistic Indonesia, 2005). In addition, about 65% of the Indonesian people live in and around coastal cities, making the problem of managing the coastal zone in Indonesia even more complex. There is no doubt that demographic pressures are exceptionally pronounced in Indonesia.

Planning and implementation of sustainable coastal resource that is not executed in an integrated feared would only damage the resources because the characteristics and dynamics of natural coastal ecosystems ecologically related to one another.

Fundamental challenge for planners and coastal area management is how to facilitate economic development, and at the same time, to minimize the negative impact of all development activities and natural disasters according to coastal resources to support the environment, so that the economic development can take place continuously.

Therefore, to support the development of environment conception program which is in accordance with the existing ecosystem, efforts of certain development methods of marine and coastal management are needed. In this case, the management effort of coastal and sea in an integrated on the preservation of the functions of the environment is an important development area (Dahuri et al., 1996).

Indonesia has the commitment to improve the effort of marine resources preservation and implement it through the integrated coastal zone management (ICZM). However, it still faces the conflict of different interest especially among the inhabitants and fisheries activities in the conservation area. Ineffective coastal conservation management and various emerging problems proved that integrated coastal management cannot be separated from the whole coastal conservation management.

So, Indonesia need to lesson learnt from other country to know more the successes on coastal conservation policy implementation particularly on law and regulation enforcement. It is important because of its aim to improve the recent policy and possibility policy transfer to implement the sustainable coastal development in Indonesia.

1.2 Research Objective

Coastal conservation can be defined as the initiatives taken by many countries to protect coastal zones from excessive development and environmental damages.

The objectives of this research can be identified as follows:

1. To gain insight on the coastal conservation policies implemented in Indonesia and France which is in accordance with the regulation and law through comparative analysis.
2. To understand coastal conservation policies in Indonesia and France in the contexts of integrated coastal zone management (ICZM).

3. To identify some lesson learnt from the experience of European countries especially France in implementing coastal conservation policies is expected to contribute in the improvement of coastal conservation management in Indonesia.

1.3. Research Questions

Based on the research objectives, the main question that will be addressed in this study is “How does coastal conservation can be implemented in Indonesia”. This main question will be divided into three sub main question:

1. What is ICZM in coastal conservation?
Through this question, the concept of ICZM will be explored and elaborated. The discussion of coastal conservation on the ICZM concept including why this concept is needed and the key strategies on how to implement coastal conservation to support ICZM concept will be elaborated.
2. How are the implementations of coastal conservation policies in Indonesia?
This question tries to give an insight on the characteristic of coastal conservation policy in Indonesia. This research question will also try to reveal the condition of coastal conservation policy that has been implemented in Indonesia.
3. How are the implementations of coastal conservation policies in France?
This question tries to give an insight on the characteristic of coastal conservation policy in France. This study will highlight some experiences in adopting ICZM in France coastal conservation policy in order to seize valuable lessons for coastal conservation policy practice in Indonesia.
4. To what extent does the implementation of coastal conservation policy in Indonesia support the integrated coastal zone management (ICZM) concept?
This question will be addressed by analyzing the implementation of coastal conservation policy in Indonesia to support the integrated coastal zone management (ICZM) concept and its strategies in the current practice of Indonesian’s coastal conservation. Derived from the theoretical review and the issues in Indonesia’s coastal management, this study will focus on analyzing the key strategies of ICZM in Indonesia’s coastal conservation policy toward implementation of this concept.

1.4 Research Methodology

This study is mainly based on literature review. Most of analysis in this research is exploratory and qualitative analysis. According to Babbie (1992), exploratory study and its analysis are done for three purposes which are to satisfy the researcher’s curiosity and desire for better understanding; to test the feasibility of undertaking a more careful study; and to develop the methods to be employed in a more careful study.

Data and information are collected from relevant reference which consists of books, journals, articles, and electronic journals. The information needed has been found with research words that have relevance with the coastal conservation policy towards ICZM and other knowledge that have relevance with the topic of research.

The research process is developed based on three main activities, which are data collection, literature review, and analysis. Detail procedure is described below:

1. Theoretical Framework and Empirical Base Development

Firstly, this research develops the theoretical development about coastal conservation and integrated coastal zone management (ICZM). In this theoretical framework, it will explore coastal zone, coastal conservation concepts, the implementation of coastal conservation policy, and Integrated Coastal Zone Management (ICZM) concept.

2. Collecting data and information about the implementation of coastal conservation and the relationship of ICZM in Indonesia and lesson learned from France.

After building the theoretical framework and empirical base, the data collection about implementation coastal conservation to support of ICZM concept in Indonesia and France experience in coastal conservation is conducted. These data include constitution, policies, law and regulations. The collected data are derived from secondary data such as literatures, official documents articles, journals, internet, and other sources since there is limitation on primary data.

3. Analyzing Data

Derived from the academic understanding and the case on coastal conservation in France and Indonesian context, the author will compare and analyze the elements in coastal conservation policies toward the implementation of ICZM. Assessing the status on the implementation of coastal conservation and ICZM is useful to propose strategic recommendation to enhance better coastal conservation in Indonesia.

1.5 Thesis Outline

The structure of this research is divided into six chapters, which tries to answer the research objectives. Chapter 1 is introduction, this chapter consist of background, research objectives, research questions, methodology and thesis outline. In the background it will be describe the general overview on the issues of coastal conservation in Indonesia and France. Chapter 2 provides the theoretical review of the coastal zone, coastal conservation concepts, the implementation of coastal conservation policy, Integrated Coastal Zone Management (ICZM) concept, and the end part of this chapter will be provided the framework of analysis of the research. In chapter three and four, will describes the implementation of coastal conservation policy. Chapter 3 will explore the experience of France and chapter 4 is the current condition of coastal conservation in Indonesia. It reviews current condition of coastal zones, political will of government on environmental policy, institutional capacity, and public participation. Chapter 5 will discusses a comparative analysis between both country (France and Indonesia). The elements to be compared are coastal zones, legal and policy tradition, and institutional capacity. Finally, the report will be end by Chapter 6 it describes strategic recommendation for Indonesia reflection of the theory into practice and make some concluding remarks.

Chapter 2 *Literature Review*

As noted in the introduction, there has been development activity in the coastal areas for generations. More or less there are three key factors which account for our more recent attention to coastal protection: (1) Over the past few years, our knowledge of how eco-systems in coastal areas function has grown dramatically and new technologies have been developed to help identify and better manage the areas of greatest sensitivity. (2) There has been much greater pressure for development in coastal areas during the last half of the twentieth century than ever before. Urban sprawl near coastal communities, growth of economic activities, and the increased desire for recreational homes and pastimes have all placed significant stress on coastal land and waterways (Vallega, 1999) (3) While the weather has always affected life and work in coastal areas, there are new risks associated with the phenomenon known as climate change (see Kennedy et.al, 2002 on Coastal and Marine Ecosystem and Global Climate Change).

Coastal areas are vulnerability, so that needed some effort to protect the area. One of the natural resource protection measures that may be applied is protected area management at sites with high biodiversity or with unique natural phenomena. Such protected areas, known as Marine Protected Areas (MPAs), Marine Conservation Areas (MCAs) and implementation of coastal conservation policy (Ministry of Marine and Fisheries, 2006).

This chapter will elaborates basic terms and concepts in the relation to coastal zones and coastal conservation as part of integrated coastal zone management (ICZM), to identify possible policy strategies, policy option, and finally at the end part of this chapter, instruments and framework of analysis is provided.

2.1 Coastal Zone

Up to now, there is no standard definition for coastal zone. However, there is a general agreement that coastal zone is defined as a transition region between land and sea. From the coastline perspectives, coastal zone is divided into two boundaries which are the limit of parallel coastline (long shore) and the boundary line perpendicular to the beach (cross shore) (Dahuri. R, 1996).

Definition of coastal zones that is used in Indonesia is the meeting region between land and sea. The coastal area includes the land, both dry and submerged water that is still influenced by the sea such as tidal, sea breeze, and salt water infiltration. Meanwhile, the sea region includes the coastal sea which is still influenced by the natural process that occurred in the area of land such as sedimentation and flow of fresh water, and the caused by human activities on land such as deforestation and pollution (Soegiarto, 1976).

Based on the National Meetings of Marine Resources Evaluation and Planning (MREP) in August at Manado, the definition of coastal zones is agreed to be the transition area between land and sea in which to the land covering all or part of the

land of region which borders directly with a coastline, to the sea and includes 12 miles far of line beach at the lowest ebb.

Coastal zone is a line which influence between land and sea, which has a special characteristic of Geosphere, the land is restricted by the influence of physical attributes and social-economic sea, while the sea is limited by natural processes and human activities as a result of the environment on land (BAKOSURTANAL, 1990).

Coastal landscape that is influenced by the sea includes the beach or waterfront, which is an area that extends from the lowest point of water at low tide the sea to inland until the limit of effective wave is reached. The meeting between sea and land is limited by shoreline. The position changes in accordance with the position at the time of ebb and flow and the influence of waves and sea currents.

Coastal region is one of the very productive ecosystems in the sea. This ecosystem is unique and known as a dynamic ecosystem, because three concourse are occur in this zone; the strength which came from the land, the sea and the air. The strength of concrete can be ground water and sediments of rivers and transports into coastal waters, and the strength of the rock cliffs forming the beach. Strength of this land is very rich. Strengths are derived from the wave energy can be substantial, and tidal currents, while the air comes from the form of wind and waves in the flow along the coast, air temperature and rainfall (Davies, 1972) in (Sutikno, 1993)

According to (Rais, 1994) the definition of coastal zone is the spatial to the land where the influence of the sea still there, especially the influence of tidal (brackish water ecosystem boundaries) and to the sea where the land is still the dominant influence (sedimentation river boundaries).

For management purpose, the landward boundary of coastal areas can be determined by two methods, namely the planning zone and the regulation zone or day to day management. Planning boundaries should include all land where there is human activity (development) that can significantly give an impact on the environment and resources in the coastal areas and oceans, so the boundaries of planning more knowledgeable of the area.

Meanwhile, according to (Dietriech G. Bengen, 2002) the definition of coastal zone refers to the coastal ecosystem and the small islands are dynamic ecosystems and habitats which have a rich and diverse, and interact between each other's habitat. However, the coastal ecosystem is the most vulnerable to be affected by human activities. In general, directly or indirect development activities will give detrimental impact on coastal ecosystems and small islands.

In the day to day management, the Government or the management has the full authority to issue or to refuse the permission for development. Meanwhile, when the authority of this kind are beyond the limit of regional settings (regulation zone), it will be a shared responsibility between the coastal zone management Institutions on regulation zone with upstream or the sea management institutions (Dahuri. R, 1996)

So, we can conclude that the above definition on coastal zone provides an understanding that coastal zone is a dynamic region and has a very rich and diverse habitat both in land and in the sea, and integrated between each other's habitat. On

coastal conservation view, planning boundaries is very important thing. OECD states that the political boundaries of local and regional governments, the normal decision making units for coastal zones, seldom coincide with ecological units. With the very few exceptions, the ecological system of the coastal zone is inherently incompatible with the political and administrative structures that have been developed to serve social system. Consequently, to manage coastal resources with encompasses the appropriate ecosystem the various administrative units responsible for management have to be integrated. This is able to determine an area for conservation or to avoid and conserve from all development activities, such as fishing, pond, and tourism, ports, or oil and gas industry. Through the implementation of coastal conservation policy, it will be achieve a sustainable coastal development.

2.2 Integrated Coastal Zone Management (ICZM)

Integrated coastal zone management or ICZM is a new branch of science not only in Indonesia, but also in the world (IPPC, 1993). So, different terminology with the actual meaning is the same human activities in managing the space, resources, or the use of the coastal region, or frequently found in various libraries with the management of coastal areas. Terminology, among other as: (1) coastal management, (2) coastal resource management, (3) coastal area management planning, (4) coastal zone management, (5) integrated coastal zone management, (6) integrated coastal zone planning and management, (7) integrated coastal resource management, (8) coastal zone resources management, and (9) integrated coastal management.

In this case the ICZM is the management of the utilization of natural resources and environmental services that are located in coastal areas; the way to do through comprehensive assessment of the coastal area and its natural resources and environmental services that are in it, set goals and targets of the, and then plan and manage all of utilization, in order to achieve the optimal development and sustainable. Process management is implemented in continues and dynamic to consider all aspects of social economic and cultural aspirations of stakeholders and conflict of interest and conflict of the coastal areas that may exist. (Sorenson, J., Mc Creary, 1990) (IPCC, 1990)

European Commission states that the definition of ICZM is sustainable management of coastal zones. ICZM seeks, over the long-term, to balance the benefits from protecting, preserving, and restoring coastal zones, the benefits from minimizing loss of human life and property, and the benefits from public access to and enjoyment of the coastal zone, all within the limits set by natural dynamics and carrying capacity.

According to Dahuri et al (1996), integrated coastal zone management is a coastal area management approach involving two or more ecosystem resources, and activities of the development in an integrated way to achieve a sustainable development in coastal areas. In this context, the integration includes three dimensions, namely the sectoral dimension, science and the ecological relevance.

Although the integration can be achieved easily through national law, in some cases this is may be insufficient to gain the desired improvement in the management of coastal resource. Commonly occurring problems such as waste from one country

affecting water quality in other (not necessary neighboring) countries suggest that successful integrated management will usually involve an international focus as well as national one (OECD, 1993)

In this term the integration of coastal conservation policy means that the sectors need to have coordination tasks, authority and responsibility between the sectors or government institutions at the level of certain government (horizontal integration) and between level of government starting from the village level, district, district, provincial, and central level (vertical integration). Integration requires a scientific point of view that the management of coastal areas should be conducted on the basis of the inter science approach (interdisciplinary approaches), which involves the field of science, economic, ecological, engineering, sociology, law and other relevant areas. This is because the coastal system is usually comprised of the social and natural systems that are tied in a complex and dynamic way.

2.3 Coastal Conservation

The word of conservation is derived from con (together) and servare (keep/save) that has refers to the efforts to maintain what we have (keep / save what you have), but the wise (wise use). The idea is presented by Theodore Roosevelt (1902) which is a United States person who first explained the concept of conservation.

Meanwhile, according to Rijksen (1981), conservation is a form of cultural evolution where the first time which is the effort for conservation poor than now. Conservation can also be seen from the economic and ecological aspects. Economic conservation means to try to allocate natural resources for now, while in terms of ecology, conservation is the allocation of natural resources for the present and the future. When referring to the definitions, conservation is defined with some limits, as follows: conservation is to use natural resources to meet human needs in a large amount of time in the old (American Dictionary). Conservation of natural resources is the allocation between times (generations) that are socially optimal (Randall, 1982). Conservation is the management of air, water, soil, minerals to living organisms including humans can be achieved so that the quality of human life, including the increase in management activities is a survey, research, administration, preservation, education, and training (IUCN, 1968).

The IUCN (The World Conservation Union) pioneered the use of concept sustainable development in the "World Conservation Strategy: Living Resource Conservation for Sustainable development" (IUCN, 1980). It defines conservation as:

"The management of human use of the biosphere so that it may yield the greatest sustainable benefit to present generations while maintaining its potential to meet the needs and aspirations of future generations" (IUCN,1980:1).

Based on the definitions of conservation, it can be concluded that coastal conservation is the effort to allocate natural resource in the coastal area for the present and the future.

The conservation of ecosystems often pure public good, although there cases where market forces do play a significant role. Many options are open to government to regulate human impact on the environment. For example, limiting fishing effort or tourist boat operators through issuing limited number licenses; regulating fishing

equipment types that are usable; enforcing anti-pollution laws; monitoring trade in marine endangered species; and establishing contingency plans to prevent and clean up after spills (OECD,1980:77)

Coastal or marine protected areas of various types can be established and implemented by all level governments. National, state/provincial/regional and local or city park can complement each other to jointly cater to a host interests (OECD, 1980:77).

Coastal conservation is very important especially in view of the approaching years because of the stresses that commercial development and human growth are putting on the various coastal habitats and species (Eng and Scura, 1992). One of the reasons for coastal conservation is that physical variety provides the basis of ecological variety through the range of habitats associated with different landform and rock types (Hooke, 1998).

The Indonesian coastlines are desirable places to live that more and more people are developing homes and businesses along the shorelines. This population growth is a major threat to natural habitat and therefore a direct cause of plummeting wildlife populations (Sukardjo, 2002).

As a result of the decreasing populations and loss of habitat, many conservation organizations have been formed (coastal conservation association, CCA). Coastal habitats around the world support a wonderful diversity of life and coastal conservation of these habitats is imperative for their future success. The most important way to ensure that these places remain self-sustaining natural systems is to help spread the awareness of their importance to our shared global community.

With the strength awareness and shared of global community we know that the ecological impacts of poorly integrated coastal zone management go beyond the direct effects on fish and shellfish (OECD, 1993). Many countries cite the adverse impacts on coastal zone wildlife habitats as major issues/problem. France as member of OECD shows serious concerns at rapid and extensive damage or loss natural habitats owing to pollution or the multifarious effects of urbanization.

So, coastal conservation is an integral part of the overall ecosystem conservation movement. Coastal ecosystems include estuaries, coastal waters and lands located at the lower end of drainage basins, where stream and river systems meet the sea and are mixed by tides. These ecosystems are very important because they provide habitat for fish and other animals beyond their immediate geographic scope. The integration management is needed to achieve sustainable coastal management with collaboration the element of physical, social, and ecological.

2.4 Coastal Conservation Policy

Based on policy direction and development of coastal areas and the ocean, the policy of marine development is directed to support, among others:

1. Enforcement national sovereignty and jurisdiction,
2. Utilization of potential marine resources and seabed,
3. Develop the potential of various industrial and marine national spreading across the country,

4. Meet the needs of data and coastal and marine information and integrate and develop in network of marine information systems,
5. To develop the organization and institutional marine management system so that it realized an integrated, harmonious, effective and efficient, and
6. Power to support and maintain the preservation of function environment.

Government policy which has a very important role to maintain strategic and sustainable marine resources, is the rising of the Law Number 22 Year 1999, which explicitly set the Local authorities in the management of coastal and marine areas that area consists of land and sea as far 12 miles which is measured from the coastline towards high seas and / or towards the archipelago. Policy analysis is an applied social science discipline that use different methods of research and arguments and transfer of information with the relevant policies so that they can used at the political in order to solve the policy issues (Dunn the Nurlian Tomboelu, 1999).

Policy is the basis for the implementation of the activities or the decisions with the intent to build a base in a clear decision making and the steps taken. The policy is based on the problems in the region and the policy should be continuously monitored, revised and added to meet the changes needs.

It has to be mentioned that the analysis of policy does not restrict itself only to the testing-testing theory and general descriptive theories due to economic problem-the complex policy issues, where the theories of this kind often failed to provide information that enables the authorities policies to control and manipulate the processes of policy, but the analysis policies also generate information relevant to the policy that can used to solve the problem, as well as information about values and the direction of the action better.

Quandun in Dunn (1998) states that policy analysis is each type of analysis that produces and presents the information. So that it can be the basis for the policy test in their opinions. There are three (3) the approach in policy analysis, namely (1) empirical approach (2) evaluative approach and (3) normative approach.

1. Empirical approach is the approach that explains the consequences of public policy. The main question is whether the fact that there is something?
2. Evaluative approach is related to the determination of price or value of some policies. The main question is how to value something?
3. The normative approach is mainly related to the proposed direction of action that can solve policy issues. The main question is what action should be done?

ICZM is now fully integrated into policy process and thinking at a variety of different government levels (Gubbay, 2001) at (Allmendinger, et all, 2002). For example OECD states that have clearly split function between the different levels of government involved: national, regional, and local level.

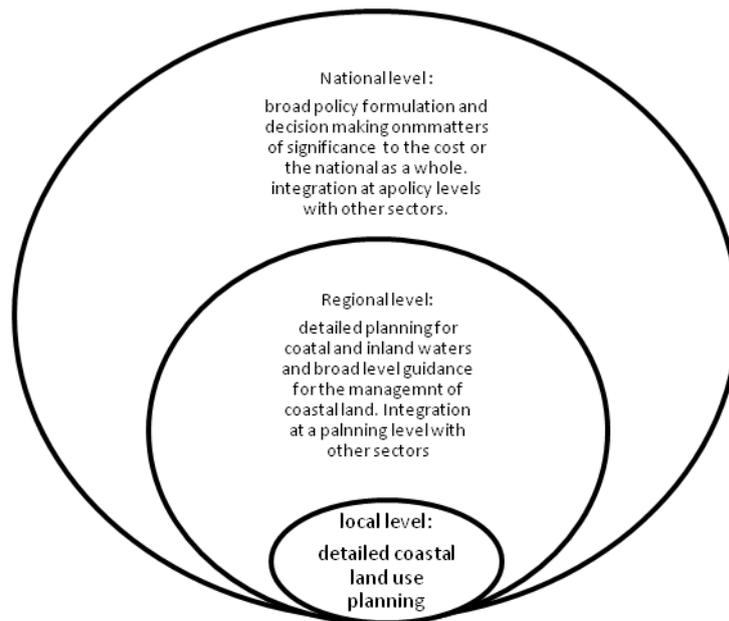


Figure 2. 1 Government levels in Coastal zone management

Source: (OECD, 1993)

In policy implementation, According to OECD (Organization for Economic Co-Operation and Development) stated that there are several elements which has influenced in how to implement of the policy and is also in coastal conservation policy, are:

1. Political will of government to address the environmental issues,
Coastal conservation will be succeed if the government able to state their policy in line with the environmental issue such as sustainable development. The will from government is expected to generate other organizations/institutions/private sectors to accommodate the environmental policy in their activities.
2. Institution capacity to Implement coastal conservation policy,
Awareness of organizations to implement coastal conservation policy is important to achieve sustainable development. There is still less awareness of organizations both public/government institutions and private sectors such as industry to implement the policy to support their activities, especially in developing country because of some misconception to the coastal management. Not only awareness in implementing coastal conservation policy but also building of institutional capacity included the ability of government organization.
3. Regulation supporting coastal conservation,
Legal mandate through some regulations that is supporting the implementation of coastal conservation policy will be useful and strengthen of it. All parties have reference to their activities regards to coastal management if there are clear and adequate regulations about that.
4. Public participation
The success of implementation of coastal conservation policy is also influenced by other actors beyond government institution.

Then, instruments for implementing coastal zone management policies as states of OECD are regulatory instruments and economic instruments. Regulatory instruments can be characterized as institutional measures (on basis of some form of legislation) aimed at directly influencing the environmental performance of polluters by regulating process or product use, by abandoning or limiting the discharge of certain pollutant, and/or by restricting activities to certain times, areas, etc., through licensing, setting of standards, zoning, etc. (OECD, 1989b:12). An economic instrument is a number of elements they have in common such as: existence of financial stimuli, possibility of voluntary action; involvement of government (related) authorities; and intention of (directly or indirectly) maintaining or improving environmental quality by applying the instruments.

