

# INTEGRATED COASTAL ZONE MANAGEMENT IN INDONESIA: THE IMPLEMENTATION AND ITS CHALLENGES

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Laely Nurhidayah<sup>1</sup>

## Abstrak

Indonesia sebagai Negara kepulauan masih menghadapi permasalahan dalam manajemen sumber daya laut and pesisir. Kerusakan terumbu karang, mangrove serta overfishing adalah salah satu indikator adanya permasalahan dalam manajemen sumber daya laut. Permasalahan ini termasuk tumpang tindih peraturan perundangan, kurangnya partisipasi masyarakat, dan konflik penggunaan pesisir dan sumber daya laut. Pengelolaan Pesisir Terpadu adalah pendekatan untuk mencapai keberlanjutan sumber daya laut dan pesisir seperti yang termaktub dalam Agenda 21 dan telah banyak diterapkan di berbagai negara. Pendekatan Pesisir terpadu adalah pendekatan baru yang menggantikan pendekatan sektoral yang dalam kenyataannya pendekatan sektoral ini tidak mampu mengatasi permasalahan kompleks manajemen sumber daya pesisir dan laut. Pengelolaan Pesisir Terpadu adalah pengintegrasian dan harmonisasi hukum, kebijakan dan kerjasama semua pemangku kepentingan dalam manajemen sumber daya laut dan pesisir. Tulisan ini mengkaji permasalahan dan tantangan pengelolaan pesisir laut terpadu di Indonesia, terutama dengan masih tumpang tindihnya peraturan perundang-undangan dalam pengelolaan sumber daya laut dan pesisir, kurangnya partisipasi masyarakat dan konflik lahan.

Kata Kunci : *integrated coastal zone management, partisipasi publik, manajemen konflik*

## Introduction

Indonesia as an archipelagic state still faces many problems in terms of management of marine and coastal resources. One of the main problems is degradation of marine and coastal ecosystems including the

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<sup>1</sup>Researcher at Research Center for Society and Culture-Indonesian Institute of Sciences (PMB-LIPI) Jakarta. E-mail: lae\_ly@yahoo.com

damage of mangrove forest<sup>2</sup> and coral reefs. According to the Minister of Forestry almost 70% of the potential mangrove areas of 9.4 million hectares in Indonesia were damaged because of development such as the shifting of mangrove areas into shrimp farms, housing, industries and cutting of mangrove forest for wood for local needs<sup>3</sup>. The data from the Ministry of Forestry is higher comparing with the data taken from 10 year period (1982-1993) which is 50% of mangrove areas were damaged and has reduced from 4 million hectare to only 2.5 million hectare. The huge and massive conversion of mangrove into shrimp farms or aquaculture occurs in North Sumatera, Lampung, West Java, Central Java, East Java, and South Sulawesi<sup>4</sup>. Meanwhile the conversion of mangrove areas into housing or industries occurs in DKI Jakarta, Tangerang, Bekasi, West Java, Central Java, East Java and Lampung.

The damage of coral reefs is also enormous, almost 71% were damaged and only 7% remains in good condition<sup>5</sup>. This damage was a result from destructive fishing activities which had been frequently practiced in the 1970s. The fisherman use bomb or cyanide for taking ornamental fish. Furthermore, the mining of coral reefs for building houses also contribute to coral reefs damage. These destructive fishing activities are not only conducted by traditional fisherman but also modern fisherman.<sup>6</sup> However, according to a recent survey the condition of coral reefs is improving with the good condition increasing to 25% and the bad condition 31%.<sup>7</sup> This improvement is basically because of an effort from Indonesian Government to restore coral reefs since 1998

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<sup>2</sup>Mangrove forests provide both direct benefits from the utilization of mangrove ecosystem as fishing, and indirect benefit include coastal protection and the prevention of sea water infiltration as well as the biodiversity benefits of fish breeding grounds and the provision vital habitat.

<sup>3</sup>Minister of Forestry, MS Kaban's statement as cited in Antara News 15 April 2008; Aloysius Budi Kurniawan, 70% Mangrove di Indonesia Rusak, Kompas 13 Oktober 2009.

<sup>4</sup>Ministry of Marine Affairs and Fisheries, *Academic Draft on the Management of Coastal Areas*, 2001, p P II-1- II-2.

<sup>5</sup>Bambang, 70 Persen Terumbu Karang di Indonesia Rusak Parah, Antara News, 10 Agustus 2007.

<sup>6</sup>Ibid.

<sup>7</sup>Diana Lestary, LIPI: 30% Coral Reef Damaged, Bisnis Indonesia, 28 March 2009.

by an increasing community education and awareness on local fisherman and promoting friendly fishing activities.

Moreover, the degradation of coastal ecosystems is also resulted from land-based marine pollution. Waste and garbage from domestic and industrial waste from the river are polluted the sea. To some extent, this land based pollution has caused an increase mortality of fish and resulted in damage to sea farming. The problem is exacerbated due to there is unclear responsibility as to which government level manages this transboundary land based marine pollution, between provincial, municipals and central government level.

Overfishing is another significant problem facing several Indonesian waters. This overfishing is caused by overcapacity, open access and the use of unfriendly fishing gear. Too many vessels catch the fish intensively in several waters such as in Java and Bali which has resulted in these areas is declared as overfished areas.

The other problem is the conflict of utilization and management of coastal areas. This conflict is either user conflict or a jurisdictional conflict. The conflict of utilization of coastal areas usually happens between central and local government, provincial and municipal levels, industries or companies and local people and the government and local people, for example, the conflict in the utilization of Pantai Indah Kapuk in Jakarta between the interest to protect mangrove areas and development of housing and a golf course. The development of Lamong Bay, where there is conflict between conservation area which is the interest of provincial level and the extension of a port which is the interest of municipal level<sup>8</sup>. In this regard, the economic interest always wins over the conservation and environment interest. The conflict between the fisherman and the owner of villas in Bali for example concerns with space allocation for local fisherman to put their boats on shores. In addition, the recent is the conflict between the government and local peoples on the allocation of marine and coastal resources for conservation area. In this case local people was rejected the idea of conservation due to this will limit their access on marine and coastal resources. The issue concern with the need to greater involvement of

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<sup>8</sup>In this case the municipal level win over conservation interest to built the extended port in Lamong Bay, despite with the protests of environmentalist and academe.

public participation in decision making and access of local people on marine and coastal resources.

