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KEY GOVERNANCE FACTORS OF INTEGRATED COASTAL MANAGEMENT (ICM) AT THE LOCAL LEVEL, NORTH SULAWESI, INDONESIA

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Thesis title:	*KEY GOVERNANCE FACTORS OF INTEGRATED COASTAL MANAGEMENT (ICM) AT THE LOCAL LEVEL, NORTH SULAWESI, INDONESIA*
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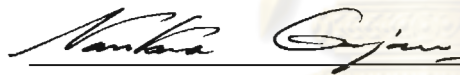
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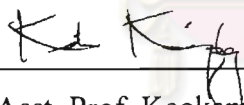

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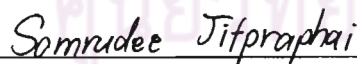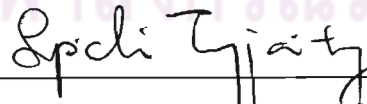_____ Thesis Principal Advisor

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This research examines key governance factors of Integrated Coastal Management (ICM) at the local level, North Sulawesi, Indonesia. Measures of governance factors are developed from two approaches to determine the key factors and the perception differences among major parties for ICM sustainability. The first approach is based on a qualitative methodology for two villages: Atep Oki village and Basaan I village. Key governance factors at these two villages were assessed through interaction of social and ecological systems. The second approach combined qualitative and quantitative methods to a group of experts (government officials, NGOs/development workers and scientists). The group of experts provided further explanation of the key governance factors of ICM at the local level and placed values on the degree of importance for each factor.

The research findings indicate there are nineteen key governance factors that are important for the sustainability of ICM. However, the status and urgency of the factors are different for each where they have been categorized as 'reach', 'intermediary' and 'contradictory' agreements. Therefore, for the two villages, leadership clearly determines the success of ICM. The role of a key person is vital for transforming ICM from a critical failure to adaptive management.

The information obtained from the group of experts illustrated that the degree of importance for key governance factors is markedly different amongst government officials, NGO workers and scientists as well as villagers on the ground level. Differences in valuing key governance factors were influenced by parties' perceptions of their roles in ICM. This, in turn, affects the way each party views the outcomes of ICM and the outcomes that follow.

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ABBREVIATIONS

AV	Atep Oki Village
ADB	Asian Development Bank
BAPPEDA	*Badan Perencanaan Pembangunan Daerah* (Regional Planning and Development office)
BV	Basaan I/Basaan Village
CAM	Coastal Area Management
CBCRM	Community Based Coastal Resources Management
CRC - URI	Coastal Resource Center – University of Rhode Island
CRM	Coastal Resource Management
CRMP	Coastal Resource Management Project
GBHN	*Garis-Garis Besar Haluan Negara*; (State Policy Guideline)
GE	The Group of Experts
GEG	The group of experts – government officers
GEN	The group of experts – NGOs
GES	The group of experts – Scientists
ICM	Integrated Coastal Management
ICZM	Integrated Coastal Zone Management
ICZPM	Integrated Coastal Zone Planning and Management
JICA	Japan International Cooperation Agency
MCMA	Marine Coastal Area Management
MCRMP	Marine and Coastal Resources Management Project
MMAF	Ministry of Marine and fisheries
NGO	Non-Governmental Organisation
PCI	Pacific Consultant International
SES	Social-Ecological Systems
SNRM	Small Scale Natural Resource Management
USAID	United States Agency for International Development
WCED	World Commission on Environment and Development

CHAPTER I

INTRODUCTION

1.1. Background of the Study

Integrated Coastal Management (ICM) has been widely debated for its validity as an approach for sustainable coastal development. The current stage of the ICM debate is now focused on evaluation. That is because numerous models of best practices and lessons learned have taken place during the past two decades. The time has come to evaluate those efforts.

The current evaluation results from the literature illustrate that ICM has a tendency to produce paradoxical outcomes. Thus, the progress of ICM is acknowledged as mixed between successes and failures. For developing nations, the evidence suggests there are more ICM failures rather than successes (Sorensen, 2000; Chua, 2006: 306; Harvey and Hilton, 2006: 59 and Harvey and Mimura, 2006: 317). Even though ICM is endorsed as an effective management approach for achieving sustainable development, many authors recognize that ICM initiatives are predominantly donor-driven through foreign institutions and individuals in Asia – especially Indonesia. It is almost impossible for developing countries to maintain ICM programs when funding dries up before countries have the capabilities of self sufficient mechanisms for sustained supports of ICM programs (White et al., 2005 and Christie et al., 2005). Such conditions contribute to further debates between those with optimistic and pessimistic attitudes on ICM.

Many scholars and international agencies, in general, continue to attempt to uncover optimal solutions to recover from previous or existing ICM related failures. These actions are necessary for continuance of ICM successes in order to achieve sustainable coastal development goals. An example of the positivist argument is Chua (2006: 306) who considered 'failure as the mother of success'. It is Chua's argument that despite East Asian countries encountering difficulties in maintaining ICM efforts, the failures can be used as lessons for working towards adaptive management of ICM.

Ascertaining the appropriate support structures for successful ICM internationally is a tremendous challenge. Christie et al. (2005) illustrate that sound institutional arrangements and positive institutional changes are influencing factors for achieving ICM sustainability. Chua (2006: 187) also identifies that ICM is about behaviour management for effective coastal governance including strengthening institutions, empowering communities and building partnership. Whereas, White et al. (2008) considers the focus should instead be the role of local governance for ICM.

Mainstreaming ICM into local governance is not an easy task. However, even though ICM has been accepted and promoted worldwide, its role in local governance is not fully understood nor appreciated. For example, according to Chua (2006: 310) 'ICM is often regarded as a new activity, outside the local government's general operational framework'. Essentially, according to Olsen (2000) *cited in* Chua (2006: 187), coastal management problems are primarily the result of poor governance and:

> "the factor that limiting effective coastal management is not the lack of prudent interpretation of existing scientific knowledge, but rather the lack of a governance strategy that is inclusive, participatory and responds to the values and concerns of the people and place".

This has triggered considerations for new perspectives of ICM and governance where ICM should be viewed from the perspective of local governance. Consequently, examinations of key governance factors that lead to ICM sustainability are paramount. The importance of governance as a key attribute to enacting a policy (such as ICM) is summarized by Ehler (2003: 335):

> "governance is the process through which diverse elements in a society wield power and authority and, thereby, influence and enact policies and decision concerning public life and economic and social development".

Ehler (2003) emphasizes that, in relation to ICM, governance refers to the structures and processes used to govern behavior, both public and private, in the coastal area and the resources and activities it contains. This is important as governance can be useful to manage coastal resources that are mainly open access and common pool resources as argued by Ostrom (1990).

Early concepts of ICM considered the main function of ICM was the ability of ICM to aid the creation of governance systems that are capable of managing multiple uses in

an integrated way through the cooperation and coordination of government agencies at differing levels of authority and economic sectors (Ehler, 2003). However, the complexity of ICM today is greater than this. The central focus today is how to view the broader perspectives of human behaviour and activities in relation to ICM. Ehler (2003) only emphasized the roles of government agencies and economic sectors attempting to mainstream ICM into local governance. However, Harvey and Mimura (2006: 319) point out that ICM should occur at an appropriate scale, recognizing local, regional and national communities of interest. Policies and programs at national and local levels should be complementary and benefit constituencies which require a major consideration of the importance and role of local communities.

For the purpose of ICM, it is necessary to recognize that governments, as state actors, should work cooperatively with the private sector, civil society and local communities in solving societal problems including coastal issues. This requires progressive governance control systems rather than conventional governance systems. For example, conventional governance systems tend to approach coastal management as primarily government or donor led initiatives that are based on control measures, are reactive and crisis driven. A progressive form of governance tends to be more interactive, inclusive and comprise adaptive systems that recognize local diversity and its interrelation between social and ecological systems (Chua, 2006).

North Sulawesi, a province within Indonesia, is used as a case study for the purpose of this research because, North Sulawesi has a lengthy and informative history of ICM. However, based on current ICM evaluations that focus on sustainability, most research has shown a distinct decline and an overall stagnation of ICM application within Indonesia and, in particular, in North Sulawesi. This is most likely due to the termination of international projects that promoted ICM. It is assumed that the Government of Indonesia is endeavoring to undertake the mandate of ICM. However, it seems that ICM has not been institutionalized in the current system of national development.

Success and failure factors relevant to the performance of ICM in Indonesia have been evaluated by a number of authors (White, Christie, Agnes, Lowry and Milne,

2005; Christie et al., 2005 and Pollnac and Pomeroy, 2005). This information is useful as empirical evidence for local (village level) research.

Essentially, this research aims to analyse governance factors that can be used to improve the implementation of ICM in Indonesia and support sustainable ICM outcomes. Similarly, this research focuses on how key stakeholders value governance factors. It is anticipated the results of this research will prove useful as inputs for policy reforms of ICM in North Sulawesi, Indonesia and support sustainable coastal development.

1.2. Statement of Problem

ICM has been implemented for more than a decade in Indonesia as a framework for sustainable coastal development. In recent times there has been debate about the application of ICM worldwide and, particularly for Indonesia. Many authors have found that global evidence of ICM results on the ground is limited (Bille, 2007; Kay, 2007 and Christie et al., 2005). In Indonesia, particularly North Sulawesi, ICM has gained strong momentum but the processes and results are not as comprehensive and sustainable as one might hope (Christie et al., 2005). The literature suggests that one of the challenges is the internalization of a context appropriate for ICM with a stable support infrastructure (Christie et al., 2005: 480). Even though there are many challenges in ICM application, many authors still believe that ICM is a potent framework worthy of support (Bille, 2007; Kay, 2007; Christie et al., 2005 and Chua, 2006). They acknowledge that new frameworks should be introduced with causation and without radically replacing ICM.

Based on the literature review, it is clear that problems have arisen due to poor coastal governance structures. Many aspects of coastal governance have not been attributed to local capacities, nor have they been internalized in a local context. Finger, Tamiotti and Allauche (2006) argue that "governance defines a function – i.e., the function of collectively solving societal problems -, as opposed to government (local, national and to a limited extent international) which defines a structure". Further investigation of this point may reveal why many ICM initiatives have stalled or led to poor outcomes in recent times.

As an international requirement, ICM relies heavily on the capacity of the state. However, in past times, local communities generally had the capacity to self-govern resource use. In modern times this is no longer evident due to the intensive occupation and influence of the state and the private sector in the context of centralized coastal management.

Based on the argument presented above, this research is titled **'Key Governance Factors of Integrated Coastal Management at the Local Level, North Sulawesi, Indonesia'**. This research encompasses the various ways in which institutions, actors, resources, regulations and mechanisms interact through the local reality of ICM in North Sulawesi, Indonesia.

1.3. Research Question

This research answers two key questions:
1. What are the key governance factors that are important for positive ICM outcomes in North Sulawesi Indonesia?
2. What differences exist in the perceptions of those factors among the key stakeholders?

1.4. Research Objectives

Based on the questions above, the objectives of this research are:
1. To identify key governance factors that can lead to achievements of positive ICM outcomes in North Sulawesi, Indonesia
2. To determine perception differences among the key stakeholders toward governance factors in ICM

1.5. Chapters

There are six chapters in this thesis. Chapter One describes the background of study and statement of problem. It also identifies the research questions and objectives; and provides some considerations on the limitations and significance of this research.

Chapter Two focuses on a literature review related to ICM and governance. Several topics are covered in Chapter Two, such as:

- the rationale of ICM in international governance;
- definitions of ICM and its link to sustainable development;
- issues of integration;
- pre-requisite and key successes factors;
- evidence of failures and its contributing factors; and
- the connection of ICM and governance.

Chapter Three is an explanation of the research methodology, notably:

- the research framework;
- operational definitions of some terminologies;
- research process;
- data collections;
- case studies;
- interview strategy and interviewees;
- data analysis; and
- ethical issues for research purposes.

Chapter Four provides an overview of coastal governance in Indonesia, especially, the political context of ICM in Indonesia, its problems and policies. Essentially, the information contained in Chapter Four is reliant upon secondary data and relevant information such as legislation, project reports, government documents, etc.

Chapter Five provides the findings and discussions of the research. There are two categories of explanations: 1) findings and discussions from the field/village level; and 2) findings and discussions based on the Provincial expert group. Chapter Five also determines the different perceptions how people value governance factors based on their perceptions of the role of different actors in ICM and how they define the outcomes of ICM.

Chapter Six provides the research conclusions as well as recommendations for further investigation and action.

1.6. Limitations

There are three notable limitations for this research:

Firstly, it is difficult to have an equal number of respondents for each case study. This was due to time constraints for the collection of field data (four weeks) and the subsequent availability of interviewees during this short time period. Secondly, the perception of the private sector was excluded from this research because key individuals were unavailable for interview during the research period. It is important to note the private companies require completion of a comprehensive administration process prior to granting approval for interview. This approval generally requires approval from management whom are based outside of North Sulawesi Province. Thirdly, in identifying the degree of importance of governance factors, respondents from both villages were not included. This was due to those persons being poorly educated (primary school education only) which made it difficult for them to quantify their opinions. However, they were able to express their ideas by providing stories, opinions and experiences.

1.7. Significance of the Study

The findings of this research will contribute to the improvement of ICM in North Sulawesi and Indonesia. This is because the expected outcomes are applicable to the development of better outcomes of ICM in North Sulawesi and Indonesia. The expected outcomes are:

- To provide an analysis of governance factors that are important to the improvement of ICM in North Sulawesi and how key stakeholders value those factors. This information can assist local stakeholders to broaden their understandings on the status of ICM in North Sulawesi.
- Results of this research may also be useful for the future design of ICM projects in North Sulawesi based on the local capacity of government, civil society and local community.
- This research can contribute to the ICM governance literature by documenting factors that are locally specific in the context of North Sulawesi, Indonesia.

CHAPTER II
A REVIEW OF ICM AND GOVERNANCE

2.1. Introduction

This chapter provides a review of the concept of ICM and its connection to sustainable coastal development. Further analysis identifies the success and failure factors that are applicable for ICM in Indonesia. Finally, the fundamental theories of governance that have been used to underline the ideas of this research are discussed.

Coastal governance stems from the globally recognised concept of sustainable (WCED, 1987) whereby world resources have degraded rapidly and this is especially evident for coastal resources. Therefore, sustainable coastal development has become a major challenge for coastal states across the world.

2.2. Rationale of ICM in international governance

The World Commission on Environment and Development - WCED (1987: 8) defines sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". The quest for a sustainable approach in development is human effort response to the degradation and depletion of global resources. Resource degradation is predicted to continue rapidly over the next decade, where the world's population will exceed the current six billion. It is apparent there is a continued need for action by both developed and developing nations to ensure that national policies and programs are both economically and ecologically sustainable.

Chapter 17 of Agenda 21 promotes ICM as a major program area for sustainable development, namely the "integrated management and sustainable development of coastal and marine areas, including Exclusive Economic Zones" (United Nations, 1992: 147). Agenda 21 stresses that oceans and coasts are an important global life-support system and present a positive opportunity for sustainable development implementation. However, Agenda 21 does not provide a clear definition of ICM.

Furthermore, there is a strong international requirement for all nations to use global coastal resources wisely. United Nations (1992) states that:

> "each coastal state should consider establishing, or where necessary strengthening, appropriate coordinating mechanisms [...] integrated management and sustainable development of coastal areas and their resources, at both the local and national levels" (p.141).

This requirement is essential as coastal resources can be vulnerable due to their unique and fragile characteristics. With impinging development, it is vital that coastal resources are managed appropriately in a sustainable manner. Subsequently, ICM has been accepted as a global strategy for coastal management. CRC (2001: 1) states that

> "ICM has been selected as a key implementation strategy for many global and regional environmental treaties including the Convention on Biological Diversity and the Convention on Climate Change".

Recognition of ICM has grown steadily following the 1992 United Nations Conference on Environment and Development (UNCED). The Rio Conference established ICM as the central vehicle for sustainable coastal development.

Since the 1992 Earth Summit, the numbers of ICM initiatives globally have doubled. By the year 2000, approximately 95 coastal nations or semi-sovereign states had initiated 345 coastal management efforts (CRC, 2001: 1). Overall, ICM has been proven to be a useful framework for coastal resource management. However, despite the global uptake of ICM, it is necessary to rephrase ICM and advance the intellectual work in ways that will allow greater integration with other conservation practitioners (CRC, 2001). The next step is to define the conditions where ICM functions best and to learn how to tailor ICM to specific conditions and contexts.

2.3. Definition of ICM and its link to sustainable development

ICM primarily stems from the field of natural resource management. For example, Cicin-Sain and Belfiore (2003: 9) define ICM as "a continuous and dynamic process by which decisions are taken for the sustainable use, development and protection of coastal and marine areas and resources". However, integration is a key tenet for ICM and Chua (1993: 84) reflects this as ICM is:

"a natural resource and environmental management system which employs an integrative, holistic approach and an interactive planning process in addressing the complex management issues in the coastal area".

However, put simply, ICM can be considered as an acknowledgement of the need for a holistic approach to managing human use of coastal resources in a sustainable way (Hanson, 2003).

ICM and sustainable development are both closely linked. ICM is viewed as a strategy that aims to attain sustainable development through: integrated planning and management to resolve multiple resource-use conflicts; maintain functional integrity of the ecosystem and; interagency, multi-sectoral collaboration and partnership. The overarching principle of ICM essentially consists of the same principles as the concept of sustainable development. That is, ICM focuses on the human and environment where the fundamental principles are integration and interrelationship, ecosystem-based management, adaptive management and intra/inter generational equity.

The ICM concept has previously been applied under different titles, namely: Coastal Resource Management (CRM); Integrated Coastal Zone Management (ICZM); Integrated Coastal Zone Planning and Management (ICZPM); and Coastal Area Management (CAM) (Cicin-Sain and Knecht, 1998). Each of these is similar as they essentially are attempts at interpretation and implementation of the principle of integration (Figure 1). The elements of integration are listed below.

(i)   *spatial integration*: ICM integrates terrestrial and coastal planning within a catchment area or over a contiguous area, such as a small island;

(ii)   *inter-sectoral integration*: ICM integrates all sectoral and regional development plans; (horizontal or cross sectoral);

(iii)   *inter-governmental integration*: ICM integrates different levels of government plans (vertical integration);

(iv)   *science-management integration*: ICM integrates between scientific inputs into management;

(v)   *international integration*: ICM integrates effort between countries that face the same coastal threats (Cicin-Sain and Knecht, 1998).

2.4. Issues of integration

A graphic depiction of the problems of integration is shown below (Figure 1). It is possible that it is necessary to revise the governance system of ICM itself because there are so many competing stakeholders and integrating these stakeholders into ICM is complex. Therefore, investigation on the factors that can allow the achievement of positive ICM outcomes is necessary.
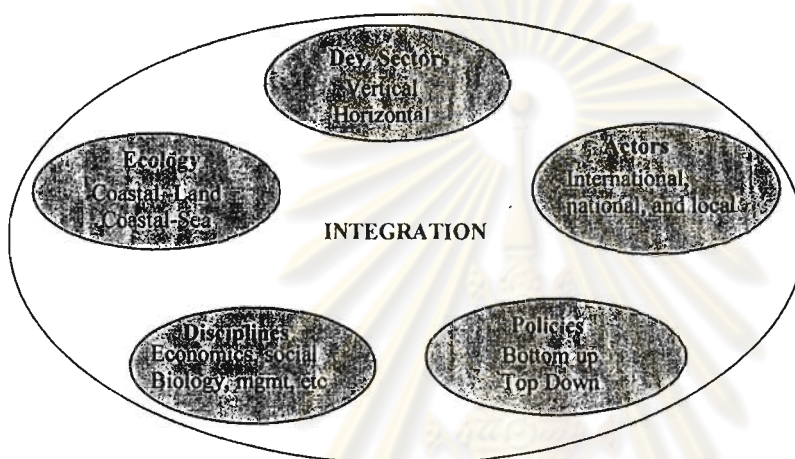
Figure 2.1: A summary of integration for implementation.

According to Vallega (1999: 13), ICM was adopted to support sustainable development as a 'meta ideological paradigm' which implies politics being sustained by the integration of three theories:

> "a) the economic theory, which is stimulated to focus upon the economic efficiency and resource rights; b) the ecological theory which is required to provide conceptual and methodological tools useful for guaranteeing the efficiency of the ecosystem and optimizing the use of living resource and c) the equity theory which is required to design concepts able to innovate policy."

In this situation, it seems that Vallega (1999) has a positive attitude to the concept of integration as he believes that 'integrated management' as a mature type of coastal management should be widely adopted for better coastal management.

In contrast, Nichols (1999) argues that ICM should be widely scrutinized whereby the long term implications of ICM should be understood prior to implementation. Nichols

(1999: 388) argues that ICM, as a definition, is problematic in terms of its meaning and methodology in an arena of resource regulation. Nichols (1999) claims this problem stems from the UN marine regulatory regime (e.g. the International Law of the Sea) and the UN conference on Sustainable Development 1992. Both have legitimated state autonomy over near-shore marine space and further consideration of how the space should be regulated for economic development. Therefore, state interests will be closer to global capital investments and ignore the needs of local community. Subsequently, Nichols (1999) predicts that ICM may introduce and lead to more social conflict and environmental degradation than coastal sustainable development outcomes.

This argument is also supported by Bryant and Wilson (1998) *cited in* Harvey and Hilton (2006). These authors claim that because ICM is seen as part of environmental management, there are a number of false assumptions within ICM operations such as: the role of states as key actors; bureaucracy and top-down approach; and positivism to technological solutions. These conditions are not conducive for ICM sustainability. Therefore, prevailing political and economic interests should be challenged in order to meet the purpose of ICM[1] while, at the same time, considering the efficacy of ICM processes in the diverse context of ICM governance.

The fundamental debate of the meaning of integration is useful in order to provide a background to the internal problems of ICM. It is this background information that allows researchers and practitioners to understand and identify where there are different ideas on how different parties perceive the outcomes of ICM.

2.5. Pre-requisite and key successes factors

The WCED (1987: 63) states the pursuit of sustainable development needs to consider several systems such as:

- "a political system that secures effective citizen participation in decision making;
- an economic system that is able to generate surpluses and technical knowledge on a self-reliant and sustained basis;

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[1] Olsen (2003: 347) emphasizes that the fundamental purpose of all ICM initiatives is 'to maintain, restore or improve specified qualities of coastal ecosystems and their associated human societies'.

- a social system that provides for solutions for the tensions arising from disharmonious development;
- a production system that respects the obligation to preserve the ecological base for development;
- an administrative system that is flexible and has the capacity for self-correction".

The pre-requisite above illustrates the basic fundamentals that contribute to either the success or failure to the achievement of sustainable development goals. As ICM complements sustainable development strategies, it is essential these factors are taken into consideration. Notably, the pre-requisite factors are contextually broad and vague. This has led some authors (Pollnac and Pomeroy, 2005; White, et al., 2005; and Christie, et al., 2005) to investigate the success and failure factors further.

Pollnac and Pomeroy (2005) believe that participation is the central point for ICM sustainability at the local level. Based on their research in the Philippines and Indonesia, they found that community participation is voted as a major component of key success. However, both authors acknowledge that the type of participation is critical to assess whether project outputs are achieved and the degree of empowerment for local people. Their research provides useful project self-assessments such as: do people have equal power in deciding resource allocation and control over resources or, do people feel that ICM has provided benefits or not? The variations on this category can be accessed through several variables from specific issues such as income improvement, individual employment, and equally managing and controlling the use of natural resources; to more general issues such as improvements in quality of life and environmental qualities. These issues are investigated further in this research and discussed in Chapter Four under the framework of social-ecological systems using the robustness model of institutions developed by Anderies, Janssen and Ostrom (2004).

Further investigation of the issues of perceptions of benefits has been conducted by Pollnac and Pomeroy (2005). Both authors mention that perceptions of benefits and initial benefits influence the early involvement and participation in ICM projects. For the sustainability of ICM initiatives, achieving ultimate benefits is a key factor that will stimulate desire for continued involvement. This is reflected in the work of

Pollnac and Pomeroy (2005: 249) who portray participation and the 'feeling of ownership' as the strongest predictors of ICM project sustainability.

Community participation has a close link with governing systems. Clarke (2003 *cited in* Harvey and Hilton, 2006) states that community involvement will vary at different levels of continuum. Ideally, to have better local community involvement in development activities including ICM, there should be a combination of top-down and bottom-up governance. Steiner, Kimball and Scanion (2003) believe that governance at all levels should be mutually reinforcing. Similarly, Jentoft (2007) emphasizes that in order for governance to work there should be compatibility of governing systems at each different level (i.e. national, regional and local). Therefore, rather than make a separation of top–down and bottom–up approaches, ideally ICM may be sustained by combining these two as proposed in Figure Two. Furthermore, in recent times collaborative management has been widely adopted in ICM.