The following requirements, based on Salm and Clark (1984) at (OECD, 1993) can be given for the successful implementation of a marine protected area:

1. Centralization of authority
Designating a single agency to manage the area, either the special agency or a suitable existing agency to lead an interagency programme;
2. Consultative requirements
Providing for consultation both between the lead agency and other government agency, and between the lead agency, user groups and the public;
3. Research and surveys
Empowering the lead agency to carry out or arrange for research and surveys;
4. Effectiveness of control
Enabling the lead agency to have full control over the area, either through legislation or special agreement with the owner(s); and
5. Revenue
Balancing the opportunities for the lead agency to raise its own revenue with basic financial assistance to prevent bias towards revenue activities and away from habitat protection

2.5 Instruments and Framework

This part tries to elaborate on the instrument and framework of analysis that will be used in this study. As shown in Table 2.1, there are four main elements of coastal conservation policy in ICZM.

Table 2. 1 Main elements of Coastal Conservation Policy in ICZM

| Objective | Policy problems | Instruments |
|--|------------------------------|--|
| Sustainable of coastal zone Management | Political will of government | General policies for protection of the coastal environment |
| | | Yes, if it specific mention on constitution, law, and regulation |
| | | No, if it is not mention on constitution, law, and regulation |
| | Regulations: | Current policy implementation |
| | - Boundaries | Planning zone and land use |
| | - Pollution | Regulation of pollution |
| | - Fisheries | Regulation of fisheries |
| | Public participation | Interest groups |
| | | Stakeholders involvement |
| | Institutional Capacity | Training and education |
| inter-institutional Collaboration | | |
| Financial support | | |

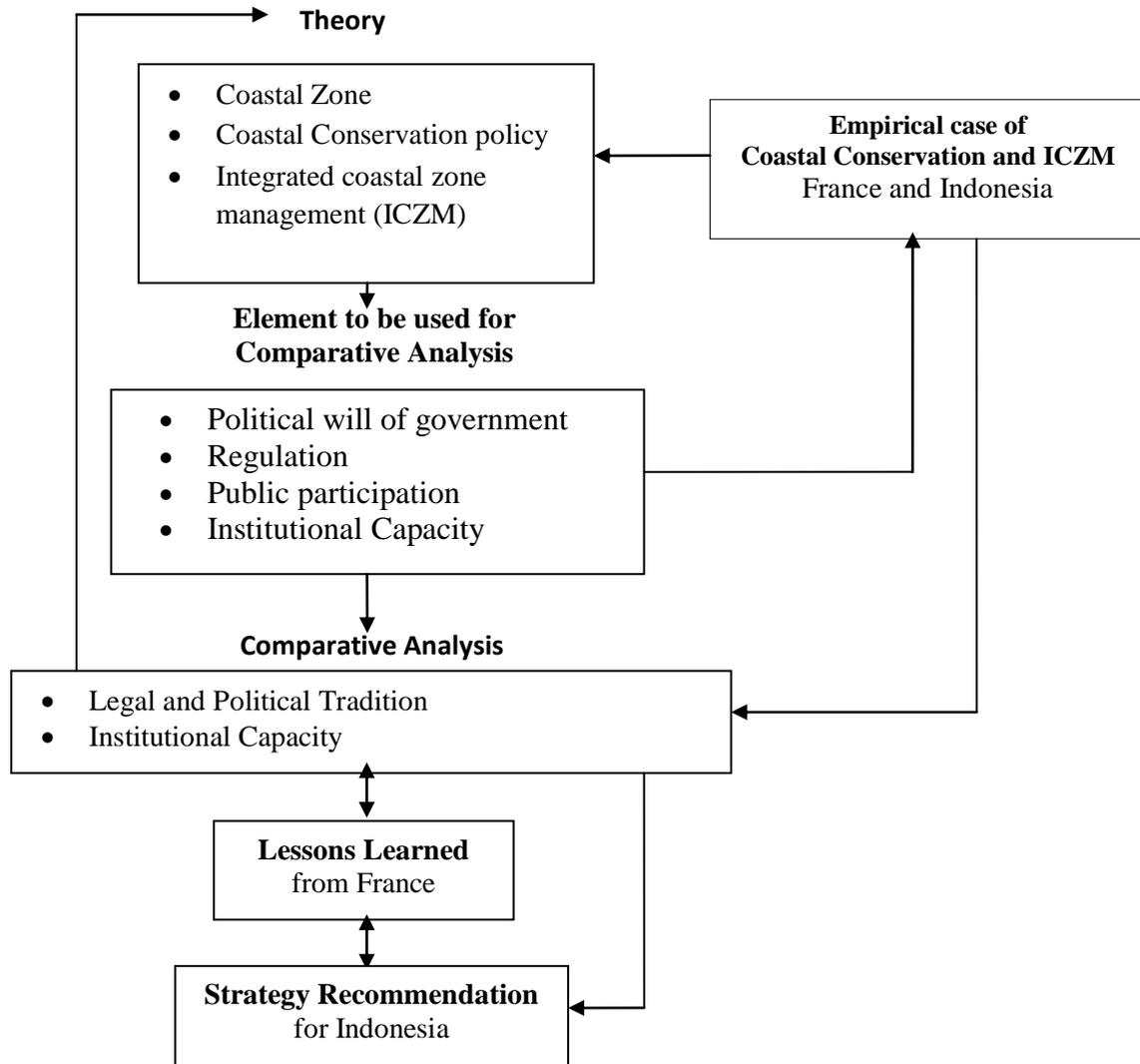
The first element is the political will of government. The degree of political will can be seen from the general policies for the protection of coastal environment. A government is said to have a political will if the general policies for the protection of the coastal environment is specifically mention in the constitution, law and regulation. If not, then the government is said not to have the necessary political will. The degree of political will of a government can be measured based on several criteria; the comprehensiveness of existing policies, law and regulations as well as adequate law enforcement. If the general policies satisfy the previous mentioned criteria, then a government is said to have a strong political will and vice versa. Later in Chapter 3 and 4, these criteria will be used as an instrument to evaluate the existence and the degree of political will of both France and Indonesia to support coastal conservation.

The second element is the regulation on boundaries, pollution and fisheries to support the existing policy implementation. The rules and regulations can be considered as adequate if there is a necessary regulation that supports the coastal conservation and ICZM and inadequate if there is less existing regulation. On the basis of this, the following Chapter 3 and 4 will try to identify whether rules and regulation in France and Indonesia are adequate enough to support the coastal conservation and ICZM.

The third element is the public participation. This includes the involvement of various interest groups and stakeholders. A strong or weak public participation in supporting the coastal conservation policy and ICZM can be identified based on how many parties involved in the decision making process of certain policies, rules and regulation. This is important to evaluate whether there is a strong public participation with regard to coastal conservation and ICZM in both France and Indonesia.

The final element is the institutional capacity to provide training and education, inter-institutional collaboration and financial support. The adequacy of the institutional capacity can be seen from the ability of the public structures and institution to identify and solve implementation problems with regard to coastal conservation and ICZM. These parameters will be used to determine whether the existing institutions in France and Indonesia have adequate or limited capacity in supporting the coastal conservation and ICZM.

Figure 2. 2 Framework of analysis



2.6 Concluding Remarks

Based on previous theoretical review, it can be concluded that coastal zone is a dynamic system; as a rich of diversity of natural resource, and consequently the variety activities, to be found within its boundaries. Conservation issue is an integral part of the overall ecosystem conservation movement, which is the integration management is needed to achieve sustainable coastal development and also part of effort for implemented integrated coastal zone management (ICZM). The implementation of coastal conservation policy is influenced by various elements. This includes the political will of government, regulation on boundaries, pollution, and fisheries, public participation as well as inter-institutional collaboration that will be thoroughly discussed in Chapter 3 and 4.

This research aims to get an insight on the coastal conservation policies in France and Indonesia. The main aspect of the policies that will be discussed in this study is the law and regulation implemented in both France and Indonesia. Through comparative analysis (Chapter 5), there are various experiences that can be learned from France and most likely suitable to be implemented in the coastal conservation management in Indonesia.

Chapter 3 *Implementation of Coastal Conservation Policy and ICZM in France*

This chapter elaborates the implementation of coastal conservation policy and integrated coastal zone management (ICZM) in France. To understand the condition of coastal conservation and ICZM in France, it is necessary to recognize the coastal zone conditions in France. Experiences from France with regard to the implementation of coastal conservation can be learned to be adjusted prior to be implemented in Indonesia. This chapter will discuss some important elements that influenced the implementation of coastal conservation policy such as political will of government to address the environmental issues, regulation supporting coastal conservation, institution capacity to implement coastal conservation policy, and public participation.

3.1 Coastal Zone in France

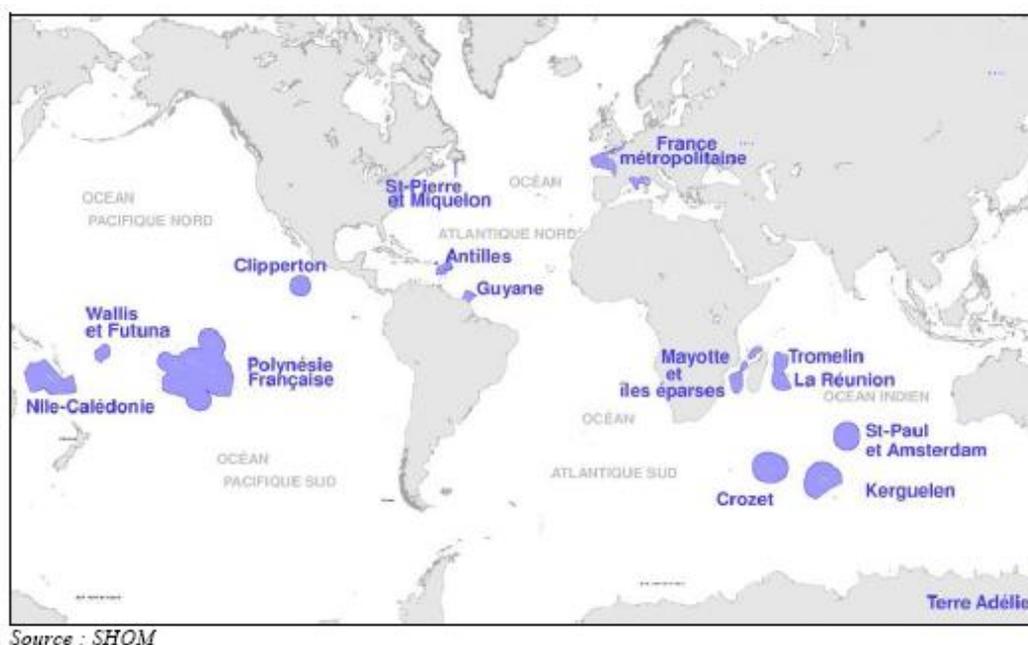
In France, there is no standard definition, or even single official coastline would adequately reflect the complexity of issues. French law gives a definition based upon coastal municipalities (art. 2 in the Coastal Protection Act of 1986). To use the best approach was undoubtedly proposed by Yvon Bonnot, who thinks that a coastal zone must be defined according to physical geography, rather than human geography. "Littoral can thus be considered as the geographical area grouping together every human activity carried out at sea, and/or along the coastline (the interface between the sea and the land), or activities that are deeply influenced on a long-term basis by the presence of the sea, and reciprocally." (Y. Bonnot, 1995)

Regulatory efforts have led to a clarification, the scope of the law "Coast" of 3 January 1986 consisting of "communes bordering the seas and oceans, ponds salty bodies of water inland greater than 1000 hectares of Commons riverine estuaries and deltas where they are located downstream from the edge of water and greet participate in economic and ecological balance shorelines" (art. 2). But this sense is, there still incomplete since it does not take into account issues beyond the shore close. Moreover, in Article I of the Act of 1986, the coastal is pragmatically defined as a geographical entity. "This lack of definition is legitimized in the integrated management of coastal areas. In such a context where it is to coordinate various stores as well as promoting exchanges between multitudes of sectors, it is not desirable that a definition is established ex ante. In identifying the actors and the stakeholders of management of coastal area, that can be delimited territory of meaning and on which to build sound integrated management strategy. The French coastline must be understood as a variable geometry.

General Information of coastal condition in France:

- 5500 km of coastline on the mainland, 1500 km overseas
- 11 million sq km of Exclusive Economic Zone, which places France at the 2nd largest in the world
- 4 seaboards (Channel-North Sea, Atlantic, Mediterranean and Overseas)
- 883 common coastal sea: 785 by the sea or ocean and 98 on the downstream estuaries across the boundary of the sea, these municipalities represent 22.250 km² or 4.05% of Metropolitan.

Figure 3. 1 Maritime of French



The French coastline is a unique, and at the same time, extremely diverse. The different seaboards its component give France a role on stage International. The fourth facade which, for ease of reference includes the coastlines of departments and overseas regions of Martinique, Guadeloupe, Guyana and Reunion contributes significantly to this wealth. The Constitution also recalls that in the departments and regions overseas, the laws and regulations of the Republic shall apply as of right, even if adjustments relating to the characteristics and constraints of these communities can be adopted.

For several centuries, the French coastal area has been inhabited by the population depends on the sea for resources and trade. For more than a hundred years, that has a coastal area into the development of tourism facilities and development. The "conquest" and enhancement of agricultural land was (and remains) the main pillar of economic development of various coastal regions. Development such as this will be achieved at the expense of landscape integration in the various sites, so that the changes of the physical depth environment and ecosystem. Aquatic ecosystems, humid zone, estuary and coastal waters are affected and become each other on the activities that are sometimes very away.

Along the 5500 km, France is in the dense coastal population and intense used. More than 50% of the coastal zone is the city, 20% are in a very compact construction, which represents more than 1,000 km of coastline. 928 coastal cities are covers 5.2 million hectares, 3.8% of national territory. This represents 10 million, a third of which live in the five major coastal cities: Marseille, Le Havre, Toulon, Nice and Brest. Needs of the military, the colonial trade, beach or deep-sea fish, and even piracy the origin in more or less glorious pasts, leaving us with the main urban centers sometimes very economic. Further inland from the coastal regions, or along major rivers, big cities such as Bordeaux, Nantes or Rouen, can develop to the maritime trade.

Coastal in French are a rich maritime history *pluriséculaire* whose legacies are consisting of both material goods (lighthouses, forts, arsenals and ports) and intangibles (world cultural traditions, skills). Long yet the coastline remained, if not marginal, at least peripheral. From the early middle Ages, the salient points of the coast were first considered as places of observation and defense against invasions from the sea became maritime heritage essentially an emblem of the French maritime power. This corresponded to the vision of the sea as invested only by the military and coastal fishermen. With the arrival of beach tourism and the development of phenomena the heliotrope, the coastline was gradually invested by the expectations of leisure and a desire for shore, sea and sea. This phenomenon, coupled with the "*maritimisation*" human activities, has greatly enhanced its attractiveness.

The identity of the coastline is changing, between an "old", which is marked by the traditional maritime activities, and a "new" issue of tourism. Its can be increasing the installation of retired from the predominantly middle and upper classes, but also the development of tertiary activities, research or industry sector.

The coastline has become an important vehicle for recreation and welfare for its residents and its visitors. Expectations of residents who are active in economic development and employment may oppose those of non-active members and tourists, concerned about maintaining the quality of the landscape and the preservation of sites, while requiring a good level of equipment and services.

The uses of land and sea coast are many. Those who practice them, whether old or new residents, landowners and tourists, fishermen or farmers, *conchyliculteurs* or practicing water sports or even just "love of the sea", have all, in one way or another, a certain legitimacy. However, antagonistic behavior can grow and generate conflicts use. The coastline is also the expectation of the whole nation and its multiple functions are not always a logical locale. Moreover, for some beaches, it is almost impossible to reason with the sole coastal issues, as these areas are in dynamic regions concerned but also the territory as a whole. These include the Mediterranean coast in its Eastern Montpellier Nice.

Land use and ownership of the coastline has changed dramatically these thirty recent years and crises have multiplied. Because of the polarization of activities and men near the shore, but of limited land resources, conflicts on the coast French have crystallized around particular problems of land use and at expense of environmental quality of coastal environments. The fact today is the following: Given the current

preferences in terms of housing (houses and second homes) the current development model is extremely consumer space for a coast whose main characteristic is to be restricted. Situations saturation is already visible and the lack of land resources is obvious. Population growth too fast in areas already saturated may exacerbate social tensions and significantly increase the pressure on the coastal environment. The space consumption of the economy and tensions residential land that induces is likely to hamper the development of productive activities.

3.2 Political will of government to address the environmental issues

In France, there are several aspects that influenced on policy direction on the environmental issue, as follow:

3.2.1 The policy of the coast in France until 2003

The foundations of the policy of coastal management have been laid in November 1973 by the report of a study group established by the Inter Ministerial Committee for Regional Development (DATAR) of 13 May 1971 and led by Michel Piquard. The report of the study group (the "Piquard") is the last reflection scale conducted in France. It was based on the principle of development in deep space coast to preserve access to many natures untouched by the sea. It proposed to introduce an operator dedicated to land preservation and development of a third of natural coastline in partnership with local authorities concerned. Law No 75-602 of 10 July 1975 created the Conservatoire de l'espace littoral and Shoreline Lake (CELRL), to acquire natural sites threatened by deterioration and disappearance and preserve them for future generations in all their diversity and richness. The instruction of 4 August 1976 on the protection and coastal development and shoreline Great Lakes identified three guidelines which are still topical today: urbanization linear edge Wednesday should be avoided; the construction must be carried back as possible to the shoreline the sea, natural areas are separate areas. The investigation also recommended banning the new transit routes to less than 2000 meters from shore. Finally, it provided for the protection of natural areas. Three years later, these principles were reaffirmed by a directive of the national development 25 August 1979, called "Ornano directive" on the protection and coastal development. She included the preservation of a coastal strip with a depth of about one hundred meters the along the shore and the general sanitation devices. Its effectiveness was real though does not apply to town planning documents to the extent that the law until 1983 of urbanism remained supreme. The Council of State denied him any regulatory, it did not apply to building permits or planning documents become the competence of local authorities. The transfer of competence related to decentralization forced to include in legislation the principles s'imposèrent then that both the state administration to local authorities this was done in two stages: Law No. 83-8 of 7 January 1983 on the division of powers between municipalities, departments, regions and the State has submitted the planning of an obligation compatibility with the provisions of national planning guidance in classifying these recent national requirements within the meaning of Article L. 111-1-1 of the Code de l'urbanisme. Then the law 3 January 1986 transcribes the directive principles while introducing a system of regulation appropriate to the establishment of local

governance of coastal areas, the initiative of a translation Geographic back to local authorities.

3.2.2 The CELRL¹

Conservatoire l'espace du littoral (CELRL) is a public institution that was established in 1975. It is the policy of land following the end of the protection of natural spaces and landscapes in the coastal beaches and lakes and can intervene in the coastal metropolis in the cantons, the foreign ministry (in Mayotte) (Bouleau, 1993), and in the bordering communes of-mouth of estuary and river deltas and lakes more than 1000 hectares (OECD, 1993). It acquires vulnerable or threatened in the land of the friendly terms, by pre-emption, or by raiding is. Donations can be made to or inherited (Stamatiou E., 2005).

After the repair work needed, he entrusts the management of the land to the communes, with the local community to ensure that the association with the management in relation to the guidelines formulated. With the help of experts, it will determine how the site should be organized and managed as a natural order to the beautiful and rich and probably defines its use, especially agriculture and leisure destination that is compatible with (UNEP, 1996). As 1 July 2004, CELRL guarantee the protection of 70-500 hectares of the 300 set, representing about 860 km from the coastal zone.

Its annual budget of € 30 M, 25 M € is a focus on the acquisition and installation site. This means that the core comes from the state. European and local communities also contribute to them. Private companies and individual patrons also provide financial contributions.

The team is relatively small CELRL hundred people, with manufacturing in the Royal Rope Rochefort, Paris and the delegation chair. Recruitments conducted mainly among civil servants. This small team of very strong: it acquires each year 2.000 to 3.000 ha, which leads to the negotiations and sign an act of acquisition per day. 150 from the coast guard, recruited by the community and local administration organizations, that about 300 young people who work are added, ensuring, along the beach, monitoring and maintenance of the site is protected by CELRL.

The originality of the Conservatoire du littoral is set to complete its mission safeguarding and enhancement of natural areas a privileged partnership with the institutions territorial local authorities, communes, inter communal, departments and regions in which prefigures some governance practiced through ICZM.

3.2.3 The Coast

Law No. 86-2 of 3 January 1986 on the protection, preservation and enhancement of Coastal 'Loi Littoral, marked a significant step towards a shared responsibility legal and operational policy of the coast with the various land contributed to its management, both by the overall vision that states that the device link geographical considerations with reference to the principles it sets up. Indeed, its objectives

¹ The conservatoire l'espace du littoral (CELRL) is a member of the World Organization for Conservation of Nature (UICN)

(protect, enhance and develop the coastline) agree with the participation of all stakeholders. Its architecture articulates a long-term vision and concerns of daily life, the consistency in an overview of logic territory at different scales, from local to regional vision and wider vision of the facade sea with its own identity, and division of roles between the different authorities depending their operational or “guarantee” of the territory common heritage of Nation Mission privileged state under Article 1 of the Urban Code.

This mission is planned with the cooperation of civil society, including associations that can build an action by relying directly on the part of directly applicable to all administrative decisions. In the area of planning is the shared responsibility that is becoming the rule provided choices that reflect the guidelines it assigns to the operators. These guidelines, seven in number, shape the evolution and development of the coastal landscape.

1. Organizing the development in depth and not along the shore.
2. Regulate the extension of urbanization should be carried out in continuity with they are either in the form of villages built into the new environment.
3. Define the near-shore areas where the density of urbanization will be a more rigorous in terms of quantity and quality as we closer to the coast.
4. Against any urbanization band 100 meters in the areas still Natural and generally avoid prejudicing the design of natural shoreline.
5. Household cuts of urbanization, i.e. Areas between zones 2 where the urban landscape should remain agricultural or simply lacked planning to maintain the readability of the relationship between land and sea are often vacation recreation, contributes to the “green screen” of the territory.
6. Protect areas or features of outstanding natural heritage or Coastal and cultural as they are identified, there are facilities that provide light and reversible with the exception of equipment needed to pursue activities traditional economic Coastal or welcome the public.
7. Allow free access to the shore establishment where necessary easements passage along the coast through private property or easements also cross-access shores stressing however that this is the vocation natural shoreline and beaches in particular.

Sectoral planning on the habitat, management of water, transport organization complete the picture but cannot ignore the principles Organizing coastal landscape that are defined above. However, to be divided these principles should properly receive some methodological note without which the operational choices may be hazardous. Carrying capacity is one of those. It means taking into account the costs of the transformation of a territory, their estimation in terms of natural hazards, fragile spaces in terms of the attendance of the public, preservation of agriculture, needs of maritime activities and the capacity of environments, such as water resources. The application of the law “locked” matured by the experience of twenty years is a real training in integrated management of coastal zone.

The management tools and planning carried out on the coast, the Scheme implementation value of the Sea (SMVM) being the only specific to the coast, show two approaches:

- Tools driven the State SMVM and guidelines of territorial development (ATD), from imposed on local planning.
- They are intended to clarify law enforcement “locked” in the field; Tools driven by local government, which government services are more or less associates.