The government can not solve all those problems effectively because there are overlapping and conflicting laws regarding management of marine and coastal resources; lack of law enforcement mechanism; unclear roles and responsibility of institutions which manage marine and coastal resources; lack coordination between sectoral government; lack of capacity of local government; and lack public participation.

The need to integrate coastal management between central and local levels in Indonesia is hampered by the current sectoral approach to the management of marine and coastal resources. In addition, overlapping and conflicting laws and regulations on the management of marine and coastal resources have created confusion, unclear mandates, roles and responsibilities of institutions which manage marine and coastal ecosystems. This has lead to unsustainable patterns of development in coastal areas. There is an urgent need to integrate marine and coastal management and to increase public participation in decision making in the management of marine and coastal resources. This paper will examines the challenges to the implementation of ICZM in Indonesia especially in concern with legal and institutional framework, public participation and conflict management framework.

### **Definition of Integrated Coastal Zone Management (ICZM)**

There are many definitions of ICZM provided by several documents and scholars. These include the definition from European Commission which defines ICZM as follows:

A dynamic, multi disciplinary, and iterative process to promote sustainable management of coastal zones. It covers the full cycle information collection, planning, decision making, management, and monitoring of implementation.<sup>9</sup> ICZM uses the informed participation and cooperation of all stakeholders to assess the societal goals in a given coastal areas and to take

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<sup>9</sup>Proposal for Parliament and Council recommendation concerning the implementation of integrated coastal zone management in Europe: COM (2000) 545, Annex 1 as cited in Mina Council Advice about ICZM, 2001: [http://www.minaraad.be/adviezen/adv\\_2001/advice-about-the-integrated-coastal-zone-management-iczmm/advies5april2001-bis.pdf](http://www.minaraad.be/adviezen/adv_2001/advice-about-the-integrated-coastal-zone-management-iczmm/advies5april2001-bis.pdf)

actions toward meeting these objectives. ICZM seek over the long term, to balance environment, economic, social cultural and recreational objectives, all within the limits set by the natural dynamic.<sup>10</sup>

Integrated ICZM refers to the integration of objectives and the integration many instruments needed to meet this objective. It means the integration of all relevant policy areas, sectors, and level of administrations.

The other definition of ICZM is from Cincin-Sain and Kneeth (1998) which gives definition of ICZM as “continuous decision making process aimed at maintaining, restoring or improving specified qualities of coastal ecosystems and the associated human societies”. Similar definition on ICZM with the EU is provided by Alejandro Yanes Arancibia (2004) which stated that ICZM as follows:

Dynamic process by which decision are taken for taken for the use, development and protection of coastal areas and resources, to achieve goal established in cooperation with user groups and authorities. ICZM recognizes the distinctive character of coastal zone, is multi-purposes-oriented, analyzes implications of development, conflicting uses, and interrelationship between physical processes and human activities, and promote linkages and harmonization among sectoral, coastal and ocean activities. There are at least seven different kinds of integration: (a) Intergovernmental, (b) Land-water interface, (c) Intersectoral, (d) Interdisciplinary, (e) Interinstitutional, (f) Intertemporal, and (g) Managerial.

There are many elements in those definitions of ICZM. However, those elements to some extent have similarities which can be concluded that ICZM is multi disciplinary and continues decision making process which involved active participation of all stakeholders to achieve the goals of sustainability to balance socio, economic and environment on management of coastal resources and mediate dispute between stakeholders.

### **ICZM Framework**

Integrated coastal zone management is a process that unites the government and the community, science and management, sectoral and

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<sup>10</sup>Ibid.

public interest in preparing and implementing an integrated plan for the protection and development of coastal ecosystems and resources (Bowen, 2009). The central defining concept of integrated coastal management is the effective integration across sectors, disciplines, agencies and stakeholders for the sustainable use of coastal areas and resources (Poitras, Bowen, and Wiggin, 2003).

The overall goal of ICM is to improve the quality of life of human communities who depend on coastal resources while maintaining the biological diversity and productivity of the ecosystem (Frost, 2009). Thus, in this matter, there are two goals which ICZM seeks to achieve. Firstly, the improvement of the bio-physical environment, for example mangrove areas or coral reefs, the control of coastal erosion or the improvement in water quality. Secondly, the improvement of quality of life of the human population, for example greater equity of how coastal resources are allocated, improved livelihood, reduced conflicts among user groups and control of destructive forms of behavior (Olsen, 2003).

GESAMP has developed a model which was modified by Olsen who suggested that a typical ICZM requires 18-15 years from identification to evaluation. Thus it is a long term and continuous program in improving and restoring the marine and coastal resources and the environment. There are five phases or stages within one ICZM cycle, from issue identification and assessment; program preparation; formal adoption and funding; implementation; and evaluation.

A viable ICM Program must be comprehensive but its content and complexity will vary from area to area according to development trends, conservation need, tradition, norms, governmental systems and current critical issues and conflicts. Compatible multiple use objectives should always be the main focus. If human and financial resources are limited, ICZM programs can be simplified to include only the following components: (i) Harmonization of sectoral policies and goals; (ii) Cross sectoral enforcement mechanism; (iii) A coordination office and, (iv) Permit approval and Environmental Impact Assessment Procedures (EIA).

### **ICZM Framework in Indonesia**

There was no national framework and policy on Integrated Coastal Management in Indonesia before the enactment of law No 27/2007 on Management of Coastal Zone and Small Island. The coastal

management in Indonesia was sectoral in approach and the coastal management programs not sustainable, continue and not comprehensive in geographical as it is not covered the entire coastal areas in Indonesia. It has been suggested that the “sectoral nature of coastal resources management in Indonesia is the greatest single factor impeding better, sustainable and integrated resource management (Patlis, 2005).” This is because many agencies have implemented their own development which may conflict with other agency programs and interests. For example, recently there has been a bribery case relating to mangrove forest which was converted into a port in Tanjung Api-Api Banyuasin-South Sumatera; the conversion of Lamong Bay for port; the conversion of mangrove forest in Pontianak into sea farming <http://regional.kompas.com/read/xml/2008/09/10/15485381/7.000.hektare.mangrove.diusulkan.untuk.tambak>. There is a trend of competition between sectoral agencies with mandates in coastal resources or natural resources management in Indonesia. The difficulties are compounded in coastal management in Indonesia because of the competition for limited resources in limited space, with the collision of laws from various sectors which further strains the legal system (Patlis, 2005).