Figure 2.2: Community participation in coastal management (Clarke, 2003 *cited in* Harvey and Hilton, 2006: 42)

Other factors that should be promoted in order to improve the sustainability of ICM projects beyond project life are illustrated in Box One (White, Christie, Agnes, Lowry and Milne, 2005). The first list of factors is those that attract the most attention and have been widely recognised since the early introduction of ICM. Whereas, the second list of factors are recent additions that tend to attract less attention by the projects that they analyzed in Philippines and Indonesia.

Box 1. Success factors for sustainability of ICM projects

a) The most common sustainability factors:
- education and awareness level raising
- link management to improved biophysical conditions
- role of stakeholder participation in the decision making process
- legal and policy framework development

b) New emergence factors that receives less attention:
- participation of the private sector
- designing a successful project exit strategy
- improving economic returns and income generation
- having capacity for law enforcement
- building durable institutions beyond leadership changes

Source: White, Christie, Agnes, Lowry and Milne (2005).

The factors outlined in Box 1 are useful as an entry point to re-examine the success factors of ICM sustainability. However, this does not provide a clear definition of how to promote the sustainability of ICM. Even though those factors have been accommodated as initial lessons learned in promoting ICM in North Sulawesi (Crawford, Dutton, Rotinsulu and Hale, 1998), problems remain in the implementation stages of ICM. It is assumed that governance that involves power relation in resource allocations and weak institutions has been a significant impingement to the success of ICM.

White, et al. (2005: 285) argues that these factors tend to reflect weaknesses in most developing country settings, such as 'poor law enforcement, poverty, the unpredictability of local and national politics and changes in leadership'. Furthermore, White, et al. (2005: 285) mentions that 'successful exit strategies and increased participation by private sector may also reflect either the project design or a combination of design and the implementing entity bias of government, in most cases'. Essentially, understanding the failure factors in promoting ICM sustainability will reveal some of the key issues faced with successful ICM implementation. Section 2.6 below discusses some of failure evidence and explanation of its causing factors.

2.6. Evidence of failures and its contributing factors

Christie, et al. (2005: 470) claims that ICM is rarely self-sustaining and generally leads to worsening conditions and that dependency on external budgets contribute to the failure of ICM projects. This is because typically, many projects fail to continue when external budget and staffs are withdrawn especially because ICM projects are generally local level focused. These issues are evident for ICM in Indonesia, however there is no research to indicate the impact of external budget and staff withdrawals.

It can be assumed that ICM efforts have not been institutionalized in the context of governance. ICM appears trapped in the concept of 'project' cycles rather than a particular governing system for coastal resources. This research investigates this issue further using the examples of two villages and the perspectives of an expert group in North Sulawesi. The focus of this research is outside conservation areas in North Sulawesi. This is because previous ICM research (such as Christie et al., 2005) were undertaken within the Bunaken Marine National Park (BMNP).

ICM efforts in Indonesia have been slowing down to a stage where ICM is almost non-existent (Christie, et al., 2005 and Kay, 2007). There are several crucial issues that affect the potential sustainability of ICM initiatives for Indonesia and these are outlined in Table 2.1.

From the perspective of institutional arrangements there are several issues that have been discussed in the literature. Chua (2006: 80) mentions that development planning functions are weak for most nations and identifies: budget allocations, secure political support and the complicated situations of multiple sector interests as influential to ICM outcomes. Essentially, globalization and economic interests will always compete with the interests of local people and conservation. Furthermore, there are typically barriers to integrated planning at various institutional scales. The discourse of integration has produced the ambiguity of ICM goals within and between multiple governance scales. Subsequently, institutions and legal frameworks that mandate governance reform are lagging behind the pace of ICM project evolution. This issue is discussed in detail in Chapter Three.

Table 2.1. The evidence of ICM initiatives in Indonesia

Village	Municipal Government	National Government	Key challenges
Limited number of village-level ICM efforts Limited number of village level Marine Protected Area establishments	Few examples of multi-local village or municipal level government ICM planning efforts	Limited joint planning by key national level sectoral offices Limited support to village and municipal government level ICM through local branch offices	- Unclear, absent and overlapping policies and regulations over coastal development prior reformation era (1999) - Laws are sectoral which resulted in a series of gaps, overlap and redundancies, conflicts – all of which can be considered as disconnects – within the legal framework - Limited implementation of ICM plans except in Marine National Parks - Low capacity of government in developing and conducting ICM programs and community to participate in them

Source: Christie et al. (2005) and Kay (2007)

It is debatable whether administrative decentralization increases grass roots decision making and agenda setting power at the local level (Christie et al., 2005). If it is not the case, then the likelihood of successful ICM outcomes is unlikely. Similarly, the capacity of local government in conducting ICM programs and promoting communities to participate in those activities is another factor that controls the success of ICM at countries. In Indonesia, decentralization has not provided better public services, but instead increased the burden of unproductive expenditure of bureaucracy. Christie et al. (2005) provides solid evidence of this failure in the area inside BMNP in North Sulawesi, however, further investigation is necessary outside of the BMNP to validate this point. This research looks at ICM outside the marine park areas within North Sulawesi. Furthermore, this research attempts to uncover detailed explanations of coastal governance that existence at the local level.

Many decisions that relate to large-scale coastal resource use are made by people who are not directly impacted by their decisions. In Indonesia, communities that resides in coastal locations are typically abandoned in the decision making process. This problem greatly affects the way people use their local resources and how they value

the long term benefits of those resources against the short term benefits of depleting those resources.

In many cases, ICM ignores social justice considerations. Even though ICM is required to provide benefits, the positive outcomes of ICM are not shared equitably between stakeholder groups. This issue will become very difficult if there are power differentials and interests (Christie et al., 2005: 473).

Overall, the literature examines the success and failure of ICM sustainability based on the governance of ICM in particular institutional arrangements and other related factors of values that shape the governing system of coastal resources. However, it can be said that there is a distinct gap for lessons learned of ICM practices and the role of governance as part of the lessons learned. The reason for this information gap is because many authors tend to ignore ICM from the perspective of an open system.

2.7. The connection of ICM and governance

There is limited literature that discusses ICM and governance related issues in detail. However, in recent times, some authors (Ehler, 2005) have acknowledged that governance has an important role in promoting ICM based outcomes. The growing recognition may be due to the emergence of lessons learned from ICM projects worldwide where there are indications that it is difficult to replicate and sustain ICM efforts (Christie et al., 2005). Therefore, the attention has turned back to questioning the fundamental of governance and particularly the function of institutional arrangements and decision making processes in the context of governance.

Several examples in the current literature show this shift directly and indirectly to ICM such as:
- the realizing of limitation in governability of fisheries, particularly institutional design by societal actors (Jentoft, 2007);
- participative governance and 'three distinct but interconnected levels of governance' in fisheries social science (Symes, 2007: 113) that are similar to orders of governance as interactive governance (Kooiman and Bavinck, 2005: 19) and;

- the mainstreaming of ICM in local governance based on Philippines experiences (White et al., 2008); and governance and its implications for ICM using Vietnam as a case study (Euker, 2008).

Based on the literature, it seems that Ostrom's idea (1990) is still applicable today particularly where governance is considered to be a system approach. Ehler (2003) has touched this idea and converts to performance indicators by providing a long list of governance indicators. For the purpose of this research, governance factors of ICM go beyond the suggested ideas by Ehler (2003), despite those ideas being used as a bridge to understand governance and ICM. Ehler (2003: 335) states that,

> "governance as the structures and processes used to govern behavior, both public and private, in the coastal areas and the resources and activities it contains. ICM refers to the process through which the use of specific resources or portions of the coastal area are managed to achieve desired goals".

Based on this view and the purpose of the research, definitions of governance and ICM are expanded in Section 2.7.1.

2.7.1. Definitions

Comparatively, ICM is more a well-established concept than coastal governance. The concept has been around more than 30 years (Post and Lundin, 1996). On the other hand, the governance field emerged during the 1990s, during which time ICM was commencing a period of lessons learned and sharing experiences. However, in recent times, there has been debate on the success and failure of ICM as mentioned in previous sections. White et al. (2008) clarifies success factors in Box One as the central tenets of governance in the ICM context using the Philippines as a case study. Essentially, the focus of governance is a new trend to be discussed as important for ICM sustainability. Therefore, many authors now assert the relations between these two concepts.

Olsen (2003) states that in ICM, coastal governance refers to the process by which the full range of laws, policies, plans, institutions and legal precedents address the issues affecting coastal areas. Chua (2006: 104) mentions that,

"governance sets the framework within which management can proceed as it establishes the fundamental goals, institutional process and structures that are the basis of planning and decision making".

Euker (2008) concludes that the current debates tend to concentrate on the question of how to establish adequate governance frameworks within which appropriate management and measures can be implemented, therefore, distinguishing the meaning of management and governance. Euker (2008: 53) also considers that management is "the process by which human and natural resources are harnessed to achieve a known goal within a given institutional structure" before going on to mention that "the fundamental goals and the institutional process and structures that are the basis for planning and decision making". Governance therefore, sets the stage on which management can be applied (Olsen, 2001: 331 *cited in* Euker, 2008).

2.7.2. Governance frameworks to guide this research

As there is limited literature that specifically discusses governance frameworks of ICM and their empirical evidence, it may be useful to learn from the perspective of fisheries governance as a common pool resource (as proposed by Jentoft, 2007; Symes, 2006; Kooiman and Bavinck, 2005; Anderies, Janssen and Ostrom, 2004; Ostrom, 1990 and 1994; and Feeny, 1994). There are many similarities that have been proposed by these authors. For example, most authors agree that governance should be approached from the perspective of 'systems' that are complex, dynamic, diverse and vulnerable. Therefore, governance frameworks should recognize the robustness of the relations between social and ecological systems (SES) (Anderies, Janssen and Ostrom, 2004; Ostrom, 1990 and 1994; and Feeny, 1994) as well as interactive and adaptive (Symes, 2006; Jentoft, 2007; and Kooiman and Bavinck, 2005). Specific investigations have been carried out by each author to define governance frameworks which has contributed to their own work. They conclude that governance should be based on local characteristics. Therefore, it is important to recognize the diversity of local governance in coastal areas which can lead to the achievements of sustainable coastal management goals.

Jentoft (2007: 360) mentions that 'fisheries and coastal governance may be seen as a relationship between two systems that could be termed a 'governing system' and a

system to be governed'. That is, a governing system comprises institutions and steering instruments and mechanisms and the system-to-be-governed is partly natural and social. This consists of natural resources, the environment and people that use those resources in certain political coalitions and institutions amongst them. In order to make governance work, it is therefore paramount to make these systems are compatible and in turn, mutually responsive. In translating Jentoft's (2007) idea of the complexity of those two systems, Symes (2006: 113) suggests that it is important to recognize three distinct but interconnected levels of governance:

> "the first dealing with day to day issue of management; the second concerns with institutional arrangements; the third focusing on the construction of images, values, principles and criteria to guide fisheries policy making along a consistent path".

Symes' (2006) statement stems from the order of governance research conducted by Kooiman and Bavinck (2005: 19-20). In this case, the orders are seen as the levels or rings, as in the construction of onions.

- Day to day affairs are thus considered as the first order of governing.
- The second order of governing is related to the institutional arrangements within which the first order governing takes place.
- The third order or 'meta' governance is the center of onions. This deals with norms that are used by stakeholders as judgments of their decisions.

The first level of governance, the day-to-day management is applied for two villages in North Sulawesi in order to understand key governance factors at the local level. The analysis combines Symes' (2006) and Kooiman and Bavinck's (2005) idea and SES suggested by Anderies, Janssen and Ostrom (2004: 2) and recognizes that SES is "an ecological system intricately linked with and affected by one or more social systems". The ecological system is defined as an interdependent system of organisms or biological units with their environment. The social system refers to interdependent relationships with others of one's kind. Therefore, SES is used to show the interdependent interactions amongst humans that are mediated through the interactions of bio-physical and non human biological units. In this interaction, human activities are the centered of analysis as they can change the outcomes of others and non-biological human as well. Understanding the interactions is believed to promote the robustness of social and ecological systems.

The second and third levels of governance are defined according to principles suggested by Ostrom (1990) and based on literature reviews that are discussed in Sections 2.5 and 2.6. Ostrom (1990: 90) provides several entities that are involved in shaping the robustness of SES. Even though these levels have followed factors that are emerged in recent times, for the purpose of this research those factors are confined to local stakeholders and explored and defined by them. Detailed discussion on how these factors are translated in this research is presented in the methodology.

Rules, norms and legislations are importantly discussed in detail in Chapter Four because they provide an overview of coastal governance in Indonesia. According to Pollnac and Crawford (2000: 62), coastal governance refers to 'rules, either formal or informal that govern the use of coastal resources'. Supportive government administrative structures are also an important factor to the success of ICM implementation at the local level. Legislation has an important role in facilitating coastal governance at local level because it defines delegating responsibility and authority to implement and enforce regulations for the success of community based coastal resource management.

However, the role of the state only is not enough in this context, as many authors have emphasized that governance, including coastal governance, is carried out by the state, as well as the private sector and civil society (Euker, 2008; White, Dequit, jatulan and Osario, 2008; Jentoft, 2007; Symes, 2006; Kooiman and Bavinck, 2005; Finger, Tamiotti and Allouche, 2006; and Ehler, 2003). This research also aims to explore the perceptions of roles and outcomes for each actor that is involved in ICM. This might be useful to underline the priorities and actions that should be considered in defining key governance factors of ICM.

2.8. Summary

In summary, this chapter presents the literature review of ICM and governance. The evidence of success and failure with their related factors in this chapter are treated as fundamental reasons on why this research has been conducted. Success factors have

been suggested by White et al. (2005) as presented in Box One. White et al. (2008) clarifies those factors as tenets for improved sustainability of ICM as profound and should be put into action. Yet, to sufficiently place the success factors into ICM will depend on local actor capacities since all situations are different and require appropriate interpretations of how these tenets will play out in local reality. Therefore, this research aims to go beyond these tenets to be tested with other factors that have been suggested in the governance field as it relates to common pool resources, including coastal resources. The theories, evidence and facts in this chapter are transferred into a new research framework that are discussed in Chapter Three.

CHAPTER III
RESEARCH METHODOLOGY

3.1. Introduction

This chapter presents methods that are used in this research. Qualitative and quantitative methods are chosen to answer the questions presented in Section 1.3 and to meet the objectives described in Section 1.4. A research framework (Figure 3.1) is designed based on the scope of problem (Section 1.2) and the literature review (Chapter Two). Terms used in this research are operationally defined. Furthermore, each stage of the research process is elaborated based on the summary of the research process (Figure 3.2) and each stage is described in detail.

3.2. Research Framework

A specific research framework consisting of three stages relevant for this research is in Figure 3.1. *The first stage* is related to the current status of ICM that has been discussed in the literature as international mandates that apply to states. The results showed a mixture of success and failure. The current status of coastal management was analysed based on written documents such as reports, legislation, etc. Understanding those components is essential for a movement to a transitional direction. That is, there should be changes in institutional and operational arrangements together with capacity enhancement in order to achieve integrated management (Chua, 2006: 189) towards governance reforms. Subsequently, the second stage is connected to the improvement of governability of ICM by determining its key factors.

The second stage is the main task of this research. For this stage investigations were conducted to find empirical evidence on the ground to confirm the key governance factors of ICM at the local level in North Sulawesi. Key governance factors were identified as follows:

- the day to day management of ICM using the SES framework;
- institutional arrangements for the robustness of SES (11 factors) and;

- the images and values of local governance based on factors on the socio-cultural (3 factors) and economic and bio-physical (5 factors).

It is assumed that the values of key governance factors depend on how communities and other stakeholders understand their roles and based on these view the outcomes of ICM. Therefore, in this research perceptions on roles and outcomes were confirmed from four different parties: government officials, scientists; NGOs workers and communities. A critical support of stakeholders and their capacity enhancement are promoted and should link to changes in perception amongst stakeholders (Chua, 2006: 189). In the transitional stage, the implementation of ICM should be maintained and scaled to effectively address major sustainable development issues within defined boundaries. Therefore, the improvement of governability theoretically ought to lead to a transformational direction towards sustainability.
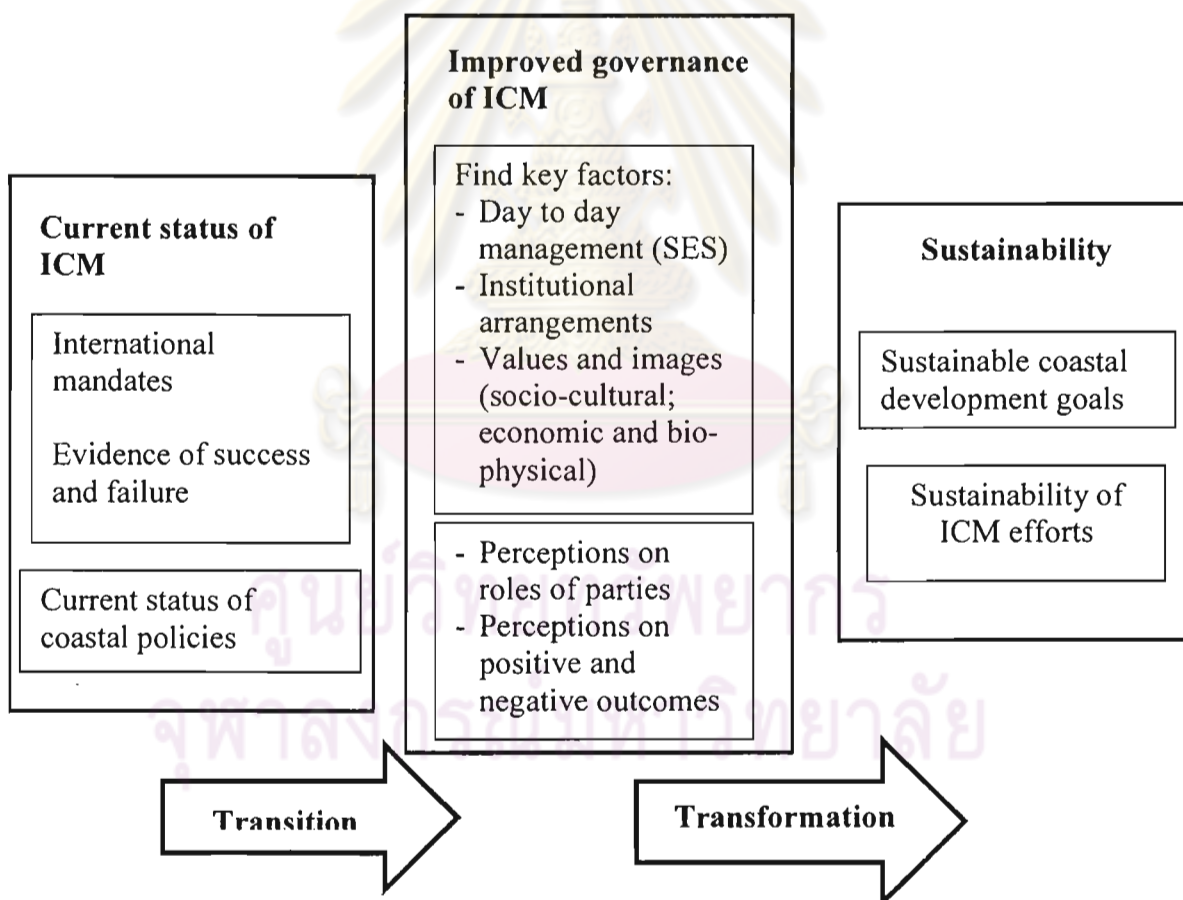
Figure 3.1. Research framework

The last stage essentially comprises the ultimate goals for sustainable development. This involves verification of good governance, improvement in the quality of life/standard of living and protection of ecological integrity and consideration of equity and social justice. In this stage, ICM initiatives should be maintained.

3.3. Operational Definitions for This Research

In this research, there are some terminologies that should be defined under four categories for the purpose of this research. The first three categories are defined based on Symes' (2006) ideas of three levels of governance in order to find the answer to the first question of this research (Section 1.3). The final category is aimed in order to operationalise the second question (Section 1.3). Detailed descriptions of each item are described below.

I.   Day to day management is referred to the first level of governance (Symes, 2006).

In this research, day-to-day management is used to understand governance factors of ICM at village levels. In facilitating this idea, SES is applied. Based on Anderies, Janssen and Ostrom (2004), SES can be interpreted as the interactions between social and ecological systems involving people interacting amongst them; using bio-physical and non-human biological units in certain geographical locations.

II.   The second level of governance is adopted from Symes (2006) that is concerned to institutional arrangements.

At this level, the ideas are limited to find factors that are related to the interpretation of proper institutional arrangements. Ostrom (1990) provides reasonable ideas of institutional arrangement principles. However, in this research this has been modified with the inputs from the preliminary interviews. Therefore, institutional arrangements are translated into several factors such as clear management boundaries; informal institutions for collective actions; formal institutions for collective actions; consistent rules and regulations; common shared goals and objectives in managing resources; networking; partnerships; law enforcement and graduated sanctions; leadership and nested enterprises.

III.   The third level of governance is defined by Symes (2006: 113) as focusing on the construction of images, values, principles and criteria to guide policy making along a consistent path.

In this research, this level is interpreted from many authors that have suggested other aspects of governance, for example, the eight tenets of success factors in ICM (White et al., 2005; and White et al., 2008). Subsequently, there are two factors to consider: 1) socio-cultural factors such as participation in decision making, equity and fairness in resource allocations, and social justice; 2) economic and bio-physical factors such as incentives and benefits sharing; alternative income; cost of management; environmental changes and resource changes.

IV.   Perceptions on roles and outcomes from stakeholders (government; NGOs; scientists and community).

Perceptions on roles are interpreted on how people express their roles and the roles of other parties in coastal management based on their experiences and knowledge. Positive outcomes towards ICM are considered to be positive attitudes, expectations, ideas, results, etc, towards ICM. Negative outcomes can be understood as the opposite of positive outcomes when people's perspectives are negative. Stakeholders are representatives of the Group of Experts (GE) that consists of: government officials (GEG); scientists (GES); NGO workers (GEN) and; communities from both AV and BV villages.

3.4. Research Process

There are four stages in the research process namely: preparation, data collection, data analysis and reporting as presented in Figure 3.1. The preparation involved questionnaire designs and preliminary interviews of five persons to validate the key governance factors of ICM, village targets and recommendations of members in the expert group. Based on their inputs, the questionnaire was revised and research methods considered. Detailed explanations on the other three stages are described in each Section below.

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┌──────────────────────────────────────────────────────────────────────────────┐
│                              Preparation:                                       │
│ 1. Literature review                                                            │
│ 2. Questionnaire design (QD)                                                     │
│ 3. Preliminary interviews (five persons + one person from Jakarta (a retired    │
│    person from Indonesia Research and Science Institute - LIPI): to choose       │
│    targeted villages, to nominate an expert group and to identify some           │
│    governance factors of ICM to be included in QD                                │
│ 4. A revision of questionnaires based on preliminary interviews                  │
│    - Qualitative format (semi-structured interview) for village interviews       │
│    - Qualitative and quantitative format (structured and semi structured         │
│      interviews) for a group of experts                                          │
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┌──────────────────────────────────────────────────────────────────────────────┐
│                    Primary and Secondary Data collections:                      │
│  ┌──────────────────────────────────────────┐  ┌────────────────────────────┐  │
│  │ Village interviews:                        │  │ A group of experts (13):    │  │
│  │  ┌─────────────┐ ┌───────────────────────┐│  │ - Government officials (4)  │  │
│  │  │ Atep Oki    │ │ Basaan I/Basaan (BV):  ││  │ - Scientists/individual     │  │
│  │  │ (AV):       │ │ 9 interviewees         ││  │   managers (5)              │  │
│  │  │ 12          │ │ A group discussion     ││  │ - NGOs/development          │  │
│  │  │ interviewees│ │ (12 people)            ││  │   workers (4)               │  │
│  │  └─────────────┘ └───────────────────────┘│  │                             │  │
│  └──────────────────────────────────────────┘  └────────────────────────────┘  │
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Literature review and feedback

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┌──────────────────────────────────────────────────────────────────────────────┐
│                              Data Analysis:                                      │
│  ┌────────────────────────────────┐  ┌────────────────────────────────────┐    │
│  │ Key governance factors at the   │  │ Key governance factors suggested    │    │
│  │ village level:                   │  │ from a group of experts:             │    │
│  │ -  Transcribe and probe          │  │ - Descriptive statistical analysis   │    │
│  │ -  Theme and subtheme analysis   │  │   (SPSS version 11) – and its        │    │
│  │ -  Socio-ecological interactions │  │   explanations                       │    │
│  │ -  Yield communities perspective │  │ - Perceptions on party's roles in ICM│    │
│  │                                  │  │ - Perceptions on ICM outcomes        │    │
│  └────────────────────────────────┘  └────────────────────────────────────┘    │
│  ┌──────────────────────────────────────────────────────────────────────┐      │
│  │ Discussions: compare and contrast for similarities and differences      │      │
│  └──────────────────────────────────────────────────────────────────────┘      │
└──────────────────────────────────────────────────────────────────────────────┘
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Literature review and feedback

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┌──────────────────────────────────────────────────────────────────────────────┐
│                  Research Report consists of five chapters:                     │
│ Chapter 1: Introduction                                                         │
│ Chapter 2: Literature review                                                     │
│ Chapter 3: Methodology                                                           │
│ Chapter 4: Coastal Policies in Indonesia                                         │
│ Chapter 5: Findings and discussions                                              │
│ Chapter 6: Conclusion and recommendations                                        │
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Figure 3.1. The Research Process

3.5. Data collections

Data collection for this research was done from June to September 2008. A multi-method approach was used in the collection of both secondary and primary data. Secondary data was collected using a documentary review technique. This technique is a standard technique for many social research projects (Miles and Huberman, 1994 and Sullivan, 2001). The sources of secondary data are documents or written materials from related organizational and program records, and official publications such as project reports, strategic plans, management plans, spatial plans, evaluation reports, laws and local regulations.