The SMVM have been imposed by Article 57 of Law No. 83-8 of 7 January 1983 (Article supplemented by Article 18 of Law “locked”) to arbitrate between the different uses of the sea and shoreline, including the land-sea approach that characterizes. Their role should be paramount in ports since the prediction of equipment determined by the SMVM the authority to create the ports.

3.2.4 Guidelines for land development in areas with high stakes

The DTA, created by law for the management and development of the territory 4 February 1995, are local planning documents prepared by the State on its own initiative or at those regions. They are binding on local urban planning documents - patterns of consistency territoriale (SCOT) and PLU. Their goal is to set the basic guidelines regarding development and balance between development and protection, to ensure consistency between the objectives location of major facilities and preservation of natural areas, sites and landscapes, and to specify the provisions to the coast and the mountains. Their preparation, under the authority of the prefect, combines the local authorities Important. The DTA is subject to a public inquiry and are approved by State Council. On DTA prescribed seven, four related to the coast: Estuaire de la Seine, the Loire Estuary, Aire Metropolitan marseillaise, Alpes-Maritimes. That concerning the Alpes-Maritimes is already in force, and others should also come into force in the coming months.

3.2.5 Water management by the master planning and water management (SDAGE) and patterns of land use and water management (SAGE)

The SDAGE of regulatory scope set the basic guidelines for managing the water resources in six major river basins (Adour-Garonne, Artois-Picardie, Loire - Britain, the Rhine-Meuse, Rhône-Méditerranée-Corse and Seine-Normandie). They needed to public policy and administrative decisions. In the lower level and an operational sub-basin homogeneous (i.e. catchment or subassemblies major river basins) the SAGE set objectives for the use, development value and protect the quantity and quality of surface water and groundwater, aquatic ecosystems and preservation of wetlands. On the coast, they have to deal with specific issues: the link between pollution terrestrial and marine conservation of coastal wetlands. The recommendations of SDAGE Rhone-Mediterranean-Corsica seek such an area at sea to a line of bathymetric 100m. These documents are an instrument of integration between land and sea.

3.2.6 The regulatory tools “generic” to protect natural areas

Sensitive natural areas Under Law No 85-729 of 18 July 1985, as amended by the Act of 2 February 1995 (Loi Barnier), departments are responsible “to develop and implement a policy protection, management and open to the public of sensitive natural areas, woodlands or not “to preserve the quality of sites, landscapes, natural

environments and to safeguard the environment natural (in Planning Code - Art. L 142.1, L 142.13).

The law allows a fee to establish the department of sensitive natural areas (TDENS) charged on building permits for which the rate varies between 0 and 2%. This fee must be used to land acquisition, development and maintenance of natural areas owned by the General Council and participation for the acquisition, preservation and management of natural spaces by public bodies (municipalities, communities of communes).

3.2.7 Sites classified and recorded

The law of 2 May 1930 organizing the protection of natural monuments and sites whose conservation or preservation of artistic, historic, scientific, legendary or This picturesque interest. It includes 2 levels of easements:

- Sites classified assets whose value justifies a strict policy of preservation. Any changed their appearance requires prior authorization of the Minister of Environment or Prefect of the Department after consultation with the DIREN, the Architect of the Buildings of France and, more often the Départementale Sites.
- Sites included the maintenance of quality requires a degree of surveillance. The works will be subject to review by the Architect of the Buildings of France which has a simple except for demolition permit where the notice complies. Many coastal areas are protected by that device (eg some parts of the Cap de la Hague in the English Channel, Pointe du Raz in Finistere).

3.2.8 Nature reserves

Law No. 76-629 of 10 July 1976 on the protection of nature provides in its Article 16: Parts of the territory of one or more bases can be classified as reserves natural when the conservation of fauna, flora, soil, water, mineral deposits and fossils, and, generally, the natural environment is of particular importance or to be them from any artificial intervention likely to deteriorate. The classification can affect the public maritime domain and the French territorial waters. The specificity of the coastal areas may therefore be taken into account (parts of the Bay of Somme, in the archipelago of Glénans, pelvis Arcachon, for example, have been classified as nature reserves).

The Decree of 25 November 1977 (under the law of 13 July 1976) allows prefects to take orders biotope to prevent the extinction of some species. At 1 January 2004, 608 orders were taken biotope (Heritage Service of the Museum of Natural History Natural). These cover the following environments:

- Habitats Coastal and Salt: 24 arrested (4.5%);
- Non-marine waters: 122 (23.2%);
- Lands, filled and lawns: 80 (15.2%);
- Forestry: 68 (13%);
- Bogs and marshes: 114 (21.7%);
- Rocks, boulders and sand intérieurs: 71 (13.5%);
- Agricultural land and artificial landscapes: 46 (8.8%).

3.2.9 National parks and Nature parks

Law No 60-708 of 22 July 1960 on the establishment of national parks, states that "the territory of all or part of one or more municipalities can be classified by order in council state "National Park" where the conservation of fauna, flora, soil, sub-soil, of the atmosphere, water and, in general, a natural environment present a special interest and that he and important to preserve this environment against any adverse natural degradation and to remove any artificial intervention may alter the appearance, composition and evolution. The territory bounded by the order may extend to the maritime public domain (Article 1). In September 2005, there are 7 spaces classified national parks (Parc national de la Vanoise, Port-Cros, the western Pyrenees, the Cevennes, Ecrins, Mercantour and the Guadeloupe). National Park of Port-Cros, established in 1963, is currently the only national park island and marine environment. Established by a decree of 1 March 1967, the regional nature parks have been devoted legislation by the laws of 7 January and 22 July 1983. Decree No. 88-443 of 25 April 1988 their assigns an objective of protecting natural and cultural heritage. A Regional Park has no specific regulatory authority. However, in approving the charter, communities undertake to implement the specific provisions contained therein (in terms of construction, water management and waste for example). There are 44 regional nature parks (1 January 2005), including Brière, Armorique, Landes de Gascogne, in the Camargue, the Narbonnaise ... located on the coast or near immediate one.

The legislation dealing with protected areas has to be an important overhaul with the adoption of Act No. 2006-436 of 14 April 2006 on national parks, parks natural marine and regional parks. This recasting of the national parks, combined with the creating a new legal instrument specifically devoted to marine areas, will allow the creation next new parks, both in metropolitan France and overseas.

3.2.10 Concluding reflection

In brief, it can be said that France has a strong political will towards coastal conservation and ICZM. This can be seen from the comprehensiveness of the existing policies, law and regulations as well as adequate law enforcement.

3.3 Regulation supporting coastal conservation

3.3.1 Boundaries Regulation

3.3.1.1 *The public maritime domain*

In France, the soil from the area of tidal swing (foreshore, between the leaves low water and the leaves of the high seas) and the bottom and the subsoil of the sea in the waters internal and territorial waters, are subject to a legal regime derogating from private property, the maritime public domain, inalienable, indefeasible.

The management of this "public domain maritime" (DPM) is provided by the state. The DPM and all public domain is inalienable and from 1566 (Edict of Moulins), a permits organizing a special economic and social uses of the area, which historically can be shared among public maritime artificial and natural. It is the order of the navy

in August 1681 of Colbert, which codifies the principles set forth above, is still the theoretical basis of management by the State of DPM.

In France, balancing resource use has traditionally been a part of spatial planning (territorial planning and urbanism). Although this approach has generally proved quite capable of organizing land-based activities, it is clearly inappropriate for coastal/maritime zones, if only because, in the latter, a third dimension- the depth of the water column - must be taken into account. On the sea, exclusive zoning leads to de facto privatization of the public space; such a de facto situation is incompatible with the status of the sea, which a priori should remain open to all as long as public interest/safety is not at risk (Philippe Deboudt, 2008).

The limit of the natural maritime public domain (DPM) varies depending on the land boundary affected by high water outside of exceptional weather conditions, according to a principle inherited from Roman law, which obviously requires a clear demarcation on a case by case is still likely to be challenged by climate change. The DPM has not been delineated on most of the shore (only 13% of the coast has been the subject of proceedings which can be conducted at the request of public or private persons interested).

3.3.1.2 The policy of the Department of Defense in support of coastal conservation

The Department of Defense has many lands on the coast. In order to Protection of coastal heritage, the Ministry of Defense has long developed with the CELRL active collaboration. On 17 February 1993, an initial agreement has spelled the partnership. On 5 December 1994, a second convention has defined their relationship to transfer estate for a period of 10 years. Although the scope of this agreement has been limited to 19 ways, the CELRL and defense agreed to bring each year in order to consider the new way that may be offered to the public. Thus, between 1994 and 2004, 28-way were transferred to CELRL is 214 hectares. Insofar as the 1994 Convention came to an end, it was agreed determine new ways of partnership, considering the outlook for Defense Relations / CELRL under one hand, the rovisions of the Protocol signed on 9 July 2003 between the Department of Defense and Department of Ecology and Sustainable Development and the other hand, the guidelines of the interdepartmental committee of the organization and development of the territory of 14 September 2004.

The draft agreement, which should be signed during the years 2006, formalizes the guidelines adopted. Namely: Greater use of the conventions for the management of places, including alienation is not considered; Develop training activities for the benefit of Defense personnel, whether general or specific (management of NATURA 2000 sites, for example); Conduct joint operations aimed at promoting regional activities to preserve the environment. Defense is considering the change to 37-way in favor of either CELRL about 1500 hectares. The principle change for free was approved, subject that the cost of remediation pyrotechnic not be left entirely at the expense of Defense. Remediation pyrotechnic is always done in the light of the framework presented by the public in accordance with existing regulations. Except is where exceptionally a so called clean surface (50 cm depth) is sufficient.

Other public policies also require that may be assigned spaces private land is particularly true of social policy and housing, especially when they designed to allow

access to housing on the coast of those who live there, who live and do live throughout the year. Land agencies, which can pool resources on a scale sufficient to acquire land earmarked for public policy, are one way to be developed in France to do so. The CIADT, 14 September 2004 has decided that the State would study, in conjunction with local authorities, the creation of public land throughout each coastal regions that do not yet have such institutions.

Such institutions are being created in the regions of Brittany, Pays de la Loire and Poitou-Charentes on the initiative of communities with a partnership of state. The North - isno - Calais, Haute-Normandie, Basse-Normandie and PACA already have this type of structure.

3.3.2 Pollution Regulation

Land-based pollution can be defined as pollution of maritime zones caused by discharges from coastal establishments or other sources situated on land or artificial structures. The Baltic and Mediterranean Sea regions have particularly high levels of land-based marine pollution²

Despite references to land-based pollution in global instruments such as the United Nations Convention on the Law of the Sea (UNCLOS), and the 1985 UNEP Guidelines, the main management efforts have been initiated at the regional level. The UNITAR's workshops have focused on the Mediterranean Sea region which is suffering from increasing environmental pressures due to industrialization, urbanization and tourism. The main applicable legal instruments are the Barcelona Convention for the Protection of the Mediterranean Environment and the Coastal Region of the Mediterranean (Barcelona Convention, 1976, amended 1995), and the Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources and Activities (LBS Protocol, 1980, amended 1996).

The basic of constitutional for management the coastal and environment living in France is European Community's directive annex II action in its nature protection act of 1976.

3.3.2.1 Marine pollution control

Because of its geographical situation on the roads used to transport hydrocarbons, French coast is regularly affected by large oil spills: the "Torrey Canyon" (1967), the "Amoco Cadiz" (1978), the "Tanio" (1980), the "Erika" (1999) or the "Prestige" (2002). Oil spills from the Erika and Prestige have led to the adoption of several measures by European Union (Erika I, II and III). The issue of accidental or intentional spills at sea (illicit discharges, commonly called "tanks") has not yet found a completely satisfactory answer, despite the European Directive on equipment ports of the Union, adopted in September 2000 and implemented French law on 16 January 2001. The monitoring and prosecution has increased efficiency and coordination, including through the establishment of criminal courts Specialty (Le Havre, Brest and Marseille) and the establishment in the Mediterranean a zone of protection ecological (ZPE) French rectifies the lack of EEZs.

² Kiss, Alexandre Charles and Shelton, Dinah, International Environmental Law, 3rd edition, 2004.

3.3.2.2 Based pollution

French rivers carry annually on average 646 000 tones of nitrogen (in majority of nitrates) and 43 800 tones of phosphorus, according to recent models. These contributions to Sea are responsible for eutrophication, with the most significant outcomes are green tides northern Britain, but also include coastal eutrophication phytoplankton ("blooms" algal, bacteria produce toxins). Each year, more than 60.000 m³ of green algae are collected in Brittany, where more than half in the Côtes d'Armor. Trends over the past decade show a reduction of urban and industrial discharges. But a near doubling of the nitrate has been against found between 1985 and 1999. The objective under the OSPAR Convention, a 50% reduction of these nitrate inputs is fixed.

3.3.2.3 The development of new sources of pollution

Pollution by heavy metals, already known, continues to provoke situations concern, near the industrial sites (estuaries) and agricultural (wine and copper). Several types of pollutants must be a better monitoring and better control: Viruses and bacteria, including the monitoring was limited until recently to the extent of coli forms, considered as an indicator of the presence of other germs. Phytosanitaires biocides (pesticides, fungicides, herbicides) are mostly original Agricultural and carried by rivers and streams. They contaminate water to the broad and seabed. Drug residues (estrogens, antibiotics) are from urban and agriculture have effects unknown, but potentially alarming to the coastal and sea.

3.3.2.4 A progressive reorganization

The quality of coastal waters, including bathing water, is crucial to the activity of many tourist areas, coastal cities, aided by agencies of water, regions and departments have made significant efforts. Nevertheless, in many points of the coast, sewage treatment plants do not respect the "urban waste water" from 1991, particularly with regard to the treatment (tertiary treatment of nitrogen and phosphorus) of wastewater. On the Mediterranean coast, the priority is the separation of networks (water and rainwater water) to avoid pollution during storm events. The quality of bathing waters has seen a clear trend towards improvement, with rates of medical compliance of over 90%. Existing and emerging risks Densely populated area, natural pollution receptacle formed in the basins slopes of the rivers, the coast is the coexistence of business risk with residential and tourist areas. Area of very low altitude, sometimes with deltas and low very flood plains, it is finally the place of specific risks - coastal erosion and marine flooding - that climate change could worsen.

3.3.2.5 New approaches to coastal erosion

Nearly 25% of the metropolitan coast undergoes erosion (Euros, 2004). Over a long period, there are patterns throughout the century. The evolution may be rapid, with sometimes more than 4 meters per year; Narbonne was a port at the time of Narbonne Gaul, but Middle Ages Saintes-Maries-de-la-Mer were many miles from the sea Facilities come locally limit or exacerbate these trends. Postpone and often damage a little further along the sandy coasts. According to its nature, the coastline evolves differently:

- The sandy coastline retreat on half of their linear or 1150 km.

- Coastline muddy (mud flats, estuaries and salt marshes) s'enrichissent in two-thirds cases, or 370 km of coastline.
- The rocky shorelines are stable and not attacked by the sea on three quarters of their linear is 2130 km.
- Sedimentary rocks including limestone cliffs are exceptions and are often subject to erosion.

The share of natural coastline in decline is very variable on the metropolitan coast. It is weak (less than 10%) in Corsica and in Ile et Vilaine. It is against very high (above 70%) in Pas de Calais, Seine Maritime, Calvados and the Gard. If this erosion poses environmental problems, it is primarily because of economic uncertainties (lower surfaces or even disappearance of beaches) and risk goods and people that this subject has been mobilized.

3.3.2.6 Climate change could increase flooding

Climate change will increase the vulnerability of coastlines. The coastline may know phenomena of cumulative flooding when the overflowing of rivers (in especially in areas as torrential regime of the Mediterranean) is combined with storms and the rising tide to prevent the normal flow of water into the sea. In the longer term climate change could have a significant impact on the coast, mainly in Due to rising sea level. The longest series available for Brest and Marseille showed an elevation average of 1.2 mm per year for a century, but which is not due solely to the change climate. Recent evaluations provide with acceleration, by the end of the twenty-first century, a rising global average sea between 14 and 80 cm, with an average value of 44 cm (IPCC). The potential consequences are numerous. Overall, this could result in faster mobility of natural environments (down to the beaches and mangroves), which nature can adapt well. The will of man to keep these areas would be fixed very upset: the logic of precaution would be to limit construction in the immediate vicinity of shore. All media are not affected in the same way: There may be a worsening of the erosion of beaches, even the disappearance of the less steep, The marine coastal lagoons could increase, particularly in the Camargue and Languedoc-Roussillon. The salt marshes, which have a natural sedimentation would be better protected the polders, dikes which should be strengthened, The vertical growth of corals could offset the rising of the sea, in the reefs healthy. In the reef very man, a lower growth rate of corals could prevent them to follow the rising of the sea and make them take risks, given the high sensitivity of these organisms to changing environmental conditions.

3.3.2.7 The density of activities required to address the technological risks

The coastline Metropolitan SEVESO hosts 126 sites, the sites of the FOD 24. 2.1 million people live together in a coastal town with at least one site on the Seveso territory (DPPR, 2002). This category of sites is the most representative risk activities on the coast - activities localized to great majority in areas industrial oportuaires Fos, Le Havre and Dunkirk-, but also potential conflicts between existing industry and other activities.

3.3.3 Fisheries Regulation

France is currently one of the leading countries in Europe for shellfish production, harvesting more than 150,000 metric tons of the Pacific cupped oyster (*Crassostrea gigas*) and 60,000 tons of mussels (*Mytilus edulis* and *M. galloprovincialis*) each year (Figure 1) (Gouletquer, 1998). Among the rearing areas, the Charentais Sounds and Marennes-Oléron Bay rank first, with an annual production of 40,000 tons and 15,000 tons of oysters and mussels respectively (Moine, 2002).

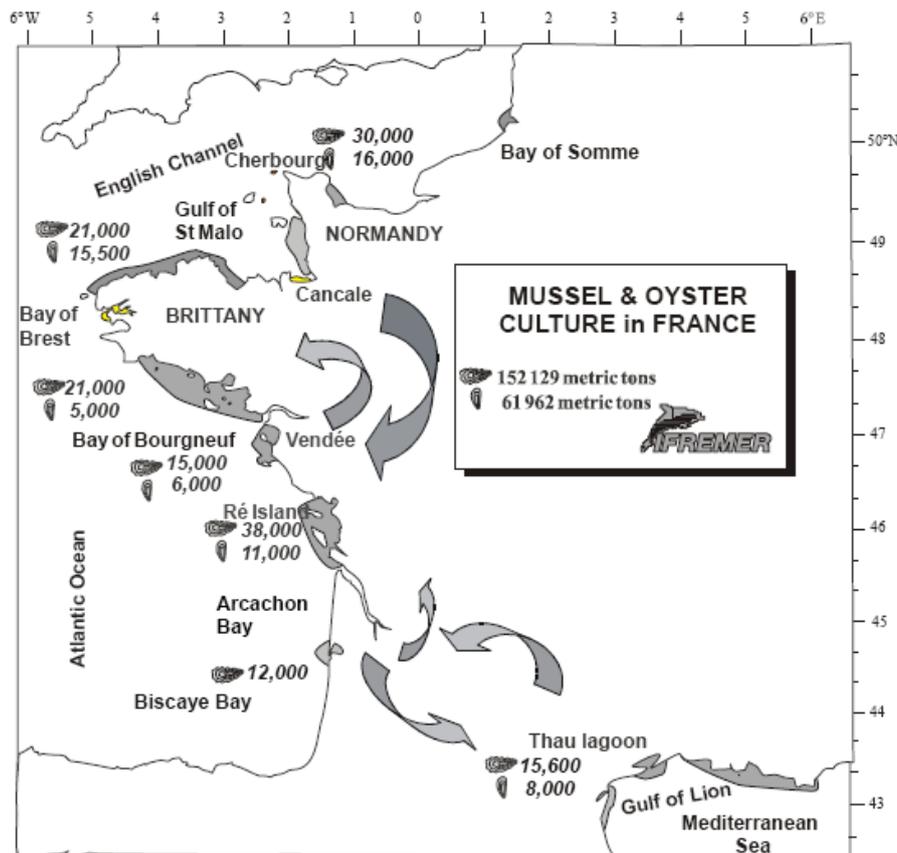


Figure 3. 2 Shellfish production in France and principal stock transfers (arrows) among French rearing areas

Source: Gouletquer, 1998

The French fisheries regulation is based on financial incentives (loans and subsidies) at national level, and licensing schemes at local level (Jacques WEBER, 1990). Since Spain and Portugal joined the European Community, each member-state has to insert Multi Annual Guidance Programmes (MAGP) within its fisheries policy. The evolution of fleet capacity in Europe led the European Commission (EC), in 1988, to oblige the member-states to return to the level of 1983. Member-states being free to choose the appropriate means for this purpose, France implemented a permit system, called "Permis de Mise en Exploitation" (PME). An investor has to withdraw more Kilowatts (hp) from the existing fleet than is required for any new vessel. The PME system preserves the existing local regulations.

3.3.3.1 Fisheries management in France

According to (Jacques WEBER, 1990) Despite the existence of historical or informal user-rights and local or regional licensing schemes, open-access is assumed to be the rule for fisheries all over Europe. Fisheries management follows basically the same principles in France and in other European countries (Tucker 1990). Differences arise from institutional and social history.

Quotas

The allocation of EC-set national quotas is a two-step process based on historical records. First, to determine the share of each of the five regions identified along the Atlantic and North Sea shores, a bargaining process takes place at the national level between state and industry representatives. And second, quotas allocated to each region are shared between fishermen belonging to Producer Organizations (PO) and others. Statistics related to the use of fish quotas are collected at the national level and controlled at the PO level. This allows for the targeting of fisheries closure, once the relevant quota has been exhausted.

Not being individualized, quotas are not transferable. Moreover, there is no direct relationship between EC-set quotas and local or national licensing schemes. The British concepts of pressure stock and pressure stock-licensing thus have no equivalent in French fisheries.

Loans and grants

National quota sharing between regions and the granting of loans or subsidies for building or modernizing fishing vessels have no direct relationship either. The latter are allocated at the regional level. Regional commissions define allocation criteria according to instructions received from the Ministry of the Sea congruent with MAGP objectives. They have to manage their budget under these constraints (Meuriot 1986, Catanzano 1988).

Loans and subsidies for boat building are granted in two allotments, one of which is not conditional. The other one depends upon EC's decision to reject or to accept an application. The latter may decrease from 22%, to 5% in a sensitive and 10% in a non sensitive area. In a study of this allocation scheme covering the 1977 to 1987 period, Catanzano (1988) shows that the self-financing part of the investment has steadily decreased from 25% in 1950, to 8% in 1987.

The main total for fleet limitation and/or renewal has been grants and loans management over the past twenty years. But how are the investments to be controlled when they are made without grants or subsidies? A brief analysis showed that the main part of the increase in terms of power was the fact of the units under 16 meters, and these units are not eligible for grants. For small fishing units, the investment was -and still is-self-sufficient, and thus, beyond control.

Markets stabilization: Producers Organizations

Producers Organizations are involved in fisheries management through quota allocation and the stabilization of ex-vessel prices. This they achieve through the setting of withdrawal prices within limits defined by common market policies. Providing they use their own resources and still respect these limits, POs are now

allowed to extend their support from species not previously agreed upon at EC level to other species of a local interest. However, POs are excluded from any direct participation in licensing schemes or grants and subsidies allocation.