The evolution of coastal management initiatives in Indonesia was mostly triggered by international and bilateral donor agencies through their programs and projects and executed by different agencies and or organizations (ASEAN-USAID CRMP DGF, 1992). These include: CEPI Collaborative Environmental Project in Indonesia(CEPI) is funded by Canadian International Development Agency(CIDA) in (1996-2001) and executed by Indonesian Environmental Impact Management Agency (BAPEDAL); Coral Reef Rehabilitation and Management Program (COREMAP) is designed for 15 years I & II (1998-2015) is funded by Ausaid for Coremap I and executed by Indonesian Institute of Sciences (LIPI), World Bank & Asia Development Bank for Coremap II and is executed by Ministry of Marine Affairs and Fisheries and LIPI; Integrated Coral Reef Management Plan (InteCoReef) (2000-2002) in North Sulawesi is funded by JICA and executed by Local Planning and Development Agency (Bappeda); Marine Coastal Resources Management Project (MCRMP) is designed for 5 years (2001-2006) is funded by USAID and executed by Ministry of Marine Affairs and Fisheries; Marine Aquarium Market Transformation Initiative (MAMTI) is designed for 5 years (2005-2009) is funded by Global Environment

Facility (GEF) and executed by Marine Aquarium Council (MAC), Reef Check Foundation and Conservation and Community Investment Forum (CCIF), and the latest one is Coral Triangle Initiative (CTI) which is signed in Manado in 2009 by six head of governments participating in CTI, to be funded by GEF and will be implemented by World Wildlife Fund (WWF) and The Nature Conservancy (TNC) (<http://www.coremap.or.id/>, <http://www.kp3k.dkp.go.id/>, [www.gefweb.org](http://www.gefweb.org), [www.cti-secretariat.net](http://www.cti-secretariat.net).)

Most of the projects are pilot projects and do not cover all the coastal areas of Indonesia. For example, COREMAP project only covers several areas in the western part and the eastern part of Indonesia. Eastern part namely: Selayar, Pangkajene South Sulawesi, Buton Southeast Sulawesi, Sikka East Nusa Tenggara, Biak Papua, and Raja Ampat Papua. These sites are under the auspices of the World Bank. The Western parts cover Batam, Riau, Bintan (Riau Island), Natuna Riau, Nias and Tapanuli North Sumatera, and Mentawai West Sumatera. And CTI is only covered Eastern part of Indonesia such as Sulawesi, Papua, Bali, West Nusa Tenggara and East Nusa Tenggara, Maluku and East Kalimantan. There are many coastal areas not covered by this project. Below is coverage of sites covered by COREMAP II and CTI.

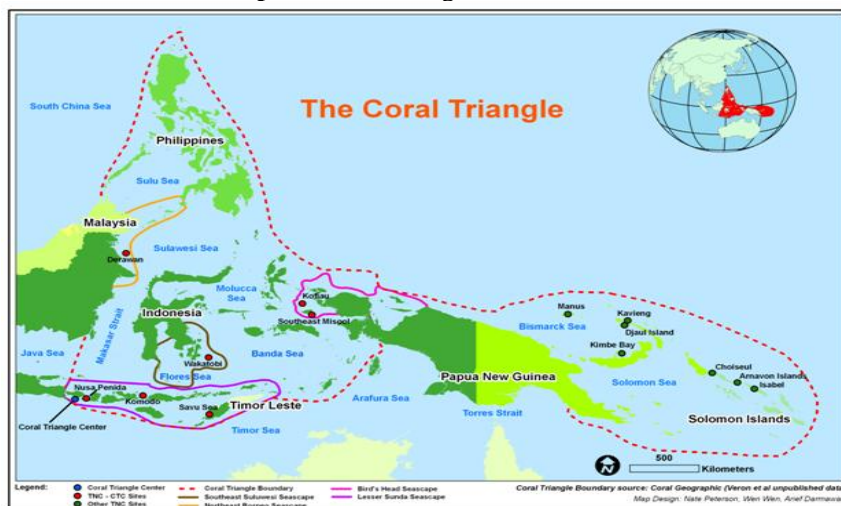
**Map 1** COREMAP Sites



Source: Coremap: <http://www.coremap.or.id/lokasi/>, 2009



**Map 2** Coral Triangle Initiative Sites



Source: CTI website, 2009

Most of the projects lifecycles are limited to only several years, beyond which they are not continued and sustained for long term. Olsen has suggested that ICZM cycle needs a long period, 16-18 years, to achieve the sustainable coastal management. In addition, it pointed out that there are challenges to sustain ICM project in Indonesia due to limitations within the legal framework (Patlis, 2005). Most of the legislation is sectoral, and conflicting and overlapping. Jason M Patlis (2005: 451) concluded that “Indonesian laws and legal framework are characterized by horizontally, the laws governing coastal resources are sectoral which resulted in series of gaps, overlaps, redundancies and conflicts”. This is because most of the legislations are being drafted by each line of agency before being submitted to People Representative Council (DPR). Jason M Patlis (2005: 453) has suggested that many laws are serving the administrative bureaucracy rather than the national interest. That is why there are many inconsistencies in law or what Patlis (2005: 453) suggested that there are disconnects in legal framework. Vertically, the laws governing regional autonomy have provided overly broad provisions, unclear mandates and few guidelines, which have encouraged regional governments to quickly impose their own regulatory framework for natural resource management (Patlis, 2005: 453). It also pointed out that Indonesia has insufficient legal

provision for ICM and the absence of clear mandates of designated institutions (Siry, 2007: 45).<sup>11</sup>

There are also initiatives from government to address degradation issue of the marine and coastal resources. However, it has been observed that most of the projects are small and scattered along the very extensive coastline of the country (Hidayati, 2000:30-32). These include Sustainable Marine Resources Development Program (*Program Laut Lestari*) established by Ministry of Environment<sup>12</sup>; a national strategy and action plan for coral reef ecosystem conservation and management established by the Ministry of Environment in 1992; *MitraBahari* (Maritime Partnership) Program was launched by the Ministry of Marine Affairs and Fisheries in 2003.<sup>13</sup>

In fact, while there are advantages of pilot projects funded by international donors to trigger the coastal protection in other areas as best practices and improving capacity of local governments and local communities in some areas, the results of this pilot projects are not so satisfactory. For example, as reported in the MAMTI project evaluation, there is low engagement of stakeholders in the project implementation.<sup>14</sup>

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<sup>11</sup>Hendra Yusran Siry, *Making Decentralized Coastal Zone Management Work for The Southeast Asean Region: Comparative Perspective*, UNDOALOS, New York, 2007, p 45.