Primary data was compiled in both qualitative and quantitative formats. The qualitative format was derived from spoken data that comes from respondent statements using structure and semi-structure interview techniques. The respondents' statements provide information related to their experiences, observations, perceptions/opinions and daily activities related to coastal management. Many people are engaged in coastal management in North Sulawesi ranging from governments to private organizations and civil society to local communities. Personal experiences, opinions and perceptions were recorded and analyzed to provide evidence about the insights of governance factors for ICM implementation. Structured and semi-structured interview was done in flexible ways so questions and probes were yield in-depth responses about people' experiences, perceptions, opinions, feelings and knowledge.

A small degree of quantitative format was conducted to a group of experts that consisted of three major parties (government staff, scientists and NGO workers) from the provincial level. The meaning of the group of experts is discussed in Section 3.7 as it applies to interview strategies and the interviewees. During the interviews, people from the expert group (13 persons) were asked to quantify the degree of importance for each key governance factors. This is important to go beyond what have been said by respondents about the insights, meanings and experiences for each factor. Quantification allowed the researcher to score and prioritize key governance factors of ICM for objective rational reality (Sullivan, 2001).

3.6. Research Sites

In this research, North Sulawesi Province in Indonesia is used as a study site where two villages have been selected. North Sulawesi is located between $0^0\ 23'$ - $4^0\ 30'$ North and $123^0\ 00'$ - $127^0\ 00'$ East (Appendix A). North Sulawesi is one province out of 32 provinces in Indonesia. It is a province without significant land-based natural resources but it has rich coastal resources and natural beauty. The coastline of North Sulawesi covers about 1,445 kilometers with approximately 68 per cent of the population residing along the coastline (Bappeda, 2007). The total population of North Sulawesi in 2007 is 2,189,173 (Bappeda, 2007). Up to now, after decentralisation, there are four cities and nine regencies. Comparatively, prior to decentralisation, this province only had two cities and four regencies.

For the local insights, two villages were chosen (Appendix A), namely: Atep Oki[1] and Basaan I/Basaan[2]. Both villages have experienced ICM, however, with different arrangements and to varying degrees. Atep Oki is the field site of the Marine Coastal Resource and Management Project - MCRP (funded by the Asian Development Bank) and initiated by the local government of Minahasa Regency in 2003. Basaan I/Basaan was the field site for the InteCoReef Project (Japan International Cooperation Agency - JICA) in 2001. Supporting programs were terminated; however, during the preliminary interviews some respondents suggested at this location the communities still maintain some ICM activities. For these villages, issues surrounding governance factors for improving ICM were appraised. The profile of Atep Oki village can be seen in Appendix A; while Appendix B provides the profile of Basaan I village.

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[1] Atep Oki is chosen as this village has conducted ICM since 2003 initiated by the local government of Minahasa regency through MCRMP. This village has no significant change in political administration prior and after decentralization as it is under the administration boundary of the original Minahasa Regency.

[2] Basaan I/Basaan is selected as this village has experienced ICM since 2000/1 under the supervision of JICA through InTeCoReef Project. Basaan I/Basaan have been affected by the policy of decentralization significantly. Prior to decentralization, these two villages was a one village in Minahasa Regency. In 2006, Basaan I separated from Basaan to be a new village, when the political administration was under the new Regency of South Minahasa (separated from of Minahasa Regency). Just last year (2007), Basaan I/Basaan have been arranged again to be part of South East Minahasa Regency (separated from South Minahasa Regency).

3.7. Interview strategy and interviewees

The respondents for the group of experts were identified during the preliminary interviews. During the preliminary interviews, the researcher selected five persons that had the appropriate knowledge and experience of ICM in North Sulawesi at the village level. These people were asked to then nominate ten people based on the following criteria (Appendix D):

1. the nominees should have working experience in coastal management in North Sulawesi;
2. the nominees should have knowledge and experience or at least have visited in both villages (AV and BV) related to the issues of ICM;
3. the nominees should understand the issues of coastal governance at local level and;
4. the nominees should represent a clustered group of NGO workers, Government officers or Scientists.

The Group of Experts (GE) was named as such because each person represented specific knowledge within the group. The aim of the establishment of the GE was to answer both research questions: to find out the key governance factors of ICM and to analyse perception differences in valuing those governance factors.

Initially, there was a list of 50 names (5 x 10, n = 50). From the nominees, the researcher chose 15 people that were selected to the Group of experts (GE). Those who had been nominated by at least two other people were chosen first. The remaining panel members were selected from those who were nominated once. However, as time for data collection was limited, if the person was not available, the researcher chose another person from the list and also confirmed to the former interviewees if they knew the person and under what circumstances that relationship was based. At the end, the researcher confirmed 13 persons in the GE as the other two persons were unavailable for the interviews due to other tasks. Furthermore, the researcher had only limited time for field data collection. The selection process of the GE is justified as Somrudee (2007: 69) states this technique is considered "a modified snow ball technique".

The selection of respondents at the village level was simpler. This is because the population of the villages was smaller and people are more likely to have an interrelation between each other. Therefore, it was easier to find the interviewees using purposive sampling methods. This technique is justifiable as coastal management deals with people, understanding their interactions and the implications of their interactions can be very useful. Therefore, respondents from village levels were regarded as key informants. Their information was important because it answered the aims of this research. More respondents would not necessarily guarantee better information, especially in the context of this research, because this research analyses governance factors in order to improve ICM in Indonesia.

Table 3.1. Interviewee List

Atep Oki Village in Minahasa Regency (AV) Total interviewees in AV (n) = 12 persons	Basaan I Village in South East Minahasa Regency (BV) Total interviewees in BV (n) = 9 persons and; A group of discussion in Basaan village (12 persons)	The group of experts (GE) in Provincial level Total GE (n) = 13 persons; consists of GEG = 4 persons GES = 5 persons GEN = 4 persons
- Head of village - Head of community cooperative/a leader of church - Head of Mosque/member of ICM focus group - Secretary of the village leader/ member of ICM focus group - Head of Chairperson of people representative (BPD) - Women' leader (PKK) - Women in the village (2 persons) - Fishermen (2 persons) - Official governments from marine and fisheries office (2 persons)	- Secretary of Basaan - Head of POKMASWAS (community monitoring group)/ a village motivator - Informal leader in the village - Head of hamlet/member of marine sanctuary group - Women (2 persons from Basaan I and 2 persons from Basaan). - Communities (fishermen, farmers, youth and others) from Basaan and Basaan I (12 persons) in the from of a group discussion - Official government from BAPPEDA Minahasa	*Government* (GEG) - Regional planning and development officer - MCRMP Project staff in regional planning and development office - Marine and Fisheries officer - Environment management officer *Scientists* (GES) - Dean of Fisheries and Marine Science faculty - Coastal Management expert - Community development expert (2 persons) NGOs/development workers (GEN) - Local NGOs and independent community development workers (4 persons)

For this research, the list of interviewees is shown in Table One. The total number of key informants is: 12 persons in AV; 9 persons in BV together with a group discussion consisting of 12 persons; and 13 persons in GE outlined in Table 3.1. Key informants were chosen based on their experiences involved in ICM initiatives in North Sulawesi. The respondents' background such as gender, education and position within organizations were documented. The specific targets for key informants were categorized as: government, scientists/independent managers, NGOs and village communities.

3.8. Questionnaire

Questionnaires were designed specifically for this research. Appendix E provides the list of questions in the preliminary interviews. The preliminary interviews identified the meaning of governance and factors that are important to be included in this research using the open-ended questions. Inputs from preliminary interviews were used to further design the questionnaire that guided the interviews at the village (as provided in the Appendix F) and the questionnaire that was provided to the group of experts (as illustrated in the Appendix G). The design of questionnaire for the GE imposed qualitative and quantitative format (Appendix G). Quantitative format required each member of GE to quantify the degree of importance of each governance factor of ICM from 1 (as less important) to 10 (as extremely important).

3.9. Data analysis

The qualitative data was generated from the interviews at the villages (AV and BV) and from the GE. The qualitative data contained information of SES at both villages, AV and BV; perceptions on roles and perceptions on outcomes of ICM. The qualitative results of interviews were taped and transcribed. Qualitative data was generated and categorized to identify themes and sub-themes to reframe governance factors in ICM. Qualitative data analysis employed thematic analysis. The thematic analysis captured what was actually said, and went beyond word counts to look at the themes or patterns of interviewees' responses for each conversation. All thematic analysis such as themes and sub-themes of governance factors were analysed and discussed.

The quantitative data was collected from the structured interviews in the GE. GE members were asked to quantify the degree of importance of each governance factors of ICM (see Section 3.8). The quantitative data was codified and analysed using the computer software of SPSS version 11. The level of importance for key governance factors of ICM was analyzed to capture the descriptive statistical analysis. Three measurements were used: mean of value – x (with standard deviation - sd), median - m and *Pearson's* correlation (r). First, mean of value or average (x) and median value (m) were conducted to measure the central tendency or the center of distribution. Standard deviation (*sd*) indicates the mean spread of the scores from the mean and is therefore the measure of dispersion (Sullivan, 2001).

Secondly, the measure of association is correlation coefficient or *Pearson's r*. Pearson's r indicates the strength and direction of relationships. Pearson's r varies from -1.00 to +1.00. -1 means a perfect negative relationship among factors. +1.00 means a perfect positive relationship among factors. It is important to note that this analysis is not to find the causality rather than show the trends and relationships amongst governance factors. The statistical results are treated as complementary information to emphasise and prioritise the level of importance of factors suggested by the GE. The strength of correlation is confirmed at levels of significance (2-tailed): 1) correlation is significant at the 0.01 level (**) and 2) correlation is significant at the 0.05 level (*) (Sullivan, 2001). The further analysis of Pearson's r is to confirm the interactions of factors that are important to rank and prioritise the importance of key governance factors suggested by the members of GE.

3.10. Ethical issue

In conducting this study, the author abided and respected research ethics. A committee approved research methods during the thesis proposal defense. With regard to the interviews, the authors received verbal permission to record and cite communications. In order to mitigate risks to individuals, the interviewees will remain anonymous.

3.11. Summary

Both qualitative and quantitative methods were applied in this research. The qualitative method focused on assessing the interactions of SES for its robustness at village levels. It also aimed to evaluate the range of perceptions held by key people in terms of their ideas and experiences of the way people use coastal resources. This method also explored the insights and meaning of governance factors that are important in maintaining ICM sustainability in North Sulawesi.

On the other hand, the quantitative research is applied only to the group of experts. The structured questionnaire was designed in order to gather different perceptions (the degree of importance) from clustered people on key governance factors of ICM as mentioned in Section 3.3. This qualitative method is paramount as a complementary explanation as this provides numerical evidence through descriptive statistical analysis. This allows the ranking of priorities of the key governance factors of ICM based on clustered people suggestions.

CHAPTER IV
COASTAL POLICIES IN INDONESIA

4.1.   Introduction

This chapter investigates the politics of public policy in the context of coastal management.   Coastal areas and resources have attracted much attention in recent decades from international, national and local actors.   This is because coastal resources generally have significant economic resource value. However, the quantity of resources in Indonesia especially, continue to deplete at and alarming rate. It is therefore necessary to manage coastal areas and resources sustainably as competing resources have produced many conflicts which generally contribute to further environmental degradation and lead to the expansion of coastal poverty. However, coastal resources are governed by a very extensive, complex policy and regulatory framework.

This chapter further explores policies that relate to coastal management in Indonesia and its implications to the achievements of sustainable coastal development within Indonesia.   This topic is an essential part in explaining the coastal governance in Indonesia in particular to point out failures in the implementation stage of ICM. Therefore, in summation, this paper examines how public policy has developed and contributed to the evolution of institutional arrangements in particular laws and regulations that exist for coastal management in Indonesia.

4.2.   Overview of coastal problems in Indonesia

Indonesia is known as the largest archipelago country with more than 17,500 islands and 81,000 kilometers of coastline (Dahuri, 2007). Combined with its tropical climate, the coastal areas of Indonesia consist of complex ecosystems and high biodiversity and it is these areas that have attracted an increasing percentage of population to live in this region. The Indonesian coastal zone supports approximately 60 percent of Indonesia's 182 million people. This high population has triggered

problems in coastal areas.   As other countries in ASEAN region (CHARM, 2007), typically, critical coastal issues and problems in Indonesia are:

- The degradation of marine and coastal ecosystems, including the coral reef ecosystem[1];
- The pollution of marine and coastal environments; and
- The overexploitation of marine and coastal resources, including widespread illegal extraction of marine resources.

As is the case for Indonesia, coastal resources are important to the North Sulawesi province as two-thirds of the North Sulawesi region is covered by coastal and marine areas (PCI, 2002). Furthermore, the coastal areas of North Sulawesi are formed by rich ecosystems such as coral reefs, mangroves and seagrass beds.   However, according to a Japan International Cooperation Agency (JICA) study team[2] (2002), a large proportion of coral reefs in this region is categorized as 'poor'[3], with coral reef assessed as in 'excellent'[4] condition covering a mere 0.2 percent (0.4 square kilometres) of the total study area.

The conditions of coastal resources including coral reefs have been researched widely, with particular reference to the conditions of people residing in coastal areas. It is known that a majority of poor people in North Sulawesi live in coastal areas. Their economic activities are highly dependent on coastal resources. As most coastal communities are poor, some scholars argue that the poverty has led to the degradation of coastal resources due to the destructive practices of dynamite fishing, poison fishing and mangrove cutting (PCI, 2002).   Ginting (2003) and Titahelu (2003) believe that further causes of coastal resource degradation are poorly defined. Enforced property rights exacerbate intense competition and conflict over resources,

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[1] Dynamite fishing in particular in reef ecosystem (reef bombing) is known as common practices throughout Indonesian seas. Cyanide is often used to catch ornamental fishes in many areas of Indonesia (Yayasan Terangi - The Indonesian Coral Reef Foundation, 2007).

[2] JICA study team conducted research in north Sulawesi in 2000-2002. The study area is 9,800 square kilometre which covered 960 kilo metre long of the coastline. The total area of coral reef in their study area is 221.6 square kilo metre.

[3] The status of coral reef in Indonesia is usually assessed using coral cover as a proxy for coral community well being. Poor means the coverage of life coral is less than 25 per cent. JICA study team found that 195.8 square kilo meter or 88 per cent of coral reef are in poor condition (only 0 – 25 per cent of live coral cover) (PCI 2002: 1-12).

[4] Excellent means the coverage of life coral is 76 to 100 per cent cover.

which in turn relates to how policies for governing coastal resources and people are defined.

4.3. Coastal Governance in Indonesia

Despite the fact that Indonesia is the largest archipelagic state in the world, and also known as the largest powers in the pre-colonial era, the policies do not reflect the needs for coastal development. In particular if we referred back to the first twenty-five year of Development Plan (1969 – 1993), the national planning and development policies focused on terrestrial development (Dahuri, 2007). Coastal and ocean resources were only considered formally in Indonesia macro policies just in late 1980s through the 1988 State Policy Guidelines (GBHN). The GBHN *cited in* Dahuri (2007: 119) states that

> " it is necessary to improve the management of coastal and marine areas so as to increase utilization and maintain the sustainability".

Accordingly, in the 1993 GBHN, coastal and ocean resources were in the first time separated from the agriculture sector to a new sector of development in itself (Dahuri, 2007). The acknowledgment of coastal and ocean as a new separate development sector was for the purpose of exploitation and utilization of coastal and marine resource.

In term of beginning policies of coastal management, PCI (2001) argues that it cannot be said that pre-1993 coastal and marine resources were totally neglected from Indonesia policies. PCI (2001) considers that coastal resources have intensively been utilized in Indonesia since 1975. However, the utilizations were based on sectoral strategies. For example are through fisheries, mining and industry sectors. However, it can be concluded that in the period pre-1993 there were no such policy and planning documents that really focused on coastal management rather than coastal utilizations.

Subsequently, these issues show that in Indonesia, coastal areas are utilized, for multiple purposes but through single sector such as fishery, tourism, sea transportation, and numerous settlements are considered to be coastal cities (Dahuri and Dutton 2000). These multiple activities combined with rapid economic

development in recent decades have contributed to coastal resources degradation as coastal resources have been overexploited (Sorensen 2000). Ostrom (1990) argues that open access and common pool resources are major characteristics that have created these conditions. The characteristics of coastal resources have also triggered conflicts which have led to 'tragedy of commons' (Hardin, 1968 and Ostrom, 1990). Furthermore, un-coordinated investment among sectors has led to conflict over coastal resources such as user conflict, authority conflict and political conflict (CHARM, 2007). Those conflicts can affect the relationship between states and society; states and private sectors; and private sectors and local communities. Poor enforcement of existing regulations related to marine and coastal resources use worsens the situation of coastal management in Indonesia. The complexity of the implementation stages of coastal policies in Indonesia are elaborated in the Section 4.4.

4.4. Politics in Coastal Policies and its Implications on Implementation Stage

In this Section, politics in coastal policies and its implication on implementation stage are discussed. The approaches are from two eras: prior to decentralization era and during and after decentralization with costs and benefits comparisons of centralized and decentralized coastal management.

4.4.1. Prior to Decentralization Era

Indonesia follows the Unitary Republic as a type of government after a long period of colonization by the Netherlands and Japan. Many authors believe that the institution of centralized management was imposed by the colonialists. Nunn et al. (2006) argue that whilst centralized frameworks of natural resource management were introduced in many parts of Southeast Asia by colonial powers, many Southeast Asian nations instituted their own centralized styles of management even after they had gained independence. This situation happened in Indonesia during the New Order Regime. All government affairs, including the management of coastal and marine resource development, were planned, implemented and controlled by the central government in Jakarta. The central government performed the centralistic system under the Act No 5/1974 on regional development (Butarbutar et al., 1997 and *Yayasan Indonesia*

Forum, 2000). With this system, the central government had a strong power to manage resource allocation across the nation and played the biggest role in the formulation of development plans. Local government had no power to manage their areas as well as for civil society.

Similarly, before the decentralization era, all Indonesian marine waters were under the central government authority, which based on Act No 6/1996 (Butarbutar et al., 1997). Local governments have no responsibility toward marine waters. It means that local governments have no access to manage marine and coastal resources. Two Acts, Act No 5/1974 regarding Local Government and Act No 24/1992 regarding spatial plan, which related to regional development did not mention about local government water clearly. Act No 24/1992 however implicitly gives the authority to local government to manage the terrestrial and water areas, but it was not strong enough to empower local government and local society.

In the village level, Act No 5/1974 had caused many problems especially in term of implementing development plans through project basis. Because of the centralized policies, people at the village levels had no change to develop their own aspirations. Moreover, the capacity of central government to manage large areas was limited, thus all the villages have treated homogenously and they received same projects; characteristic of regions and ethnic were neglected. In addition, traditional knowledge diversity was replaced with unsuitable projects from central government. This also has caused the neglecting of traditional coastal values, institutions, and norms (Tihatelu, 2003 and Siry, 2006). The centralized power has provided less space for society to express their needs. Local communities struggled for their rights to coastal resources surrounding their areas.

The principle of centralized development, which mentioned above is oriented toward sector development especially economic related sectors such as agriculture, forestry, mining, and tourism. This principle has strongly affected the quality of coastal resources. These resources have been exploited in an alarming level. Many development activities did not concern with the carrying capacity of coastal resources. Government has done its functions on 'accumulation' of profits in order to boost economic growth; however it has received limited legitimation by people.

4.4.2. Decentralized Coastal Management

Decentralization in Indonesia began in 1999 after Indonesia just experienced the economic crisis in 1997 and followed by the collapse of new order regime in 1998. In the very short time, the central government had to design the decentralization concept that can be applied across Indonesia. This change has drastically affected the political system in Indonesia from fully centralized to the democratic system (Yayasan Indonesia Forum, 2000). However, Bell (2001) warns that it seems that decentralization has been driven by economic and political reasons. Independent movements triggered by unfair sharing over natural resources revenues in rich regions such as Aceh, East Kalimantan and Irian Jaya (now: West Papua) had triggered the political idea of regionalization (not decentralization) in Indonesia. The decentralization idea was arranged to avoid the separation movement from a unitary nation of Indonesia.

Decentralization has influenced coastal management in Indonesia. The aspirations of decentralized coastal management actually has undergone under the assistance of international organization before decentralization was recognized in Indonesia. Siry (2006) acknowledges that foreign donors had a strong influence in introducing decentralized ICM in Indonesia. Two models, Community based coastal resource management in North Sulawesi Province and integrated bay management in East Kalimantan Province are examples on the early types of decentralized ICM in Indonesia (Crawford, Dutton and Rotinsulu, 1998). In additions, international experiences (Philippines, Sri Lanka, Australia and US) have inspired coastal management concept in Indonesia. For example, community based coastal resources management in Indonesia is modified from Philippines experiences assisted by CRC – URI, a US University that focused on the development of a village marine sanctuary.

Many promises have been expected from decentralization system. Generally, the demand of decentralization has emerged widely throughout the world in the last two decades and has become global trend. Prud'homme (1995) points out some reasons for the prevalence of decentralization: decentralization is believed as a media that can assist the prioritization of local needs in developing policy; it promotes civil society participation in decision making; it can encourage greater accountability; and also it

can enhance political stability and national unity. A long the line of Prud'homme (1995), Crawford and Tulungen (1999) present an analysis of cost and benefit to support decentralized ICM in Indonesia (Table 4.1 and 4.2). Subsequently, they conclude that decentralization is beneficial for achieving sustainable coastal management in Indonesia (Table 4.1 and 4.2).

Table 4.1. Centralized Management Regime

Cost	Benefit
• Centralized law enforcement activities • Prosecution and imprisonment of law violators • Loss of fisheries production due to overfishing and habitat destruction • Loss of tourism business due to habitat degradation • Expenditure on increased coastal protection due to reef damages • Loss of public infrastructure and private property due to erosion and poor infrastructure placement • Expenditures due to poor health • High costs of collection of information for decision making by centralized agencies	• Communities do not contribute in-kind or financial resources to management efforts.

Source: Crawford and Tulungen (1999).

Table. 4.2. Decentralized Coastal Resources Management Program

Cost	Benefit
• Community law enforcement activities • Operational costs of a CRM office and program: staff, travel, operations, capital equipment. • Block grants to communities for implementation activities	• Reduction in Provincial law enforcement expenditures due to improved compliance. • Reduction in prosecution and imprisonment of -law violators due to improved compliance • Increased fisheries production due to less overfishing and habitat destruction. • Increased tourism business due to habitat protection • Reduced expenditures on increased coastal protection due to reef damages. • Reduced loss of public infrastructure and private property due to reduced erosion and proper infrastructure placement. • Reduced expenditures due to improved health. • Easier work planning by sectoral agencies. • Increased success of government programs due to local community participation and empowerment. • Reduced costs of information gathering by provincial agencies as villages provide monitoring reports.

Source: Crawford and Tulungen (1999).

The reform era (decentralized system) in Indonesia has been on the board almost a decade and the devolution of central government affairs to local government have been undertaken gradually. However, recently many authors have questioned the achievements of ICM under decentralization system. Theoretically, the ICM in Indonesia is expected to be implemented progressively in order to achieve sustainable development goals as mentioned in Chapter Two as it has been introduced intensively with extensive financial supports from International donors and agencies. However, it seems that ICM initiatives at all level in Indonesia have been slowed down. This issue seems not just happening in Indonesia, but it has also happened in other countries such as Philippines and Thailand.

4.5. Barriers in ICM Implementation and the Implications

Patlis (2005) and Dirhamsyah (2006) have provided a thorough analysis on Indonesian law and legal institutions. Dirhamsyah (2006) argues that Indonesia legal frameworks are still complicated and inappropriate to allow ICM will be successfully implemented. Rather than, the complexity has contributed to further environmental degradation in Indonesia. Furthermore, Patlis (2005) claims that conflicts in coastal management are still existence due to conflicts that arise among the case body of sectoral laws. Therefore, the next Section elaborates the issues and problems related to institutional arrangements.