Licensing schemes

The licensing schemes found in France are totally dependant from MAOP's implementation. They deal with specific resources or fishing methods, they exclude transferability, and in most cases operate on a localized basis as for the schemes instaurated: in 1973 for the scallop fishery of the Bay of Saint Brieuc, in 1972 for the Mediterranean groundfish trawl fishery, in 1983 for the fixed gear fishery of the Charentes coastline, for the crustacean fishery of the English Channel, for the mussel fishery of the eastern coastline of the Cotentin peninsula, and for the migratory fisheries (eels, elvers, salmon, etc) of all estuaries,

These schemes have all been devised to face localized problems of overcapacity and of crowding on fishing grounds. As mentioned earlier, they are dependant of national quota allocation (in contrast to U.K. pressure stock licensing schemes).

3.3.3.2 Fishing fleet management before and under MAGP

The Common Fisheries Policy has been resource based from its beginning in 1983 to 1986. When Portugal and Spain joined the Community, the problem of global overcapacity was emphasized. Since 1988, each member-state has to reduce its fleet's capacity. The introduction of a general Exploitation Allowance Permit was chose by France for achievement of the objective (Jacques WEBER, 1990).

French fishing Fleet evolution

Between 1945 and 1987, vessels and crew numbers within the French fishing fleet have been drastically reduced, while horsepower and capital invested increased considerably. Within 42 years, employment onboard fell from 57.000 to 17.600 men. While productivity per unit of power or per man increased steadily (Meuriot,1986). As an illustration, when 120 crewmen using 121 Kw could land 1000 mt in 1945, by 1970 only 68 of them using 188 Kw were needed to land the same amount of fish, while 40 crewmembers using 212 Kw did the job in 1985. This trend was maintained between 1983 and 1988: the number of vessels decreased from 11.161 to 10.361, while horsepower increased from 1.103.327 to 1.196.360 Kw, and tonnage from 212.841 Grt to 213.302 Grt.

The rate of change was not the same for all classes of fishing vessels, however, as horsepower increased more rapidly for those under 16 m than for those above. This is particularly obvious for the recent past: between 1983 and 1988, total horsepower for vessels of the former category increased by 28.000 Kw against 7.400 for the latter (Lantz et al. 1989).

Multi Annual Guidance Programmes (MAGP)

The first Multi Annual Guidance Programmes were drawn in 1986, by each member state and by Portugal and Spain, recently admitted in the European Community. The programmes established the situation of the fleet from 1983 to 1988, defined objectives of fleet capacity control for 1988. This first MAGP was indicative.

If the first MAGP, issued from EC's Decision 2098/83 and covering the period 1983-1987 was indicative, the second MAGP, was constraining: the EC's Decision

4028/86 obliges the member-states to achieve the objectives of MAGP if they want to obtain Structural Grants for their fleet renewal. The objective at the end of 1991 is to restrict the fleet capacity at its level of 1983, in KW and GRTs. The objective for France was a reduction of 3% of the global power.

Each member-state was free to define appropriate means to achieve this goal. Denmark implemented a buy back scheme, U.K. instigated a transferable licensing system, and Spain decided a replacement KW per KW and GRT per GRT. The Netherlands implemented ITQs before MAGPs and added decommissioning schemes and fishing day's limitations; France instituted a permit system, called "PME" (Exploitation Allowance Permit).

Implementation of "PME"

It may be important to recall that the Exploitation Allowance Permit is the first fleet regulation scheme implemented in France at the national level. The fleet considered in MAGP is constituted by all the fishing vessels, excluding: vessels operating only in lagoons and estuaries, transoceanic tuna purseiners, oysterculture and aquaculture vessels, vessels fishing exclusively bivalves, coral, sea urchin and sponges. A vessel is considered an "active vessel" if it has fished one or more days over the past two years. The fleet is divided in length categories: < 12m; 12-16m; 16-25m; 25-38m; >38m. (Jacques WEBER, 1990)

3.3.4 Concluding Reflection

In short, various rules and regulations have been made clear with regard to the importance of boundaries, pollution and fisheries along the French coastline. Thus, it can be said the existing rules and regulation is adequate to support the coastal conservation and ICZM in France.

3.4 Institution capacity to implement coastal conservation policy

3.4.1 Training and Education

3.4.1.1 The function of expertise and training

Managing a complex area as the coastline suppose to have a capacity expertise mobilized permanently able to perform the following functions:

- Acquisition of knowledge;
- Understanding and modeling of processes at work on the coast;
- Development of methods;
- Training policy makers and coastal managers

In the national organization, these skills are of particular institutions.

The French Institute for Research and Exploitation of the Sea (Ifremer) is a public world, which plays a major role on the coast in support of policies public (particularly on fisheries and monitoring of water quality) and professional organizations (e.g. for the development of good practice). He identified in the 2004 Integrated Coastal Zone Management as a strategic component of its activity, and devoted one of its programs. Ifremer is involved, in conjunction with several other French or foreign specialized or on coastal issues, in international programs and community related to

ICAM (Core Pointer, SPICOSA, etc.). This function of expertise necessarily relies on the observation function.

3.4.1.2 The function of observation and information

The integrated management based on several types of information such as data and indicators, which depend on the area and issues that are expressed. The data are descriptive characteristics of the environment and activities that to exercise, which are descriptions of reality, however, attached to the scales (time and space), to measurement strategies (permanent, periodic, occasional, surveillance) and to methods (sensors, filtering, integration, etc.). Data can be collected through networks (thematic or territorial), measurement campaigns, surveys, etc. Their number is virtually infinite, but can include, for the coastal data on water (quality, speed), use of space, to human activities.

The indicators are intended for evaluation or decision-making: they refer therefore to a objective (strategic or management) or an issue considered important. So that data is a priori associated with any qualitative (good, bad), an indicator refers to a standard ("Value target", for example) or an objective (value, trend) well defined. For a given project, only a finite number of indicators are needed, and also usable. A management indicator provides information directly related to the effectiveness of a measure and is normally used at this level where action is decided and implemented; however, a normalization of these indicators should facilitate their development, and where appropriate the comparison of management practices and identification of best practices.

The indicators used by the evaluation should be a consistent hierarchy: some these indicators should be produced at a given level and aggregated to levels higher and this implies a standard definition, and methods of production and aggregation standardized at the national level (for the indicators used to assess the national strategy), or even at the European level (for the indicators used at the community level). The work done by the group of experts established by the Commission Europe have produced a first list of indicators, this work should be continued at European France should participate in the Coastal Observatory. The program DEDUCE conducted under INTERREG III C, contribute to the development of a set of indicators sustainable development used to measure the effects of integrated coastal zone management. A seminar on indicators of sustainable development was held in Paris March 23 2006 under the program DEDUCE, and attended some of the winners of the call projects for a balanced development of coastal areas through integrated coastal DATAR - SG gathered Wednesday for the first time in Paris on 22 March 2006.

3.4.1.3 A hierarchy of observatories levels consistent with the national strategy

Each level strategic and management identified in the national strategy should have an observatory able to collect or aggregate its scale to the necessary data, and develop indicators for management, monitoring or evaluation. These observatories can combine the functions of observation and the information and expertise; their information should be accessible to the public, policy makers and managers, but also to responsible for assessment.

At the national level, this function should be entrusted to the Observatoire du Littoral established in 2003. L'Observatoire du Littoral³ is implemented as part of a framework agreement comprising the Ministries of environment and equipment; DIACT, the General Secretariat of the Sea and the French Institute for the Environment, Technical Operations of the Observatory. It is integrated with the Observatory of the territories controlled by the DIACT. Its tasks are to monitor the coastline, the pooling of efforts and knowledge information dissemination and to support decision support. At the regional level, observatories are being established, often insufficiently coordinated, including through regional councils and the State: to run these Projects should probably converge towards regional observatories (one per region littorale) supported by all stakeholders in the coastal region-wide. L'Observatoire de la Aquitaine coast, set up under an agreement between the State, the Regional Council d'Aquitaine, BRGM and the NFB, is a foreshadowing of what could be an observatoire.

At the local level, it will most likely need to establish the scale of each project included an observatory, which should be directly linked to the structure of governance and local management (public, GIP or other). The observatory marine Littoral of Maures⁵ is an example of what can be such an observatory at Local. All these networks will be as much as possible build on existing networks (by density, if necessary), and protocols and standardized metadata.

3.4.1.4 Networks able to pool resources and standardize the compendium of measures

The information potentially useful for coastal management are numerous, since include the terrestrial and marine environment, social data in the region concerned, and economic data related to activities that are practiced. Some of this information is already collected routinely through networks observation or measurement, established at various scales (from local network, consisting possibly a single measuring point, until global network such as network meteorological measurements) for general or specific needs, or to monitor the implementation of policies (e.g. water policy)⁴

The existence of these institutional networks is essential, including:

- To allow the pooling of resources often large and costly, both in terms of data collection, in terms of expertise or management;
- To allow the standardization of protocols and data;
- To ensure the independence of the measure and the local decision;
- Finally, to ensure continuity of data collection, long time series is often necessary to model the future.

Some data have particular importance, and are repositories. Whether to establish an inventory, develop a common vision on a perimeter or a given territory, to implement management measures, to evaluate the actions in terms of objectives, or simply to disseminate knowledge in the direction of the actors or the public, most information has a significant spatial component. So, in particular with regard to

³ <http://www.ifen.fr/littoral>

⁴ <http://littoral.aquitaine.fr/>, <http://www.observatoire-marin.com/>

geographic information that is important to develop and to provide benchmarks, i.e. organized sets of references geography. These benchmarks should cover the national coastline in spatio-temporal scales, and topics tailored to specific coastal areas.

3.4.1.5 First realization: orthophoto coverage of the coasts of France accessible free

This need had been felt particularly at the major pollution of coastal Atlantic following the 1999 sinking of the tanker Erika off the coast of Brittany, and storms of winter 1999-2000. The CIADT, 28 February 2000 and 9 July 2001 and decided to entrust the IGN achieving ortho photo coverage of the coasts of the North Sea, Channel and Atlantic, titled "Geographic Information System Inter (SIGI)"⁵ This pilot was extended to the Mediterranean by a decision of September CIADT 2004, contrary to national standards in terms of conventional geographic information; the data were made freely available to the public.

3.4.1.6 Mapping of benthic habitats

The national benthic (REBENT)⁶ aims to collect and format the data on the distribution of coastal habitats and monitoring of biodiversity and wildlife flora, in order to provide scientists, managers and the public a statement of places and coherent and to detect spatio-temporal changes. This program conducted by Ifremer and co-financed by several partners should be extended to all French coasts.

3.4.1.7 Map sensitivity of coastal

Following the spill of the Erika in 1999, the need for better knowledge coastal environments is evident. At a CIADT and under the auspices of the Conservatoire Botanique National de Brest, was developed from 2000 to 2003 an atlas of the flora and vegetation of coastal land to serve a tool for decision support (diagnostics, cards) as part of plans against pollution marines (MARPOL), but also in the much broader context of the management of coast; this environmental sensitivity atlas POLMAR describes the heritage of the two plant regions of Brittany and Pays de la Loire (species and habitats). This atlas is a basic tool for coastal management, and should be extended to all French coasts.

3.4.1.8 A specific geographical reference to the coast and accessible to all is essential

The need to pool ideas on this subject, and expand operations in this area is become increasingly clear. As a result of preliminary work done by the French Institute of Recherche pour l'Exploitation de la Mer (IFREMER) and the Hydrographic Service and Oceanography la Marine (SHOM), the Conseil National de l'Information Géographique (CNIG) has gathered between 2000 and 2002 a special commission on matters of geographic information littorale. Based on the work of this committee, the National Information Geographic concluded the need to develop a geographical reference coastline (GLR) layer of information to form the basis of any information system coastline, designed as a specialization on the coast of the reference scale (RGE). In line with this recommendation, the Inter ministerial Committee of the Sea 2003 asked the National Geographic Institute (IGN, French agency benchmark

⁵ <http://siglittoral.test.application.equipement.gouv.fr/>

⁶ <http://www.rebent.org/index.php>

mapping land), and the Hydrographic and Oceanographic Service of the Navy (SHOM, French body of reference for mapping marine) to join together to develop layer topography continuous land-sea "of the GLR and the project Litto3D" encouraged by the Committee Inter Sea in 2003 and supported by the CIADT September 2004 has emerged, and should be deployed on all the French coast in the years to come.

An Inter ministerial mission is to propose a reorganization of shares field of geographic information. The multiplicity of actors, needs and data producers on the coast makes very difficult coordinated vision of the issues of observation; it was clear that despite major investments, the dispersion and heterogeneity of information collected and compartmentalization of responsibilities and sectoral approaches to reduce the effectiveness of approaches companies.

The CIADT, 14 September 2004 has decided to lead a mission to:

- Identify the needs of geographic data, economic, social and ecological;
- Identify the operators and prime contractors;
- Prioritization and clarify the respective roles of state and local;
- Evaluate the budgets needed to achieve the sustainability of a collection, analysis and dissemination.

The mission will submit its proposals to the first half of 2006.

Integration with broader reflection of the rule on the administration Service du Développement de l'Administration Electronique (SDAE, who succeeded ADAE) has identified the use of geographical information as a strategic area for its action. Among the projects she has initiated GIS; the geo portal was officially launched in September at a steering committee led by the SDAE in association with the National Geographic Information (CNIG). The "geo portal will enable the articulation of local portals, thematic and national to simplify access to data and services in areas such as urban planning, agriculture, defense. This tool will allow public access in a unified manner to all shared data sets. This project will contribute directly to the satisfaction of needs, in terms of information Geographic littorale. Also open to the general public, the geo portal will contribute to the legibility of territory, enabling citizens to access the heritage of public geographic data.

A pilot site this geo portal is planned for mid-2006. These steps will also France to prepare the implementation of the European directive "inspiration" in 2007, organizing the exchange of spatial data related to the environment.

3.4.1.9 Coastal operational oceanography

The ability to observe, analyze and forecast the evolution of physical parameters and biological coastal water bodies is essential for managing coastal activities and identify scenarios for sustainable development. This requires the establishment of operational system based on physical models and biological assimilating observational data in situ or remote sensing. The Interdepartmental Committee on Wednesday, 29 April 2003 stated the willingness of France to support operational oceanography projects, in addition, the project led by PREVIMER IFREMER and funded including Contrat de Plan État-Région Bretagne and launched in 2005 be an

operational demonstrator and prefigures an operational system covering national coastline.

3.4.2 Inter-Institutional Collaboration

The variety of situations, issues and interests justify the autonomy of project management integrated, but the partial similarities and complexity justify some sharing experiences. This pool must remain flexible, on the basis of shared interest, which may be through networks of integrated management.

In France, the management of coastal is held by The State. The state also acts through the agency of various administrative services of different Ministries. They are, Ministry of Public Works, Ministry of Environment, Ministry of Agriculture, Ministry of Sea, and Ministry of Defense. In implementation level, CELRL is affiliated to Ministry of Environment. The *CELRL* is presently the most important estate owner in France, after the State itself. The *CELRL* has both administrative and financial autonomy, both of which are guaranteed by state subvention (to the tune of 100 million FRF a year) and by private donors who may be firms or individuals. Although a guarantor of the smooth functioning of the conservation of its estates, the *CELRL* does not carry out their day-to-day running. This is done by the local authorities or by specialized agencies (nature conservation groups, public agencies empowered to do this, and mixed liability groups). The *CELRL* is a body specialized in the conservation of natural coastal sites (Meur-Ferec, 1997). The form of inter institutional collaboration in coastal management as follow:

3.4.2.1 Territorial or geographical networks

These networks can be built on land bases (for example, the scale of a region), based on common issues (such as those encountered at the level of a façade maritime or common situation: estuaries, deltas, islands), or on common goals (knowledge sharing, dissemination of good practices, etc.). Nothing should prevent this project is linked to several TPNs complementary. Finally, local projects or regional powers should unite in the trans-nationals.

The network of projects selected following the call for projects DATAR-SG Sea in 2005 will be the first of these networks. The DATAR and the General Secretariat of the Sea have developed a device monitoring of these projects, which will among other vocations to share experiences. The architecture of these networks may include multiple levels, which should in particular be the case for territorial networks: the development of networks at the regional level is considered in several regions. Through its Charter of coastal areas, the Region Bretagne plans particular link in a network the various local coastal management.

3.4.2.2 Networks transthématiques

The integration also requires cooperation between scientists in networks thematic or regional, not only bringing together representatives of all disciplines, but also through exchanges between these networks. The coordination action ENCORLA launched in early 2006 foreshadows such cooperation, and aims to establish a “network of networks” which includes over a dozen national networks, specializing in issues important to coastal zone management (planning, pollution, climate change, biodiversity, monitoring, engineering, etc.). France is represented by the

French Network of Coastal Research (RFRC), which includes more than 25 players from very diverse backgrounds (universities, associations, government services, companies).

3.4.3 Financial support

3.4.3.1 Public funding on the coast

The report of Senator Philippe Marini (6 March 1998) on Evaluation of the policy maritime and coastal France “was the first work that has been given the Office *parlementaire d'évaluation des politiques publiques*”. There is no latest balance sheet funding allocated to the policy of the coastline and the sea. The report included estimated expenditure public in the maritime world with 3 billion per year and 23 billion Euros over the period 1991-1997. It particularly concerns the construction and military shipbuilding, fishing and Merchant Marine, the port sector representative, however, an annual expenditure of 150 million.

This report and other sectoral studies highlight several features public funding on the coast and coastal sea:

- Variables to support various economic activities, with a strong presence the state in some sectors (fishing, ports, shipping) and a virtual absence in others (tourism);
- Non-individual income of the Sea (concession rights and occupation temporary public marine aggregates extraction, general tax on pollution ...) in the state budget;
- Resources of local coastal generally higher than the national average (the bases of local taxes (*taxe d'habitation*, land and buildings built, tax), especially for small municipalities and tourist areas that have an indirect tax (tax, levy on the turnover of the casinos) and resources Annexes (products *domaniaux*, revenue) that can partially compensate constraints of seasonality and overcapitalization it induced);
- Finance sector and very rarely grouped in a policy Multi coast. A notable example is against the development strategy Sustainable Coastal Languedoc-Roussillon, who was accompanied by a program Action 306.5 million over the period 2003-2006. To implement, CIADT the 13 December 2002 decided to set up a fund management Integrated Coastal (FGIL), with 25.1 million Euros over 2004-2006, which additional appropriations of the State-region plan (CPER) and document Single Programming Document (SPD). Another example is the concerted mechanism put implemented by the State, the Nord-Pas-de-Calais and the two departments (Coastal funds) in which local authorities have clearly marked a taking financial responsibility active, even dominant.

With the exception of a minimum funding of projects selected in the call for projects 2005, no specific mechanism of integrated management has so far been established. The lack of financial planning can lead to opportunistic conduct of projects, without any real coherence final.

In current thinking, this should be sought partly locally (taxes, contributions, fees, subsidies), be provided in the next generation of contracts State-Region project, and in the European Structural Funds.

In a space constrained and highly coveted, the market can not suffice to ensure the allocation of space according to needs and the collective interest. This is also protection of natural areas or agricultural areas, the minimum reserve land for social housing policies.

3.4.3.2 The action of the Conservatoire du littoral

The agency states that land of the financial and regulatory (right preemption, expropriation) to put in the public spaces of conservation and allocation for public use would have been nearly impossible otherwise. The CIADT, 14 September 2004 decided to explore ways to strengthen the Conservatory, and strengthen cooperation between the Conservatory and local authorities to which is most often entrusted the management of acquired. Furthermore, according to the report The Pensec July 2001, the area of intervention Conservatoire du littoral was extended by Act 2005-157 of 23 February 2005 in the public domain sea. The extension of the intervention of the Conservatory is expressly placed under the ICAM: "To promote a more integrated management of coastal areas, the Conservatoire de l'espace coastal and lake shores can also carry out its missions in the maritime public domain it is assigned or entrusted "(Environment Code, art L3221).

3.4.4 Concluding reflection

In brief, it can be said that the existing institutions is adequate to support the implementation of coastal conservation and ICZM in France. This can be seen from the ability of the public structure and institutions to provide training and education as well as to solve implementation problems with regard to coastal conservation and ICZM practice.

3.5 Public participation

3.5.1 Public Participation in Coastal Conservation

Besides the government, integrated coastal zone management (ICZM) in France is involving several stakeholders. Interregional cooperation between various actors (local actors, experts, agencies research, etc.) can facilitate the sharing of experiences and exchange of good practices in integrated coastal zone management. Core Pointer The program, launched in November 2004 under INTERREG III B and involves actors from several European countries (including Ireland, UK, France, Belgium and the Netherlands) is a precursor of such networks. France is represented by the Center of Law and Economics of the Mer de l'Université de Bretagne Occidentale and Ifremer.

An integrated coastal ultimately based on sectoral actions and are naturally integrated into sectoral policies whose perimeter exceeds necessarily the only coast, for example when setting a national regulatory framework, or where the coast does provides a contribution to a broader sector policy (eg transport, energy , etc.) Much of national sectoral or cross (as environmental) policy is defined at Community level. The development of a genuine policy of national coastline based on the approach to integrated coastal zone management requires the alignment of these sectoral

policies which must be adapted to their principles and their content to the requirements of integration. This need for adaptation may include:

- Identification of the coastline as an area of application of rules and standards particular;
- Amendment of regulations on land or sea to adapt to the specificities of coastline, or new modalities of implementation;
- The choice of decision-making consistent with the pattern of governance chosen (this applies particularly in France, the level of decentralized decisions administrative);
- The integration of sectoral policies, land and sea, where they are not the same institutional and regulatory framework;
- The establishment of mechanisms for dialogue adapted to the mode of governance specific to the Integrated Management (or as appropriate for the adaptation of existing coastline);
- Integration in a single process of planning or evaluation environment, where the complexity own warrants to the coast.

The national strategy includes three levels; two of these levels are important particular kind of administrative decision:

- The national level, of course, since this is where policy is developed sectoral (and programs) and the regulations;
- The regional level and / or interregional;
- The local level, since it is the level of management, which is close or are taken decisions (plans and drawings, permits, etc.).

Administrative decisions should, whenever possible, be devolved to local level. This is already the case for many of them, while others have been recently de concentrated.

3.5.2 Concluding reflection

France has a strong public participation in supporting the implementation its coastal conservation and ICZM. This is obvious from the involvement of various interest groups and stakeholders in the decision making process of certain policies, rules and regulation at the national and local level.

Chapter 4 *Implementation of Coastal Conservation Policy and ICZM in Indonesia*

This chapter depicts the implementation of coastal conservation policy and integrated coastal zone management (ICZM) and describes the coastal zone conditions in Indonesia. This chapter also will discuss some important elements which have influenced on coastal conservation policy implementation, such as: Political will of government to address the environmental issues, Regulation supporting coastal conservation, Institution strengthens to implement coastal conservation policy, and Public participation.