<sup>12</sup>Program Laut Lestari established by Ministry of Environment. This program focuses on five activities: (1) Marine biodiversity management, (2) Mangrove ecosystem management, (3) Coral reef management, (4) Marine pollution prevention and control, and (5) Coastal community development See: Deny Hidayati, *Coastal Management in ASEAN Countries, The struggle to achieve Sustainable Coastal Development*, UNU Tokyo, 2000, p 32.

<sup>13</sup>The Mitra Bahari (Sea Partnership) Program is an initiative sponsored by the General Director for Coastal Areas and Small Islands at the Department of Marine Affairs and Fisheries of the Republic of Indonesia. Mitra Bahari aims to maximize the utilization and management of marine and coastal resources by regional government in the era of regional autonomy. Article 41 the law no 27/2007 on management of coastal and small island suggested that Mitra Bahari is established to empower the capacity of stakeholders on management of coastal zone and small island. It is a partnership forum between central Government, local Government, university, NGOs, professional organizations, local community leader and private communities. Mitra Bahari activities are focus on assistantship, education, training, campaign, applied research and policy recommendation.

<sup>14</sup>Ibid, pv

The project ownership is weak.<sup>15</sup> It is similar with the outcome of the COREMAP. While the outcome of the project was mainly satisfactory, it was only modestly effective in establishing a viable framework for national coral reef management in Indonesia.<sup>16</sup> The key elements of supportive legal framework have been drafted but not officially approved and enacted.<sup>17</sup>

### **1. Legal and Institutional Framework**

Before the enactment of the Law Number 22/1999 on autonomy act and this act was revised by the Law Number 32/2004 on Autonomy Act, marine and coastal resources management in Indonesia was centralistic in approach. Almost 32 years (1967-1998) of management of coastal resources in Indonesia was centralistic in approach. It has been observed that the centralization of fisheries management in Indonesia was characterized by the existence of national policy that all marine waters are State property and to be managed centrally, through the provincial, regency and village offices of the central government, for the benefit of the entire nation (Ruddle 1999 as cited in Satria 2006). During this period the policy and management remained at the central level, with the local government is only following the central government's policy. There had been no significant roles for local governments and local people in marine management and coastal resources (Ruddle 1999 as cited in Satria 2006). Thus, this created a lack of capacity at the local government level and local people to manage marine and coastal resources. There was no responsibility, participation and sense of stewardship within local people to conserve and protect marine resources from destructive activities (Ruddle 1999 as cited in Satria 2006). For example, most ornamental fishermen in the 1970s used bombs and poisons to catch ornamental fish. This destructive fishing activity has resulted in enormous damage to the coral reef ecosystem and the fish. According to an interview with local fisherman in Bondalem village in 2008, it was stated that due to bomb and poison practices many coral reefs had been damaged and many fish died.

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<sup>15</sup>Ibid, pv

<sup>16</sup>World Bank, Project Performance Assessment report Republic of Indonesia, Coral Reef Rehabilitation and Management Project Phase I, March 2004.

<sup>17</sup>Ibid

There are many legislations directly or indirectly governed marine and coastal resources. However, to some extent these legislations are not comprehensive. Ocean and coastal resources governance are regulated scattered in many legislations. There are some opinions from academes that there should be a legislation to govern sea in comprehensive way. The bright side is the government is now in progress to prepare the draft of law on sea and ocean policy. Below are the lists of legislations concerning marine management and coastal resource.

**Table 1.** The law related marine and Coastal Management

<ul style="list-style-type: none"> <li>• The Act No 23/1997 it revised by the Law No 32/2009 on Management and Protection of Environment</li> </ul>	It governs the prevention and protection of environment inside Indonesian jurisdiction including marine and coastal environment
<ul style="list-style-type: none"> <li>• The Act No 31/2004 on Fisheries</li> </ul>	It governs fisheries resources in Indonesian
<ul style="list-style-type: none"> <li>• The Act No 5/1990 on Conservation Living Natural Resources</li> </ul>	It governs and protect living natural resources including mangrove, coral reefs
<ul style="list-style-type: none"> <li>• The Act No 32/2004 on Autonomy Law</li> </ul>	It govern devolution of power from central government to local government including the authority to manage marine resources 4 nautical miles for municipal level and 12 miles for provincial level
<ul style="list-style-type: none"> <li>• The Act No 26/2007 on Spatial Planning</li> </ul>	It governs zoning and spatial planning including coastal areas
<ul style="list-style-type: none"> <li>• The Act No 27/2007 on Management of Coastal Areas and Small Island</li> </ul>	It governs management of coastal areas and small islands
<ul style="list-style-type: none"> <li>• The Act No 6/1996 on Indonesian Territorial Water</li> </ul>	It governs 12 nautical miles of the territorial waters of Indonesia including innocent passages and conservation
<ul style="list-style-type: none"> <li>• The Act No 5/1983 on Indonesian EEZ</li> </ul>	It governs 200 miles of the economic exclusives zone include the exploitation and preservation of its resources
<ul style="list-style-type: none"> <li>• The Act No 1/1973 on Indonesian Continental Shelf</li> </ul>	It governs the continental shelf of Indonesia 200 nautical miles include exploration and exploitation of sea bad and prevention of pollution

Source: modified from various laws in Indonesia, 2009

Before the establishment of the Ministry of Marine Affairs and Fisheries in 1999, there was no specific legislation concerning coastal resource management. Thus, marine and coastal management was sectoral in approach. The regulation regarding marine management and coastal areas is heavily based on three regulations, namely the Fisheries Act no 9/1985 which has been revised by the Law Number 31/2004; the Law Number 5/1990 on Conservation of Living Natural Resources; and the Law Number 23/1997 on Environment Management. After the enactment of the Law Number 5/1990 on Conservation Living Natural Resources, six national marine parks have been established. These include (Satria, 2006):

- Kepulauan Seribu
- Karimun Jawa
- Takabonerate
- Bunaken
- Wakatobi
- Cendrawasih
- Togian Marine National Parks.