4.5.1. Issues and Problems in Institutional Arrangements

According to Dirhamsyah (2006: 68), coastal management in Indonesia is governed by "a very extensive, complex policy and regulatory framework". The foundation for this is laid out in the Section 33, Para 3 of the 1945 Constitution which reads (Dirhamsyah, 2006: 69):

> "land and water and natural resources therein shall be utilized for the greatest benefit of or welfare of the people".

According to Ginting (2003), at least twenty parliamentary laws and hundreds of regulations and ministerial decrees related to the management of coastal resources in Indonesia. However, the main regulations that have affected the implementation of

ICM are listed in Table 4.3. As Dirhamsyah's list is based on data in 2006, in recent time, there are two new laws that have been enacted in Indonesia: Law No 26/2007 regarding to spatial land use management and Law No 27/2007 regarding to coastal and small islands management. It seems that these two Laws have given a new promising hope in coastal management in Indonesia. However, resistance is still undergoing. Many NGOs have protested as the contents of these two laws skewing to the needs of economic development. Event though public participation has been acknowledged, many activists feel that local practices, traditional knowledge and community rights have not been mentioned clearly. Similarly, participation can still be politicized to certain degrees that are not in the favour of civil society.

Even though, Ministry of Marine and Fisheries Affairs (MMAF) as a focal agency for coastal and marine affairs has been announced since 1999, this agency can not act as a coordinator for the implementation of coastal management in Indonesia. This is because there are no such laws that have given a mandate to them. Amongst all the Laws that are listed in Table 4.3, Dirhamsyah (2006) identifies some issues that impinge their application to assist better coastal management in Indonesia. Those issues are: lack of detailed information and clarity; conflict in the use terms of conservation or protected areas; conflict in the meaning of conservation; conflict in the scope of definition of marine species; conflict in the penalties and liability; a short-cut approach for conflict resolution; lack of consistency in interpretation of legal rules; conflict of jurisdiction among the national laws; lack of recognition of traditional management.

To emphasize problems in Indonesian Laws related to coastal management, Patlis (2005) approaches the problems in specific ways. Patlis (2005: 451) recognizes that horizontally Laws listed in Table 4.3 has "disconnects" because those Laws have produced gaps, overlaps, redundancies and conflicts within the legal framework. Interestingly, Patlis (2005: 451) found that

> "each line agency essentially manages its own bill, from the initial drafting pages to the research and consultation stages, and finally to serving as President's representative before the People's Representative Council as it considers the bill for enactment."

Therefore, Patlis (2005) concludes that each agency champions its own statute, whether in fisheries, forestry, mining, tourism, agriculture or industry, so that rather

than laws serving the national interest that benefits all society, the laws are developed to serve the administrative bureaucracy. Furthermore, it seems that regulations are made to empower the agencies rather than to provide reliable and fair guidance to people subject to the legislation.

Table 4.3. National legislations affected the coastal management in Indonesia

Regulations	Subjects
A. Ocean Jurisdiction claims	
Law No 6/1996	Indonesia waters
Law No 5/1983	Indonesia EEZ
Law No 1/1973	Indonesia continental shelf
B. Ocean resources and activities	
Law No 21/1992	Shipping
Law No 11/1967	Basic provisions for mining
C. Terrestrial spatial and general planning laws	
Law No 26/2007*	Spatial land use management
Law No 9/1990	Tourism
D. Coastal and marine resources management	
Law No 31/2004	Fisheries
Law No 41/1999	Forestry
Law No 16/1992	Quarantine of agriculture, cattle and fish
Law No 27/2007*	Coastal and Small Islands Management
E. General legislation of environmental management	
Law No 23/1997	Environmental management
Law No 5/1990	Conservation of biological resources and their ecosystems
F. Legislation of decentralization	
Law No 32/2004	Regional government
Law No 33/2004	Financial distribution between central and regional government
G. International level	
Law No 17/1985	Ratification of United Nations convention on the law of the sea
Law No 5/1994	Ratification of United Nations convention on biological diversity

Note: * is an additional new Act. Source: Adapted from Dirhamsyah (2006)

4.6.   Summary

Coastal management policies in Indonesia appear on the surface to be gaining momentum toward some form of sustainable coastal development, however, the implementation stage is far from ideal.   Essentially, the evolution of coastal management in Indonesia can not be separated from the interference of international actors.   International experiences have highlighted a set of systematic guidelines on how to implement the ICM based on best practice. However, the adoption of international efforts to local context is still problematic due to factors in institutional arrangements.

Decentralization (the reformation era) in 1999 has brought a new hope for better coastal management in Indonesia through decentralized ICM.   It can be said the Indonesian approach to ICM is 'regulatory' focused; however, the Indonesian legal frameworks have been widely acknowledged as complex and disconnected. Furthermore, the implementation and law enforcement of those laws have impinged the achievement of ICM towards its common goals under sustainable development requirements. These laws have produced confusion and have severely affected the overall effectiveness of ICM in Indonesia. Finally, ICM emphasizes government–led uniform approaches and this has seen results that show less participation from the people in the ICM initiatives.

CHAPTER V

FINDINGS AND DISCUSSIONS:
KEY GOVERNANCE FACTORS OF ICM AT LOCAL LEVEL

5.1. Introduction

This chapter provides findings and discussions of key governance factors of ICM. This chapter answers the two research questions (Section 1.3) based on the primary results obtained from the methodology in Chapter Three. The two questions are as follows:

1) what are the key governance factors that are important for positive ICM outcomes in North Sulawesi Indonesia; and

2) what differences exist in the perceptions of those factors among the key stakeholders?

The findings and discussions for these questions are approached from two angles. These approaches were arranged because governance is about both what is and what should be, reality and potential. What is the reality of governance was explored in the first category. The first category covers implementation how coastal resources in the context of ICM-CBCRM[1] are governed by communities. Social Ecological System (SES)'s framework is used to analyse social and ecological interactions in the implementation of ICM-CBCRM. Understanding SES in this context is useful to unpack problems of coastal management and to find out governance factors that can be used to improve the implementation of ICM for sustainability. This follows the research of Kooiman and Bavinck (2005) whom illustrated that interactions imply governance. Interactions explain the actions and the reality of governance and its factors.

This category relies mainly on qualitative data that was gathered from the semi structured interviews. As mentioned previously, two villages were suggested in the

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[1] ICM – CBCRM is Integrated Coastal Management – Community Based Coastal Resource Management. CBCRM is one of ICM approaches which emphasizes decentralized coastal management to communities.

preliminary interviews by the respondents that are working in the field of ICM: Atep Oki village (AV) and Basaan I/Basaan villages (BV). In AV, 12 people participated in the interviewing process; while in BV, 9 people and a group discussion were involved in this research. Detailed interviewees are described in Section 3.7.

The second category identifies key governance factors from a group of experts (GE) in North Sulawesi. In this second category, governance was approached from the perspectives of 'what should be' the key governance factors of ICM. The factors were explored mainly from the institutional arrangements factors that take place during day-to-day affairs. These factors should underline the actions and decisions that are made by stakeholders in ICM. In other words, these categories are similar to the work of Kooiman and Bavinck (2005) and Symes (2006) on second and third orders of governance.

As mentioned in Section 3.7, the GE consists of three clustered people: government officials, scientists/independent managers and NGO/development workers. There are thirteen people in this group. The profile of this group is presented in Section 5.4.1. These people are chosen because of their expertise, representation and their involvement in ICM at local level in North Sulawesi Province. They were recommended in preliminary interviews by five selected people based on criteria that were arranged for this research. In this category, qualitative and quantitative research methods were applied. Definition of key governance factors, roles of parties and perceptions of ICM outcomes were asked in the qualitative format. A quantitative format was used to quantify the degree of importance for each governance factor of ICM. This quantification is needed in order to justify whether there are value differences in governance factors.

To limit biases to interviewee responses and gain insights to broaden understanding of each quantified factor, the interviewees were asked the basis or reasons they chose a specific degree of importance. The reasons/justifications were then checked and compared to other parties. Finally, the descriptive statistical analysis using 'SPSS version 11' is presented in the form of mean value (x), median (m) and standard deviation (sd) and the *pearson's r* for correlation amongst factors.

5.2. Findings at Village Levels

ICM at village level in North Sulawesi has adopted the concept of Community Based Coastal Resource Management -- (CBCRM) introduced by the Coastal Resource Management Project -- (CRMP). CRMP was a project funded by United States Agency for International Development (USAID) that was implemented from 1997 to 2006. This project is regarded as a pioneer of CBCRM within the ICM framework in Indonesia including North Sulawesi. The CRMP's mission was to decentralise and strengthen natural resource management, in particular coastal resources' (CRMP, 1999: 1). The aim of CRMP in North Sulawesi was 'to test and develop good practices for effective coastal management that enable the community, government, private sector and NGOs to participate and work together to achieve sustainable coastal development' (CRMP, 1999: 1). Subsequently, several CBCRM models were developed based on their work in North Sulawesi and other provinces as illustrated in Table 5.1. Therefore, it is unsurprising that CRMP's models in the form of CBCRM were adapted to other villages including Atep Oki and Basaan I/Basaan.

Table 5.1. Best Practices from CRMP

Provinces	Practices
North Sulawesi	- Community-based marine sanctuaries
	- Village management plans and implementing ordinances
	- Project and control sites monitoring
Lampung	- Participatory provincial strategic planning
	- Coastal atlas as tool for information-based planning
East Kalimantan	- Village-scale sustainable shrimp aquaculture
	- Bay management

Atep Oki was chosen as a pilot project of government-led ICM within MCRMP (ADB Loan) since 2003. Basaan I/Basaan villages have implemented ICM through InteCoReef (JICA Grant) since 2000. Both implementation agents have followed the same procedures of CBCRM that were proposed by the CRMP project:

a) Community identification

b) Communities orientation and preparation for the planning process

c) Baselines establishment (environmental, social and economical data)

d) Coastal management issues identification

e) Issues validation and prioritisation

f) Management options development

g) Implementation initiation

h) Review, evaluation, reflection and adaptation.

The procedures above appear to be idealistic procedures that were suggested in some literature as the concept of ICM policy cycle (GESAMP, 1996 and Olsen, 2003). It is proposed that the policy cycle of ICM[2] should be maintained as snowball processing (Figure 5.1). That is, the efforts should become greater overtime to reflect the snowball analogy.
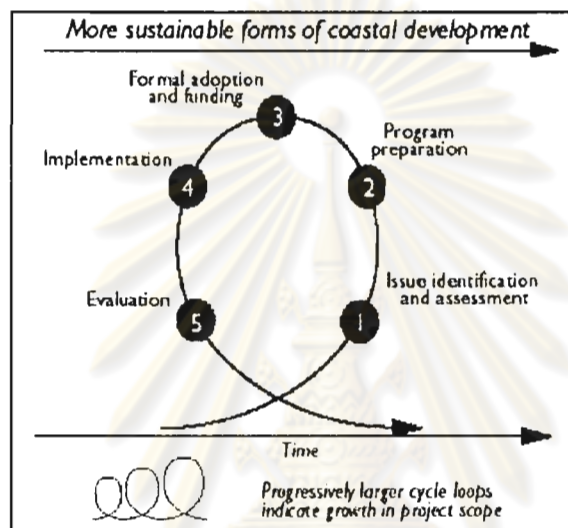
Figure 5.1. ICM policy cycle (GESAMP, 1996 and Olsen, 2003)

In reality, this cycle, sometimes, can not be managed and maintained. Chapter Two and Chapter Four illustrated the general difficulties in the case of Indonesia. For example, a lack of government budget and commitment is a causation of the slow down of ICM at the local level (see Chapter Two). Similarly, development conflicts have arisen due to overlap and contradictory laws and regulations (see Chapter Four). Each development sector proposes its activities without considering the environmental protection requirements and the needs of the community. Furthermore, the policy cycle on many occasions has been simplified as can be learned from the findings in this Chapter. The implementation agents seem to avoid (or ignore) the complexity, diversity and vulnerability of the SES that is important for the robustness

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[2] The policy cycle processes are taken into five stages: 1) issue identification and assessment; 2) program preparation; 3) formal adoption and funding; 4) implementation and 5) evaluation. The processes are a continuing cycle.

of local governance that can support the sustainability of ICM. Effort occurs only to meet project requirements for project outputs rather than ICM outcomes. Furthermore, point 'h' (CRMP's procedure) or stage 5 as suggested in Figure 5.1 (GESAMP, 1996 and Olsen, 2003) appears absent. Therefore, to a certain degree, the policy cycles have collapsed.

Based on village level findings, it can be said that even though ICM in Atep Oki and Basaan I/Basaan have been introduced using typically similar ICM procedures, the translation into activities in each village are significantly different as they based on the interpretation of each implementation agent. Consequently, these have produced varying results for each village. Therefore, this Section presents findings and evidence by providing an overview of both villages, the interactions of SES as introduced in Chapter Three, and finally discussions that reflect the configuration of local governance factors based on descriptive analyses.

AV in this research is chosen to represent ICM at the local level that is initiated by the Government of Minahasa Regency[3]. ICM in AV as mentioned earlier started in 2003 through MCRMP. MCRMP is a national project that was arranged through the cooperation of ADB and the Ministry of Marine Affairs and Fisheries (MMAF). 15 provinces and 54 Regencies were targeted for this project. MCRMP is designed to achieve its objectives through the implementation of four inter-related project components (A, B, D and D)[4].

Activities in AV were conducted to achieve the objectives of component D, the Small scale Natural Resources Management scheme (SNRM) that aimed to: 'improve socioeconomic and environmental conditions within the marine and coastal

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[3] Prior to decentralization, Minahasa Regency was the first local government that had enacted the Community Based Integrated Coastal Resource Management (Local Regulation "PERDA" Number 02/2002. This law was assisted by CRMP to support their ICM initiatives in four project sites (Talise, Blongko and Bentenan/Tumbak villages). However, because of 'pemekaran'[3]; those four sites have been arranged under the new regencies.

[4] The four interrelated components are Component A – Coastal and Marine Resources Planning and Management (CMRPM); Component B - Spatial Data and Information Management (SDIM); Component C – Legislative Review and Law Enforcement (LRLE) and Component D – Small-Scale Natural Resources Management Schemes (SNRMS).

management areas (MCMA)[5] in participating provinces through implementation of a range of small-scale, priority activities'. In the ADB Loan Document (ADB Project No. 1770-INO-SF), it is mentioned that "these activities were expected to demonstrate the tangible value of ICM to local governments and thereby support devolution of resource management responsibility to the districts and sub-districts" (ADB, 2003: 1). Therefore, it is clear that the focus of SNRM – MCRMP in AV is for improving the conditions of socio-economic and environmental conditions of the village in order to provide 'tangible value of ICM". An interviewee, GES4 mentioned that SNRM was designed to revise CRMP's models. This is because in the past, CRMP was focused more on conservation aspects rather than local economies.

There are several points that contribute to the characteristics of this village. This village has since opened to wider economic activities as there is a new alternative national road (South Ring Road) recently built through this village. This road was built to connect the 'Bitung harbour' with other 'supplier' cities within the corridors of the Manado-Minahasa-Bitung Economic Zone. The new road is projected to contribute to the external forces of the village.

Basaan I/Basaan (BV) represent the donor driven ICM-CBCRM initiatives introduced by JICA in 2000 through the InteCoReef project.[6] The process of CBCRM in BV was relatively short as it was only seven months (December 2000 – July 2001). However, the process was different to the case of AV as JICA experts and local experts designed the process (including providing an internal extension officer). Based on further analysis in this research, the internal extension officer had a crucial role in promoting ICM during the transition and crisis period. Further elaboration is provided in Section 5.3.

Even though this research focused on the Basaan I village, it is difficult to separate Basaan I and Basaan for the purpose of this research. Originally, ICM initiated by JICA was introduced to Basaan village in 2000 where Basaan I was a hamlet within

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[5] MCMA refers to recipient Regencies in this research is for Minahasa Regency. Other regencies as the MCMA of North Sulawesi Province are Bolaang Mongondow Regencies and Bitung City.

[6] InteCoReef is a JICA project titled, the Study on the Integrated Coral Reef Management Plan in North Sulawesi in the Republic of Indonesia" (JICA, 2002).

this village. However, in 2002, Basaan I decided to separate from the original village of Basaan and become a new village, Basaan I. Overtime, Basaan I is more active in promoting ICM comparing to Basaan. Therefore, Basaan I receives more recognition than Basaan village.

As both villages continue to share the coastal areas and are closely linked in using coastal resources and spaces, this research could not eliminate the existence of Basaan village. The uniqueness of Basaan I/Basaan is seen as strength for this research rather than a limitation. Therefore, these two villages were used together in the analysis to enrich findings on key governance factors of ICM for the case of shared resources amongst two villages. Subsequently, even though the focus of this research is on the Basaan I village, the original villages of Basaan are included to a degree.

5.2.1. Villages Profiles and Management Problems in AV and BV

A brief profile of each village related to political, economic, social and resources conditions are illustrated in Appendix B (AV) and Appendix C (BV). Both villages have relatively poor resource conditions because of damaging uses of coastal resources for a long period of time. BV1, BV2 and BV3 mentioned that during the 1980s, there was extensive coral mining and mangrove cutting due to the high demand for housing in BV. Almost all interviewees and the group discussion agreed that coral mining stopped in recent times because as people understood the impacts to their fish stock. However, this is not the case for mangrove. BV1 stated people are not using the mangrove within the marine sanctuary areas, but they cut mangroves outside the marine sanctuary.

In terms of the quality of coastal resources, AV has more complex problems due to overharvesting. In this case, the overharvesting applied to several marine biotas. In 1997, it was reported that the most significant coastal management issue facing this village was the impact of the many milkfish fry collectors on the various organisms that use inshore areas as a nursery. The milkfish fry nets, with their tiny mesh, capture all sorts of organisms (Pollnac, Rotinsulu and Soemodinoto, 1997). When this problem was confirmed to respondents, many of them said that this activity had ceased several years ago as there were no more stock and they felt that this activity

had a low economic value. Furthermore, the sandy beach in AV is known as a habitat for green turtles, however because of the economic values of these resources, the local green turtle population has continued to decline. The issues of resource management are discussed further under the SES framework.

In AV, previous research findings suggest the improvement of economic livelihoods in the village is due to seaweed farming. Kartiawan (2007) used financial analysis of seaweed farming in AV to show that seaweed farming has generated higher community incomes. Respondents in the AV also mentioned the seaweed farming as a good income generating activity. However, based on the observations during the field visit in AV, almost none of the seaweed famers conduct the activities, only the facilities and equipments could be found. When, this problem was confirmed, villagers assumed that production decline due to disease problems. However, they could not expand what the problems are.

Education-wise, communities in both villages have a low education level as most of them have only primary education (finished or unfinished); with the figures of 40.17 percent in BV and 71 percent in AV (detailed information in Appendix B and C). Many scholars believe that low education levels affected the skills of the villagers in utilizing their coastal resources. Many villagers can not undertake multiple tasks or skills in fisheries. Their skills have rarely improved over a long period of time. Therefore, in BV, capture fishing is the main livelihood activities for the fishermen. Inadequate technology and financial have protected the local fishermen to expand their business.

In terms of public facilities both villages share common problems. For example, education facilities are only available to primary school level. Secondary and high schools are only available in the district capital city of districts which are located far away in distance from both villages. Other facilities such as banks and health centers are not available in the villages. All respondents mentioned that fresh water facilities, sanitation and toilets are not enough; however, they felt there had been reasonable improvements since the introduction of ICM. The respondents showed positive attitudes towards this issue and they wanted more facilities to be added in the future for both villages.

Political influence is strong for both villages. During the data collection, there was high tension in the communities due to election campaigning. Political issues had become common talk in the communities and this had produced divisions in the villages. BV1, BV2, BV3 and BV5 state that development activities were slowing because all resources have been put to the election process and communities were polarized to support their proposed new leaders. In AV, the situation is slightly different. The issue of elections started this year, despite the election taking place in 2009. Respondents in AV believe that political situations can affect the ways that villagers interact in daily activities. In particular AV3, AV4, and AV5 felt that whichever party loses an election, potentially, that person will become the opposition side and therefore contribute less toward village activities. The respondents then gave the example of the former candidate for the AV. This person provided almost no contribution to the ICM activities.

5.2.2. ICM – CBCRM Activities in North Sulawesi Province, AV and BV

The profile of both villages is typical of coastal villages in North Sulawesi. Poverty and serious environmental degradation has triggered efforts of ICM in this province. ICM has been promoted in North Sulawesi for more than a decade. The strongest evidence of ICM in North Sulawesi was during the period of 1994 – 2004. During that period, there were several ICM initiatives undertaken in North Sulawesi province. However, there were two projects that had strong influence on the ICM models in North Sulawesi, namely: CRMP and InteCoReef. CRMP provided best practice examples of ICM-CBCRM that have been adopted by other ICM projects, although there were still some limitations on the models in particular the issues of conservation versus economic activities. Similarly, InteCoReef modified best practices of CRMP especially providing comprehensive coastal spatial data and information in North Sulawesi. By 2002, InteCoReef and CRMP had worked together to promote the coastal laws and the ICM board in North Sulawesi (GES1, GES2, GEG1 and GEG2).

The most current ICM project in North Sulawesi is the MCRMP project. MCRMP is a national project implemented in 15 provinces and 54 cities/regencies under the coordination of MMAF (national government). North Sulawesi is one province within Indonesia that has been implementing this project since 2002. At the provincial level,

MCRMP aims to strengthen local capacity in planning and implementing ICM. The, main activities are for providing planning documents of ICM including strategic plans, zoning plans and other related plans. Other activities focus on ICM training for local governments and other ICM stakeholders. At the end of the project, it is expected that in North Sulawesi there will be an information data spatial center for coastal resources and this will lead to better procedures in formulating coastal planning. The executing agency of MCRMP in provincial level is the BAPPEDA of North Sulawesi (regional planning and development office of North Sulawesi Province) (GEG2).

In Atep Oki Village (AV), ICM – CBCRM were introduced through SNRM-MCRMP funded by the ADB. This project is regarded as the first ICM project in decentralization era of Indonesia. Therefore, the central government has given a mandate to local government to run this project. Consequently, SNRM-MCRMP in AV was initiated by the Bappeda of Minahasa Regency. There are three major activities of SNRM-MCRMP in Atep Oki village: 1) community development programs; 2) environmental rehabilitation and infrastructure improvement; and 3) alternative income for the communities. Based on the project documents (PT. Waja Utama, 2004 and BAPPEDA Minahasa, 2007), detailed activities that took place from 2003 – 2007 were:

1) Community development programs including:
- Community awareness and human resources development
- Information provisions: social and economy baseline data and information, local ordinances and coordination procedures for ICM-CBCRM.
- Community information center and its local rules
- Community involvement (individuals/groups) in environmental protection; coastal resource management and for the implementation of local ordinances and regulations.

2) Environmental rehabilitation and infrastructure improvements, namely:
- The establishment of marine sanctuary
- The establishment of sea turtle conservation areas
- Pollution control activities
- The physical construction of breakwater for stopping the beach abrasion
- The improvement of sanitation facilities

- Enforcement for illegal fishing practices
- Mangrove rehabilitation program
- Green belt promotion along the beach
- Clean water infrastructure provisions
- Jetty constructions for better sea transportations.

3) Alternative income generation programs, such as:
   - The establishment of alternative income groups
   - The establishment of 'unit simpan pinjam' (economic unit for saving and borrowing money) and communities cooperation
   - Training programs for cooperation management and technical advisory for the members of organizing committees.
   - Alternative income programs: 'keramba jaring apung' (KJA) – floating net technique of aquaculture; crabs culture; seaweed farmings, etc
   - Alternative income programs for food processing products from fish, seaweed, etc and trainings of diversification food from marine products.

In Basaan I/Basaan (BV), the ICM-CBCRM project commenced in 2000 within the InteCoReef JICA program. BV was chosen as one of pilot project sites (JICA, 2002). However, BV was supported by InteCoReef - JICA only for eight months. Basically, the InteCoReef – JICA program was done to support the formulation of the integrated coral reef management plan in North Sulawesi. Therefore, the approach to BV was very different compare to AV. AV was fully supported by the SNRM-MCRMP program. Meanwhile, BV was a test of how ICM can be internalized into current planning and development systems. As a result, ICM-CBCRM in BV was supported in the forms of multi-programs and multi-agencies. In 2007, BV was chosen by the BAPPEDA North Sulawesi as the location for a short program (five months) of Adaptive Research and Extension (ARE) program – MCRMP.