4.1 Coastal Zone in Indonesia

Coastal areas, where the land is met with the sea and fresh water met salt water. This region is the ecological system in the most productive and diverse and has a high complexity. This zone is as a buffer and protective filter between land and sea.

As mention on chapter 2, the definition of coastal zones that is used in Indonesia is the meeting region between land and sea. The coastal area includes the land, both dry and submerged water that is still influenced by the sea such as tidal, sea breeze, and salt water infiltration. Meanwhile, the sea region includes the coastal sea which is still influenced by the natural process that occurred in the area of land such as sedimentation and flow of fresh water, and the caused by human activities on land such as deforestation and pollution (Soegiarto, 1976).

Based on the National Meetings of Marine Resources Evaluation and Planning (MREP) in August at Manado, the definition of coastal zones is agreed to be the transition area between land and sea in which to the land covering all or part of the land of region which borders directly with a coastline, to the sea and includes 12 miles far of line beach at the lowest ebb.

The coastline is an area which has experienced relatively frequent physical changes, accretion as well as abrasion. In Indonesia these changes may be caused by natural as well as human factors (Dahuri. R, 1996). The natural factors include wave, sedimentation, coast morphology, tidal flats, eutectics, tectonics, volcanism activities, tsunami, chemical processing, etc., while the human factors comprise waste disposal, brackish-water ponds, salt processing, etc. Since both the natural and human factors may bring about serious problems for the coastal area the management of coastal resources deserves our special attention (Dietriech G. Bengen, 2002)

Figure 4. 1 Indonesian Map



Source: Cultural and Tourism Board, 2009

The annual weather of Indonesia is characterized by two seasons, wet and dry, which are separated by transition period. The dry seasons usually occurred from June to September, and influenced by the Australian continental air masses. The wet season occurred from December to March, influenced by Pacific Ocean and Asian continent air masses. During these seasons, winds are steady and light to moderate. The transition periods occurred from April to May and from October to November, usually marked by unsteady wind.

The Indonesian seas experienced the monsoonal weather. Northeast monsoon is characterized by high pressure over Asia and low pressure over Australia, and it is happened during the wet season. Southeast monsoon occurred at some months during dry season, characterized by high pressure over Australia and low pressure over Asia.

The range of marine ecosystems in Indonesia is extremely varied, especially the coastal ecosystems. These ecosystems support a huge collection of species. Indonesia is home to the most extensive mangrove forests, sea grass beds and spectacular coral reefs in Asia.

In article 33 paragraphs 3 of the Indonesian Constitution of 1945, which is the basis for the management and utilization of Indonesian natural resources, the following has been stipulated: Land and water, and the natural resources contained therein, shall be controlled by the state and utilized for the greatest feasible prosperity of the people.

Conceptually urgency of coastal and ocean zone in Indonesia was based on three main reasons (Kusumastanto, 1998), namely: First, the physical fact that Indonesia is a country of the world's largest archipelago consisting of 17,508 pieces of small islands, with a coastline along the 81,000 km, the longest in the world after Canada.

In addition, most of the Indonesian territorial sea is about 5.8 million km² or 75% of the total area of Indonesia. With natural conditions such as the above conditions, coastal areas and oceans as part of the integral dimension of the island nation, was wealth of natural resources with a large and diverse, both natural resources that can be restored (such as fishery resources, mangrove forests, sea grass and coral reef) and resources that cannot recover and services coastal environment.

Second, with the increasing development activities and amount of population will reach an estimated 220 million people in 2005, and supported by the fact of diminishing of womb of natural resources in the area of land (upland), the oceans and coastal areas will become the center of economic growth as well as new becoming object of hope for the sustainability of Indonesia national development in the future.

Third, is the concentration of a shift in global economic activity, from axis European-Atlantic into Africa, Asia-axis, and Changes in concentration to be sure this will bring consequences that are not light for coastal and sea areas of Indonesia.

Table 4. 1 Coastal and Marine Ecosystem in Indonesia

| Coastal statistics | Indonesia |
|--|------------------------------|
| Length of coastline | 95,181 Km |
| Percent of population within 100 km of the coast | 96% |
| Area of continental shelf | 1,847,707 (km ²) |
| Territorial sea (up to 12 nautical miles) | 3,205,695 (km ²) |
| Claimed Exclusive Economic Zone | 2,914,978 (km ²) |

Source: Earth Trends, 2003

4.2 Political will of government to address the environmental issues

4.2.1 Political will

Political will of government is one of the important aspects in creating sustainable coastal management in Indonesia, because government has power to make policy and regulation and also goals to achieving the sustainable coastal management. Integrated coastal resources management will be the existence of sustainability in the use of coastal resources. As the area that was used for the various sectors of development, coastal have the complexity of issues, problems, opportunities and challenges. There is some legal basis for coastal areas, namely:

1. Law No. 5 of 1990, Conservation of Natural Resources and Ecosystem Act
2. Law No. 24 of 1992, Spatial Planning Act
3. Law No. 23 of 1997, Environmental Management Act
4. Law 22 of 1999, on Local Government Act
5. Government Regulation No. 69 of 1996, the implementation of the rights and obligations, and The Forms of Role of Society in spatial planning act
6. Presidential Decree No. 32 of 1990, the Management of Protected Area
7. Ministerial of Home Affairs Decree No. 8 of 1998, the Implementation of Local Spatial Planning Act
8. Law No. 27 of 2007, Management of Coastal area and Small Island Act
9. Many of the relevant Local Rules

Revolving of a reform era with the establishment of the Department of Fisheries and Marine exploration in The Government of President Abdurrahman Wahid, who later changed its name to the Department of Marine and Fisheries, was considered a new phase for the Indonesian people in managing and utilizing the potential resources of the sea so much more serious about the prosperity of the nation.

Since the establishment of the Department of Marine and Fisheries, has been a new breakthrough in marine policy and fisheries issued, in order to become a foundation of law in an effort to overcome various problems of development. One is the birth of Law and Management of Coastal Region and Small-Island (UU-PWP3K) on 26 June 2007.

UU-PWP3K expected to be the best solution at the same time can overcome the various problems associated with the utilization and management of coastal, marine and small islands in Indonesia, which is less coordinated and less is better, so there has been degradation, pollution, sedimentation, over exploitation, conflict seizure of natural resources and other problems that reduce the quality of coastal and marine environment and its small islands.

Coastal waters are an integral part of the coastal region is a transition area between land and ocean ecosystems, where the biophysics limits of coastal areas to the land is still affected by a variety of ocean activities, such as sea water intrusion, tidal, wind and sea. To the sea while still influenced by the land activities such as river flow, sedimentation due to deforestation, pollution of waste from agricultural activities, and other industries. Coastal is so closely associated with the river system which is the land ecosystem (up land) to the sea ecosystem.

The boundaries of the coastal line is only a delusion, because depending on the character biophysics of a region, so that each region will be very different, because the boundaries can enter coastal up to the upstream where the sea is still influencing the activity, as well as coastal limit will vary far to the high seas where many activities are still influenced land either naturally or by activity anthropogenic carried by the flow of rivers (Latuconsina, 2008).

Therefore, in the management of coastal should be the 3 principles of integration (Dahuri. R, 1996); First principle, the integration between land and sea ecosystems, which must consider the impact of various biophysics socio-economic and related ecosystems between land and sea, as it is one ecological, cannot be separated. This means that the threat of damage to the ecosystem and land will be implicated to negative ecosystem of the oceans, as well as vice versa.

Second principles, the integration between sectors and stakeholders, as they share the sector related to the management of coastal cannot walk alone in their activities, especially coastal waters is the center of and activities of various sectors related to land and sea, services such as sea transportation, industry, shipyard, fishery, mining, tourism, forestry, agriculture, industry and manufacturing in the mainland. So that is required cooperation and coordination to avoid arrogances each sector in implementing the development program. In addition, related stakeholders such as government, private sector, academia, NGOs and communities need to accommodate together in determining policy related to the management of coastal, marine and small islands to the equal perception.

And third principles, the integration between the level of government, both central and local levels, where there must be in the same way of communication and harmonious cooperation between the level of government, so that the error does not occur and the accuracy in the planning and various implementation development programs. (Dahuri. R, 1996)

4.2.2 Concluding reflection

Indonesia has the political will for coastal conservation management. However, the current political will is not as strong as France. Although the general policies for the protection of the coastal environment is specifically mention in the constitution, law and regulation, the law enforcement still remains a major problem. A strong political will is necessary to ensure the law enforcement of the relevant policies with regard to the coastal conservation management in Indonesia.

4.3 Regulation supporting coastal conservation

4.3.1 Boundaries Regulation

In the management of natural resources, such as coastal areas and oceans, the first step that must be done by the planners and authorities' decision is determining boundaries of the region that will be managed as a unit of management. With knowing the boundaries of a coastal and ocean region as a management, the components along with all the functional interaction (such as the flow of materials and energy) between components in the unit (system) management and the inter-region management unit with other areas of management can well be known. Knowledge about the components and functional interactions internally and externally is the basis for the planning and management of development resources coastal areas and the sea development.

Nowadays, there are so many shifting land uses, for example from agricultural land into industrial land, property, offices, and others. Sometimes, the policy shifting is without considering ecological effects, but only considers short-term economic benefits. Similarly, that occur in coastal areas, many occur shifting land and coastal protected area even though the land into residential, industrial, ports, fishing pond, and tourism.

The issue of jurisdictional boundaries is unique to Indonesia (J. Alder, 1994). The Birth of Law No.26 Year 2007 on the Management of Coastal Areas and Small Island-Island (UU-PWP3K) should be positive appreciation, because this signifies the good intention of all parties, especially the legislative and executive attention to coastal areas and small islands as that excellent potential for this marginalized. Law-PWP3K expected to be a legal umbrella for all stakeholders who use the waters of coastal areas and small islands to avoid the conflicts that linger.

It's interesting that the law-this is PWP3K; will be the Rights of The Coastal (HP3) in all provinces and districts of the city in Indonesia that has the potential of sea, and can be given to individuals, agencies or business communities, which include undertaking HP3 top the sea and water surface column up to the seabed within the sustainability of ecosystem.

The Rights of Coastal (HP3) is a breakthrough new and very important in the field of coastal resources management in Indonesia, and will begin to apply after each area has been completed to spatial and coastal sea with clearly accommodate all relevant sectors, to avoid and minimize overlapping of coastal conflict. The exception in the efforts of HP3 later should not be given to the conservation area, preserve the fishery, ports, beaches and general flow of sea.

In addition, it should be careful in the utilization, because the waters of coastal areas with very different land, both from the aspect biophysics-chemical and socio-economic development. The region's which are rich of biological diversity and biological resources are susceptible to external factors such as excessive exploitation pressure, because it will cause over exploitation. While the physical area of coastal and its natural resources is vulnerable to human activities that damage, such as destructive fishing, coral mining and sand, which will cause degradation and decreasing quality of the coastal environment. While the chemical area is also vulnerable to the danger of pollution, such as the oil spill from ship-out waste and hazardous chemicals that contain heavy metals from various human activities on the mainland, because it can provide a great impact on the declining quality of coastal waters.

Aspects of socio-economic, coastal waters are very vulnerable space utilization conflict between different sectors and stakeholders concerned. Moreover, the future there will be a very fundamental change to the status of coastal waters and its natural resources, which can be used by everyone (open access) because the property (common property resources), but with the HP3 will change status to become private property (private property resources), although in the limit of the region and time, because the rights of society in general form of access rights and the rights will be limited even lost.

However, the development and management of coastal areas in Indonesia are not only the responsibility of central government authority, but has to be the local government with the Law. 22 of 1999 which gives authority to the regions in managing coastal and marine far as 12 miles to the province and 1/3 for the district (Law No. 22 of 1999).

Without the regulation and management of coastal areas and ocean in an integrated, it will give a negative excess area for the sustainability of coastal and marine waters and its natural resources in times to come.

4.3.2 Pollution Regulation

Marine pollution is the inclusion or inclusion of living creatures, substances, energy, and/or other components to the marine environment by human activities so that quality decreased to a level that does not cause the sea environment in accordance with standard quality and / or function (DKP RI, 2002).

Pollution problems caused by this human activity such as land clearing for agriculture, cities and industrial development, logging and mining in the catchment area. Land use changing in upstream is as part of the agricultural activities also has been increased agricultural waste both solid and liquid into the coastal and the sea through streams and rivers.

Development of cities and industry is a source of sediment pollution for coastal and the sea. Rapid development of the settlement and the city has increased the amount of waste both solid and liquid which is a source of pollution of coastal and marine controlled difficult. Mining and industrial sectors that generate chemical waste (in the form of cyanide, lead, nickel, chromium, and others), which removed a large amount of river flow to potential contaminate coastal and the sea, especially that of cyanide, the poison is very dangerous.

Physical Habitat damage, Physical damage to coastal habitats and sea areas has resulted in a decrease in the quality of ecosystems. This occurred in the mangrove ecosystem, coral reefs, and seaweed, or the yet. Most of the damage to the habitat in the coastal areas is due to human activities such as the conversion of mangrove forests for the purposes of settlement, infrastructure development, and fishing pond.

Indonesia has a tropical mangrove forest reserve night around the world with a 3.8 million ha or about 30 - 40% of all the world's mangrove forests, mangrove forests in Indonesia concentrated in Irian Jaya and Maluku (71%), Sumatra (16%), Kalimantan (9%) and South (2.5%). However, the result of human activity, in the year 1970 - 1980, Australia wide mangrove forest is reduced to about 700,000 ha of another land (Nugroho et al 2001).

Other ecosystems that are severe enough damage in Indonesia are the coral reef ecosystem. From various research results that describe the location of 24 coral reefs in the Indonesia, 60% are in very good condition, 22% good, 33.5% and 39% are in a state of broken (Suharsono Sukarno, in 1992 Dahuri et al 2001). According to the Environment Ministry (1993) that 14% coral reef ecosystems in Indonesia has reached worrying levels, 46% were damaged, 33% in good condition, and 7% in very good condition.

There are several factors that cause damage to coral reefs include: (1) coral mining for building materials, roads, and decoration, (2) fishing using explosives, poisons, equipment and catch a fish, (3) water pollution by industrial waste, agriculture and households, (4) precipitation and increased water turbidity due to soil erosion on land, digging and mining, (5) over-exploitation of reef fishery resources.

However, the ecosystems in particular are susceptible to environmental degradation caused by human activity. Some human activities that can be destroyed the ecosystem is yet (1) dredging and flexing for residential seafront development, ports, industry and navigation channel, (2) of the metal industry, especially heavy metals, and organic chlorine compound, organic waste disposal, pollution by waste industry, agriculture, and oil (Bengen, 2002).

The basis of constitutional for the management of the environment is to be found in Article 33, paragraph 3, of the Indonesian constitution of 1945 (UUD 1945) which states that: Land and water and the natural resources therein shall be controlled by the State and shall be utilized for the greatest benefit (welfare) of the people.

The law and regulation that government made for protecting the environment and management is written in Law No. 23 of 1997 about Environmental Management Act

(EMA). This is to be umbrella type of law for all issues and aspect in environmental management, and to be a philosophy for sustainable development.

The main basic provisions contained in EMA 1997 are the following:

1. The right to a good and healthy living environment. Article 5 provides that:
 - (a) Every person has the right to a good and healthy living environment.
 - (b) Every person has the right to get information about environmental related to role of environmental management
 - (c) Every person has the right to role on environmental management according to law and regulation
2. The authority of environmental management by government, central and local government. Articles 8-13
3. Conservation and preservation of environment. Articles 14-17
4. Polluter pays principle. Paragraphs 1 and 2 of Article 34 contain provisions based on the principle that the polluter must pay. Article 41 of EMA 1997 contains a provision concerning the strict liability principle. It states that: in certain activities pertaining to specific kinds of resources, strict liability rests on those causing the damage and/or pollution of the living environment at the time of the occurrence of the damage and/or pollution, which shall be stipulated in relevant legislation.

Article 15 states that every plan which is considered likely to have a significant impact on the environment must be accompanied by an analysis of environmental impact, carried out according to government regulations. The elucidation of this article reads as follows:

In principle, development projects and activities produce impact on the living environment. Early planning of any development effort or activity must include a consideration of its major impact on the living environment, both physical and non-physical, including socio-cultural, so that an assessment can be made as to whether an environmental impact analysis should be carried out. This analysis will indicate more precisely the negative and positive impact of a particular activity so that steps may be prepared as early as possible in order to abate its negative impact and to develop its positive impact.

Major impacts to be considered include, among others:

- (a) the total number of people affected;
- (b) the size of the area affected;
- (c) the length of time during which the impact will persist;
- (d) the intensity of the impact;
- (e) the number of other environmental components affected;
- (f) the cumulative nature of the impact;
- (g) Reversible or irreversible impact.

The Government can assist economically weak groups, whose fields of enterprise are suspected to lead to this type of major impact, in carrying out analyses of environmental impact.

On preventing and abating damage pollution Article 14 states that: To ensure the reservation of the environment, every effort and/or prohibited activities may violate

standard quality criteria and standard damage the environment. Terms of the standard quality of living environment, prevention and pollution response and recovery of carrying capacity is regulated by Government Regulation. The elucidation of this article reads as follows: The provisions as stated in this article provide the means of enforcing the law. Within the framework of the abatement of negative impact, the government can assist economically weak groups, whose activities are considered to have damaged or polluted the environment. The abatement of environmental damage and pollution caused by activities outside the State territory is carried out through agreements between countries.

4.3.3 Fisheries Regulation

Indonesia has a large maritime zone, some 5.8 Km² consisting of archipelagic waters, territorial seas, and Exclusive Economic Zones. Its coastline is more than 81,000 km long. Its sustainable fisheries (MSY) of all kinds are about 6.4 millions MT a year while its total allowable catch (TAC) is estimated at 80% amounting to about 5.12 million MT annually. In addition, there are also great potentials for aquaculture, inland open water fisheries as well as the development of marine biotechnology (Ministry of Marine Affairs and Fisheries, 2008)

Table 4. 2 Fisheries Production 2001-2006 (MT)

| Production | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | Increasing Average 2005 - 2006 |
|--------------------------|------------------|------------------|------------------|------------------|------------------|------------------|--------------------------------|
| Total | 5,353,470 | 5,515,648 | 5,915,988 | 6,119,731 | 6,869,543 | 7,488,709 | 9.01% |
| CAPTURE FISHERIES | 4,276,720 | 4,378,495 | 4,691,796 | 4,651,121 | 4,705,869 | 4,806,112 | 2.13% |
| Marine Fish | 3,966,480 | 4,073,506 | 4,383,103 | 4,320,241 | 4,408,499 | 4,512,191 | 2.35% |
| Inland Open Water | 310,240 | 304,989 | 308,693 | 330,880 | 297,370 | 293,921 | -1.16% |
| AQUACULTURE | 1,076,750 | 1,137,153 | 1,224,192 | 1,468,610 | 2,163,674 | 2,682,597 | 23.98% |
| Marine Aquaculture | 221,010 | 234,859 | 249,242 | 420,919 | 890,074 | 1,365,918 | 53.46% |
| Pond | 454,710 | 473,128 | 501,977 | 559,612 | 643,975 | 629,610 | -2.23% |
| Inland Openwater | 401,030 | 429,166 | 472,973 | 488,079 | 629,625 | 687,069 | 9.12% |

Source: DG of Capture Fisheries and DG of Aquaculture, MMAF, 2008

Potential marine fishery resources in Indonesia consist of archipelagic fishery resources large (451,830 tons/year) and small pelagic (2,423,000 tons/year), demersal fishery resources 3,163,630 tons/year, shrimp (100,720 tons/year), reef fish (80,082 tons/year) and squid 328,960 tons/year. Thus the potential for sustainable national marine fisheries of 6.7 million tons/year with the level reached 48% (Directorate General of Fisheries, 1995). Data in 2006 showed that fish production was 7.488.707 tons and this shows that the level of potential the sea reached a new 9.01%.

While the potential interactions of estimated land area of 866,550 ha and 344,759 ha of used (39.78%) can be even higher again. Thus the opportunity is still open for increased production and productivity of land. Community involvement in improving the production needs to be regulated so that it can bring benefits for all parties and the management of environment-friendly and sustainable.

There are several resources that have been fishing excessive exploitation (over fishing), including shrimp, demersal fish, small phalanges, fish and coral. This occurred mainly in areas with dense population, for example, in the Malacca, north

coast of Java, the Bali and South Sulawesi. Decreasing stock of resources, in addition to over fishing is also triggered by economic activities either directly or does not damage the ecosystem and the environment so that development of the fishery resources disturbed. In addition, there was a lack of appreciation and knowledge to perform human resource conservation in fisheries, such as shrimp, mangrove, coral reefs, and others.

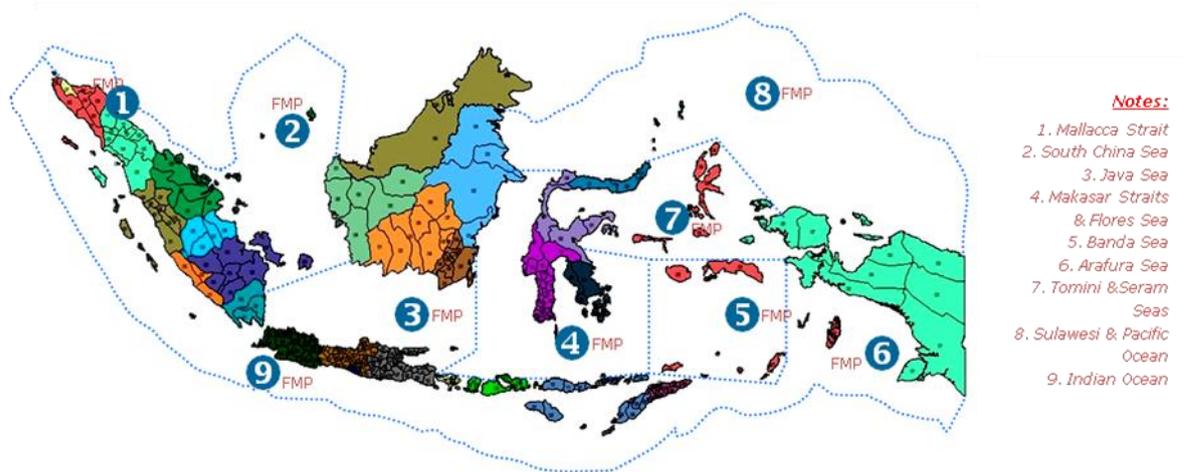


Figure 4. 2 Indonesian Fisheries Profile, 9 Fisheries Management Area

Source: Ministry of Marine Affairs and Fisheries – Indonesia, 2007

In the fishing firm, need to increase skills for the public to use new technology efficiently. This is to anticipate the arrest of competition by other countries that often enter the waters of Indonesia with more advanced technology. This effort involves all stakeholders from the fishing community, employers and government and other stakeholders. Another thing that needs to be done is to provide understanding on the fishing community about the danger of arrest is not environmentally friendly such as the use of explosives or the use of poisons.

In the field of interactions, as do the extension, improvement of business interactions in the form of intensification. If this is connected with the management of fishponds in Indonesia in general is still traditional. Production, interactions with Indonesia in 1998 amounted to 585,900 tons, which is the value of more than 50% of the fish farming activities (Directorate General of Fisheries 1999, in Susilo 1999).