These six marine national parks are under the management of the Ministry of Forestry which becomes the designated institution in managing marine parks under the Law Number 5/1990 and the Law Number 41/1999 on forestry. However, with the enactment the Law Number 31/2004 and the Law Number 27/2007, this responsibility was transferred to the Ministry of Marine Affairs and Fisheries. However, the management of the six marine national parks is still under controlled by Ministry of Forestry; While the Ministry of Forestry is only transferred the eight marine conservation areas to be managed by the Ministry of Marine Affairs and Fisheries.<sup>18</sup> There is conflict and inconsistency between the previous legislation the Law Number 5/1990 and Law Number 41/1999 and the recent the Law Number 31/2004 and the Law Number 27/2007. This overlapping legislation has created a dualism and unclear mandates and responsibilities in marine management. These two institutions always referred to the conflicting legislations to maintain their respective authority. In addition, with the “sectoral ego” makes the management conflict is more difficult to resolve and to make the situation even more complex because many institutions are involved in marine and coastal resources management.

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<sup>18</sup>See: [www.dephut.go.id](http://www.dephut.go.id).

Table 2 below lists the national institutions which have a marine and coastal management mandate.

**Table 2** National Institution and their roles in Marine and Coastal Management

Institution	Role
<b>Coordinating Agencies</b>	
Ministry for State Environment	National coordination of environment policy and impact assessments. This include policy on marine environment
National Development Planning Board (Bappenas)	Draft, Coordinates, and implements national five years development plans
Department of Home Affairs	Regional development policy, planning, and coordination from national perspective
Ministry of State for Science and Technology (BPPT)	Natural resource inventory, evaluation and technology coordination
National Coordinating Agency For Data Survey and Mapping (Bakosurtanal)	Land including coastline mapping, receive data from other agency such as DEHIDROS
Indonesian Institute of Science (LIPI)	Marine research, data coordination and scientific advise for other agencies
Coordinating Committee for National Sea Bed Jurisdiction	National Marine Boundaries, Jurisdiction and the law of the sea issue
Coordinating Board for Marine Security (BAKORKAMLA)	Security issue such as piracy, foreign fishing intrusion, pollution and smuggling
<b>Line Agency</b>	
Department of Marine Affairs and Fisheries	Management of marine and fisheries resources, conservation of marine and coastal areas including marine protected areas
Department of Forestry/Directorate General of Forest Protection and Nature Conservation	Marine conservation, mangrove conservation and management of national marine protected areas
Department of Mining and Energy	Regulate oil & Gas exploration and production on sea bed and oil industry safely,sand sea mining licensing

Department of Industry	Administer industrial development and management
Department of Trade	Administer and regulate trade, export and import including sea sand export
Department of Public Works	Coastal Engineering, infrastructure and erosion control
Department of Tourism	Marine Tourism development and management
Department of Transportation Directorate General of Marine Transportation	Regulate transportation in sea, port, vessels

Source: Modified from Dahuri, Sloan Sugandy, Deny Hidayati, 2000

There is no institution which coordinates and arranges cross sectoral approaches on management of marine and coastal resources. National Development Planning Board its too broadly coordinate all development sector for Indonesia. There is no specific body mandated to coordinate in marine and coastal resources, both at the national level or the local level. If we look to Vietnam experience, Vietnam also has similar problem with Indonesia. The management of marine and coastal is characterized by overlapping and fragmented sectoral approach.<sup>19</sup> To overcome this problem, the Vietnam Government launched the “Strategy of Vietnam’s Seas toward 2020” in 2007 which consisting the requirement to establish the powerful governmental organization of Seas and Island Affairs.<sup>20</sup> Agenda 21 calls States to consider establishing or strengthening appropriate coordinating mechanism such as high-level policy-planning body for integrated management and sustainable development of marine and coastal areas at both national and local levels. It is pointed out that some options for achieving intersectoral integration may include naming a lead agency, creating a new agency and training agency personnel. For example, the creation of special inter-Ministerial coastal coordinating council or commission; Assignment to an existing planning, budget or coordination office; and designation of an existing line ministry to act as lead ministry (Cicin-Sain and Knecht, 157).

Despite there is decentralization and devolution of power from central government to local government on management of marine and

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<sup>19</sup>Mr. Dai presentation from VASI in Marine management and good governance in practice training, Vietnam, SIDA, 4-9 October 2009.

<sup>20</sup>Ibid.

coastal resources, until now the problems of coastal environment degradation and depletion of coastal resources continues. CZM in Indonesia is not working effectively because there is ambiguity and overlap with respect to various laws and jurisdiction issues (Siry, 2007: 21). In addition, a lack of capacity of local government level in most of the archipelago hampers the implementation of ICZM. Despite the long standing interest in improving national capacity for the development of the vast marine and costal resources of the Indonesian archipelago (Bappenas, CIDA, 1997), active involvement in various pilot scale integrated coastal management initiatives (USAID ASEAN CRMP, 1991), and recent investment in large scale planning initiatives (ADB,1992).<sup>21</sup> It is argued that integrated coastal zone management in Indonesia still remains in infancy (Tulungen, Kussoy, and Crawford, 1998). New legislation on the management of coastal areas and small islands such as the Act no 27/2007 states that the management of coastal area and small islands is conducted by integrated activities: between national government and local government; between local government; between sectors; between government, industries and communities; between terrestrial ecosystem and marine ecosystem; between science and management principles.<sup>22</sup> However again, this regulation does not provide a framework and a mechanism on how the decision making is integrated between sectors. The lack of coordination between sectors and stakeholders for the management of marine and coastal resources is because there is no system and agency to coordinate every activity in the marine and coastal areas.<sup>23</sup> In addition, until now most local governments tend to prioritize terrestrial planning rather than marine space planning. They do not have any mapping and zoning for marine areas, this is because development in Indonesia favoured the terrestrial areas rather than marine areas. Most spatial planning is intended for the zoning of terrestrial areas while in marine areas zoning is limited to

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<sup>21</sup>J. Johannes Tulungen, Priciellia Kussoy and Brian R Crawford, *Community Based Coastal Management in Indonesia: North Sulawesi Early Stage experience*, a paper presented at Convention of Integrated Coastal Management Practitioners in the Philippines, 1998.