BV has a simple ICM management plan. In the management plan, communities agree to solve nine crucial issues such as: coral mining; beach abrasion; lack of clean water and sanitation facilities; mangrove cutting; lack of teachers and schools facilities; and alternative income. As the management plan is simple, it is easier for the communities to implement this plan (BV1). Detailed activities that have been conducted in BV are:

a. The establishment of marine sanctuary (6 hectares) – supported by JICA InteCoReef study team and communities.

b. Artificial reefs (300 units) – supported by JICA, communities and PT Newmont Minahasa Raya (PT. NMR)

c. Mangrove rehabilitation program (10 hectares), supported by communities, PT.NMR, JICA and forestry agency of North Sulawesi Province.

d. Seawall/breakwater, supported by the water resource office of North Sulawesi (150 meters)

e. Clean water facilities – supported by district government and communities

f. Alternative income such as fish aquacultures (grouper, etc) – supported by fisheries and marine office of North Sulawesi and PT NMR.

g. Women empowerment: skill trainings and others – supported by Social and welfare office of Minahasa Regency.

h. School renovations: SD Inpres Basaan I – supported by PT NMR

i. Village ordinances

j. Adaptive Research and Extension (ARE) – supported by MCRMP at the provincial level in cooperation with Mitra Bahari (Coastal partnership program) of Sam Ratulangi University.

k. Alternative income programs through the establishment of fishermen groups – supported by Fisheries and marine affairs department of South East Minahasa.

The explanations above provide a brief overview of ICM – CBCRM activities in North Sulawesi, particularly in AV and BV villages. Based on the activities provided in the project reports, it seems that ICM has been comprehensively promoted from the programs of community development, environmental rehabilitation and alternative income programs. However, based on the observations, some activities are still maintained by communities whereas others have been terminated.

In a comparison of both villages, many respondents claimed that ICM-CBCRM in AV is viewed as 'project oriented' and has not been part of local governance systems in the village. On the other hand, ICM in BV to some degree has been involving local needs, even though it has not been constructed formally. Therefore, in order to promote better understanding on how to sustain local activities over time, it is important to find out some key governance factors that can be useful for the

sustainability of ICM at the local level. In approaching this issue, the interaction of social and ecological activities are important points in the context of local governance.

5.2.3. Day to day Affairs: SES Interactions in the Context of ICM at AV and BV

Institutions, the rules that govern interactions between people, have a tendency to evolve over time and influence SES (Janssen, 2006). SES comprise a set of people, their natural and human-made resources, and the relationships between them (Anderies, Janssen and Ostrom, 2004). Figure 5.2a shows a minimal model of SES. This model can be utilised to understand interactions of four components in the context of ICM-CBCRM: resource (A) that is used by multiple stakeholders; resource users (B) and infrastructure providers (C) that are composed by humans and their interactions which might be overlaps between B and C; and public infrastructure (D) that consists of human made capital- physical (roads, toilets, marine sanctuary boundaries, etc) and social (eq. rules for governing resources). Based on Figure 5.2a, the strategic interactions in the society can be identified.

The model in Figure 5.2a is treated as a tool that helps the researcher to understand interactions amongst different components (A, B, C and D) in particular their challenges and opportunities as governance factors at local level. According to Anderies, Janssen and Ostrom (2004), this model goes beyond the traditional strategic interactions that focused only amongst resource users and their impacts to resources (link 1). Intentions are given to other links such as links 2, 3 and 6 as parts of social systems. Links1, 4 and 5 are related to ecological links. However, Anderies, Janssen and Ostrom (2004: 6) mention that 'it is not possible to have one integrated model that captures all the potential links'. Therefore, those links are simplified to understand major interactions of social and ecological systems. Links 7 and 8 are recognised as external forces both for social and resources functions. Therefore, Figure 5.2a is translated into Table 5.2 to show SES interactions in the context of ICM in AV and BV villages.
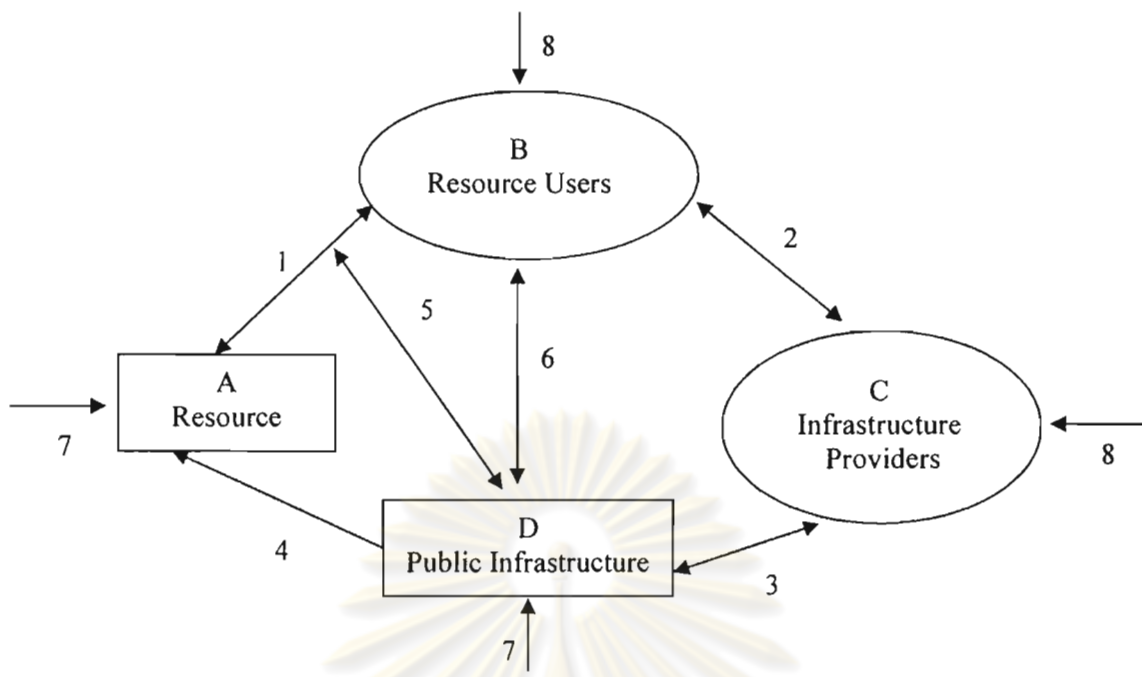
Note:

Links = (1) Resource and resource users; (2) Users and public infrastructure providers; (3) Public infrastructure providers and public infrastructures; (4) Public infrastructure and resource; (5) Public infrastructure and resource dynamics; (6) Resource users and public infrastructures; (7) External forces on resource and infrastructures; and (8) External forces and social actors

Figure 5.2a. A minimal model of a SES (Anderies, Janssen and Ostrom, 2004)

Table 5.2a provides the summary of each link. Link 1 reflects the interactions of people (villagers) and resources. Interviewees in both villages agreed that overharvesting was the major problems in utilizing coastal resources. Coral mining, bomb fishing and mangrove cutting are some examples that have appeared for a long time. BV experienced fish stock decline due to habitat loss. In comparison, AV has more complex problems in this link. In 1997, fishers had used small mesh nets for catching milkfish fry which later caused depletion to coastal resources and other biotas (Pollnac, Rotinsulu and Soemodinoto, 1997). Consequently, those resources have disappeared in recent times. When problems of milkfish fry were asked to AV2, he mentioned the activities had stopped because the milkfish fry collectors could not obtain benefit from this activity due to less stock and lower demand. Green turtles are

found in the AV. People caught the turtles because of high demand on their eggs and meat.

ICM – CBCRM was introduced in AV and BV primarily due to problems between resources and resource users (Link 1). Some management approaches were introduced to solve problems in relation to resources and resource users such as community based village level marine sanctuaries (Link 3 in Table 5.2). Villagers developed their own conservation areas together with the rules and regulations that were agreed among the villagers. Evidence of the marine sanctuaries initiatives and the rules are illustrated in Photo 5.1.

Photo 5.1. Marine Sanctuaries in BV (left) and Marine Sanctuaries in AV (right)

To maintain the marine sanctuaries, some interviewees mentioned potential problems for the future. AV2 and BV2 mentioned the costs of buoys that are used as boundaries. It is difficult to purchase a new one when it disappeared due to weather and storms (AV2). Boundaries are needed to remind villagers for the location of marine sanctuaries. Another problem related to marine sanctuaries is from neighboring villagers and outsiders. Outsiders have tended to arrive and not follow the village rules. However, it was difficult to catch them in the act as the incidents would take place during night time (AV2, BV2 and BV3). Until now, villagers are maintaining marine sanctuaries as villagers in AV and BV valued the benefits of these initiatives. Many interviewees stated that marine sanctuaries have increased the fish stocks (Table 5.2). Furthermore, awareness programs and the meaning of marine

sanctuaries have reduced bomb fishing and other unfriendly fishing practices drastically in AV and BV.

Subsequently, many villagers tried to alter their livelihood activities to be more sustainable. In AV, many villagers changed to other activities introduced by MCRMP such as seaweed farming, groper culture, crab culture and others that connect to links 3, 5 and 6. However, the alternative programs introduced by MCRMP were not free from problems. In the beginning of its introduction, villagers had experienced some successes in conducting these activities. However, in recent times, there are some problems that have not been solved by the communities.

Photo. 5.2. Facilities of alternative income in AV (left: the facilities of KJA; Top: the sign of 'Atep Oki Koperasi' (*economic cooperation*) and below: the crab farming facilities)

Photo. 5.3. Activities in Seaweed farming (Photos credit: MCRMP – Bappeda Minahasa documentation in 2006)

AV's respondents claim that many alternative income activities developed through MCRMP had stopped recently due to many reasons (outlined in Table 5.2). Seaweed farmers faced the issues of harvesting failures (AV1-AV6). Grouper farmers faced problems with not enough food and little juvenile stock. Furthermore, crab farming could not continue due to construction failure (AV3). Respondents hoped they could maintain the livelihood program, especially for seaweed farming. It is for this reason respondents provided tangible success of ICM in particular for economical benefits but generally felt that it was going to collapse. Therefore, the respondents could not tell whether the problems could be solved. They also did not know how to cope and arrange assistance with other parties. They were heavily reliant on the MCRMP. These situations have strong relations with the infrastructure providers (Links 2, 3, 5 and 6).

Table 5.2. Links involved in SES: strategic interactions (based on interviews, a group discussion, observations and project documents)

Links	Atep Oki Village (AV)		Basaan/Basaan I Village (BV)	
	Examples of Evidence	**Existing Problems and Potential Problems**	**Examples of Evidence**	**Existing Problems and Potential Problems**
(1)	Availability of fish and coral reefs destruction Lobsters Availability of coastal areas for seaweed farming	Overharvests: bomb fishing, poisons, coral mining Less stocks Over-occupied coastal areas and disease problems	Availability of fish and coral reefs destruction Availability of mangrove	Overharvests: bomb fishing; poisons; coral mining Mangrove cutting for housing
(2)	Voting for a new 'hukum tua', a village leader in 2009 Contributing resource Recommending policies New institutions/village organizations Monitoring performance of providers	Division in community Competing in budget allocation; friction in community Skewed to local elites and mostly are still top-down Problems of personal behaviours in core group for ICM and community Cooperation Almost no monitoring	Voting for a new 'Bupati', a new leader of Regency (9 August 2008) Contributing resource Recommending policies New institutions/village organisations Monitoring performance of providers	Division in community Competing in budget allocation amongst resource users and between infrastructure providers in Basaan I and Basaan **Individual roles** and less involvement of women competition between ICM board and 'Pokmaswas' a coastal monitoring group limited monitoring
(3)	Marine Sanctuary (MCRMP) Mangrove plantation (MCRMP) Clean water & Toilets (MCRMP) Alternative livelihoods (MCRMP) Jetty and break water (MCRP) Toilets (Civil Works office) Other works from local agencies Maintenance issues Monitoring and enforcing rules	Most public infrastructures are provided by government through MCRMP. Some programs overlapped with other local agencies Less local participation in the construction Low quality and corruption issues Sustainability and less enforcement	Marine Sanctuary (6 Ha) –mangrove plantation (10 Ha) – (JICA, local agencies and community) 300 artificial reefs (JICA, community and Newmont) Seawall/breakwater (Water resources office and community) Alternative income (JICA, Newmont and Provincial MCRMP) Local roads by communities Maintenance issues Monitoring and enforcing rules	Many infrastructures in Basaan I provided through a collaboration works of government, private and community. To some extent, communities had participated and contributed in development; in recent time, they have built a new local road. Rent seeking Maintenance issues are problems for marine sanctuaries Less enforcement efforts

Links	Atep Oki Village (AV)		Basaan/Basaan I Village (BV)	
	Examples of Evidence	**Existing Problems and Potential Problems**	**Examples of Evidence**	**Existing Problems and Potential Problems**
(5)	Impact of infrastructure on the feedback structure of the resource-harvest dynamics Examples of positive impacts: - marine sanctuary - sanitation and clean water facilities Examples of negative impacts: - Toilets construction - seaweed farming - New national roads that have just been built	Villagers felt that marine sanctuary increased fish stocks Sanitations improved their quality of life Ineffective/low quality Unintended impacts due to overuse of coastal areas Unintended impacts due to openness	Impact of infrastructure on the feedback structure of the resource-harvest dynamics Examples of positive impacts: - Seawall and break water - Artificial reefs - Marine sanctuary Examples of negative impacts: - Pearl farming by private	Less flood and improved the environment More fish - conflicts in coastal areas - low payments
(6)	Coproduction of infrastructure itself Maintenance of works Monitoring and sanctioning	No incentives Free riding	Coproduction of infrastructure itself Maintenance of works Monitoring and sanctioning	No incentives Free riding
(7)	External forces on resource and infrastructure	Weather (storms 2 times a year) Fishing problems such as bomb fishing and poisons were done by neighboring and outsiders fishermen	External forces on resource and infrastructure	Weather (storms 2 times a year) Small tsunami that has caused flooding Fishing problems such as bomb fishing and poisons were done by neighboring and outsiders fishermen
(8)	Changes in political system Migration Commodity prices New regulation of ICM	More stable in AV Uncertainty is higher Less labour Greatly increased demand on seaweeds None villagers recognised the law	Changes in political system Migration Commodity prices New regulation New regulation of ICM	High tensions Uncertainty Less labour Greatly increased demand on consumptive products as no banks None villagers recognised the law

Notes: Links = (1) Resource and resource users; (2) Users and public infrastructure providers; (3) Public infrastructure providers and public infrastructures; (4) Public infrastructure and resource; (5) Public infrastructure and resource dynamics; (6) Resource users and public infrastructures; (7) External forces on resource and infrastructures; and (8) External forces and social actors

According to Anderies, Janssen and Ostrom (2004), risks and problems of Link 2, 3, 5 and 6 are complex, when infrastructure providers were separated from the resource users. This situation can be learned from the situation in AV. The infrastructure providers of alternative income facilities in AV were not overlapping with the resource users, which mean that the infrastructure providers are not directly impacted from these activities and they do not depending on the SES. Therefore, there have been limited responsibilities for the infrastructure providers in AV to act and consider for the long term benefits of the alternative income facilities. In these links, it is difficult to avoid the issues of corruption and rent seeking. AV1 and AV2 claimed that, people did not know how much money that has been spent for the constructions of those facilities.

The interviewees in AV mention that dealing with people behavior and attitude are not an easy task. They provided another example amongst themselves, resource users related to economic cooperation. AV1 mentioned that cooperation was established as a long run strategy in improving villagers' economic activities. SNRM-MCRMP had provided the villagers with initial budgets for revolving funds. Villagers can borrow the money based on their economic activities plan. However, AV1 claimed that the majority of villagers are not willing to return the money. Their mind is still on the project mindset that the money has been given as 'grant' of political consequences rather than as a trigger of economic generation activities.

In BV, it appears that alternatives to livelihood programs are limited in comparison to AV. The work divisions are mainly farmers and fishermen. Fishermen rely only on fishing activities (Appendix C). Both villages, Basaan and Basaan I shared the same areas and resources for fishing. In BV, villagers are still doing almost the same activities. However, they are more carefully in choosing the types of technology, for example, they do not want to use cyanide, bomb or even other traditional types of fishing gears that are unfriendly to their environment and resources.

Alternative income activities in BV are basically based on individual efforts. BV1 mentioned that he tried to approach other agencies in particular fisheries and marine affairs office in South East Minahasa Regency to assist them in providing fishing boats and other facilities (Table 5.2. in link 2 and 3). BV at the moment has good

reputations in ICM programs as many small activities were successfully implemented with local supports. Therefore, in 2007, BV was chosen as the location of adaptive research and extension (ARE) program introduced directly by the MCRMP for Provincial government (BAPPEDA). Villagers were introduced with the coral transplantation program. This activity can be used to rehabilitate the coral conditions in the BV, but it has an economic benefit as coral transplantation can be sold for ornamental fish accessories and aquariums.

Another success program that is recognised in BV is related to artificial reef programs. Artificial reefs program was introduced in order to improve the habitat of fish due to massive destructions of coral reef in the past. Therefore, in the context of ICM, initially JICA introduced artificial reef construction. This was supported by PT. Newmont Minahasa Raya - NMR, a gold mining company in Ratatotok (Table 5.2 in link 2 and link 3). The artificial reefs have shown positive impacts in recent times, as villagers felt that it is easier to catch the fish now, the distance is shorter compare to before the constructions of artificial reefs and the establishment of marine sanctuaries.

The success of artificial reefs constructions as the collaboration of villagers and private sector (PT. NMR) has provided a good example of private and community relationship as well as the example of infrastructure providers by private. Based on the group discussion in BV, it appears that the Newmont Minahasa Raya had a good reputation as this mining company supported many infrastructure provisions. Almost all infrastructures in BV such as school, village office, road, mosque, church, etc were supported by PT. NMR. Photo 5.4 provides an example of the collaboration of PT. NMR and the village communities. Until now, the villagers in BV still have good impressions to NMR. However, this company finished mining in Minahasa several years ago, therefore supports have been withdrawn.

Photo. 5.4. the village government office and village meeting hall donated by PT. NMR.

On the other hand, in recent years, there has been an issue between villagers and a pearl farming company *(PT. Mutiara Cahaya Manado)*. In the group discussion, it has been identified that villagers have difficulties in using their resources. The pearl farming has occupied the coastal areas which are only 16 meters from the marine sanctuary that has been established by communities. Therefore, the group said the fishermen have had limited spaces for fishing (because of restrictions of marine sanctuary and coastal occupations by private). Furthermore, Villagers in the discussion group mentioned that the minimum salary was offered by the company is very low. It is only US $ 1.2/day (IDR 12,500), and villagers should provide their own lunch. When this issue was confirmed to the government officers in South East Minahasa Regency (BV11 and 12), they stated that, the license was issued under the former government of South Minahasa Regency. None of the officers were familiar with this issue and both interviewees were just new officers as results of *'pemekaran'*. This problematic situation has shown the difficulties in Link 3 and Link 6 (Table 5.2). Infrastructures are given by the infrastructure providers are not for the benefits of local people but more towards the benefits of private. For this situation, BV1 mentioned that the villagers will not reject the private investments because he realized the importance of private sector in supporting village development; however, he

suggested that investments should be mutually benefited in both sides - the company and villagers.

Based on several examples above, it appears that infrastructure providers can be interpreted as the government (village, regency or provincial governments). However, infrastructure providers can be other parties such as the private sectors (PT. NRM in BV and a consultant company, PT. Waja Utama in AV) or villagers as they can provide the infrastructures based on their own efforts. In the case of BV, the public infrastructures have been provided indirectly by the roles of individual. GES3 stated that the Basaan I village had a satisfactory result in ICM. This was due to particular individuals in the village. In BV, the internal extension officer from JICA project is still active in promoting ICM (Table 5.2 in link 2).

However, from the basic model of SES as illustrated in Figure 5.2a, it is difficult to decide where this person should be categorised, whether as part of resource users (component B) or infrastructure providers (component C). Anderies, Janssen and Ostrom (2004) mention that people in component B can be the same persons that are appointed in component C. Referring to the case of BV, this particular individual can be categorized under both components, B and C. However, his roles are more than what have been suggested for these components. This person has been recognised by many respondents as 'the facilitator, initiator, motivator and a catalyst' (BV2, BV3, BV7, BV 9, GES1, GES3 and GEG2). He is famous not only in the village but also in the regency and at the provincial level. Many ICM activities were conducted because this person actively triggered the communities and approached many different agencies to participate in village development not necessarily ICM. Relying on a particular individual to some degree might produce a barrier as the benefits might be skewed for personal/group interests. However, this situation can be beneficial if the person/group has promoted his/her functions properly and overtime, this role can be transferred to more established community institutions.

In the cases of AV and BV as mentioned above, relatively robust local SESs have been seriously challenged by a lack of understanding of public infrastructure providers and resource users. In this analysis, it seems that original infrastructure providers are closely referred to be governmental bureaucrats (village, regency, and

provincial levels). However, in the implementation stages, there have been many other parties influencing the actions. Therefore, this research refines the model of SES as illustrated in figure 5.2a into a new model as illustrated in figure 5.2b. Detailed descriptions of the proposed model are discussed in Section 5.3.1. In short, it is proposed that the robustness of SES in particular links 2, 3, and 6 needs a new component which is the intermediate agent.

5.3. Discussions: Local Governance at Village Level

5.3.1. Revisiting the Model (suggested by Anderies, Janssen and Ostrom, 2004)

Figure 5.2b illustrates the suggested model as a modification of the original model of SES suggested by Anderies, Janssen and Ostrom, 2004). The modification model is provided below.
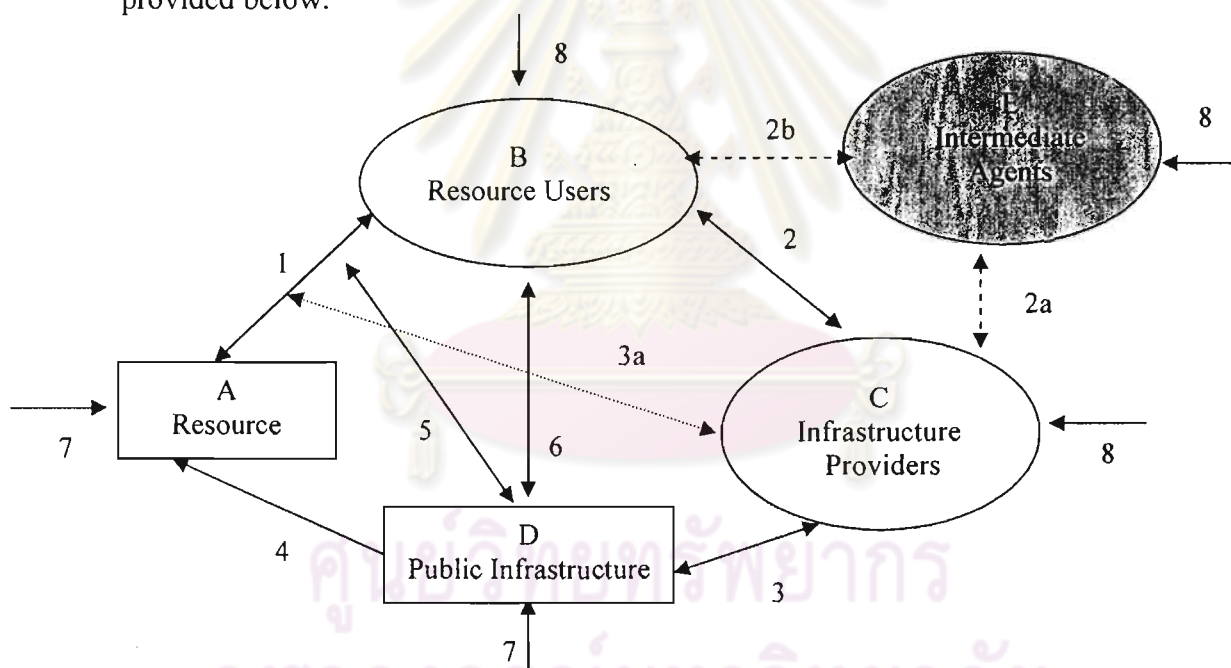
Note:

Former Links = (1) Resource and resource users; (2) Users and public infrastructure providers; (3) Public infrastructure providers and public infrastructures; (4) Public infrastructure and resource; (5) Public infrastructure and resource dynamics; (6) Resource users and public infrastructures; (7) External forces on resource and infrastructures; and (8) External forces and social actors

Additional component and links:
　　　　= new component in SES
2a,2b,3a = new proposed links

Figure 5.2b. Revisiting the models

Based on the empirical evidence mentioned in Section 5.2, it is necessary to revisit the model as suggested by Anderies, Janssen and Ostrom (2004) illustrated in Figure 5.2a. First, it is clear that infrastructure providers have the interactions directly to the outcomes of link 1 between resource users and resources. Therefore, Link 3a is proposed. This link has not been recognised in the previous model of SES. This has been appeared strongly based on ICM experiences in AV and BV. For instance, the introductions of seaweed farming infrastructures have caused problems on resources and their surrounding environmental qualities. Even though until this research was finished, there has been not enough information related to this issue. Another example is in BV, as government has supported the pearl farming, now villagers have to compete in small areas of resources, it might affect the conditions of resources in the future. Therefore, it can be said that operational rules are defined by resource users but are triggered by the infrastructure providers in this case the government bureaucrats. Similarly, infrastructure providers in many cases influence harvesting conditions directly or indirectly.