However, on the other hand there are the problems that affect the development of marine and fisheries, so that the fishery sector is not fully provide the optimal contribution in national development. Problems are still many practices illegal, unregulated and unreported fishing as the weak law enforcement in the sea, the level of discrepancy between the stock of fish one area with other areas of the sea, where on the one hand there are areas that the fish stock is experience over fishing, and the area is still quite a lot of sea-level resource fish utilization is not optimal or even not at all touchable.

With regard to fisheries in the coastal zone, the problem in Indonesia is basically that it is not only an environmental problem, that is, protection for fish and other living resources, but also involves a socioeconomic problem of considerable complexity

and magnitude (Kusuma-Atmadja, 1996). Coastal fisheries in Indonesia have been for decades and still are subsistence fisheries of a traditional kind. Although insignificant in monetary terms, subsistence fishing is very important from a social and political point of view. Traditional fishing has been carried out along the whole east coast of Sumatra, including the Riau archipelago, the whole north coast of Java and the island of Madura, the whole west coast of Kalimantan, its southern and eastern coast, the whole coastal area of western and southeastern Sulawesi, parts of northern Sulawesi, the Moluccas and Irian Jaya. Clearly, a viable national marine fishery development model cannot afford to overlook the serious human and social costs associated with the breakdown of artisanal fishing communities. It is estimated that 2 million families depend for their livelihood on coastal fishing (Kusuma-Atmadja, 1996).

As a matter of policy, the Indonesian Government has sought to reserve certain areas for artisanal fishermen (Kusuma-Atmadja, 1996). The Coastal Fisheries Act of 1972 established four coastal fishing belts. The three inner belts, which are three, four and five miles in width, respectively, are reserved for coastal or artisanal fishing. Moreover, as previously mentioned, trawling has also been largely prohibited since the 1980s in Indonesian waters. It is now permitted only in the Indian Ocean and some parts of eastern Indonesia. Having explained that, in Indonesia's coastal zone, fishing presents problems other than questions of the protection of habitat and preservation of the marine environment in general, the other problem is a more general one, which is that, in dealing with environmental problems, we have to use institutions and laws which have been designed to deal with problems in a sectoral manner (Kusuma-Atmadja, 1996).

Law No. 54 of 2002 about Fisheries Firm, Law No. 31 of 2004 about The Fisheries Act, Law No. 16 of 2006 about System Extension of Agriculture, Fisheries and Forestry, and Law No. 27 of 2007 about Management of Coastal Area and Small Island in Indonesia, are under the progress of decentralization policy, the intensified and function of local government's authority is become very important. In order to urge of marine and fisheries policy more properly, it is needed to have a reference of marine and fisheries law and regulation.

4.3.4 Concluding reflection

In brief, there are various rules and regulations have been provided by the government with regard to the importance of boundaries, pollution and fisheries along the Indonesian coastline. Necessarily therefore, it can be said the existing rules and regulation is adequate to support the coastal conservation management in Indonesia.

4.4 Institution capacity to implement coastal conservation policy

4.4.1 Training and Education

4.4.1.1 Community Based-Development

Consider the characteristics of coastal communities, especially fishermen, as a component of most, and the scope or limits of empowerment is the empowerment of the fishermen should be done comprehensively. Development of comprehensive, according to the Asian Development Bank (ADB) in Nikijuluw (1994), the characteristics of the development have feature (1) local-based, (2) increase in welfare-oriented, (3)-based partnerships; (4) is holistic; and (5) development.

Local based development is that development is carried out not only local but also involve local resources so that it eventually returns to a local resource can be enjoyed by local communities. Thus the principle of comparative competitiveness will be implemented as a basic or first step for achieving competitiveness competitive. Development based on local population does not create a local audience and observers outside the system, but involve them in the development itself.

Welfare-oriented development that focuses on public welfare and is not increased production. These change principles adopted for this is that the achievement of further development of the target-directed macroeconomic variable. The comprehensive development realized in the form of business partnership between mutuality local people (the poor) with a more capable person. Partnership will open the access of poor people to technology, markets, knowledge, capital, management is better, as well as commingling the wider business.

The development in the holistic development is covering all aspects. For that every resource should be local and utilized. Most coastal communities are dependent on the marine sector (fisheries), but that does not mean that all people have to depend on the fishery. Pursuant to all the people hangs out on the fishery potential degradation of fish resources, the decline in production, increase production costs, the decline in income and a decrease in welfare. The symptoms are similar to what is called the Gordon (1954) with the tragedy property.

Sustainable development also includes economic and social aspects. The sustainability of economic development means that there is no economic exploitation of the economy is strong against the weak. In this connection, it is necessary to provide the institutional economics, and to provide access for each perpetrator. The sustainability of social development does not mean that the fight, and destroy or replace the system and positive social values that have been passing and has been so long practiced by the community.

Community involvement in the core of interactions is where the people as its core business and the community as farmer is a good concept although sometimes a lot of experience in the implementation constraints. Other relationships such as partnerships between the farmers with the means of production are also a model of partnership that needs to be developed and enhanced the future.

In order to improve the ability of the community, especially in the coastal areas, the Department of Marine Affairs and Fisheries (DKP) has implemented several approaches (Nikijuluw, 2001). These approaches are: (1) job creation as an alternative source other income for the family, (2) approach the people with capital resources with emphasis on the creation of self financing mechanism, (3) approach people with the new technology of the more successful and efficient, (4) approach the market with the community, and (5) to build solidarity and collective action in community center. Fifth approach is implemented with attention to the truly aspirations, desires, needs, income, and potential resources of the community.

4.4.1.2 Coastal Resources Management Project (CRMP) or Proyek Pesisir⁷

USAID's partnership with CRC/URI has been central to the delivery of coastal resources management programs to numerous USAID-supported countries for almost two decades. CRC/URI is designs and implements long-term field programs that work to build the local and national capacity to effectively practice coastal governance. It also carries out analyses and shares experiences drawn from within and across field projects. These lessons learned are disseminated worldwide through training programs, publications and participations in global forums. The CRMP put Indonesia in the forefront of developing new models and generating new information useful in Indonesia, and in other countries around the world, for managing coastal resources. Being the fourth largest country in the world, with approximately 60 percent of its 230 million people living within 50 kilometers of the coast, Indonesia is perfectly positioned to influence and shape the coastal management development strategies of other developing countries around the world.

4.4.1.3 University development in Proyek Pesisir

University development was an important aspect of the CRMP, and the marine center at Bogor Agricultural Institute, the premier natural resources management institution in Indonesia, was its primary partner, and was used to develop capacity in other universities. In addition to managing the Lampung site, the Center for Coastal and Marine Resources Studies established a national ICM reference library that is open to students and professionals, and provides an inter-university library loan service for other universities in Indonesia⁸. The Center initiated an annual ICM learning workshop, a national peer-reviewed coastal journal and worked with the CRMP to establish a national coastal conference that is now the main venue for exchange of information and case studies on ICM in Indonesia, drawing over 600 Indonesian and international participants to its bi-annual meeting. Building from the positive experience with Bogor and its marine center, an Indonesia-wide network of 11 universities (INCUNE) was developed that tied together key coastal

⁷ In 1996, USAID initiated planning for the Indonesia Coastal Resources Management Project (CRMP) or Proyek Pesisir). This program was planned and implemented in cooperation with the Government of Indonesia through its National Development Planning Agency (BAPPENAS) and with the support of the Coastal Resources Center at the University of Rhode Island (CRC/URI) in the United States.

⁸ Website: <http://www.indomarine.or.id>

universities across the nation for information exchange, academic research and capacity development, with the Center for Coastal and Marine Resources Studies serving as the secretariat. In addition to INCUNE, the CRMP was instrumental in developing the new Indonesia Sea Partnership Program, modeled after the highly successful U.S. Sea Grant College Program, that seeks to develop coastal outreach, education, policy and applied research activities in key regional coastal universities. This program, sponsored by MMAF, connects regional universities with local governments and other stakeholders through issues that resonate with local government and citizens, and addresses the gap of human and institutional capacity in the regions.

4.4.1.4 Program Economic Empowerment Coastal Society (PEMP Program)

Besides those approaches, the DKP during the last two years organizing a national program called Program Economic Empowerment Coastal Society (Program PEMP).⁹

PEMP program can be as an integrated fish farm program, start stages of planning, implementation and evaluation. Integration is also realized in the case productive economic activities that people do not focus on certain activities but to spread in the group activities that are related to each other. Similarly, integration realized through the involvement of stakeholders from different parties, institutions government, community and private sector.

4.4.1.5 Principles of Management PEMP

Principles of management and development program PEMP (Nikijuluw, 2001) is as follows:

- Options under discussion so that activities support the community (acceptability)
- Management activities conducted in open and known by the community (transparency).
- Management activities must be responsibility to the public (accountability).
- Management activities can provide benefits to the community in a sustainable, (sustainability).
- Activities to be implemented as a form of concern over the burden of the poor (responsiveness).
- Delivery of assistance to the people of the target quickly (Quick disbursement).
- The process of selecting participants and activities done in a consensus PEMP (Democracy).
- Providing the opportunity for other groups who do not have the opportunity, so that all communities benefit directly (Equality).

⁹ In 2000, the Social security Network (JPS) with the funds, the program was conducted in 26 District, seven provinces. In 2001 through response of Impact Reduction Program Subsidy Energy (PSE-PPD), which is allocated to the seven programs, PEMP conducted in 125 districts / cities in 30 provinces in Indonesia.

- Each provision in the Fund Economic Productive people are expected to encourage the creation of a healthy competition and honest in submitting the proposed activities feasible (Competitiveness)

4.4.1.6 Development of programme

Number of villages which is the target of this program is 370 across the country. And number of households which are reached about 15,000 to 20,000 families. They are a group that will be so empowered. The same model with this PEMP also is developed for other regions. Considering the nature and potential areas some of the variants and the development of community or coastal fishing are: (1) the empowerment of women, fishermen, (2) empowerment of the community joined in religious organizations, (3) empowerment of youth fishing, (4) the empowerment of NGOs fishermen, (5) market access to developing areas that have similarity in commodities, and (6) development of non-fishery as part of the diversification of economic activities coastal communities.

4.4.2 Inter-Institutional Collaboration

To overcome various problems and issues that appear in the management of coastal and marine resources in Indonesia, the needs of a collaborative management model that combines elements of the user community (fishermen groups, the fisheries, etc.) and the government, known as co-management is the role dominant over from one party in the management of coastal and marine resources, so that the reflection of aspirations on the other hand can be eliminated (Rudyanto, 2004). Through this model, the management of coastal and marine resources was conducted to unite with related institutions, especially community and government and other stakeholders in the process of resource management, from planning, implementation, utilization and control. The division of responsibilities and authority between stakeholders can occur in various patterns, depending on the capabilities and readiness of human resources and institutions in the respective regions. The order of model in this management is not only a static structure that against legal rights and rules, but also a process that creates a dynamic in the structure of the new institution.

In a long term, the implementation of the co-management is believed this will provide the changes to the direction of better are:

- Increasing of public awareness to the importance of coastal and marine resources in support of life.
- Increasing of ability of community, so it is able to participate in each stages of management an integrated.
- Increasing of people income with forms of utilization and sustainable development and environmental conception.

The success of the management model with the co-management is highly influenced by the willingness of the government to decentralize responsibility and authority into management fishermen and other stakeholders. Therefore, co-management requires the support of legal and financial policy formulation such as a support to the co-management, and supports the fishermen and coastal communities to manage

and perform the role of restructuring the management of the fishery (Rudyanto, 2004).

Management of co-management combines between the centralistic resources management or government-based management with community based management. The highest hierarchy is rank in the relationship of cooperation, and then on the new Consultative and advisory relationships. Relations of cooperation may include the cooperation between sectors, regions, and the actors involved.

4.4.2.1 Cross-Sector Cooperation

In the coastal areas, not only the fisheries sector that big a role but also other sectors have major role as related to each other can solve the problems that exist. For example, the economy that is associated with coastal communities, industry and services sector that has become a major contribution in the development of productive business community. Related to environmental sustainability can not be separated from the role and involvement of the industrial sector and the industrial waste is usually discarded to the water. Supporting infrastructure is also important for the region can develop and maintain environmental sustainability. Therefore, cross-sector cooperation is very important to consider because each sector has its own interests. Each sector must be mutually supportive. The role of local government in this case is very large so that there is good synergy in the development of each sector, so there is no mutual harm.

4.4.2.2 Inter-regional Cooperation

Coastal area cannot be essentially limited to the administrative. In connection with this case, the region is included in a region (the homogenates both ecological and economic) should be mutual cooperation to minimize conflicts of interest. Cooperation between regions can be formed by cooperation through the establishment of a forum or a forum of communication between local governments that have marine and coastal areas to anticipate the emergence since the early conflicts among the worst, such as fishermen. Agreement and the establishment of norms of collective utilization of local resources in accordance with the spirit of regional autonomy have to be broadly correct to the community and the fishermen so that they do have the same perspective.

4.4.2.3 Cooperation between Actors (stakeholders)

Reduction efforts and gaps in sectoral areas clearly require special strategies for handling a comprehensive and sustainable. For that, the policy required from the central government to bridge the problems of poverty and inequality and sectoral areas, through the mechanism of cooperation between actors (stakeholders) involving community elements (groups fishermen), the private sector / businessmen fishery, and government.

In the management of marine and coastal areas that have not been provided for the welfare of communities, the necessary attention to the serious form of breakthrough ideas for the acceleration of development efforts and economic development participants involving local communities in the process of implementation and management. Poverty reduction and sectoral gaps and areas that core of a new paradigm, where local development initiatives are no longer the center of effect, but

the initiative is a local (regional) to decide the steps in implementing the best management plans and area action plans in accordance with needs and capacity owned (Rudyanto, 2004).

4.4.2.4 The Collaboration

During this time the management of marine and coastal areas in Indonesia under the responsibility of the Ministry of Marine Affairs and Fisheries. In addition, there are several department and non-department that directly and indirectly involved and has authority in certain areas to manage the coastal resources, including: Department of Home Affairs (MENDAGRI), Department of Transportation (DEPHUB), Department of Agriculture (DEPTAN) , Department of Trade and Industry (DERERINDAG), Department of Forestry (DEPHUT), State Ministry of Tourism, Art and Cultural (MENEG PERSENIBUD), Department of Mining and Energy (DEPTAMBEN), Department of Public Works (KIMPRASWIL), State Ministry of Environment (MENLH), Environmental Impact Control Agency (BAPEDAL), National Land Agency (BPN), and Application of Technology Board (BPPT), National Development Planning Agency (BAPPENAS), National Coordinating for Surveys and Mapping (BAKOSURTANAL), Indonesian Institute of Sciences (LIPI) and the Indonesian National Army-Navy (TNI-AL). There are not directly related to some other department such as finance department, department of national education, State Ministry of Cooperatives and Small Medium Business (MENKOP). To coordinate the handling of development problems marine policy and a fast break (instant policy) then at the end of 1996, established a National Council of Maritime (DKN), which is led by the president, with the head of the daily Coordinating Ministry of Political and Security (MENKOPOLKAM). DKN is changed and then again in early 2000 to Indonesian Maritime Board (DMI), which involves elements of both business and NGOs with the head of the daily Ministry of fisheries and marine affairs.

So far it can be identified there are several technical institutions on activities related to the management of coastal and ocean areas. Table 4.3 and table 4.4 provide these institutions with the authority and its duties in the management of coastal and ocean areas.

Table 4. 3 Coordination Institutions and their Role in Coastal and Marine Management

| A | Coordination Institution | Role |
|---|--|---|
| 1 | Secretary of State office environment (MENLH), environmental impact control agency (BAPEDAL) | Coordinate the management of environmental policy coastal and marine areas; BAPEDAL manage the process studies on environmental impact analysis (AMDAL) |
| 2 | Department of Finance (DEPKEU) and National Development Planning Agency (BAPPENAS) | Coordinate all planning activities national development is implemented in the Five Year Development Plan (Repelita) |
| 3 | department of home affairs (MENDAGRI) / Directorate Regional Development (BANGDA) | Coordinate all activities of regional planning development, including the development marine sector in regional area |
| 4 | Secretary of State office Research and technology /BPPT | Coordinate the activities of research and technology development in the field of marine natural resource inventory |
| 5 | National Coordination Boards of survey and mapping (BAKOSURTANAL) | Coordinate mapping (including the beach), receive and manage the spatial data from other institutions such as DIHIDROS |
| 6 | Institution of Science and Technology / | Coordinate marine research activities, information centers, |

| | | |
|----|--|---|
| | Research and Development Center of Oceanology (P3OLUPI) | and marine ecosystem data provide advice to other institutions |
| 7 | National Regional Committee Coordination and Sea baseline (PANKORWILNAS) | Handle problems with the state border neighbors |
| 8 | Indonesian Maritime Board (DMI) | Coordinate the handling of problems and development of marine fisheries |
| 9 | Marine Security Coordination Board (BAKORKAMLA) | Coordinate the handling of problems security of the sea, ships, such as piracy, arrest illegally fishing by foreign fishermen, sea pollution, illegal infiltration and others |
| 10 | Regional Development Planning Board / BAPPEDA | Coordinate all regional and sectoral planning development and private sector in the region |
| 11 | Village Secure Society Institution (LKMD) | Social institutions at the village level that unify and coordinate all activities in rural communities such as religious activities, security, education, environment, social economic, family planning, health and youth |

Source: (Dahuri. R, 1996)

Table 4. 4 Sectoral Institutions and their Role in Coastal and Marine Management

| B | Sectoral Institution | Role |
|----------|---|---|
| 1 | Department of Marine and Fisheries (DKP) | Manage, develop and manage the fisheries activities in oceans and coastal areas (Fisheries capturing, fish farming, processing results fishery) |
| 2 | Department Of Forestry / Directorate General of forest guard and nature conservation (PHPA) | Managing activities coastal and seas ecosystem conservation such as the establishment and management of the area marine conservation (Marine National Park, Natural Sea Park, and others) |
| 3 | Department of Transportation / Directorate General Sea Transportation | Managing water as a medium of transportation, including pollution of the sea |
| 4 | Department Mining and Energy/ Directorate General Oil and Gas | Manage various activities related to exploration of oil and gas in the coastal region and offshore |
| 5 | Department of National Education / University | Develop human resources in marine and maritime research |
| 6 | Department of security and defense/ Hydrography and Oceanography Official on Duty (DISHIDROS) | Security territorial sea border, the collection of data hydro-oceanography and produce maps of sea |
| 7 | Department industry and trade | Set the various development activities in the industry coastal and marine areas, including in the handling industrial waste |
| 8 | Department of Residential Areas and Infrastructure (KIMPRASWIL) | Manage all engineering activities in the beach such as infrastructure development, prevention of erosion beach and other |
| 9 | Department of Tourism, Art, and Cultural/Directorate General of Tourism | Managing and developing coastal tourism activities and marine ecotourism |
| 10 | Department of Cooperation | Develop a cooperative business in Indonesia, particular fishery cooperatives in the coastal village |
| 11 | Marine and Fisheries Official on duty | Manage and develop the fishery activities in coastal and marine areas |

Source: (Dahuri. R, 1996)

Coordinator at the institution level, for example, the State Office minister responsible for environmental policy in formulating environmental management in coastal and ocean areas, in cooperation with BAKOSURTANAL and DISHIDROS responsible for coordinating the inventory and mapping of marine natural resources in the area of marine and coastal seas, BPPT manage technology related to the management of coastal and ocean areas, and so forth. At the implementation, DKP responsible in the management of fishery resources, such as the properties of sea treasure trove, management of coastal beaches and small islands and several national parks and the sea that separated large islands. Department of forestry is responsible for management of mangrove forests, conservation areas and land that connects the ecological to the sea. This shows the existence of overlapping administrative authority. However, the management of the fishery can not be separated from the mangrove forest ecosystem, sea grass and coral reefs. Similarly in the case of fishing, of course, will be affected by mining activities oil and gas offshore or mining gold pollution that contaminate the pond and the sea is the task mining and energy department.

4.4.3 Financial support

Good environmental management starts with good planning. State Ministry for Environment works closely with National Regional Planning Agency in drawing up the planning and budget for environmental protection and preservation at the start of every Five Year Plan (Repelita). The budget also includes expenditures for environmental protection purposes of the sectoral departments, Ministry of Home Affairs and the provinces.

Expenditures outside the (approved) budget of the various ministries and departments for environmental protection purposes could be appropriated as a special fund budget. It would be helpful if the Minister for the Environment could have a special fund to finance additional or supplementary budget requirements for sectoral problems not covered by the routine budget allocation for environment protection purposes (Kusuma-Atmadja, 1996).

Such an arrangement would help relations between the Minister for the Environment and the other ministers or departments because the former would not then be seen as competing for their budget but rather as a party helpful in obtaining additional or supplementary money if required.

Of equal importance to planning and the budget are consultations between the Office of the Minister for the Environment and Department of Public Works, which is in charge of spatial planning and zoning.

The legal basis for this exercise is the law of Spatial Planning Act enacted in 2007 (Act No 26 of 2007). The consultation process between the Ministers for the Environment and public Works is essential and of great importance when conclusions and recommendations with regard to coastal zone management has to be translated into special plans or the zoning of certain areas. Special zone planning is also necessary, not to say urgent, in the matter of dumping, most specifically in the designation of dumping grounds for the various categories of waste, including dangerous and toxic substances. This exercise can no longer be avoided as dumping of dangerous and

toxic substances is a real possibility in the present-day world. On a more mundane level, the disposal of municipal waste already presents a big problem. It is therefore imperative that Indonesia, which actively participated in the London Dumping Convention Conference in the early 1970s, not only signs the Convention but also ratifies it in the not too distant future (Kusuma-Atmadja, 1996).

Dumping of waste and hazardous and toxic substances is the single most important source of marine pollution for which Indonesia has to be on its guard. All the other sources of marine pollution and degradation of the marine environment pale by comparison with the danger of dumping is it dumping from land or from passing vessels. It is recommended that the ratification of the London Dumping Convention and its amendments be followed as soon as possible with a regional arrangement for the prevention of dumping of waste, and hazardous substances, including radioactive materials, in the Southeast Asian Seas of which the Indonesian archipelago forms an integral part.

As a result of decentralization, the addition or changes in coastal management efforts should be reflected in national and local budgets to have a real effect. This requires major changes in how the budget is prepared, reviewed, approved, implemented and monitored. Efforts to develop strategic planning capabilities at all levels is to build capacity where this is required, but the process will take a lot of the budget cycle to be smooth and clear. Mechanisms to ensure appropriate allocation of funds for the management of coastal resources (whether the funds come from the central government budget and local governments) are still considered. The creation of a special allocation at the central level, plus the conditioning from the general allocation of funds is given as block funding to local governments present some good potential. In any form is finally taken, local contributions to activities will be necessary and demonstration of sufficient legal and budgetary commitment will be an important criteria for national certification of local programs. All approaches require consideration of innovations in good governance and the spirit of resistance encountered (Dahuri R. , 2001).