<sup>22</sup>See: Article 6 The Law Number 27/2007 on Coastal Management and Small Island.

<sup>23</sup>Dahuri, Reoriented the development based on Maritime sector, 2003 [www.tokohindonesia.com/ensiklopedi/.../rokhmin-dahuri/wawancara2](http://www.tokohindonesia.com/ensiklopedi/.../rokhmin-dahuri/wawancara2).



marine protected areas. Many local governments do not have any capacity in marine zoning and mapping.

With the euphoria of decentralization, many local governments enacted local regulations regarding the management of marine resources. This local regulation sometimes is not consistent with the pre-existing central law, even with pre-existing provincial laws. However, within the hierarchy of the Indonesian legal system, lower regulation can not be inconsistent or contradict higher level law. The Ministry of Home Affairs may review the local regulations and if these contravene with higher regulation it will be revoked. Department of Home Affairs has estimated that more than 7000 provincial or Regency regulations in mining, forestry, trade and industry have not complied with higher level regulations.<sup>24</sup> Most of these regulations usually favour government revenue rather than conservation. Thus, it is hard task for the Ministry of Home Affairs to assess, monitor and revoke all the local regulations at the provincial and district levels which contravene higher regulation. Below is the hierarchy of the Indonesian legal system and administrative levels.

**Table 3.** The Hierarchy of Indonesian Legal System Based on MPRS Decree 1966

MPRS Decree No XX/MPRS/1966

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- Basic Constitution
  - General People Assembly Decree
  - Laws and Acts
  - Government Regulation substitute Law or Act
  - Government Regulations
  - Presidential Decrees
  - Ministerial Decrees
  - Provincial Government Regulations
  - District or City Regulations
  - Village Regulation
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Source: MPRS Decree No XX/1966

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<sup>24</sup>Depdagri assess that 7000 local regulations are not valid, Kompas Daily News 14 Agustus 2003 as cited in Dirhamsyah, Analysis of the Effectiveness of Indonesia's Coral Reef Management Framework, University of Wollongong 2005.

**Table 4.** The Hierarchy of Administrative Level in Indonesia

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- National Level (Central Government) in Jakarta
  - Provincial Level (Local Governments) in 33 provinces
  - District/Municipal level (Local Governments)
  - Village Level
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Most of the local regulations (district regulations) contain rules on licensing and retribution in the fisheries sectors. This regulation is intended to increase the local government revenues in fisheries sectors, especially the revenue from the fee of licensing to fish and retribution and licensing in sea farming. There are not many local government enacted regulations for the management of coastal resources which are intended to protect the marine and coastal areas. It has been argued that local acts are more concerned with revenues rather than with ecological and sustainable principles (Siry, 2007: 51). For example, too many sand mining licenses granted by the local Government in Riau has caused significant environment degradation in coastal areas ([http://www.majalahtrust.com/liputan\\_khusus/liputan\\_khusus/437.php](http://www.majalahtrust.com/liputan_khusus/liputan_khusus/437.php)). With this massive coastal degradation, the export of sea sand mining is prohibited under the decision of the Ministry of Trade No 117/2003 and No 2/2007. However, illegal sea sand mining still occurs. This phenomenon occurs because the devolution of power from the central government to the local government is very fast and does not take into account the capacity of the local government. It is argued that without capacity building greater decentralization is not effective. The World Bank stated that decentralization is not convinced to have positive effects or positive impacts still very limited ([http://www.majalahtrust.com/liputan\\_khusus/liputan\\_khusus/437.php](http://www.majalahtrust.com/liputan_khusus/liputan_khusus/437.php)). With the decentralization, the local government has been given the authority for the management of marine and coastal resources, except for the sea bed which remains under the central government control: Article 18 the law no 32/2004

- (1) The local regions that have sea are given the authority to manage marine resources in their area
- (2) Local region will be given the share from the utilization and management of marine resources in sea bad accordance with the law.
- (3) The authority to manage marine resources. This includes:
  - a. Exploration, exploitation, conservation and management of marine resources

- b. Administrative function
- c. Spatial planning
- d. Law enforcement of the local regulation and central legislation
- e. Support central government in Security issue
- d. Support central government in Defense

Based on this regulation, the management of marine and coastal resources is decentralized to local government. However, local governments seem only prioritize the exploitation of marine resources. They do not have enough capacity to undertake marine conservation. All the conservation initiatives, planning, funding and the implementation are mostly conducted by central government especially with respect to the establishment of local conservation areas both through the Ministry of Forestry and the Ministry of Marine Affairs and Fisheries. Both institutions have the authority to manage marine conservation but with different approaches and different criteria in assessing marine conservation areas. For example, in Buleleng Bali, the Ministry of Forestry has assessed and intended to include all 144 km<sup>2</sup> coastline in Buleleng Bali become a conservation areas. However, according to the assessment of the Ministry of Marine Affairs and Fisheries only three designated areas in Buleleng Bali namely Gerokgak, Lovina and Tejakula are suitable to be designated as marine conservation areas within the zoning system. There are two systems of marine conservation areas centralized: the Ministry of Forestry as the leading institution and decentralized with the Ministry of Marine Affairs and Fisheries as the leading institution (Satria, 2006:25). It has been suggested that the Ministry of Forestry does not believe that the local government is capable of handling the management of conservation areas so centralized approach is still conducted (Satria, 2006:25). On the other hand, the Ministry of Marine Affairs Fisheries has begun to decentralize the management of conservation areas to local governments with the development of local marine conservation areas and attempting to involve the local people (Satria, 2006:25). Even though, this involvement is still limited in only to inform local people on the program and project of marine conservation areas which will be conducted in their areas. In this top down approach there is limited participation of the local people particularly local people do not participate in planning, implementation and monitoring.