Secondly, empirical evidence in AV and BV showed that private sectors such as consultants, village groups and individuals have strong roles in promoting ICM. In the simple model of SES as illustrated in Figure 5.2a, those agents have not been mentioned clearly their positions in the diagram. Therefore, this research proposes another component to be included in the diagram which is called the intermediate agents, the component E (Figure 5.2b). In BV, the process of ICM is still undergoing because the roles of the intermediate person. This key person acts the functions of leadership, trust, vision and meaning. Therefore, this person has created a new links (Links 2a and 2b in Figure 5.2b). The key person can help transform management organizations toward a learning environment. However, the function of the key person is still unreliable. Action should be taken into the adaptive governance systems. What has been happening in BV is there has been a natural condition of adaptive and interactive governance of SES during periods of abrupt change (crisis) because of the roles of a key person. However, communities need to be accompanying to understand their social dimension in broader contexts. Investigations of social sources should be done for renewal and re-organisation such governance connects individuals, organizations, agencies and institutions. A resilient SES may make use of crisis as an opportunity to transform into a more desire state.

Ideally, the roles of the intermediate agents should be promoted by the village ICM board. The village ICM board has been promoted in both villages. In AV, this formal institution was developed from the early concept of a core group of SNRM-MCRMP. However, when this research was undertaken in AV, the ICM board was not functions, as well as the core group of ICM. The only organization that has been existence is the cooperation organization with some managerial problems. Similarly, in the BV, formal institutions for ICM have been collapsed. BV1 mentioned that the ICM board in BV has not been functioning due to internal problems in the organization. The leader can not be trusted anymore. Therefore, BV1, has taken the leader for ICM initiative as he is also the chairperson of 'pokmaswas' (village coastal monitoring group), a community organization introduced by the line agency of fisheries and marine affairs. Close examinations of these introduced formal institutions are necessary to support the long term efforts of ICM.

5.3.2. Key Governance Factors for Daily Affairs at Local Level

Based on the SES analysis, it is difficult to argue if ICM has been successful, from the point of view of sustained tangible economic, social and ecological improvement. It is apparent that many ICM initiatives are trapped in the perceptions of 'project oriented' outputs. ICM has been promoted in order to accomplish project outputs and many have failed to provide tangible economic, social and ecological outcomes. Examples to explain this are the conditions of alternative income activities in AV. It is difficult to say that all alternative income activities have failed. It might be recovered in the future as people expressed the benefits of those activities. There is some attention that should be given to them. For instance, it is not just about improving economic tangible outputs but communities should be given with the ideas of management with certain principles that can show the outcomes related activities for the long run. The issues of environmental protection are not limited to the establishment of marine sanctuary alone. There should be a clear spatial management purposes as seaweed farming occupied the coastal areas. This is needed as coastal resources and areas are vulnerable. The conditions will easily be changed because of external disturbances including new technologies.

Regarding to the success of ICM initiatives in AV and BV, other respondents at the provincial level, GES1, GES3 and GES4 were acknowledged the difficulties. These interviewees mentioned that "ICM in AV was purely project-minded or oriented". Results of ICM are more to outputs e.g. Infrastructure provisions as many focus on providing economic alternatives and infrastructure constructions that are believed can improve environmental qualities. Furthermore, the change process was quick, instant and the procedures accomplished only to meet the project requirements. This was confirmed by respondents in the AV. Some of them mentioned that,

> We do not really know what our tasks are as a core group. We were selected by the consultants in the beginning of SNRM-MCRMP in 2003. But we did the socialization about the project to the communities (AV2).

> I do not really understand why we got the money when we attended the meetings or trainings. Other villagers who do not involve in the core group meetings or other meetings saw us got the money. So, they think we get pay for the work but actually do not. I felt like because the project wanted to get quick results, then they used 'money' to bring people came to the meetings for instant results. After that, we get difficulties when we asked the rest of villagers to participate in the action programs. They do not want to participate again if they will not get money or, they said, we will not participate because you (we) get pay. This issue might be simple for people from outside the village. But this is a serious issue for us. This has changed norms and values at the village. Importantly, this reduced the emotions and feelings of social relations at the village. At the end, I may think that other parties have used our poverty to get benefits from it (AV1)

The conditions in AV, confirm the project's aim that is mentioned in the ADB Loan Document (ADB Project No. 1770-INO-SF). It is mentioned that "SNRM-MCRMP activities were expected to demonstrate the tangible value of ICM to local governments and thereby support devolution of resource management responsibility to the districts and sub-districts" (ADB, p.1 2003). The tangible results apparently are good for people; however, it should not be achieved with instant processes. The results may appear, in the short term, to satisfy the project's results and supervisions. However, it seems that for the long term, tangible results can not be maintained that might not be attributed to the other aim of devolution of resource management. Therefore, if this situation is reflected to the model of SES, this can influence the robustness of the social systems in Figure 5.2b (links: 2, 3, 6, and 2a, 2b and 3a).

It is necessary to propose that, at the local level, governance should be seen as the management of the rules of the political system that makes specific decisions on

resource use based on inclusive and participatory processes. Governance in resource management thus inevitably involves the exercise of power in decision making systems of resource allocations among different uses and user groups. Marginalized communities should be involved: governance systems should allow people empowering themselves, taking control of their lives and managing their resources. This is because, based on the interviews, some respondents mentioned they were not involved in the activities because they were from the low class in the society (e.g. poor, have no property and/or considered to be outsiders) (AV10 and AV12)

Based on the findings, the social systems are complicated and diverse. However, they are crucial in promoting ICM. The social systems involve the social interactions among people, groups and organizations (link 2, 2a, 2b, 3, 3a, 6). Political agenda, supporting policies, and human behaviour are some underlying factors involved in this link (Table 5.2). Success and failure is affected by principles of good governance such as: participation; representation; empowerment; accountability and social justice; open communication and organizational features. Ostrom (1990) highlights that promoting robust designs for SES depends on institutional principles. Those principles can be inferred in the situations in AV and AB and detail analysis is discussed in Section 5.4.2. Some evidence that shows the complexities, vulnerabilities and diverse in the social links can be reflected from the case of AV and BV. Respondents in BV stated an example of the benefit of planning process ICM that:

> The idea of bottom – up planning in ICM is very good. This has increased community participation in the village. We (the community) could build long breakwaters/seawalls (400 meter) even the budget was only for 50 meter. This was because people participate in providing labors and other materials. Now, we just finished the village road with our own money (BV1).

In contrast, AV1 (with supports from AV2, AV3, AV4, and AV5) mentioned that,

> It is difficult to ask people to participate in ICM activities, some villagers participated but it was not so active. When people heard about 'project'; they think this must be related with 'money', therefore, they will wait....if the village leader encouraged them, then they might participate but were not fully participate.

In the cases of AV and BV, it seems that none of the processes of good governance have been done completely. Rather, the processes were conducted to finish outputs that were arranged by the ICM implementing agent. An example is the establishment

of a core group in Atep Oki village as mentioned earlier. Respondents (AV1, AV2 and AV3) mentioned that they were chosen as members of a core group to conduct the process of planning. However, those people do not really know what their functions are. This has caused the 'chaotic' situation in local governance. Traditional systems have been abrupt but the new introduced institutions have been incompletely installed.

As a matter of fact, governance involves many actors, in different positions and levels of society. However, in normative side, Kooiman and Banvick (2005:12) mention that "participation in governance is an expression of democracy and therefore a desire state of affairs". Our goal is to maximize participation and to structure it according to democratic principle. In this case, we should try to look at the main problems in moving forward with community based governance in the present context. The community-based approach has had little gain in linking organizations operating at different levels of decision-making, especially between the local and the provincial or regional levels.

Almost all vertical cross-scale linkages today are in the top-down direction. In resolving the governance dilemma, it is important to promote "community learning" in terms of analyzing the CBCRM experience over a wide variety of contexts and coming up with new mechanisms to reconcile competing models of decision-making. It is important to propose the mainstreaming of ICM into local governance means that ICM should be seen as a part of 'public service delivery' as consequences of decentralised coastal management. Essentially, this can transform ICM efforts and the related communities to be more flexible and locally specific.

"Transformative communities" can be promoted as the new locus of politics and governance. "These types of communities will become the lynchpin for a transformative politics that promotes non-hierarchical processes, more egalitarian institutions and values like liberation, peace, sustainability, equity and sharing." To sum up, there are three tasks in moving forwards strategies:

1) politically constructing social capital by expanding social networks;

2) intensifying the presence of civil society in domains of the state; and

3) using the community-based approach to address the domains neglected by the state.

To sum up, the scientific group (GES) believes that there has been a slow down in ICM activities at the village level. This is because of no attention from government to take over the results of ICM from other parties such as international donors (JICA, USAID, ADB, NGOs, etc). They state that ICM has not been integrated to the development systems. For example, the Governor and other leaders were only involved for ceremonial purposes (GES3 and GES4). They did not realize the tremendous effort involved in undertaking ICM. At the end, when the project concludes those efforts will not be recognised for its sustainability outcomes.

Although success and sustained ICM efforts have still been questioned, ICM initiatives have still made contributions in terms of the generation of intellectual capital at individual, social, organizational and stakeholders' levels. The evidence is that many interviewees expressed that bomb fishing and cyanide should be banned as they can damage the environment and coastal habitats. Essentially, the communities realize that sanitation is important to maintain in order to have a better standard of living.

However, it appears that knowledge building should be done continuously and pursued to a level that people can act by and for themselves. Chua (2006) has recognised that ICM is actually behaviour management. Therefore, the process of the generation of intellectual capital should be accompanied overtime. Yet an incomplete understanding of intellectual capital generation might cause resistance to communities acting actively. In addition, a new process might be more difficult as it takes time and will be very costly. Therefore, knowledge generation should be done across, intra, inter and over generations as demands are still strong in both villages, AV and BV. Villagers in BV still hold hope as they stated that presently ICM and village development activities have been slowing down due to an unstable political situation and the election of a new 'Bupati', the head of regency. They hope that the new regency government will place more attention to their ICM activities. BV1 suggests the government should remind people all the time for the purposes of ICM. This is not necessarily budgeting all the time, "we need support from the leader to mention in their speech, show actions and others". This will inform communities all the time that the ICM is important to all.

5.4. Findings from the Group of Expert (GE)

In unpacking the key governance factors of ICM in Indonesia, the general concept of ICM and the requirements from the international perspective were discussed in Chapter Two. Chapter Four discussed coastal governance in Indonesia from its evolution to perspectives of rules and regulations that can affect ICM at the local level. Previous sections in this Chapter, particularly Sections 5.2 and 5.3, provided insights and evidence of local governance and ICM based on interviewing results of local stakeholders that were involved in the day-to-day management of ICM.

In this Section, all experiences and insights from the local level are extrapolated to the bigger context and confirmed to the broader audience at provincial level that involve in the ICM. This approach is important to analyse stakeholders' perspectives and particularly, those people that are in position of power for promoting ICM. Therefore, this section aims to further explore the key governance factors in systematic ways by converting the factors into quantifiable figures. The key governance factors of ICM were divided into three categories: institutional arrangements, socio-cultural factors and economic/bio-physical factors as mentioned in Chapter Three. This Section begins with the profile of GE (Section 5.4.1). The following Sections (Section 5.4.2; Section 5.4.3 and Section 5.4.4) provide findings for each item. Section 5.5 provides discussions on some important topics related to findings from GE. Section 5.6 discusses perceptions of stakeholders on roles and outcomes to emphasise the findings of perceptions' differences in key governance factors of ICM.

5.4.1. The GE profile

Gender and age. The composition of GE (n=13) included 5 females (38 percent) and 8 males (62 percent). The respondents' age range between 31 years old to above 56 years old (Figure 5.3). 61 percent of the respondents aged at 45 years old and below; and the rest of respondents aged above 45 years old accounted for 39 percent.
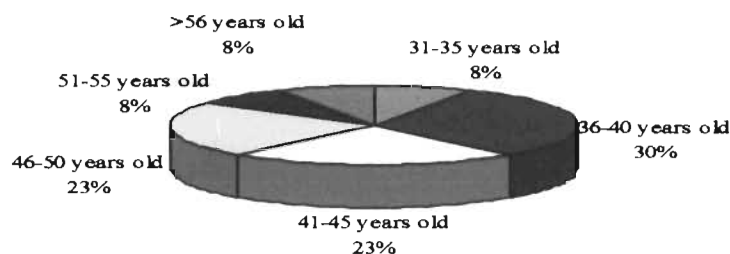
Figure. 5.3. Ages of the GE

Expertise and positions in the organization. With regards to areas of expertise, the GE (n=13) comprised three sub-groups of expertise including government officials (31 percent), NGO workers (31 percent) and scientists (38 percent). The positions of GE in the organizations (Figure 5.4) shared relatively equal for each position: formal leaders (39 percent), representing individual expert (23 percent), development workers (23 percent), and technical staffs/member of organizations (15 percent).
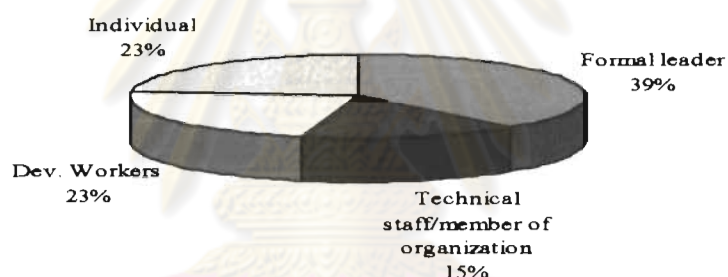
Figure. 5.4. Positions in organization of GE

Educational background. In terms of educational background, the GE (n=13) possessed doctoral degrees (38 percent), master's level degrees (31 percent) and bachelors (31 percent).
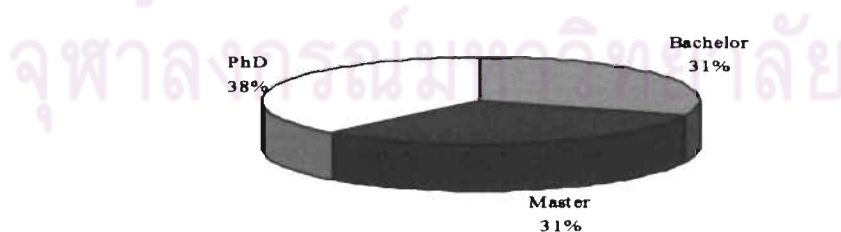
Figure. 5.5. Educational background of the GE

All respondents are familiar with the case studies of this research at both local level (AV and BV) and provincial level of North Sulawesi. They were selected based on the preliminary interviews and key persons' recommendations related to ICM in North Sulawesi. GE members (n=13) were asked the same questions of the structured and semi-structured interviews related to governance factors of ICM. The governance factors were chosen based on the literature reviews that were justified with reasons, as described in Chapter Two and Chapter Three.

5.4.2. Institutional Arrangements Factors

Institutional arrangements have been a strong determinant in ICM. Governance factors are of importance to ensure the sustainability of ICM in Indonesia. Institutional arrangements assist constituencies or appropriators to manage common pool resources (Ostrom, 1990). Institutional arrangements are treated as the enabling conditions in the ICM process (Olsen, 2003). This means that institutional arrangements are the basis for the achievement of ICM goals. Jentoft (2007: 363) believes that 'the governing system is a matter of institutional choice and planning'. However, properties of the system-to-be-governed such as diversity, complexity, dynamics and vulnerability demand a proper response from the governing system. Therefore, under this category, several factors are tested to find ways to responses such attributes.

For this purpose, this research modified the 'eight' design principles of sustainable-governed commons by Ostrom (1990: 90) and Anderies, Janssen and Ostrom (2004: 8). These authors mention that it is important to make sure that all factors in place to ensure the robustness of local institutions. Similarly, based on the preliminary open-ended interviews with five key informants, these factors have been modified both in using terms and definitions. Therefore, for the purpose of the analysis of institutional arrangements, 11 factors were tested as illustrated in Table 5.3.

Amongst all institutional factors, common shared goals and objectives (A) received a high degree of importance (x = 9.00 and m = 9.00) across all expertise groups. In contrast, nested enterprises (K) has been voted with the least degree of importance (x=7.00 and m=7.00). The overall comparison is further elaborated to identify

whether there are different patterns/perceptions between each expertise (GEG, GES and GEN).

Table 5.3. Mean and Median values of Institutional arrangements factors

		A	B	C	D	E	F	G	H	I	J	K
N Valid		13	13	13	13	13	13	13	13	13	13	13
Mean (x)		9.00	8.23	8.23	8.15	8.00	8.00	7.92	7.92	7.69	7.46	7.00
Std. Error of Mean		.253	.361	.469	.274	.577	.439	.445	.265	.444	.369	.424
Median (m)		9.00	8.00	9.00	8.00	9.00	8.00	8.00	8.00	8.00	7.00	7.00
Std. Deviation (sd)		.913	1.301	1.691	.987	2.082	1.581	1.605	.954	1.601	1.330	1.528
Minimum		8	6	4	7	4	5	5	6	5	6	5
Maximum		10	10	10	10	10	10	10	10	10	10	9
Percentiles	25	8.00	7.50	7.50	7.50	6.00	6.50	7.00	7.50	6.50	6.00	5.00
	50	9.00	8.00	9.00	8.00	9.00	8.00	8.00	8.00	8.00	7.00	7.00
	75	10.00	9.00	9.00	8.50	9.50	9.00	9.00	8.00	8.50	8.50	8.00

Note:

A = common shared goals and objectives in managing resources; B = formal institutions; C = clear defined management boundaries; D = Network; E = consistent rules and regulations; F = enforcement; G = partnership; H = conflict resolution mechanisms; I = leadership; J = informal institutions and K = nested enterprises.

A. Common shared goals and objectives in managing resources

In the context of ICM, many respondents believe that it is important to have common goals and objectives. These should be developed. The ideas are about continuous benefits for all parties. This is the pre-requisite for the success achievements of ICM goals. Even though in reality, it is difficult to achieve a common shared goals and objectives, however, all respondents from three expertise groups agreed to have a high degree of importance for this factor (x = 8.60 – 9.25).

Table 5.4. Comparison of perceptions on common shared goals and objectives

Parties	x	m	n	sd
Government officials	9.25	9.33	4	.957
Scientist/independent manager	8.60	8.50	5	.894
NGOs/development workers	9.25	9.33	4	.957
Total	9.00	9.00	13	.913

B. Formal institutions for collective actions

Formal institutions for collective action accounted for the second highest degree of importance for institutional arrangement factors. Three sub-groups scored almost the same level of importance; however the GEG counted higher than other sub-groups. GEN group stated that formal institutions have a function as 'executor'. That is because formal institutions have all resources including financials and human resources. It should be noticed that systems that are promoted by the formal institutions should be based on 'agreement and commitment'.

In contrast, GES5 defines formal institutions as a professional foundation and are not necessarily a formal government institutions/organization. He stated that,

> I put the 'real' acting organization as a formal institution. 'Yayasan Pantai Produktif', a professional foundation is an example. This foundation gets money and pays workers to develop a sustainable production mechanism for the coastal and marine ecosystems in North Sulawesi. I do not believe that there is such a thing in the region. I do not believe that 'dinas' (government agency) is capable and has a commitment to promote this kind of activity (S5).

'Badan Pengelola Pesisir Desa' (Village Coastal Management Board) is another example that has been promoted since the introduction of ICM through Community Based Coastal Resource Management (CBCRM). However, in many cases, formal institutions are not suddenly improving the achievement of ICM outcomes. Many issues have arisen in its implementation. A detail examination is discussed in the next section based on Atep Oki and Basaan I experiences.

Table 5.5. Comparison of perceptions on formal institutions

Parties	x	m	n	Sd
Government officials (4)	8.75	8.67	4	.957
Scientist/independent manager (5)	8.00	8.00	5	1.581
NGOs/development workers (4)	8.00	8.33	4	1.414
Total	8.23	8.38	13	1.301

C. Clear management boundaries

This is important to the ICM concept as integration should be managed within boundaries (GES3). Clear management boundaries are needed to avoid overlapping, however, in defining boundaries they should be based on 'agreements of various

stakeholders in particular community' (GEN1). Clear management boundaries are very important to avoid overlapping programs particularly in the context ICM.

Clear and distinct management boundaries allow each sector/party to negotiate their needs and reach 'agreements' that should be followed. However, in reality, there will always be problems in defining management boundaries (GEG; GES and GEN groups). Even though the GEN group thought this factor is important, they stated that competition of interests is problematic (GEN1 and GEN3). Therefore, in this factor, GEN valued this factor less than other sub groups (x, m = 7).

GEN explained that communities have no power to negotiate their needs. Parties with strong power are dominated the process of defining boundaries. The zoning process to some extent is used to provide benefits for certain groups (GEN3). Interestingly, GEN4 stated that project has somehow dictated the zoning process. GEN4 provided an example of zoning process in the Bunaken Marine National Park (BMNP) in particular in the Southern part of BMNP.

GEN4 claimed that villagers did not have choice rather than follow what have been proposed by the project (NRM). She was questioned the process of participation in this area. GEN4 said that zoning can be skewed for the benefits of private sectors such as resorts and diving centers in North Sulawesi. GES5 has different perspective on how he valued this matter related to communities; he argued that

> "almost no villagers understood how to manage the coastal areas. They thought coastal areas and resources are provided for free. The coast is owned by anyone unless you fence it, but how then you fence it will be very problematic.

The two contradictory arguments have shown different perspectives on how the value a clear management boundaries.

Table 5.6. Comparison of perceptions on clear management boundaries

Parties	x	m	n	sd
Government officials	9.00	9.00	4	.816
Scientist/independent manager	8.60	8.67	5	1.140
NGOs/development workers	7.00	7.00	4	2.449
Total	8.23	8.63	13	1.691

D. Networking

In defining networking, some interviewees provided their perspectives toward this issue. GEN believed that there are two types of networking: internal and external networking systems. Internal networking has a purpose to strengthen communities; and external networking is more for doing actions together. However, the positions of communities might be problematic as usually communities have the lowest skills, resources and communities network itself.

From the perspective of GEN and GES, networking has been chosen as a strategy for capacity building at village level. This is based on the ecology and social theories that coastal areas are connected each other which mean that communities are connected as well. From this point, GEN proposed that a good network should be built at the local level. Networking is used as advocacy and 'learning' strategies. With a good internal network system, communities can be strengthened. Problems from one village can be communicated to other villages.

If internal networks are properly built, it is the time that communities can be a partner of other external parties. However, it has to be noticed that the weakest networking system is at the village level. Therefore, networking should be accompanied with empowerment programs. So in this case, NGO have an important and essential role.

In term of scoring of importance (Table 5.7), GEG valued lower than other sub-groups which is x and m = 7.50. GEG viewed this factor as of importance. However, they gave lower score of degree of importance as they thought that networking has consequences to GEG in particular for financial supports. Therefore, from GEG's perspective, it might be better to promote networking systems among civil society as proposed by other sub groups' members.

Table. 5.7. Comparison of perceptions on networking

Parties	x	m	n	Sd
Government officials	7.50	7.50	4	.577
Scientist/independent manager	8.80	8.80	5	1.095
NGOs/development workers	8.00	8.00	4	.816
Total	8.15	8.00	13	.987

E. Consistent rules and regulations

Consistent rules and regulations are stated in the literature of institutional arrangements as key governance factors for managing common pool resources such as coastal resources. However, when this factor was confirmed to three sub-groups, the pattern of the degree of importance is different. GEG has the highest value (with x, m = 9.50) followed by GES (with x, m = 9.00) and GEN has a big gap of the degree of importance (with x = 5.25 and m = 5.00). These scores showed that there have been some different perspectives amongst stakeholders in viewing this factor.

GEG and GES have relatively similar views. Both groups agreed that rules and regulations have to be enforced consistently (GES2), as there have been many evidence that low enforcement systems have caused conflict in coastal management. GEG similarly thought that rules and regulations are the basis on their works; therefore, those should be enforced consistently to have better disciplines in the society in managing public resources.

On the other hand, GEN rejected the term of 'consistent'. GEN1 mentioned that rules and regulations should be 'adaptive and dynamic'. Rules and regulations should be anchored with specific characteristics of political, economic and social conditions in certain areas. Rules and regulations can not be generalized to every place and situation. The important factor is each party has a commitment to obey the rules and regulations. The respondent provided an example related to fish stock and stated that resources conditions in certain locations will not be the same for other locations. The respondent suggested that it is important to have regulations and rules that have operational functions. Rules and regulations that do not have operational functions will be meaningless. Essentially, the suggestion is that each province/regency and even village should actively develop their own operational rules.

Perhaps the best example to explain this idea is a case in Lembeh Strait, Bitung. GEN1 explained that in Bitung, marine sanctuaries and diving spots are joined. However, fishermen who have fished for generations, have been banned. In conflict resolution mechanisms, the mayor has decided to make a schedule in shared resources uses.