4.4.4 Concluding reflection

Although there are various training and programs as well as inter-institutional collaboration among the relevant institutions, the institutional capacity in Indonesia is still limited as compared to France. This can be seen from the limited ability and capacity of the existing institutions to solve implementation problems with regard to the coastal conservation management in Indonesia.

4.5 Public participation

4.5.1 Public Participation in Coastal Conservation

Community Based Management (CBM) defined by Nikijuluw (1994) is one approach management of natural resources, such as fisheries, which put the knowledge and environmental awareness of local communities as a basis for management. Community-based management can be defined as a system management of natural resources in a place where local people is actively involved in the process of natural resource management is in resource management.

The Indonesian constitution of 1945 (UUD 1945) states that: Land and water and the natural resources therein shall be controlled by the State and shall be utilized for the greatest benefit (welfare) of the people.

Provision explicitly wants to be the implementation of state control over natural resources, especially coastal and ocean resources directed towards the achievement of the benefits that as big as prosperity for many people, and must also be able to achieve justice and equity as well as improve the life of coastal communities and promote coastal villages in. In the implementation, the pattern of coastal and ocean resources is for this is very contrary to what has been outlined in the article, the implementation is still a top down, meaning the management of all activities coastal and ocean resources, from policy making, planning, implementation, evaluation and monitoring is done entirely by the government without involving participation of local communities, when viewed on the characteristics of coastal and sea both in terms of natural resources and people from the very complex and variety, so that in the management of coastal and sea areas should be directly involve the local community On the basis of and with the government policy of the Republic of Indonesia on Regional Autonomy and decentralization in the management of resources coastal and ocean, then is when management and proper utilization of resources coastal directly involve the participation of local communities in the planning, implementation, monitoring and evaluation, so it can guarantee the welfare and viability of local communities and the preservation of coastal resources it.

According to Harbinson, and in his book Myers² "Manpower and Education" Country Studies in Economic Development states that in the final analysis, the wealth of a country is based upon its power to develop and to effectively utilize the innate capacities of its people.

Referring from the assumptions in order to anticipate Regional Autonomy is providing an independent and responsible, then needed community that has the ability to efficiency and effectively natural wealth for the prosperity of the people. In this regard, community development in coastal area is an integral part of the management of coastal and marine resources for prosperity of communities, so the need to use an approach where society as an object as well as the subject of development.

Another regulation also can be seen in article 6 paragraph (1) in Law No. 23 of 1997 which is states that: Every person has the right and obligation to participate in the management of the living environment. In OECD's publication on "*Public Participation and Environmental Matters*", it is stated that: Effort to engage the public at the earliest feasible point in the policy planning process provides an opportunity for assessing public desires and needs, clarifying elements of controversy, and evaluating the full range of policy options. Information is prerequisite to effective public participation, and governments have a responsibility not only to make information on environmental matters available to the public in a timely and open manner, but also to ensure that citizens are able to provide constructive and timely feedback to government.

Public participation can be seen as an essential means for increasing environmental as well as political awareness, for clarifying choices to be made, and for seeking social consensus on the balance to be sought between economic development and environmental concerns. The balance between economic development and environmental concerns is stipulated in Article 1 of EMA 1997, that is, development with environmental consideration, defined as a 'conscious and planned Endeavour to utilize and manage resources wisely in continued development to improve the quality of life.

4.5.2 Concluding reflection

The public participation in Indonesia with regard to the coastal conservation management is still relatively low. This is because only certain interest groups and stakeholder are involved in the decision making process of policies, rules and regulation related to coastal conservation management. The government and other institutions have to increase the awareness and public participation in order to realize a better coastal conservation management in Indonesia.

Chapter 5 *Comparative Analysis*

This chapter will provide a comparative analysis between the two countries: France and Indonesia. There are some items that are compared, discussed, and reviewed: coastal zone definition in both countries, legal and political tradition, and institutional capacity. The last part is lesson learnt from practical experience in France for Indonesia's condition.

5.1 Coastal Zone Definition

The definition of coastal zone between France and Indonesia basically doesn't have standard meaning. Both countries have different definitions, France define coastal based on coastal municipalities (art. 2 in the Coastal Protection Act of 1986) as the geographical area grouping together every human activity carried out at sea, and/or along the coastline (the interface between the sea and the land), or activities that are deeply influenced on a long-term basis by the presence of the sea, and reciprocally." (Y. Bonnot, 1995) while coastal zone in Indonesia define according to physical characteristics, which is the region between land and sea. The coastal area includes the land, both dry and submerged water that is still influenced by the sea such as tidal, sea breeze, and salt water infiltration. Meanwhile, the sea region includes the coastal sea which is still influenced by the natural process that occurred in the area of land such as sedimentation and flow of fresh water, and the caused by human activities on land such as deforestation and pollution (Soegiarto, 1976).

The differences between both definitions are regulatory effort from France government to strict the coastal definition with clear law and regulation. France states that coastal as a part of system in law and regulation. Even on physically characteristic based on geographical condition, similar with Indonesia coastal definition. However, the Indonesian government also tries to implement law and regulation on coastal definition on the definition with states that border or limit of land covering from coastline to the see includes 12 miles far from the coastline.

Based on geographical characteristics, France and Indonesia have different condition. France is a unique, and at the same time, extremely diverse. The different seaboard's component give France a role on International stage. The fourth facade which, for ease of reference includes the coastlines of departments and overseas regions of Martinique, Guadeloupe, Guyana and Reunion contributes significantly to this wealth. The Constitution also recalls that in the departments and regions overseas, the laws and regulations of the Republic shall apply as of right, even if adjustments relating to the characteristics and constraints of these communities can be adopted. While in Indonesia, geographically coastal condition is as an archipelago divided into 33 provinces, means that Indonesia applies authorities to manage the coastal zone based on local authority. Because of Indonesia is huge and consists of thousand islands (from Sabang to Merauke), the regulations to manage thousand of islands are based on "Wawasan Nusantara" or as an Indonesian Unity which is the umbrella of law based on Indonesia basic constitution of 1945 (art. 33 paragraph 3).

Both of countries also give limitation about influence of human activities on coastal zone. This is important both conducted by the State because of the need for management of coastal resources. In their regulatory have efforts on the management and utilization of natural resources for the greatest feasible prosperity of the people. The utilizations it could be residential, fishing, ports, tourism, and others.

Therefore, the challenged on coastal zone management is how to develop coastal zone without gives significant effects to environmental. In practice, the implementation of coastal conservation in France is basically based on zoning methods, also in Indonesia. They have been regulatory to manage coastal zone based on environmental perspectives.

5.2 Legal and political tradition

In general, France and Indonesia have the same goal for coastal zone management especially on coastal conservation policy but a very different policy direction. Both countries consider coastal conservation policies implementation as a tool to achieve sustainability and protect the coastal. However, the policy direction of Indonesia is to support the economic development by exploring the coastal zone while France is toward protection of the resources.

5.2.1 Political Will of Government

Political will from both governments is necessary to realize a sustainable coastal management. This is because by the government have any power in determining the direction and government policy. With the political will of all the good rules and laws will be directed to achieve the goals and targets of sustainable development. So that all goals will be expected to form of a sustainable coastal management, also with the French and Indonesian government, the political will of both government officials from the coastal management and its regular shows at the direction of sustainable coastal management. This can be seen from the fact that the government and the legislative create the rules and regulation to support the environmental issues, especially on coastal conservation and sustainable coastal zone management.

In France there are several laws which published by government as policies on coastal management. The foundation of the policy of coastal management is Law No 75-602 of 10 July 1975 about the formation of the Conservatoire de l'espace littoral and Shoreline Lake (CELRL). This is as an operator dedicated to land preservation and development of a third of natural coastline in partnership with local authorities concerned. Its means that government has concern and good political will in handling of environmental issues.

Furthermore, government and legislation re-issued several regulations relating to the environment particularly in coastal management such as law about preservation and enhancement of Coastal, which arrange the legal and operational policy of the coastal with the various land contributed to its management. In addition, there are also rules which regulate land development in areas with high stakes, protect natural areas, sites classified and recorded, nature reserves, national parks and nature parks.

In Indonesia, the government also has political will to improve and manage coastal area with publish several policies which relating to environmental issue. The basic foundation of regulation is Law No. 23 of 1997 about Environmental Management Act.

As a developing country, Indonesia continues to work to improve the rules related to environment issues. The reformation era in 1998 is a new way to establish basic law in coastal areas. The establishment of the Department of Fisheries and Marine exploration in The Government of President Abdurrahman Wahid era which is the birth of Law No.27 about Management of Coastal Region and Small-Island (UU-PWP3K) on 26 June 2007. In addition, the government of Indonesia with the House of Representatives (DPR) also makes rules that set the various issue related to environment such as conservation of natural resource, spatial act, and other regulations.

Table 5. 1 Summarizing the main historical phase of conservation of natural coastal sites in France and Indonesia

| Year | France | Indonesia |
|------|---|--|
| 1930 | Law of May 2, concerning the protection of sites, instituting the ' <i>Site Classé</i> ' (classed site) and ' <i>Site Inscrit</i> ' (listed site). These terms are widely used to protect coastal sites; they impose numerous interdictions and limitations concerning utilization of coastal sites by their owners. (This kind of protection is close to certain British designations such as SSSI and AONB.) | |
| 1945 | | Indonesia Constitution of 1945 (Art. 33 paragraph 3 and 4) the basis for the management and utilization of Indonesian natural resources, the following has been stipulated: Land and water, and the natural resources contained therein, shall be controlled by the state and utilized for the greatest feasible prosperity of the people. |
| 1960 | Institution of 'Parcs Nationaux' (National Parks). | |
| 1968 | Institution of the ' <i>Redevance Départementale d'Espaces Verts</i> ' (Departmental green tax), a tax levied on constructions. It financially and legally empowered <i>Départements</i> to intervene substantially in favor of the protection of coastal sites. It is the first step for a <i>Département</i> to play a prominent role in a voluntary policy that is close to those of both the Heritage Coasts and the <i>CELRL</i> . | |
| 1973 | Two important Ministerial circulars deal with the limitation of the use of the coastal zone for development operations (Anon. 1975). | |
| 1974 | Publication, at the initiative of the State authorities, of the Rapport Piquard, entitled ' <i>Perspectives pour l'aménagement du littoral français</i> ' (perspectives for the management of the French littoral zone); it is the first document laying the foundations for coastal planning. | |

| | | |
|------|--|--|
| 1975 | Foundation of the <i>Conservatoire de l'Espace Littoral et des Rivages Lacustres, CELRL</i> , a state body whose field of authority is specifically the coastal zone; it attempts to carry out the twin goals of protecting the beauty of landscapes and ecosystem diversity. This creation marks a significant turning point in the history of the conservation of French coastal sites. | |
| 1976 | Law changing the <i>Redevance Départementale d'Espaces Verts</i> into the <i>Taxe Départementale d'Espace Vert</i> (Green Tax); reinforcing the role of the <i>Département</i> | |
| 1977 | Decree instituting impact studies for new developments in order to preserve the ecological balance. (<i>Journal Officiel</i> 13/10/1977). | |
| 1978 | | Presidential Decree No. 43 of 1978, about the endorsement of Convention International on Trade of Endangered Species of Wild Flora and Fauna |
| 1979 | Publication of the ' <i>Directive de la Préservation et l'Aménagement du Zone Littoral</i> ' (Directive on the preservation and management of the coastal zone) by the French Government (<i>Journal Officiel</i> , 26/08/1979). | |
| 1985 | Law changing the ' <i>Taxe d'Espaces Verts</i> ' (Green tax) into the <i>Taxe Départementale d'Espaces Naturels Sensibles</i> (Departmental tax on sensitive natural sites). It confirms again the competence of <i>Départements</i> in matters of coastal conservation. | Law No. 17 of 1985, about the endorsement of United Nations Convention on The Law of The Sea |
| 1986 | 'Loi Littoral' (Coastal Law), relative to coastal management, protection and planning. It constitutes the basic text formalizing the doctrine of coastal management and marks a turning point (Becet & Le Morvan 1990). It aims not only at nature conservation but also at the reconciliation of the various coastal interests. It is the first legal text concerning the protection of natural coastal sites. | |
| 1989 | Application Decree of the Coastal Law of 1986, specifying the ' <i>espaces remarquables</i> ' (special sites) to be protected because of their ecological value. These sites must be delimited in the ' <i>Plan d'Occupation des Sols</i> ' (Land Use Plan) of the <i>Communes</i> and should be under strict legal protection. This is presently under way. In certain <i>Communes</i> , where the pressure is strong and the interests are varied, negotiations between State agencies and local councillors may be very difficult. Since the law does not make a provision for compensation, <i>Communes</i> with large areas of 'protectionprone' natural sites, often consider themselves as disadvantaged compared to neighbouring <i>Communes</i> more free to encourage development. | |

| | | |
|------|--|---|
| 1990 | | Law No. 5 of 1990, Conservation of Natural Resources and Ecosystem Act, Presidential Decree No. 32 of 1990, the Management of Protected Area. |
| 1992 | | Law No. 24 of 1992, Spatial Planning Act. |
| 1994 | | Presidential Decree No. 5 of 1994, about the endorsement of United Nations Convention on Biological Diversity |
| 1997 | | Law No. 23 of 1997, Environmental Management Act. |
| 1998 | | Ministerial of Home Affairs Decree No. 8 of 1998, the Implementation of Local Spatial Planning Act. |
| 1999 | | Government Regulation No.19 of 1999, about pollution control and / or destruction Sea, Law 22 of 1999, on Local Government Act. |
| 2000 | | Government Regulation No. 25 of 2000, about Government and Local Authority as a local autonomy. |
| 2001 | | Government Regulation No.82 of 2001 about management of water quality and water pollution control. |
| 2004 | | Law No. 7 of 2004, about Water resources, Law No. 31 of 2004 about Fisheries, Law No. 32 of 2004 about Local autonomy, and Law No. 33 of 2004, about central and local financial balancing. |
| 2007 | | Law No.27 of 2007, about Management of Coastal Region and Small-Island (UU-PWP3K). |

Source: Research, 2009

5.2.2 Regulation on Boundaries, Pollution, and Fisheries to support Coastal Conservation

In the implementation level, the need for regulations that manage the implementation of a rule is necessary. Implementation of clear regulations in the field will impact on the achievement of the purpose of sustainable coastal management. So even with the implementation of some regulations related to coastal conservation in France and Indonesia. The regulations are on boundaries, pollution and fisheries will be compared between France and Indonesia.

- **Boundaries Regulation**

In France, the boundaries regulation can be seen from the policy made by the states to manage the “public domain maritime”. This is also adjusted to the physical character of its coastal and marine to made permits organization economic and social uses of the area. There is interference from the government of France through the Department of Defense in collaboration with the CELRL to protect and developed coastal heritage at the same time. The balancing resource use has traditionally been a part of spatial planning (territorial planning and urbanism). Although this approach has generally proved quite capable of organizing land-based activities, it is clearly inappropriate for coastal/maritime zones, if only because, in the latter, a third dimension- the depth of the water column - must be taken into account. On the sea, exclusive zoning leads to de facto privatization of the public space; such a de facto situation is incompatible with the status of the sea, which a priori should remain open to all as long as public interest/safety is not at risk (Philippe Deboudt, 2008).

In addition, there is the integration with another institution such as the department of ecology and sustainable development to create collaboration for guidelines of the interdepartmental committee of organization and development of the territory as ways of Partnerships. The collaboration among them, made formally in the form of agreement which is signed during the years 2006. Other government policies that are applied together are the determination of spaces for private land and public land, especially for social and housing.

Difference with France, in Indonesia, the coastal zone management and coastal boundaries is set in the right of coastal (HP3) through legalization of Law No. 26 of 2007 regarding management of coastal areas and small island (Law-PWP3K). It's interesting that the Law of PWP3K will be the Rights of The Coastal (HP3) in all provinces, districts, and city in Indonesia that has the potential of sea resources, and can be given to individuals, agencies or business communities, which include undertaking HP3 on the sea and water surface column up to the seabed within the sustainability of ecosystem.

In addition, with the introduction of decentralization and regional autonomy, then the coastal management is at last given the authority to local government in full control of the central government.

If we compare between the existing policies in France and in Indonesia, there can be known that, French policy are more stressing in the process of integration and collaboration between institutions based on the Partnerships (vertical views) which have been set clearly in territorial planning and urbanism. France as member of European Commissions (EU) has agreement on managing coastal resource particularly in European regional boundaries. The government must compliance the Recommendation voted by the council of Europe and the European Parliament, concerning the implementation of ICZM strategy in Europe. But it is still lack in implementation in field of practice; because of it does not consider the change of natural and social dynamic. So this can be create of horizontal conflicts between stakeholders in utilizing resources and claims to the coastal area as a private property. Meanwhile, Indonesia is more stressing on the involvement of all stakeholders in the utilization of coastal resources. The role of local government in decentralization era is more clearly seen in the frames of control by central government. However, this policy will cause of egoism on local government level in managing their coastal resources and coastal conservancy strategies without considering the interests of other institutions, especially in the administrative border.

- **Pollution Regulation**

As for pollution regulation, European Directives annex II action in its nature protection act of 1976 is basic constitutional for protect and manage the coastal and environment in France. This can be a regulatory for handling a pollution issues. But in implementation level, particularly in pollution regulation, France is still facing of large oil spills problem and other environment issues. That issue is still not yet found a complete satisfactory solution, despite the European Directive on equipment ports of the Union, adopted in September 2000 and implemented French Law on 16 January 2001. Besides that the source of coastal pollution in France are comes from

the river, industrial sites (estuaries), and agriculture. Also environment issues such as coastal erosion, marine flooding, and other impact of climate changes. To overcome these problems the government issued several policies are: the establishment of criminal courts Specialty (Le Havre, Brest and Marseille) and the establishment in the Mediterranean a zone of protection ecological (ZPE) French rectifies the lack of EEZs, reduction of pollutants for upstream industry, better monitoring and control of several pollutants from urban and agriculture, and disaster mitigation management.

While in Indonesia, the basic law and regulation that government made for protecting the environment and management is written in Law No. 23 of 1997 about Environmental Management Act (EMA). This is to be umbrella type of law for all issues and aspect in environmental management, and to be a philosophy for sustainable development. In general coastal pollution problems in Indonesia is caused by this human activity such as land clearing for agriculture, cities and industrial development, logging and mining in the catchment area. The other is physical habitat damage; it could be decreasing of the quality of ecosystem such as, mangroves and coral reefs. Similar with France policy to overcome these problems, the government of Indonesia through Law of No. 23 of 1997 gives direction and guidance to protect and maintain the environment. The Law states that in certain activities pertaining to specific kinds of resources, strict liability rests on those causing the damage and/or pollution of the living environment at the time of the occurrence of the damage and/or pollution, which shall be stipulated in relevant legislation.

In general France and Indonesia try to give their best to protect the best ways to protect their environment, whether it's the influence of human activity or even from natural hazard. In legal practice France has specific sanctions such as fines and imprisonment that can be imposed as purely administrative sanctions, without the interference of a judge or court¹⁰. But in level of implementation of regulation, both of countries still face problems. It is because many of the problems that occur and the level of compliance in the community to obey the rules, particularly in Indonesia is still lack of law enforcement.

- **Fisheries Regulation**

Fisheries regulations are intended as a guide in respect of the various legal controls which apply to fishing. France is a member of the European Union and therefore in Community waters implements the Common Fisheries Policy (CFP), which was reformed in 2002 and which is currently governed by Regulation (EC) No. 2371/2002 of 20 December 2002. In force since 1983, the CFP aims to reconcile resource conservation with the preservation of income and jobs in coastal zones that offer few alternatives in terms of production or employment. It therefore covers not just resources but also markets and structures. With regard to resource management, the CFP regulations comprise: A traditional management tool based on TACs (total Allowable Catches) and quotas; Technical measures relating to gear or catch; Effort-related management, based on vessel engine power and the number of days at sea. The CFP also provides for the introduction of measures to rebuild, over a period of

¹⁰ Michael Faure and Gunter Heine. (2007). Criminal Enforcement of Environmental Law in European Union.

several years, stocks that are threatened in terms of sustainable harvesting, and for recourse to effort-related management rules to supplement TACs and quotas.

While in Indonesia, one of the main purposes of fisheries management is to enhance the living condition of small-scale fishermen and fish farmers (Law of the Republic of Indonesia No. 8/1985 strengthened by Law No. 31 in 2004 concerning Fisheries). Fisheries management for capture fisheries and fish-culture should take into account "Hukum Adat" (custom law) and indigenous knowledge, including community participation, so it could be a Knowledge-based fisheries co-management. Besides that there is delegation of function/authority and supporting mandates is the delegation of part of fisheries functions from the Government to the Regional Governments and the Government may delegate its function to the Regional Government to carry out supporting mandates in the field of fisheries.

France and Indonesia have different policy direction on fisheries. France has implemented fisheries regulations with a clear, from the preparation, planning, implementation, requirements and processes in catching fish. In addition, France has also been applying the rules on fishery production, market, and the organizational structure so that management is clearly organized. While in Indonesia is still lack of management although there has been giving mandates to local government to manage the local authorities in fishery production with co-management. There are still many illegal practices, unregulated and unreported fishing due to the weak law enforcement in the sea, the level of discrepancy between the stock of fish one area with other areas of the sea, where on the one hand there are areas that the fish stock is experience over fishing, and the area is still quite a lot of sea-level resource fish utilization is not optimal or even not at all touchable.

5.3 Institutional Capacity

Institutional capacity aims to enhance the capacity of governments, business/private, non-governmental groups and communities to plan and manage the coast efficiently and effectively. It also aims to improve institutional arrangements for coastal management. This implies addressing Capacity Building on a long-term, strategic level. Concepts such as leadership, awareness, and constituency building are part and parcel of institution building.

In France, the French Institute for Research and Exploitation of the Sea (IFREMER) is a public world, which plays a major role on the coast in support of policies public (particularly on fisheries and monitoring of water quality) and professional organizations (e.g. for the development of good practice). They identified in the 2004 Integrated Coastal Zone Management as a strategic component of its activity, and devoted one of its programs. IFREMER is involved, in conjunction with several other French or foreign specialized or on coastal issues, in international programs and community related to ICAM (CorePointer, SPICOSA, etc.). This function of expertise necessarily relies on the observation function.

In Indonesia, through of USAID with Coastal Resources Management Project (CRMP) or as known as Proyek Pesisir is the program that was planed and implemented in cooperation with government of Indonesia through its National Development Planning Agency (BAPPENAS) and with the support of the Coastal Resources Center

at the University of Rhode Island (CRC/URI) in the United States. CRC/URI designs and implements long-term field program that work to build the local and national capacity to effectively practice coastal governance. It also carries out analyses and shares experiences drawn from within and across field projects. These projects also collaborate with local institution such as Bogor Agricultural Institute (IPB) as a primary partner natural resources management institution in Indonesia and were used to develop capacity in other universities. In addition, the establishment of Center for Coastal and Marine Research Studies and Marine Center was as a key of coastal universities across the nation for information exchange, academic research and capacity development.

Both of France and Indonesia have clear institutions to manage and its functions as center coastal and marine center. However, France is superior as compared to Indonesia, because they have leading on human resources capacity and supporting infrastructure in associated with coastal and marine research. While Indonesia is still depends on assistance and support from other country, especially from United States with Coastal Resources Management Project (CRMP).