## 2. Public Participation in Marine and Coastal Management

Under decentralization the management of marine and coastal resources is decentralized to the municipality or regency, and the village level. The current institutional framework of openness and reform has created windows of opportunity for establishing community based management approach (Tulungen et. al., 1998). Community based coastal management (CBCM) is recognized globally as an integral feature of integrated coastal management (Harvey, 2001: 163). CBCM is people centered, community-oriented and resources based. It starts from the basic premise that people have the innate capacity to understand and act on their own problems (Harvey, 2001: 163). It begins where the people are, i.e. what the people already know, and build on this knowledge to develop further their knowledge and create a new consciousness (Harvey, 2001: 163). It strives for more active participation of stakeholders in the planning, implementation and evaluation (Harvey, 2001: 164). There is a global trend toward increased community involvement in coastal management processes (Harvey, 2001: 164)s. Many international donors for marine and coastal projects emphasize community based coastal management approaches. They choose the village as pilot project and try to establish effective models of participatory and community based coastal resources management (Tulungen et. al., 1998). For example, Pesisir Project (Coastal Resources Management Project-Indonesia) in North Sulawesi funded by USAID. This project aimed to identify a model and best practices for management of marine resources. These include the formulation and the implementation of village based integrated coastal management plans, community based marine sanctuaries, village ordinance and participatory early action such as beach clean up and mangrove planting (Tulungen et. al., 1998). Actually, in community based marine management based adat already exist, for example, *sasi* in Maluku, *Mane'e* in Sulawesi, *panglima laot* in Aceh, and *awig-awig* in Bali and Lombok which contribute to conservation programs.

There is no explicit regulation on community based coastal management in the new Law on Management of Coastal Resources and Small Island No 27/2007, It is only stated in Article 28 (7) that the initiation of conservation areas can come from individual and community, without any further stipulations. A clear legislation on how marine protected areas or conservation areas are managed with the involvement of all stakeholders are needed. Because top-down

approaches on the establishment of marine protected areas create conflicts with the communities and local fisherman. For example, on the establishment of marine protected areas in Sepanjang island in Sumenep, Madura, East Java the local people is rejected to the idea of the local government to establish marine protected areas in their marine coastal areas and fishing grounds. They are afraid they could not fish anymore and that no take zone policy would have negative impacts to their livelihoods.

Community based management approaches are mainly triggered by international donors and projects in marine management. For example, in Bondalem village Buleleng Bali, where the community established marine protected areas, enacted village regulations and planted coral reefs with the assistance of NGOs and is funded by international donors. While there is a growing of the value and benefit of working at the community level, this community based approach still faces many challenges and obstacles. These include:

- The gap in implementation
- Lack of law enforcement to the village regulation<sup>25</sup>
- The sustainability of funding<sup>26</sup>
- Lack of government support<sup>27</sup>
- Lack of public awareness.<sup>28</sup>

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<sup>25</sup>In case of Bondalem village the community is become angry if they warned by *pecalang laut* not to take sand or stone from the sea. The *pecalang laut* who consisted only 6 peoples are rarely in the sites when the violation to the village regulation occurs especially in destructive fishing practices. The law is only good in paper but lack enforcement in practice.

<sup>26</sup>According to the interview with the head of the village they have difficulties in maintaining the coral reef that have been planted due to lack sustain financial support from the government or donor. The donor is contribute to the establishment of marine protected area only.

<sup>27</sup>The funded from the local government is only occasionally. It just only a gift to the establishment and the opening of marine protected areas.

<sup>28</sup>People are still unaware to the important of protection of marine and coastal resources. This is shown by the behaviour of local people who still throw the rubbish directly to the river or in the beach. This behaviour has caused the beach is full of waste especially in the rainy season when the rubbish from the river run off to the sea. There is absolutely public awareness campaign and education is needed.

It has been observed that externally funded projects generally have been the main means of implementation of ICM within developing countries (Christie, 2005:208-232). The dependence on external financial and technical assistance creates unsustainable institutions and policies as project are terminated and support staff and funding are withdrawn (Christie, 2005:208-232). For example, in the Philippines the majority of marine protected areas are not maintained for an appreciable amount of time (Christie, 2005:208-232). The example of abandoned marine protected areas may also occur in Indonesia. This because the local communities have difficulties to secure sustain funding, and it is worsened by the lack of government support and incentives to maintain marine protected area that has established by local people. The lack of government support also occurs in Proyek Pesisir marine sanctuaries in North Sulawesi. Even though line government, such as the Forestry and Fisheries agency has been fully informed and supported the activities (Tulungen, 1998). However, they only occasionally involved their staff in actual field activities. These agencies lost the opportunities to learn about the marine sanctuary planning process (Tulungen, 1998).

Community based coastal management should be improved and supported by government. Bottom-up community based approaches should be supported by government and top-down approaches should also included local people in its planning and implementation. Many marine protected areas are not successful because local peoples are not included in the planning, implementation, monitoring, and evaluation process. Many local governments remain confused about the model of management of conservation areas and not sure how to involve local people in management of marine conservation area. Moreover, community based is not only limited to the management of the conservation areas or marine protected areas but also includes zoning, coastal resources management and other problems that need to be addressed and managed in coastal areas. For example, beach management and coastal erosion, wetland protection, land-based pollution, sea level rise adaptation, coastal and estuaries water quality, and threatened and endanger species (Cicin-Sain, 1998:178).

### **3. Conflict Management**

Risk of conflict on the uses of marine and coastal resources is an issue of increasing importance in Indonesia. The limited coastal space, relatively high population density, diverse marine and terrestrial

habitats in close proximity, and the many economic and social interest all increase the potential conflict over coastal space and resources (Suman, 2001: 1-13). The conflict of interest and uses between different stakeholders has created unsustainable development and management of marine and coastal resources. It has been proposed that the basis of conflict between uses/user may be anchored in one or more following reference points (Suman, 2001: 1-13):

- Incompatible uses of coastal space and/or resources because one use fully occupies the space, completely utilizes the resources, or damage the resource for the other user.
- Different environmental values and world views, particularly the balance between development versus conservation
- Level of government, the public authority, or the institutional arrangement that makes the allocation regarding resources use
- Involvement of public in the decision making process
- Use and interpretation of scientific and technical information in decision making
- Allocation of funding for the government action or intervention.