Table 5.8. Comparison of perceptions on consistent rules and regulations

Parties	x	m	n	sd
Government officials	9.50	9.50	4	.577
Scientist/independent manager	9.00	9.00	5	.707
NGOs/development workers	5.25	5.00	4	1.258
Total	8.00	8.67	13	2.082

F. Law enforcement and graduated sanctions

Law enforcement and graduated sanctions have the same pattern with the previous factor of consistent rules and regulations. However, the score of GES (x = 9.20 and m = 9.25) is higher than GEG (x, m = 8.50), whereas GEN (x and m =6) has the lowest score of the degree of importance for this factor. Reasons behind the decisions of GEG and GES gave reasonably high degree of importance, similar to the other factor. However, GEN provided more specific reasons why they gave a lower score for this factor.

GEN valued law enforcement and graduated sanctions as important factors. However, GEN believed that law enforcement is highly dependent on the context. GEN1 argued for many cases of law enforcement. It was assumed that generally, people are aware of all the laws and regulations, although in reality, this is not the case. GEN1 felt that laws were enforced to people who do not have enough information related to the substantives of the laws, rules or regulations. Therefore, GEN1 claimed that societies in particular communities should have enough education programs before they become targets of the laws. In this case, they should know what has been happening since the drafting process of specific laws.

Because of the above issue, GEN1 criticized the term of 'law socialization' that has been used mainly by the government in the formulation of laws; this term has no meaning rather than has a political reason and symbols of participation processes. Law socialization focuses only on achieving tangible targets (e.g. number of people attending the meeting) with no attention to achieving the outcomes, whether information had reached the target groups or not. Therefore, GEN1 preferred to use the term of education. That is, communities should be given enough knowledge on particular issues related to the laws. Therefore, GEN1 provided positive gestures on

graduated sanctions. That is because laws and regulations can not be enforced strictly in particular in the absent of information.

Table.5.9. Comparison of perceptions on law enforcement and graduated sanctions

Parties	x	m	n	sd
Government officials	8.50	8.50	4	.577
Scientist/independent manager	9.20	9.25	5	.837
NGOs/development workers	6.00	6.00	4	.816
Total	8.00	8.29	13	1.581

Even though law enforcement has risen some contradictions in the interpretation at the ground levels of communities, all members of GE agreed that in massive destructions, law enforcements should be strictly applied.

G. Partnerships

In discussing partnership as one of governance factors of ICM, some respondents provided similar thoughts that there is a correlation between networking and partnership. However, networking is recognised as passive relations, voluntarily and occasionally based on needs, e.g. needs to learn a particular skills from other parties. While partnerships regarded as productive and mutual relationships. However, in reality, partnership has been made in the form of capitalism. Communities have been marginalized on the current partnership interactions (GEN). Based on this argument, it is clear that GEN valued this factor lower than other sub-groups (x = 6.25 and m = 6.33) as illustrated in Table 5.10.

Table. 5.10. Comparison means of perceptions on partnership

Parties	x	m	n	Sd
Government officials	8.25	8.00	4	1.258
Scientist/independent manager	9.00	9.00	5	.707
NGOs/development workers	6.25	6.33	4	1.500
Total	7.92	8.14	13	1.605

H. Conflict resolution mechanisms

Conflict resolution and mechanisms does not have an extreme pattern amongst the members of GE. All sub-groups supported that conflict resolution and mechanisms

should be promoted in solving coastal problems. However, the variation of the degree of importance can still be seen in Table 5.11. Surprisingly, GEG has the highest degree of importance (x = 8.75 and m = 8.67) compared to GES and GEN.

Table.5.11 Comparison means of perceptions on conflict resolution mechanisms

Parties	x	m	n	sd
Government officials	8.75	8.67	4	.957
Scientist/independent manager	7.80	7.80	5	.447
NGOs/development workers	7.25	7.33	4	.957
Total	7.92	7.90	13	.954

I. Leadership

Leadership as one of key governance factor actually is not mentioned explicitly in the Ostrom (1990)'s principles of institutional arrangements. However, based on ICM literatures, leadership has been discussed as one of success factors in ICM sustainability. Furthermore, this factor has been suggested by some interviewees in the preliminary interviews and the researcher has observed the role of individual leadership in promoting ICM. Leadership in this research is more toward the individual efforts which can be anyone from government, development worker, villager that are closely touched to the people on the ground eq. the village leader in AV and the role of a individual person (former internal officer of JICA) in BV.

Table. 5.12. Comparison means of perceptions on leadership

Parties	x	m	n	Sd
Government officials	8.50	8.50	4	1.000
Scientist/independent manager	8.60	8.50	5	.894
NGOs/development workers	5.75	5.67	4	.957
Total	7.69	7.86	13	1.601

In valuing this factor, GEG and GES agreed to the reasonably same degree of importance as illustrated in Table 5.12. GEG and GES believe that individual leadership is important, this person can be used as a starting point as an agent in promoting ICM. However, GEN has different views which reflected to their score. GEN valued this factor with the mean value (x) = 5.75 and the median (m) = 5.67. GEN claimed that for the achievement of ICM goals, process should promote for the function of society and how to internalize the ICM effort into their social systems

rather than only to one person (GEN1 and GEN3). If there is the existence of leadership, this should be treated as supporting factor.

J. Informal institutions for collective actions

In answering the question related to informal institutions in coastal management, almost all respondents had difficulties. According to the interviewees, informal institutions that are suggested from literature such as managing the traditional practices have been disappeared in North Sulawesi. This might be true as mentioned by Harvey and Hilton (2006) that colonialism has destroyed many informal institutions in South East Asia including Indonesia. This idea applies to the context of Minahasans. As Minahasans had never have stories of 'kingdom' in the past, this might be the reason on why the informal institutions had not been existence. However, the informal institutions are recognised in other parts of North Sulawesi such as Sangir-Talaud islands (manee'). GEN2 and GEN3 expressed this idea as 'lembaga adat' in particular in Kakorotan Island, the most outer island in North Sulawesi which borders with Philippines. However, GEN1 claimed that a term of 'adat' should not be seen as informal institutions but it is formal. He mentioned that,

> "Government through laws and regulations has made 'Adat' as informal institutions but communities that practice 'adat' are seen 'adat' as formal institutions in their communities (GEN1).

However, then several respondents explained that nowadays, informal institutions can be referred to church/mosque/alliances and other informal arrangement of social interactions. GEG1 recognised that this informal institution is useful as it can be used as an entry point when government has a program that is difficult or sensitive to reach the community. Similarly, GES5 believed that informal institution is important at the initial stage of program for the involvement and awareness activities but He claimed that the informal institutions do not have many impacts for sustainable actions. GEN1 concluded that informal institutions are an important factor if that is existence in the village. However, it should not be introduced to be a compulsory in coastal management. He claimed that informal institutions can be formulated by village government or other levels to achieve certain political goals. Based on reasons from each sub-group, it is clear that GEN provided a reasonably high mean value to the degree of importance (x = 8 and m = 7.67), GES with a moderate mean and median

value (x = 7.60 and m = 8.00) and GEG agreed only to the level of mean value (x) = 6.75 and median value (m) = 6.67.

Table. 5.13. Comparison means of perceptions on informal institutions

Parties	x	m	n	sd
Government officials	6.75	6.67	4	.957
Scientist/independent manager	7.60	8.00	5	1.517
NGOs/development workers	8.00	7.67	4	1.414
Total	7.46	7.33	13	1.330

K. Nested enterprises

Nested enterprises have been pointed out to have a lowest degree of importance in institutional arrangements for ICM sustainability. Scores from GEN is very low (x and m = 5.75), the GEG's scores (x and m = 6.50) are just slightly higher than the GEN. GES is the only group that seems support for this factor (x and m = 8.40). Even though the scores are varied across the expertise sub-groups, all GE members agreed that nested enterprises are a good media for communication. Reasons on why the results of degree of importance are different are based on current nested enterprises' experiences. Many of nested enterprises that have been proposed by consultants and scientists (international and domestics) have not been functioning properly. There are many internal and external conflicts in the nested enterprises idea. Diversity, dynamic, complexity and vulnerability of organizations have been overlooked. GES3 mentioned that failures in promoting current nested enterprises (for example is North Sulawesi ICM Board) are because less support from the government politically and financially.

Table. 5.14. Comparison means of perceptions on nested enterprises

Parties	x	m	n	sd
Government officials	6.50	6.50	4	1.000
Scientist/independent manager	8.40	8.40	5	.548
NGOs/development workers	5.75	5.75	4	1.500
Total	7.00	7.29	13	1.528

5.4.3. Socio-cultural Factors

The factors under the socio-cultural category are developed based on the current literatures that suggested the success and failures in promoting ICM (Table 5.15).

However, for the purpose of this research, the researcher confirmed the socio-cultural factors in the preliminary interviews based on five interviewees. Similarly, the factors in this category were revised based on empirical evidence at village levels (AV and BV).

There are three factors in this category including participation in decision making (L), equity and fairness in resource allocations (M) and social justice (N). Based on Table 5.15, GE members valued participation in decision making to have a highest degree of importance as key governance factor of ICM ($x = 8.77$ and $m = 9$); followed by equity and fairness in resource allocations ($x = 7.62$ and $m = 7.00$) and social justice has the lowest degree of importance ($x = 7.54$ and $m = 8.00$). From the Table 5.15, it can seen that the mean value (x) and the median value (m) has a big gap, it can be inferred that respondents have significant perceptions' differences as the minimum and maximum values are diverse across sub-groups in GE.

Table 5.15. The comparison of values (x, m) on socio-cultural factors.

		L	M	N
N Valid		13	13	13
Missing		0	0	0
Mean		8.77	7.62	7.54
Std. Error of Mean		.343	.474	.475
Median		9.00	7.00	8.00
Std. Deviation		1.235	1.710	1.713
Minimum		6	4	5
Maximum		10	10	10
Percentiles	25	8.00	7.00	6.00
	50	9.00	7.00	8.00
	75	10.00	9.00	9.00

Note:

L = participation in decision making; M = equity and fairness in resource allocations; and N = social justice

L. Participation in decision making

Table 5.16 shows that the expertise sub groups of GEG, GES and GEN agreed that participation should be promoted as a factor for coastal governance. The meaning of participation has come to the agreements that communities should be involved in the

ICM as earlier as possible. Active participation can sustain the activities. GES1 said that communities can participate in all aspects including labors, money and ideas.

Table. 5.16. Comparison means of perceptions on participation in decision making

Parties	x	m	n	sd
Government officials	8.75	8.67	4	.957
Scientist/independent manager	8.60	9.00	5	1.673
NGOs/development workers	9.00	9.00	4	1.155
Total	8.77	8.86	13	1.235

M. Equity and fairness in resource allocation

The idea of equity and fairness is well developed amongst GES. GES respondents can describe and understand this factor easily. However, this is not the case of GEG members and GEN members. This has affected the results of the degree of importance from each sub group (Table 5.17). GES3 mentioned that equity and fairness do not mean that all should get the same amount of resources. However equity and fairness should have an equal access to resources. GEG1 claimed that in promoting equity and fairness in resource allocation, it depends on the supporting laws and regulations, therefore, they can not perform outside the corridors of the legal documents.

Table. 5.17. Comparison means of perceptions on equity and fairness in resource allocation

Parties	x	m	n	sd
Government officials	6.75	6.75	4	.500
Scientist/independent manager	9.20	9.20	5	1.095
NGOs/development workers	6.50	7.00	4	1.732
Total	7.62	7.50	13	1.710

N. Social justice

GEN provided reasonable high mean and median value (x = 8.75 and m = 8.67) to social justice as governance factors of ICM. Along the line with GEN, GES provided almost the same score (x = 8.20 and m = 8.00) of the degree of importance for social justice (Table 5.18). On the contrary, GEG has a pessimistic idea on this factor as

they provided the lowest score for this factor (x and m = 5.50). GEG1 provides reasons on why she chose a lower degree of importance for social justice.

Table. 5.18. Comparison of perceptions on social justice

Parties	x	m	n	sd
Government officials	5.50	5.50	4	.577
Scientist/independent manager	8.20	8.00	5	1.304
NGOs/development workers	8.75	8.67	4	.957
Total	7.54	7.60	13	1.713

GEG1 mentioned that it is difficult to understand and promote social justice. GEG1 expressed that in the administrative bureaucracy, we have to follow 'orders' and hierarchical functions which produced by the top executive 'leaders'. Therefore, GEG1 has less confidence in achieving social justice. She said that 'interests' have stronger power than 'justice'.

5.4.4. Economic and Bio-physical Factors

The last category for the analysis of governance factors of ICM is economic and bio-physical factors. Economic and bio-physical factors are combined because both factors always discussed in the same format in order to provide tangible benefits for the appropriators/communities or other stakeholders. Similarly, these factors are mentioned in the literatures that have a causal connection. That is, people will contribute to the ICM efforts if they can have tangible benefits from the initiatives. Therefore, people will not mind to bear the cost for management including maintenance costs of the infrastructures.

Several factors that are included in this category are: incentives and benefits sharing (O); alternative income (P); cost of management (Q); environmental changes ® and resource changes (S). Across these factors, GE responded that there have almost no significant differences in the degree of importance across factors (O, R and S); accept, for alternative livelihood programs (x = 7.62 and m = 8.00) and cost of management (x = 7.46 and m = 8.00). The differences emerged because of different perceptions on how the GEG, GES and GEN valued these factors as P and Q have a wide range of number across the GE's members. For example, the minimum value of P is 4 and the highest number is 10.

Table 5.19. The comparison of means amongst economic and biophysical factors.

		O	P	Q	R	S
N Valid		13	13	13	13	13
Missing		0	0	0	0	0
Mean		8.08	7.62	7.46	8.23	8.08
Std. Error of Mean		.288	.549	.433	.323	.288
Median		8.00	8.00	8.00	8.00	8.00
Std. Deviation		1.038	1.981	1.561	1.166	1.038
Minimum		6	4	5	7	7
Maximum		10	10	10	10	10
Percentiles	25	7.50	6.50	6.50	7.00	7.00
	50	8.00	8.00	8.00	8.00	8.00
	75	9.00	9.00	8.00	9.50	8.50

Note:

O = incentives and benefits sharing; P =alternative income; Q = cost of management; R = environmental changes and S = resource changes

O. Incentives and benefits sharing

The effectiveness of incentives and benefits sharing has been recognised across the sub-groups of GE. From Table 5.20, it seems that GEG has a strong belief on this factor as shown by the figure of means (x = 8.75) and median (m = 8.25). GES has slightly lower figure than GEG, with x = 8.20 and m = 7.67. Finally, even though GEN provided the lowest number amongst the three sub-groups, their figure is still moderate (x = 7.25 and m = 7.33).

Based on the interviews, the meaning of incentives and benefits sharing can be interpreted in many ways. GEN's members believe that incentive and benefits sharing can be direct economic benefits or indirect economic benefits. GEN4 described that incentives should be interpreted as knowledge building rather than 'money', therefore incentives should take the forms of training, empowering, and critically thought of education. On the other hand, GEN2 and GEN3 claimed that this factor is problematic in particular in the system of sharing management. Benefits can produce free riders, who get benefits but do not pay for any costs. Similarly, GEN3 argued that incentives can make the community become 'dependent' and produce 'false perception' for the real management efforts.

GEN's opinions have closed connections to what have been happening on the implementation stage of ICM at the village level. Their opinions to some extent have

reflected what have been said by AV1 and other interviewees in AV. Villagers, off course are looking for incentives and benefit from their management efforts, however AV1 claimed that currently, the incentives by providing 'cash money' to people as their transport costs have had negative impacts on village society. AV1 suggested that people should be given more encouragements and knowledge rather than money. This issue actually has been discussed earlier in the Section 5.3. When the issues was confirmed to the respondents in GEG, they said that incentives should be given to people because they have given up their today's income as they have to join with the project (in this case ICM) activities. Therefore, villagers should get a compensation for this situation (GEG1 and GEG2).

Table 5.20 Perceptions on incentives and benefits sharing

Parties	x	m	n	sd
Government officials	8.75	8.25	4	.957
Scientist/independent manager	8.20	7.67	5	.837
NGOs/development workers	7.25	7.33	4	.957
Total	8.08	8.00	13	1.038

P. Alternative income

Alternative income activities have become major programs in AV. This has been used by MCRMP to revise the CBCRM's procedures proposed by CRMP (See Section 5.2. However, results of alternative livelihoods at local level have been mix. Interviewees in AV and BV believe that alternative livelihoods are beneficial for them, however, there were some technical problems that they have faced eq. seaweed farming problems (See Section 5.2.2). Table 5.2.1 have confirmed on how sub-groups valued the alternative income. GEG has been consistent with their programs at the village level. This sub group voted the alternative income with the higher degree of importance (x, m = 8.25). However, GEN result is the lowest value of mean (x = 6.75) but with the wide number of m = 7.33. These two different figures confirmed that there has been a different perspective within the GEN. For example, GEN1 and GEN4 believe that alternative income programs are of importance because these activities can reduce the negative impacts of unfriendly fishing practices or utilizing resources. However, GEN2 and GEN3 to some extent questioned the meaning of alternative income programs. According to them, these programs are

designed to make people/appropriators are away from their resources. At the end, big companies or private are the one gets the benefits.

Table 5.21 Comparison means of parties' perceptions on alternative income

Parties	x	m	n	sd
Government officials	8.25	8.25	4	.500
Scientist/independent manager	7.80	7.67	5	1.643
NGOs/development workers	6.75	7.33	4	3.202
Total	7.62	8.00	13	1.981

Q. Cost of management

Cost of management has been problematic in many ICM initiatives. After project terminations, local people can not maintain the processes and activities of ICM because lack of financial supports. Cost of management in term of 'money' is provided for maintenance the infrastructure. However, it is identified that costs of management can be the non-materials such as opportunity costs losses or give up for some benefits from the resources. Based on Table 5.22, it is clear that this factor was not been in the supports of GES and GEN as they provided reasonably low value especially from the GEN (x, m = 7.50). The reason is, the majority of the respondents believe that this should be on the support of government. Interestingly, GEG voted a reasonably higher number for this factor. The main reason is, as government has limited budget then people can contribute to some of management costs.

Table 5.22 Comparison means of parties' perceptions on cost of management

Parties	x	m	n	sd
Government officials	8.00	7.67	4	1.414
Scientist/independent manager	7.80	8.00	5	1.789
NGOs/development workers	6.50	6.50	4	1.291
Total	7.46	7.50	13	1.561

R. Environmental and resource changes

In answering the bio-physical factors, many respondents viewed these two closely (Table 5.23 and Table 5.24). However, at the end environmental change has been voted to have higher degree of importance compare to resource changes. This can be understood as environmental changes are most obvious then the resource changes.

Table 5.23 Comparison means of parties' perceptions on environmental changes

Parties	x	m	n	sd
Government officials	7.75	7.75	4	.500
Scientist/independent manager	9.00	9.00	5	1.414
NGOs/development workers	7.75	7.67	4	.957
Total	8.23	8.00	13	1.166

Table 5.24 Comparison means of parties' perceptions on resource changes

Parties	Mean	m	n	Sd
Government officials	7.75	7.75	4	.500
Scientist/independent manager	8.60	8.50	5	1.342
NGOs/development workers	7.75	7.67	4	.957
Total	8.08	7.90	13	1.038

From the interviews, respondents argue that environmental and resource changes should have a positive correlation with ICM. ICM should produce positive outcomes on the environmental and resource changes. They said, if to some extents ICM would produce negative outcomes to the environment and resources, then all respondents agreed that they will change their value and perspectives on these factors. Detailed figures from each sub groups are provided in the Table 5.23 and 5.24.

5.5. Discussions: Suggested Governance Factors from GE

5.5.1. Patterns Across Factors

There are some clear patterns of key governance factors of ICM that resulted from GE. In general, The GE members believe that common shared goals and objectives are very important in coastal governance (based on the highest total x = 9.00). GES2 mentioned that common shared goals and objectives should be developed at each governance level (eg. national, province, regency, and village). The shared goals and objectives are important to guide all stakeholders in achieving agreed ICM goals. However, in reality, it is difficult to get consensus and commitment from all stakeholders to reach common goals and objectives. GEG1 mentioned that until now, the ICM strategic plan has not been formalized despite the draft being developed several years ago. It is apparent that commitment and agreement among stakeholders is very difficult. GEG1 said there is dependence on the 'top leader', that is both

executive and legislative, to formalize or not. Essentially, political will is a critical factor that allows progress and outcomes for ICM to take place.

Comparatively, nested enterprises were voted to have the lowest degree of importance (total x = 7.00) for key governance factors of ICM. Both NGOs and Government received the lowest value for this factor. This is understandable given that interviewees from GEN and GEG have seen failures in some nested organizations (not necessarily enterprises) such as: the ICM board of North Sulawesi; The Bunaken Management Boards; and the *'Badan Pengelola Pesisir Terpadu Desa'* (village ICM board).

Nested enterprises face many problems in their implementation stages. Several interviewees argued those problems tend to result from 'lack of commitment and support'. For example, the lack of financial support from the ICM board of North Sulawesi in implementing ICM. On the other hand, GES results were reasonably high (x=8.40) which showed that theoretically, nested enterprises are of importance for anchoring ICM programs. However, proper design is needed for implementation stages based on local capacities.

Participation accounted for the second highest ranking in overall factors and the highest amongst the socio-cultural factors. This factor has the most robust value compared to the other factors as the level of importance is closest from 8 to 9. Pollnac and Pomeroy (1995) argue that participation is the central point for ICM sustainability at the local level. This was confirmed with the findings of key governance factors at the village level. In reality, although participation has been promoted by different groups at local level, the degree of participation is different. Furthermore, in conducting participation strategies, it seems there has been a problem of 'incomplete information'. For a better explanation of this matter, the core group in AV (Atep Oki Village) mentioned that in the beginning of ICM (MCRMP initiative) they had been pointed out to be a core group. However, they did not have adequate knowledge on how to conduct ICM. So, they collectively conducted activities based on project requirements. Therefore, when the activities were completed, they did not know what they had to do following activity completion (AV1, AV2 and AV3). This was despite

the assigning of a core group as a formal institution with the function of promoting ICM at the village level.

5.5.2. Interactions amongst Factors: based on *Pearson's r* correlation

Pearson's r correlation is used to further explore the interactions among key governance factors. The correlation coefficient or Pearson's r is used to measure the direction and strength of the linear relationship. However, association or correlation does not imply causality (Sullivan, 2001), which can be meaningless in social science research. Therefore, this analysis is only used as a complementary analysis to rationalize the interactions amongst factors. It is useful to indicate and anticipate some potential relationship amongst factors.

As mentioned in the Section 3.8, Pearson's r varies from -1.00 to +1.00. The strength of correlation is confirmed at levels of significance (2 tailed): 1) correlation is significant at the 0.01 (**) and 2) correlation is significant at the 0.05 level (*). Detailed figure of correlation coefficient or Pearson's r is provided in Appendix H. The table in Appendix H indicates some interesting figures as follows:

- Age has a positive correlation with two factors: nested enterprises (K) at the 0.05 level of significance (r = 0.621*) and; equity and fairness in resource allocation (M) at the 0.10 level of significance (r = 0.478).
- Gender has only a single moderate correlation in this analysis, with the equity and fairness in resource allocations - M (r = 0.585*) at 0.05 level of significance.
- Education correlates positively with several factors such as; K (r = 0.883**) and M (r = 0.700*); enforcement (F) (r = 0.489 at 0.10 significance level).
- Organisation (GEG, GES, and GEN) has strong positive correlations with three factors: leadership - I (r = 0.701**); consistent rules and regulations-E (with r = 0.833**) and N (r = 0.774**); have moderate negative correlations with H (r = -6.42*), O (r = -0.590*) and F (r = -0.645*). Furthermore, organization correlates negatively with C (r = -0.483) and G (r = -0.509) at the 0.10 significance level.
- It is found that position in organization does not have any correlation with factors. There are no significant differences on the ways people provide

information. This pattern appears to the network (D) as well where none factors have significant interactions (0.01, 0.05 and 0.10 levels of significances).

- On the other hand, leadership (I) is the factor that has the most correlation with other factors at the 0.01 significance level. Apart from the organization factor mentioned above, Leadership (I) has a positive correlation with clear – defined management boundaries C (r = 0.767**); consistent rules and regulations - E (r = 0.775**); partnership - G (r = 0.833**); enforcement - F (r = 0.724**) and incentives and benefits sharing O (r = 0.718**). With the conflict resolution mechanisms (H), leadership - I has a positive correlation (r = 0.583*) at the 0.05 level of significance.

Appendix H provides further information on how factors interact. There are still some other correlations that can be seen in the Appendix H. For example, participation – L does not seem to have a significant correlation at 1 percent with other factors. However, participation positively correlates with informal institutions - J, alternative income – P, cost of management (Q) and resource changes – S.