Inter institutions collaboration plays key role in management of coastal and marine resources. In France, the State is held of coastal management, with severe administrative service and function of ministries (Public Works, Environment, Agriculture, Sea, and Defense). Ministry of Environment is affiliated to CELRL and itself is presently the most important estate owner in France, after the State. The *Office National des Forêts* (National Forests Office) is another governmental body involved in the conservation of coastal sites.

In Indonesia, the management of coastal and marine is handled by government and those inter institution collaboration consist of 3 types of ministries that each has the same level in the structure of government, the minister coordinator 2 people, State ministers 8 people, and ministers who led the department Sectoral 15 people. Minister responsible coordinator coordinates several sectoral ministries to achieve a goal. Minister of State responsible for preparing the national policy which is relating to one of the important things, such as the environment, research and technology, population and so forth. Meanwhile, the ministers who led the department responsible for sectoral policies that are set in accordance with the sectoral sector led, and usually consist of some directorates-general, a secretariat general, the General Inspectorate of research and development institutions (R & D). The three ministers are directly responsible to the president.

If we compares, both countries has the same rules to acts on coastal management. The State or government through the various ministries is based on their administrative and services as responsibilities. The difference is the existence of CELRL in France. Indonesia does not have that one. CELRL itself is important estate owner after state. Indonesia also has council of Indonesian Maritime (DKN), but it was part of government under the president, with the head of the daily Coordinating Ministry of Political and Security (MENKOPOLKAM).

On funding and budgeting for coastal management particularly for coastal conservation, The States of France through the report of Evaluation of the policy maritime and coastal France. There is no latest balance sheet funding allocated to

the policy of the coastline and the sea. The report included estimated expenditure public in the maritime world with 3 billion per year and 23 billion Euros over the period 1991-1997. It particularly concerns the construction and military shipbuilding, fishing and Merchant Marine, the port sector representative, however, an annual expenditure of 150 million. For financial support, the government accompany with CELRL tries to put possibility to increase income through strengthen cooperation between conservatory and local authorities with taxes, contributions, fees, subsidies.

While in Indonesia, the planning and budget for environmental protection and preservation at the start of every Five Year Plan (Repelita). With closely works between BAPPENAS and Department of Environment to allocate funding for coastal conservation. The allocation of budget for coastal conservation also considering a consultation between other sector, for example Department of Environment and Department of Public Works which is charge of spatial planning and zoning. In decentralization era, the mechanism to ensure appropriate allocation of funds for the management of coastal resources is the funds come from the central government budget and local government. So, local authorities have responsibility to allocate the funds in their sector.

Implementation of coastal conservation and ICZM policies in both countries, also involve severe actors besides the government. France collaborates with several actors from European countries such as, Ireland, UK, Belgium and the Netherlands to launches the core program under INTERREG III B. In France, interregional cooperation between government and local actors, experts, agencies research, etc. can be seen from the center of Law and Economics of the Mer de l'Université de Bretagne Occidentale and Ifremer. This is as an integrated approach on coastal management in sectoral actions and sectoral policies, where it can be contribution to a broader sector policy e.g. transport energy, etc.

On the other hand, in Indonesia, public participations in coastal zone management can be seen from the implementation of community based management (CBM). This approach involves local people in the process of natural resources management but, in fact all the implementation is still a top down. It means that central government is still taking all activities of coastal and marine resources, from policy making, planning, implementation, evaluation and monitoring without involving participation of local communities. Whereas, is clearly mandated in the Constitution in 1945, that in management of natural resources as well as coastal and marine resources must involve public participation in planning and making a policy. Particularly that directly associated with the public interest.

As conclusion of this chapter, following table and figure summarize both countries condition.

**Table 5. 2 Comparison Aspect on Implementation of Coastal Conservation Policy
In France and Indonesia**

| Policy | Instruments | France | Indonesia |
|---|--|--|--|
| Political will of government: General policies for protection of the coastal environment | Yes, if it specific mention on constitution, law, and regulation | ✓ | ✓ |
| | No, if it is not mention on constitution, law, and regulation | | |
| Regulations: | Current policy implementation | | |
| - Boundaries | Planning zone and land use | <ul style="list-style-type: none"> • Based on Roman law, European regional boundaries • Public domain maritime • Department of Defense in collaboration with the CELRL to protect and developed coastal heritage | <ul style="list-style-type: none"> • The right of coastal (HP3) through legalization of Law No. 26 of 2007 regarding management of coastal areas and small island (Law-PWP3K) • Decentralization and regional autonomy |
| - Pollution | Regulation of pollution | <ul style="list-style-type: none"> • European Directives annex II action in its nature protection act of 1976 • The European Directive on equipment ports of the Union • The establishment of criminal courts Specialty (Le Havre, Brest and Marseille) • The establishment in the Mediterranean a zone of protection ecological (ZPE) | Law No. 23 of 1997 about Environmental Management Act (EMA) |
| - Fisheries | Regulation of fisheries | <ul style="list-style-type: none"> • European Union about Community waters implements the Common Fisheries Policy (CFP) • Regulation (EC) No. 2371/2002 of 20 December 2002 | Law of the Republic of Indonesia No. 8/1985 strengthened by Law No. 31 in 2004 concerning Fisheries |

| | | | |
|------------------------|--|--|---|
| Public participation | Interest groups and Stakeholders involvement | <ul style="list-style-type: none"> • Collaboration with several actors from European countries such as, Ireland, UK, Belgium and the Netherlands to launches the core program under INTERREG III B • Cooperation between government and local actors, experts, agencies research, etc. • center of Law and Economics of the Mer de l'Université de Bretagne Occidentale and Ifremer | Community based management (CBM) |
| Institutional Capacity | Training and education | the French Institute for Research and Exploitation of the Sea (IFREMER) | Coastal Resources Management Project (CRMP) or Proyek Pesisir |
| | inter-institutional Collaboration | <ul style="list-style-type: none"> • Collaboration between Ministries (Public Works, Environment, Agriculture, Sea, and Defense) • Ministry of Environment affiliate with CELRL • The <i>Office National des Forêts</i> (National Forests Office) | <ul style="list-style-type: none"> • Collaboration consist of 3 types of ministries • Council of Indonesian Maritime (DKN) |
| | Financial support | <ul style="list-style-type: none"> • Allocated from National Budget • The government accompany with CELRL tries to put possibility to increase income through strengthen cooperation between conservatory and local authorities | <ul style="list-style-type: none"> • Allocated from National Budget • The planning and budget for environmental protection and preservation at the start of every Five Year Plan • Department of Environment and Department of Public Works which is charge of spatial planning and zoning |

Source: Research, 2009

Figure 5. 1 Main Stakeholders in the conservation of natural coastal site in France

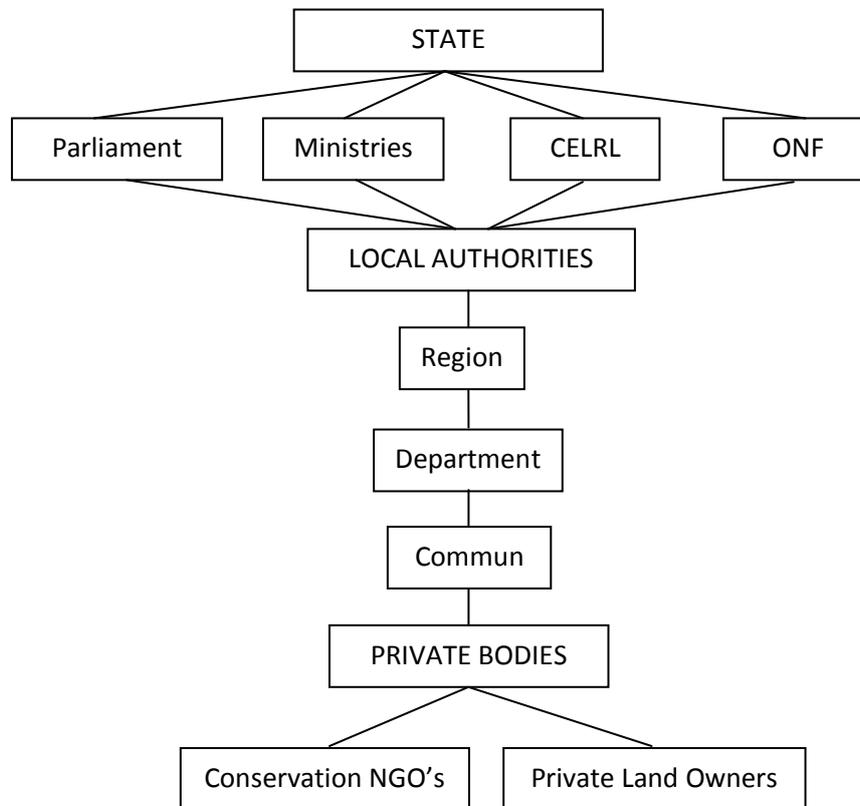
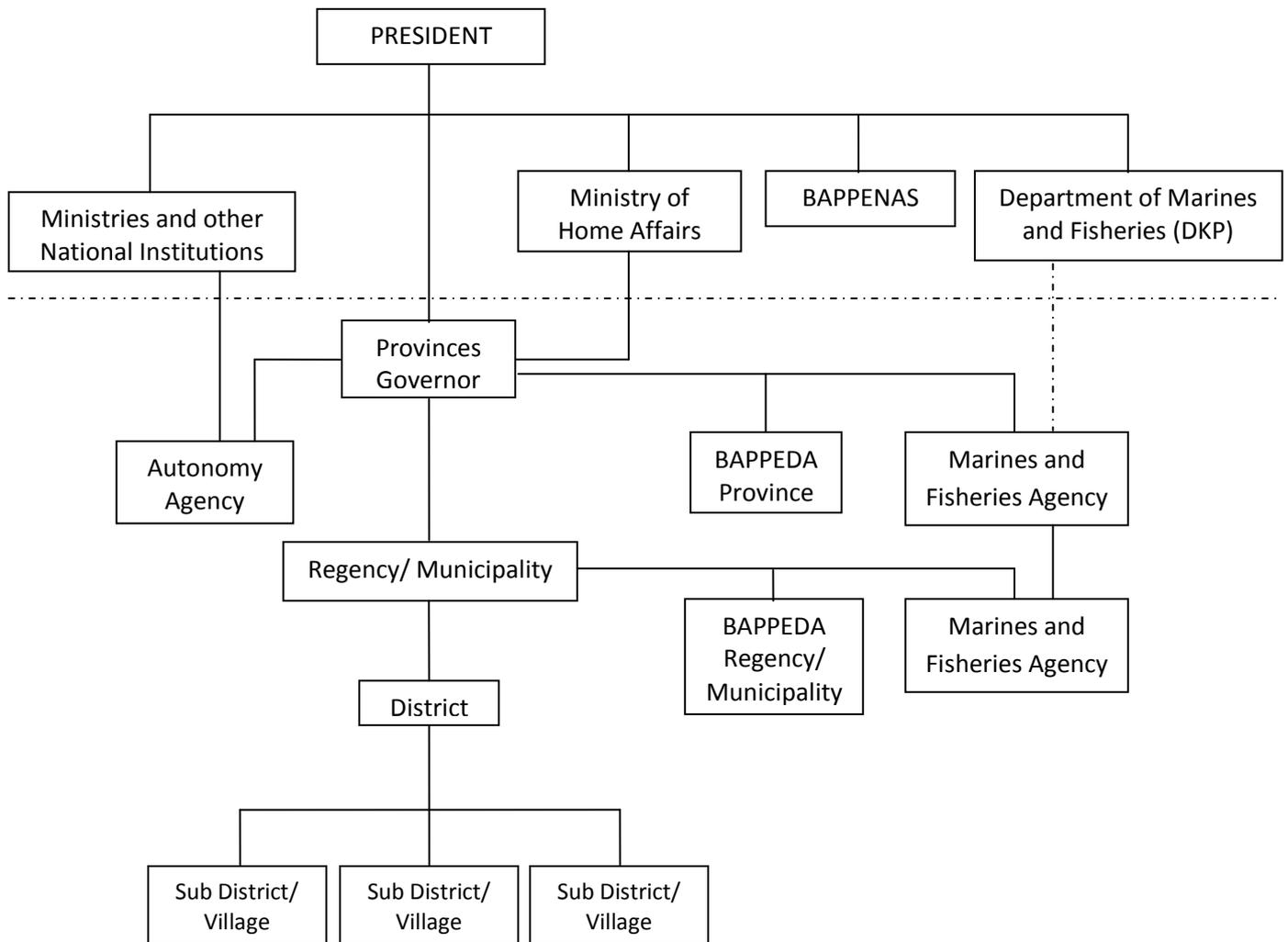


Figure 5. 2 The Inter Relation National and Regional Institutions in Indonesia



5.4 Lessons Learnt

From the description about coastal conservation and ICZM for both France and Indonesia in the previous part, there are some positive elements that can be drawn from the original policy issue, political will, regulation enforcement, and institutional capacity. Indonesia has different implementation of coastal conservation policy and ICZM as compared to France. This is because, coastal conservation and ICZM in Indonesia is generally still not being fully implemented. Existing condition in Indonesia has to be adjusted to implement coastal conservation as in France. Nevertheless, Indonesia has the possibility to implement it because there are some aspects that can support to the implementation of coastal conservation and ICZM.

Several important lessons that can be taken from France including whom and how to implement the coastal conservation and ICZM concept in Indonesia can be considered as follow:

1. A strong will from government as the starting point for coastal conservation and ICZM implementation to all government institutions.

With regard to this, the government of Indonesia has to have strong will to create a clear policy in terms of contents and roles of all stakeholders involved. This can be achieved either by establishing a new policy such as Indonesian Policy on Coastal Zone Management or improving the existing the policies to support the coastal conservation and ICZM concept.

2. A continuous evaluation and improvement both in policy/regulations and practices in order to succeed the coastal conservation and ICZM implementation

Besides the government, who has a power to implement the regulations, also should involved law practitioners, and other institution such as NGOs which concern to these issues. Continuous evaluation and improvement can be achieved by encouraging such as: training and education on coastal management, exchanges of experts, or comparative study.

3. Coordination among government institutions to comply and apply that will in daily activities

Coordination among government institutions can be seen from intergovernmental collaboration. This needed to conduct coordination between government and other actors, such as private sector, public (citizen and NGOs). Public can help government to supervise the process of decision making policy and it can be a pressure for all parties who involved in decision making process to give their commitment/promises to conduct of coastal conservation policy and ICZM.

In practices, the existence of specific institution for specific functions in coastal conservation and IZCM process such as the supervising institutions for all process is also important to develop and monitor coastal conservation and ICZM. The ability to encourage the supporting factors such as data availability supports from professional staff/human resources and involvement of all stakeholders will push the success of coastal conservation and ICZM practices.

Besides the above important elements, France faced some challenges or crucial condition in the implementation of coastal conservation and ICZM. Crucial factor from France's experience in the ICZM practices should become an attention prior to be implemented in Indonesia. Some crucial factors in France's experiences are related to constraints in the regulation pollution (large oil spills) and authority's division for broader autonomy. These aspects can become constraints in developing ICZM and influence to the success of coastal sustainable implementation. All of these aspects should be considered as lessons for the possibility of coastal conservation and ICZM implementation in Indonesia. The implementation ICZM in Indonesia can be realized by considering the aspects that can become positive points to encourage its implementation and also some weaknesses that have to be improved by learning from the experiences of advanced country (France).

A positive point in Indonesia's coastal conservation policy and ICZM is the new Law on Law No. 27 of 2007, about Management of Coastal Region and Small-Island (UU-PWP3K). UU-PWP3K expected to be the best solution and at the same time can overcome various problems associated with the utilization and management of coastal, marine and small islands in Indonesia, which is less coordinated, so there has been degradation, pollution, sedimentation, over exploitation, conflict seizure of natural resources and other problems that reduce the quality of coastal and marine environment and its small islands. Another positive point is the acknowledgement of traditional practices in coastal management as the uniqueness of cultural diversity. It is this point that is not provided in the concept of CELRL in France. Therefore, to make an effective implementation of ICZM, the government as the enabler and facilitator should accommodate the cultural value in the society.

Chapter 6 *Conclusion and Recommendation*

This chapter is intended to provide conclusion from the theoretical approach and the analysis of the case study that are discussed in the previous chapters. Finally, in the last part, it provides some recommendations for better implementation of Indonesia's coastal conservation in the framework of ICZM.

6.1 Conclusion

Indonesia is one of the countries in the world which has the highest marine biodiversity. This high biodiversity is not only due to Indonesia's geographical location around the equator where the Pacific and Indian Oceans mix, but also due to the complex currents and the high diversity in habitat types and ecosystems. Indonesia's increasing population and economic development are causing increased pressure on marine resources. Failure to adopt environmentally sound development criteria resulted in an excessive and unsustainable use of marine resources (over-exploitation). Therefore, there is a need for management that results in a wise, planned and controlled marine resource use.

One of the natural resource protection measures that may be applied is protected area management at sites with high biodiversity or with unique natural phenomena. Through coastal conservation policy and toward Integrated Coastal Zone Management (ICZM), a sustainable coastal management can be achieved.

ICZM is the management of the utilization of natural resources and environmental services that are located in coastal areas; the way to do through comprehensive assessment of the coastal area and its natural resources and environmental services that are in it, set goals and targets of the, and then plan and manage all of utilization.

The concept of ICZM as described above, is one of the conditions to achieve optimal development and sustainable. Sustainable development is a development to meet the needs of life at this time without any damage or reduce the ability for future generations to meet their life needs (WCED, 1987).

Characteristics and condition of coastal zone in Indonesia is different than France. Thus a different policy approach is needed to overcome the problem, particularly on environmental issues. Indonesia's coastal zone with thousand islands is using spatial approach to manage coastal area, decentralization and regional autonomy as a policy to handle diversity and complexity of the problems. The establishment of Law No. 27 of 2007, about Management of Coastal Region and Small-Island (UU-PWP3K) as an effort and good political will from government to manage coastal and marine in an integrated way. But, in the implementation is still on lack of condition, between

expectation and reality. The weakness of law enforcement in society is still one of issue to be solved.

In other hand, France as part of European Union and one of “mature nation” on implementing coastal conservation and ICZM have an experience in coastal management. The foundation of the policy of coastal management (Law No 75-602 of 10 July 1975) about the formation of the Conservatoire de l'espace littoral and Shoreline Lake (CELRL) is as an operator dedicated to land preservation and development of a third of natural coastline in partnership with local authorities concerned. In addition, the existence of rules and regulations on managing coastal zone also clearly implemented. The regulations on boundaries, pollution and fisheries are different condition with Indonesia.

On implementation of coastal conservation policy, Indonesia needs to learn from other countries which have more experiences. From the experience of implementation of coastal conservation and ICZM in France, there are some elements to be lesson, strong political will from government, clear law and regulation to support coastal conservation and ICZM, and institutional capacity.

Although not fully match with the condition of Indonesia, but there are several possibilities for the ICZM to be adopted as an alternative for government in making a policy and regulation. In the end, all these policies are implemented to achieve a sustainable coastal management.

6.2 Recommendation

In the last part of this research, recommendations are made based on the main research questions about “How does coastal conservation can be implemented in Indonesia” and based on analysis of research stated in chapter 5. However, there are some strategic recommendations to contribute and improve the management of coastal resources and ICZM in Indonesia, as follows:

1. Developing Political Will (Policy) and Regulations on Coastal Conservation

Based on the analysis in previous chapter, political will and related regulations/guidance are important in developing coastal management and they become starting points to encourage ICZM implementation. Regarding to political will (policy) and regulations aspects, currently, Indonesia has specific will or regulation on environmental issue and there are some existing environmental regulations which can support to coastal management development in Indonesia. But it still needs to be improved.

Related to the condition in Indonesia, political will (policy) should be prioritized in developing coastal conservation. The establishment of political will (like in France, it can be mentioned as Indonesian Policy on Coastal management). The policy should be clear in content, easy to understand by all stakeholders and bind all government institutions to implement it. The policy and also related regulations are better to be legalized so that the policy has the power in its implementation especially in the decision making process. If this recommendation will be implemented, it should consider other existing policy/regulations to support this recommendation.

Generally the content of policy on coastal conservation for Indonesia comprise of the context of policy, strict statement of government commitment in environment; responsibilities and clear role of all government (institutions); general target and other achievement (both short, medium and long term target) in ICZM implementation. This policy should be supported and be integrated with some regulations and guidance in coastal management practices and also be integrated with other existing policy/regulations. Implication to this recommendation is the needs to review some existing regulations and also guidance regarding to ICZM practices. For example is regulation on fisheries.

2. *Improving Institutional Capacity*

Institutional capacity is another important element in developing ICZM especially for a country that has not much experience on it. Based on previous chapters, capacity of government institution in Indonesia for existing coastal conservation and ICZM implementation is still need to improve. One of weaknesses related to the capability of government institutions in Indonesia is in controlling and monitoring aspect. It has been explained that unlike in France, there is no specific institution in Indonesia that responsible for all ICZM process. Besides, the environmental awareness/culture of that institution in ICZM practices is not shaped yet but this can be perceived because of still in sectoral way.

Regarding to the significant role of institution as one of element in developing coastal conservation and ICZM, improving the capacity of government institutions is important. Improving the capacity is not only means building new institutions but also building its culture and awareness on environment in daily practice.

Other recommendation for Indonesia with regard to this element is to improve the role and capacity of existing government institutions such as Ministry of Marine Affairs and Fisheries (DKP) or other environmental bodies/agencies for coastal conservation implementation. Related to the controlling and monitoring, actually in Indonesia, there are supervision boards both internal (BPKP and Inspectorate) and external (BPK/Audit Board) for supervising ICZM practices. Performance of these audit boards should be strengthened in supervising ICZM practices. Improvement of their performance in ICZM practices is not only audit economic aspects but also environmental aspect as the major points in coastal conservation. Other important recommendation in this part is to change the culture and competences of government institutions who conduct the coastal management to be more aware on environmental aspects.

From those explanations, improving of institutional capacity is important for Indonesian context because current condition shows the weaknesses of some government institutions in their capacity in ICZM practices. It should be considered that capacity improvement of government institution is not easy but should be done continuously and in the regulations, it should be stated clearly about the target of this achievement. It also should be clear enough about role of each involved institution in coastal conservation policy implementation. In short, these recommendations are needed in the framework of improving institutional capacity for coastal conservation policy and ICZM implementation in Indonesia.

3. Increasing public participation and public awareness

The implementation of the concept ICZM and coastal conservation policy is not only in institutional reform, but it must be socialized to the people and create the awareness among Indonesian people to apply the ICZM principles in practical life. Since many people in Indonesia still perceive that coastal and marine resources is abundant and a social good, and use or exploit it as it is a renewable resources; therefore, increasing public awareness is important. It can be done through environmental campaign by using information and communication media. Besides that, increasing the involvement of civil society, which encompasses different age, gender, social-economic status, and cultural diversity, is important to gain the public support for the improvement of coordination among stakeholders, decentralization, good governance, and law enforcement.

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