The conflict in Indonesia is basically because management of marine and coastal resources sectoral in approach. The conflict in the coastal areas mainly between different stakeholders such as conflict between agencies of local government or authorities, conflict between different levels of government (central, provincial and municipal) and conflict between company and local people. It has been observed that national, provincial and local governments tend to play different roles, address different public needs, and have different perspectives. These differences often pose problems in achieving harmonized policy development and implementation between national and sub-national level (Cicin-Sain, 1998:45). The other conflict is between local people and private sector or investors. This conflict is triggered because there are overlapping regulations between the provincial level and the municipal or regency level, especially regarding spatial planning law. For example, in Bali the provincial level has set up regulations prescribing that no development is allowed less than 100 meters from the beach in order to conserve and prevent the beach from further erosion. This 100 meter is allocated as green space areas. However, in Buleleng Regency under the regulation on spatial planning, they are allowed development near the beach or between 25 meters and 50

meters from it. This regulation has allowed many resorts constructed close to the beach. This development has caused many beach considered as private beaches, local people and local fisherman do not have space anymore to enjoy the beach or put their boat on shore. Overlapping regulations, lack coordination between government institutions and lack of public participation in decision making is the causes of such conflict of users. There should be a harmonization of the law and legislation in order to reduce conflict between stakeholders. If this harmonization of the law is not conducted, there will be further riot and social unrest in the community. In environment governance and integrated coastal zone management all the stakeholders should be involved, especially on zoning or marine spatial planning. Integrated policy and regulation is absolutely needed. There should be intergovernmental integration or integration among different levels of government (national, provincial, local) (Cicin-Sain, 1998:45). The requirement for consistency in the action and policy of all levels of government participating in ICM programs is of key importance (Cicin-Sain, 1998:135).

The other conflict is in the allocation of funding of government action. This is again because there is overlapping regulations between higher level regulations with the sub-level legislation for the implementation of the law. For example, on the management of mangrove areas, the higher level regulation namely the fisheries law and the coastal management and small island law has appointed the Ministry of Marine Affairs and Fisheries to manage mangrove areas. However the sub-level regulation namely regulation from the Ministry of Home Affairs has appointed the Ministry of Environment and the local agencies in environment to manage mangrove areas. Thus, the allocation of funding will be given to the Ministry of Environment. There is unclear and inconsistency between higher level and the sub-level of legislations in Indonesia. This is absolutely needed for harmonization of the legal framework in Indonesia.

The conflict also occurs in the uses of marine areas between stakeholders such fisherman, sea farmers, tourism agencies and local governments. The cause of this problem is mainly because there is no zoning or marine spatial planning. For example, in Buleleng Bali because there is no zoning and marine spatial planning, the risk of conflict is increasing between fisherman, seaweed farmers, pearl farmers and tourism agencies especially on the utilization and designation of marine space (Bali Post, 2009). The other conflict is



conflict on the utilization of fishing grounds or resources use conflict between local fisherman small and traditional fisherman and the fisherman from outside using modern boat and modern fishing gear i.e. using trawl and purse seine. For example, the conflict in Masa Lembu island Madura between local fisherman and the fisherman from Java. The local fishermen argue that their water is belonging to them and the fisherman from Java has taken their fishing ground. However, the fishermen from Java argue that the water is outside the 12 miles which is considered as open access. It is argue that this kind of conflict is arising because of the decentralization. Arif Satria pointed out that during the implementation of decentralization policy there were some problems and negative effects on marine fisheries management. These problems are related to false perception and misunderstanding of the meaning of “management authority” as mention in the local autonomy law. Some local government and local people assumed the term authority has similar meaning with sovereignty over territorial water, which are 12 miles for provincial authority and 4 miles for district authority (Satria & Matsuda, 2004: 437-450). The only way to resolve the conflict is through the coordination between local governments, in Masalembu case coordination between Local government East Java and local government Central Java is important, especially regarding the management of fisheries in both regions and the conflict management and resolution. Integrated coastal zone management is absolutely needed to reduce the conflict. Coordination and harmonization of sectoral policies are a simple mechanism of Integrated Costal zone management. As FAO mention for Ocean Chapter at the Earth Summit (FAO,1991).

A viable ICM Program must be comprehensive but its content and complexity will vary from area to area according to development trends, conservation need, tradition, norms, governmental systems and current critical issues and conflicts. Compatible multiple use objectives should always be the main focus. If human and financial resources are limited, ICZM programs can be simplified to be include only the following components: (i) Harmonization of sectoral policies and goals; (ii) Cross sectoral enforcement mechanism; (iii) A coordination office and, (iv) Permit approval and Environmental Impact Assessment Procedures (EIA).

There are two urgent issues that need to be addressed by the Indonesian Government. First, is to improve the livelihood of people in

coastal areas because until now many of them are traditional fisherman with low income and live in poverty. Second, is to restore and improve the quality of coastal environment and its ecosystem and resources.

## **Conclusion**

Integrated Coastal Zone Management in Indonesia still remains in infancy. Even though, to some extent there is an improvement in the legislation to establish coordination office for cross sectoral activities in coastal areas in central and local level. There still many aspects need to improve to integrate the management of marine and coastal resources in Indonesia. First is the harmonization of the laws and legislation between sectoral laws (horizontal) and between central legislation and local legislation (vertical). In integrated coastal zone management coherent legislative framework is required. This is due to the conflicting and incoherent legislative framework is creating confusion and ambiguity and creating unsustainable development. The integrated coastal zone management should be reflected by legislative framework that can contribute to coherence between different policies and foster the integration of environmental concern into other policies.<sup>29</sup> The conflicting laws and legislations between sectoral laws and between central and local government remain the challenge to the implementation of ICZM in Indonesia. It is quiet difficult to harmonize these laws and legislations due to many of the legislations are drafted by sectoral ministries which is to some extent this sectoral ministries legislation tend to maintain the sectoral interest rather than national interest. Moreover, with the decentralization the local government has the authorities to enact law which is to some extent may or may not coherent with central legislation. Thus, there should be mechanism to resolve these overlapping and conflicting legislations.

Second is strengthening collaborative and partnership between central government and local government on the management of conservation in marine and coastal resources. Third, is the improvement of public participation in decision making. Integrated coastal zone management should include all the stakeholders in the planning, implementation and monitoring including local communities. As a matter of fact, the public participation in Indonesia still weak. This remains the challenge to the implementation of ICZM.

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<sup>29</sup> As it is suggested in Marine Strategy Framework Directive 2008

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