5.5.3. Patterns Across the Three Expertise Subgroups

Amongst the three expertise subgroups (GEG, GES and GEN), the patterns of key governance factors of ICM are different based on the mean and median values. It is clear there has been a different position in proposing key governance factors of ICM. From a government point of view, consistent rules and regulations should be the main factor that can promote the sustainability of ICM. Interviewees from the GEG mentioned that in conducting their work, they had to follow legal documentation and regulation. Therefore, consistent rules and regulations are important factors for which they can justify their actions.

On the other hand, NGOs workers do not consider that consistent rules and regulations should be the main factors for better ICM implementation. This perspective is based on their experiences. GEN1 argued the meaning of 'consistent' and stated that rules and regulations should be locally adopted to become rules and regulations that are flexible and adaptive. Other interviewees from NGOs considered that consistent rules and regulations have caused many problems for local

communities. This is because those rules and regulations are formulated to support certain agenda and, in particular, are skewed to the interest government and the private sector.

In the socio-cultural aspects, social justice has been valued to have a lower degree of importance in key governance factors of ICM. However, the pattern amongst sub-groups is different. From Table 5.18, it seems there is an agreement between GEN and GES that social justice should have a higher degree of importance in promoting ICM sustainability (GEN - x = 8.75 and GES - x = 8.20). However, this is not the case for government officials. Social justice was accorded only x = 5.50 for the degree of importance. It is difficult for GEG to promote social justice. GEG1 has mentioned that in many cases, the bureaucrats have to follow 'orders' that come from the top executive leaders, hierarchical procedures are the main feature in GEG's work. Similarly, GEG1 claimed that interests are stronger than justice. However, she believes that justice should be the state of goals for ICM works.

For the factor of equity and fairness in resource allocations, Government and NGO provided a lower degree of importance (GEG – x = 6.75 and GEN, x = 6.50). However, scientists provided a high value for this factor with a score of 9.20. This pattern has shown differences in pragmatic (GEG and GEN) and (GES) scientific ideas. Equity and fairness in resource allocations have been proposed as values in collective actions for managing common resources. However, equity and fairness are difficult to define amongst the GEG and GEN. From the perspectives of GEN, equity and fairness can be achieved if the communities have been empowered. Therefore, access can be opened in fair and equitable manners. However, it is difficult to achieve the idealistic conditions of equity and fairness if there is inequality in term of power, capacities and capitals. Meanwhile, GEG mentioned that equity and fairness in many cases can be politicized by certain groups to get more benefits from others, while the group representatives are questioned by others. In particular in the decentralization era where everyone can express their ideas, it is difficult to share equitable resources as government has limited resources. Based on this explanation, it is clear that images and values of governance are complicated and can be interpreted based on roles and attributes that are held by parties.

5.6. Perceptions on Roles and Outcomes

Perceptions on roles and outcomes to some extent can influence the ways people/stakeholders value the ICM initiatives. Their perceptions may then affect on their behaviour and their beliefs on how they define the goals of ICM, whether towards its sustainability or not. Exploring stakeholders' roles and on how they value the perceived outcomes can explain on how the variations to the degree of key governance factors can exist. This Section attempts to explore these ideas from the perspectives of government, scientific, development workers/NGO and local communities. Small information has been provided for private; however, the information has been produced indirectly from other parties' perspectives.

5.6.1. Government (GEG)

The word of government has a connotation of 'authority'. Government holds the function to govern that should be based on the laws and regulations. Government should be responsible, as a motivator, a facilitator and executive agency and act as a major agent to promote better development (GEN1). The detail information of roles from the perspectives of GEG is provided in Appendix I.

The Government considers ICM as 'tools' to be used in coastal management. Therefore, the government places greater focus on the outputs that can be quantified. In many cases this leads to essential processes being shortened as a result of quantified focus. Government involvement can assist the protection of coastal resources and implementation of sustainability initiatives and legislation, however, the negative side of this is that government involvement sometimes leads to complete preservation (e.g. in Lembeh Strait). In this case, local people lose access to traditional income generating activities and have to revert to other livelihood options that may in fact be less profitable, or sustainable (e.g. mangrove harvesting, illegal mining, illegal logging, etc). Detailed perspectives of outcomes for each GEG interviewee are provided at Table 5.25.

Table. 5.25. Government officials value the outcomes of ICM

ICM Outcomes	
Positive outcomes	Negative outcomes
- promotes integrated management (GEG1, GEG3) - eliminate overlapping in development sectors (GEG1; GEG2) - As, collaboration is one of ICM's principles, this can produce more outputs (GEG1). - Improves the planning systems (GEG2) - Provides guidelines for government organization ; subsequently program formulation is more focus to beneficiaries (GEG2) - It brings a new nuance in development (GEG3) - There is a new paradigm in development that considers many aspects in coastal development. - ICM has promoted the issue of participation of community (GEG4) - ICM increases government performance, as it can go directly to work with the community. - Community wants to conserve their coastal resources (GEG5) - There is an attention from national government for coastal community. There is a chance to develop coastal spatial planning (GEG6) - Kabupaten government has the rights to manage their coastal areas (GEG7)	- There will be some activities that are prohibited. For an example is in Lembeh Strait. Conservation will allow certain activities only, therefore, some economic activities that are not compatible in this location will be rejected (GEG1) - ICM still relies on government as a major initiator. Therefore, it can not be denied that the focus of coastal management is still on how to maximize the economic benefits of coastal resources (GEG2). - Many ICM programs are concentrated in particular locations. Problems are on location distributions (GEG2) - Problems are in implementation in particular to reach an agreement (GEG3). - ICM are still more towards ceremonial programs. The activities are more on how to arrange an exhibition, conference, etc (GEG3). - Ego-sectoral is still existence. EIA of many development projects is problematic. (GEG3) - Many contradictive regulations and rules have limited the idea of integration. (GEG3) - There is still issue on distribution, which will get the benefits directly (GEG5). - As a new Kabupaten, there is limited capacity in particular for financing the ICM initiatives. Therefore, still relying on provincial and national initiatives (GEG6). - Domination is still by certain groups in accessing 'bantuan langsung nelayan' (grant for fishermen) (GEG7). - There is still overlapping in permit issues as Mitra is a new kabupaten after two times 'pemekaran'. There is still issue in administrative management (GEG7).

5.6.2. Scientists (GES)

Scientists have functions in supporting scientific evidence for the formulation of regulations. Scientists can play many roles however their main tasks are to justify data and information that are necessary for the communities. Scientists as suggested by other stakeholders should perform as a bridge between community and government as well as with NGO in providing technical assistances. Detail

information on how scientists (GES) value their own roles and others are illustrated in Appendix J.

Scientists have seen ICM as **'systematic procedures'** that should be followed with certain theories/formulas. Therefore, in implementing ICM, certain conditions should be followed first before another. For scientists and protected area managers, ICM provides an opportunity for biodiversity conservation and an opportunity to educate communities in sustainable resource use practices. However, a negative view is that many ICM projects consist of international scientific staff and upon project completion, often the international staff and their information/knowledge return to the donor country. Therefore, a knowledge 'gap' remains in the ICM locality/region. Detail perspectives of outcomes from each GES's interviewee are provided in Table 5.26.

Table 5.26. Scientists/independent managers valued the outcomes of ICM

ICM Outcomes	
Positive outcomes	**Negative outcomes**
- ICM contributes to biodiversity sustainability for next generation(GES1) - ICM has opened the new perspective of coastal management to stakeholders in particular community based conservation management such as marine sanctuary (GES2, GES3) - More attentions to village as ICM promotes community based management as well. - Increase the awareness of the community on their resources and environment protection (GES4). - ICM promotes integrated management which means that the benefits should be shared equally among sectors, not only go to one sector of development in particular to community (GES3). - For regional economy, ICM provides more taxes, as there will be many resorts that will pay the taxes as the consequences of conservation and better quality of environment (GES3).	- Limitation of space as to negotiate with conservation and difficulties in reaching commitments in space occupation in particular for private sectors (GES1) - Private sectors may not agree as ICM will limit their interests. For example in reclamation areas, many activities are illegal. Government should manage these areas by providing spaces for public place and public sphere. Twenty percent of reclamation areas should be provided for public, in reality, this has not been enforced (GES3). - Many ICM initiatives have been successful, however those initiatives were not been accompanied long enough, as results, many have been on their down turning (GES2). - International supports were only used the international experts and local experts were not been involved. Their expenditures were many on their own countries such as for equipments and other procurements (GES2). - ICM initiatives are used as political tools by the elites. For example in Atep Oki, the inaugurations of some activities were arranged for political campaigns. - ICM is implemented more to 'project oriented' (GES4 and GES3)

5.6.3. NGOs

GEN has a function in capacity buildings and empowerment of the community as government can not reach all the communities (GEN1). Many stakeholders have agreed that GEN should perform as the control agent as well as the implementation agent. GEN should provide some empirical evidence to GEG as they work closely with the communities. However, in many cases, GEN hopes that GEG should actively supporting the village development as many evidence showed that this factor has been lacking. The complexity of roles is provided by GEN as illustrated in Appendix K.

Table 5.27. NGOs/development workers valued the outcomes of ICM

ICM Outcomes	
Positive outcomes	**Negative outcomes**
- ICM opens an access for community to participate in coastal management (GEN1) and promote a collaboration amongst stakeholders (GEN2). Therefore, ICM can reduce the cost of management if it can be implemented based on its principles (GEN3). - ICM provides fair information to community (GEN1). - Theoretically, ICM should promotes justice, equity and shared responsibility in coastal management (GEN1) - Community, directly and indirectly gets the benefits of proper coastal management (GEN4). - ICM as its nature, promotes integrated in coastal management . Therefore, ICM improves the quality of life of people in coastal areas and rehabilitates coastal resources and environment	- ICM can be dominated by a powerful party such as government or private (GEN1). Issues of domination are still existence in the concept of ICM. Powerful parties will dominate the decision making processes and driven toward their interests and benefits (GEN3) - Issues of power relations are existence. The community will always be marginalized as they have less voice and less vocal (GEN2) - ICM can not ensure the equity when politics and power involve in asymmetric ways (GEN1). - A collaboration of ICM in many cases is based on representative of stakeholders. The issues are always on who are the representatives and on what basis they have been chosen (GEN3) - Community has been damaged by new concepts of ICM. Their own concept has been replaced without their consciousness (GEN2) - Negative outcomes are resulted when community is excluded from the management. - In many cases, ICM projects have labeled the communities. In these cases, communities have fewer chances to get more supports from other parties. An example is a case in BMNP. The communities inside BMNP have been occupied by the label of NRM (GEN3) - Many ICM are 'project oriented' (GEN1)

GEN has seen the ICM as 'an agreement' (Table 5.27) as they tend to focus on processes rather than outputs. Therefore there should be a dynamic and adaptive process on ICM. One agreement builds to another agreement. Therefore, NGOs believe That ICM is a process for a long period of time. A positive aspect of NGOs is that ICM provides access in participation, information and justice that can promote equity. However, ICM usually results in domination by the powerful parties in many cases are dominated by government inclusively cooperate with private. For a system to properly function, it is important to make all parties in equal positions. Yet, when there is asymmetric power and unclear regulations, then systems will not function and certain parties tend to dominate and 'hijack' the ICM process.

Essentially, ICM has been developed and adopted from developed countries where the society has better education and are generally homogenous. For Indonesia, the governance and suggested systems will not work because there is inequality. In order to improve the ICM, it has accompanied with the concept of CBCRM because it has within it a principle of equity. Detail perspectives of outcomes from each GEN's interviewee are provided in Table 5.27.

5.6.4. Community

GEN, GEG and GES agreed that communities are the main actors in ICM (Appendix I, J and K). They are the beneficiaries (GEG2). Community should have the tenures to manage their resources as they are the closest parties to the resources. They should be accompanied by the GEN and other parties. GEG should provide fair regulations. In certain levels, communities should be seen as a partner of private entities and they share the responsibility in managing resources. In reality, communities have been seen as targets of projects from other parties. AV1 said that "it seems that our poverty has been used by others. Projects are developed based on our poor conditions; however, the programs were not really solving our problems rather than produce divisions amongst villagers". In this case AV tried to express his idea toward 'false meaning of participation". At the end, suggested roles of communities are provided in Appendix I, J and K.

Communities have seen ICM as **'a promising condition'** that can help them to improve their quality of life in particular economic condition. There has been strong willingness to implement the ICM in particular CBCRM based on the benefits that they can get: directly or indirectly. However, sometimes individual expectations do not meet with the group expectations. Furthermore, expectations to the ICM have enormous. However, problems exist when supporting programs disappear from them when they are not ready to be an independent manager.

Table 5.28. BV Communities valued the outcomes of ICM

ICM Outcomes	
Positive outcomes	**Negative outcomes**
- ICM has increased community awareness for coastal environment in particular my capacity in dealing with other people and making a good network. ICM has taught me about the bottom-up planning process. This started from JICA initiatives, many knowledge that has been transferred (BV1). - Community knows how to contribute in development. Many village infrastructures have been constructed by village themselves BV2). These initiatives assisted the village government in development (BV3). - ICM has eliminated unfriendly used of resources such fish bombing, cyanide, and coral mining. ICM has protected the coastal resources and environment by the establishment of marine sanctuary (BV1, BV4). - Fish stocks have increased (BV1) It is easier to get fish now then before (BV3).	- Marine sanctuary can generate conflicts in resource uses. Negative perspective and resistance from opponent of ICM in the village. Similarly, problems mainly are generated from outsiders. For example, many fishers from other neighboring village come to bomb the coral reef BV1). - In recent time, although there has been mangrove rehabilitation program, the big issue in this village is on mangrove cutting. People do not have other alternative for their home construction (BV1). - Sanitation remains a problem - There is no economic infrastructure in particular Bank in the village (BV3). - Private sectors in particular pearl farming have occupied community fishing areas (BV1). Pearl farming has provided low salary to people(BV4). - Still relies on individual figure. There is still not many people have the capacity in encouraging people to promote the ICM initiative continuously. The sound of ICM has been up and down. There is less attention from government in all level to remain people all the time about the meaning of marine sanctuary (BV2). - ICM has produced unequal distribution of programs. For example, 'talud' (coastal protection) was only constructed in Basaan I and none has been done in Basaan BV4). - No more activities of ICM until now. Marine sanctuary is the only one left. - Villagers in particular women do not know exactly the meaning of ICM. "Do not know directly what are the outcomes but we have involved in some activities such as food processing (BV5, BV6, BV7, BV8)

Table 5.29. AV Communities valued the outcomes of ICM

ICM Outcomes	
Positive outcomes	**Negative outcomes**
- It has improved the village infrastructure such as jetty and information center. Similarly, village has the cooperative organization for alternative income generations (AV1, AV3). Sanitation has the most obvious one. Now, people are using the toilet, which make the coastal is cleaner (AV3, AV4) It has improved the village aesthetical (AV5). ICM is very helpful. It has improved the village development (AV9). - Many projects have come to the village - ICM has reduced the unfriendly fishing practices such as bombing, coral mining and others (AV1). Community knows on how the important to protect the environment. The initiatives will be put in local regulations, so can ensure the maintenance. This head village is very good. She has improved the village development enormously (AV4). - Alternative livelihoods have improved community income in particular through seaweed farming. However, there are some problems now in particular for seaweed diseases until now, community does not know how to solve this problem, so many of them have stopped farming now (AV2)	- Incentives that were provided when they joined the meetings have made negative impacts on community. Those have changed people mind on the meaning of participation. They thought that they will be paid all times when they joined the activities. Some people become passive. It is difficult to encourage people all the time to participate in active management (AV1) - Focal group was chosen by the initiators (consultants) – (AV3). Similarly, some projects come to the village without coordination under the ideas of ICM. It just came under sectoral development (AV3). - In term of the economic cooperation, many people do not want to pay back the loan; they thought the money is given as former project types which based on political reasons and they do not need to pay back (AV1). Enforcement of some local rules (such as the payment of loan, etc) can not be done. Issues of families, friends and other social relations have made this issues become more difficult (AV2) - Many alternative livelihood programs have stopped. Technical issues that communities can not solve and do not know who can they contact (AV2) - The issues of separation groups in the village. The former head village followers do not want to support the programs (AV2) - Based on observation, AV4 *was chosen as a committee for the next new head village election and for the people representative (BPD).* - ICM activities have only been conducted temporarily. The information is not continuously provided (AV5). AV5 *was chosen by the head of village to be a leader of PKK.* - The programs were only for the elites. As we have nothing, so we were not being involved. The alternative income activities were distributed unequally. Therefore, they do not know ICM as they were not involved (AV6, AV7 and AV8). - There are no problems. All ideas are good. I will still be the head village for the next round (AV9)

Overall, ICM provides a number of positive outcomes especially increased community awareness of their coastal environment and resources. It provides education to villagers and government on conservation practices and sustainable

resource use. Yet, it also has a tendency to alienate coastal villages that are no longer able to access local marine resources due to preservation/protection outcomes and legislation. Furthermore, it is essentially difficult to get sufficient stakeholder involvement in many communities to aid the implementation of sound ICM because it is a lengthy process and positive outcomes are often difficult to measure in the initial stages (e.g. greater crab numbers due to conservative practices). Detail perspectives of outcomes from each communties in both villages are provided in Table 5.28 (BV) and Table 5.29 (AV).

5.6.5. Private

From other parties' perspectives, it is clear that they believe that private has attentions more on business and profit oriented. Therefore, private is seen as a partner of government for the purpose of exploitative of resources. However, private should have a clear responsibility such as to ensure that their activities promote sustainable activities. Similarly, some interviewees hoped that private should act actively in promoting ICM as GEG alone can not perform well due to budget limitations. Privates should be encouraged to promote mutually partnership with the villagers in particular where privates implement their business. However, conditions in BV confirmed that ideal mutually benefited programs have not been achieved (See Table 5.29). Other parties' perceptions on private roles are illustrated in Appendix I, J and K.

5.7. Summary

Chapter Five is the longest Chapter in this research report as it provides findings and discussions that have been collected in North Sulawesi Province. Several topics have been discussed started by providing the introduction that reminds the purposes and methodology that were used in this research.

In general, this research has followed the research framework as described in Figure 3.1 (Section 3.2). Current status of ICM as international mandates and its success and failures factors have been elaborated in Chapter Two. Chapter Four discusses the current status of coastal policies that are the fundamental information of coastal

governance in Indonesia. Chapter Four focuses on the rules, regulations in the evolution of coastal governance in Indonesia.

Chapter Five exposes the real conditions how ICM has been implemented at village levels. The SES framework was translated to explore the day to day management of ICM at AV and BV. Both villages demonstrated different ways how local governance operates. BV is more independent compared to AV as the introduction of ICM was relatively short (8 months) and this village experienced a variety of local political conditions. ICM has been successfully recognised in the BV as the key person is still promoting the ICM initiatives and has assisted villagers to obtain support from outsiders.

On the other hand, in AV, ICM was initiated by the local government and the real work on the ground was conducted by a consultant company (the winner of the bidding). Local people valued the ICM that is beneficial however, they stated that efforts were more based on 'project oriented'. ICM has been functioning in the village due to the initiatives of the village leader. The leader is confident that she would be elected in the village elections in the following year. Based on the provided information, it is clear that an intermediate agent has strong roles in promoting ICM at local level. Therefore, it is suggested to revisit the model of SES by adding the intermediate agent. Other insights of local governance and ICM have been discussed in this Chapter.

Key governance factors were tested to the GE, to find out the patterns and rank based on people perspectives. There are nineteen factors that have been tested divided into three categories such as: 1) institutional arrangements; 2) socio-cultural factors and economic and bio-physical factors. These factors were analysed to satisfy the second and third orders of local governance such as: institutional arrangements (as the second order of governance) and the values of socio, cultural, economic and bio-physical factors as 'meta' governance or third order of governance.

Results of the analysis have different interesting patterns. Amongst factors, shared goals and objectives were chosen to be a stronger point in institutional arrangement factors. In the third order of 'meta governance', participation has been chosen to be

the fundamental governance factor for the sustainability of ICM. Participation has also confirmed in the actions level of day to day affairs. However, problems relating to participation have challenged the consciousness for all parties to promote democratic institution and mainstream this idea into local governance.

Furthermore, different sub groups in the GE (GEG, GES and GEN) have suggested different patterns which some factors are contradictory (confirmed with Pearson's r analysis). Finally, differences in patterns were confirmed with perceptions of roles and outcomes. Stakeholders' perceptions on their own roles and perceived outcomes, to some extent have affected the ways they value governance factors.

CHAPTER VI
CONCLUSIONS AND RECOMMENDATIONS

6.1. Introduction

This Chapter provides the conclusions and recommendations for this research. The conclusions are based on a combination of literature review and empirical evidence from the village levels and the GE. Some recommendations are provided in order to improve the governance structure for ICM sustainability. Further studies that may be relevant for this topic are provided, as well as some practical suggestions for coastal managers, governments and other stakeholders in order to promote the sustainability of ICM.

6.2. Conclusions

This research attempted to answer two questions (Section 1.3) and follow the objectives of this research that have been arranged as follows:

- to identify key governance factors that can lead to achievements of positive outcomes in North Sulawesi, Indonesia; and
- to determine perception differences among the key stakeholders toward governance of ICM.

A literature review guided this research with ideas on how ICM and coastal governance has to be mutually reinforcing. Better arrangements of key governance factors can lead to the achievement of positive outcomes of ICM. The literature review covered the status of ICM in recent times along with success and failure factors. In this research, with the case study of North Sulawesi, Indonesia, such factors are viewed as the transitional conditions in the process of coastal management evolution. Finding the key governance factors of ICM is useful for moving forward to the transformational conditions. In other words, improvements should be done to change the transitional conditions to transformational conditions to aid achievement of sustainable coastal development. Therefore, the next section of this conclusion part answers both of the questions that were designed for the aims of this research.

6.2.1. What are the key governance factors that are important for positive ICM outcomes in North Sulawesi Indonesia?

It can be said that governance factors of ICM are broad and complex in nature. Issues of rules and regulations contribute to the complexity of coastal governance (Chapter Four). There are hundreds of laws, rules and regulations related to coastal management in Indonesia that are overlapping and inconsistent. This has led to the complexity of governance in Indonesia. The inconsistency has produced a slowing down of ICM at every level of governance, particularly for local villagers that are directly impacted from coastal activities. In difficult situations, there are some attempts that have been done in recent years on how not to avoid and ignore the complexities and instead adapt with crisis situations to produce robustness SES. Therefore, in this case, ICM must be viewed in broader terms of governance. Shift must be done from a problem solving approach of coastal management to model that seeks for "opportunity creation and effective handling of tensions" (Kooiman and Banvick, 2005: 12).

In doing so, governance should be approached as systems that should be integrated between the governing systems and the systems-to-be-governed. Governance should be seen as the arrangements of principles that can be trusted and can build trust amongst stakeholders. This has confirmed to be the requirements of first order governance at AV and BV. Interviewees in both villages agree that ICM-CBCRM should give more attentions to the meanings of ICM efforts rather than just confirmed the physical outputs of ICM. In AV, participation was weak but initial benefits of ICM were promising to villagers. Therefore, there has been a strong demand in continuing the benefits that they had experienced before. In BV, benefits of ICM were experienced gradually. Process of ICM adoption is slow but it has been tested under several political conditions. This village can pass to better ICM cycle if role of individual in this village can be extrapolated and formalized in the local governance of BV. Current situations have shown the resilience of this village to move from crises however, the robustness of SES should be re-emphasized based on undelined factors of interactive governance that are explored in this research.

In reality, governance is a new term in ICM. Similarly, both ICM and governance were introduced by international organizations. Subsequently, there have been gaps in the local interpretations. The effectiveness of ICM in the context of local governance has been a new attention in recent years (White et al, 2008). Therefore, it is time to mainstream ICM into local governance. Establishing ways on how to promote this mainstreaming has become a challenge in the context of diverse, dynamic, complex and vulnerable SES – including resources, people and their interactions. It is now the time to change the concept of ICM from 'project oriented' to be part of basic service deliveries.

In operationalising governance in the context of ICM, this research combined several methods that have been proposed recently: Kooiman and Banvick (2005)' ideas that have been re-done by Symes (2006) of three orders of governance has been reasonably effective in finding the key governance factors of ICM. Therefore, the three orders/levels of governance have been modified as a framework combined with other suggested frameworks as follows:

- The concerns on identification and solution of everyday problems. This research applied the interactions of SES suggested by Anderies, Janssen and Ostrom, 2004

- Focusing on institutional arrangements. This research adopted the institutional arrangements principles for common pool resources suggested by Ostrom (1990) combined with factors suggested in the preliminary interviews (e,g. leadership factor).

- Meta governance dealing with values, principles and criteria that are guide policy making which translated into socio-cultural, economic and bio-physical factors. This analysis was based on current literatures in particular 'eight tenets of ICM success factors' from White et al (2005) and White et al (2008) and analysis of factors for ICM sustainability from Christie et al (2005).

Key governance factors of ICM at local levels were assessed using the SES model in AV and BV. Based on this model, it is proposed to revisit this model by providing a new component of 'intermediate agent'. This was evidenced in both villages that the interactions of resources users and infrastructure providers are not always direct interactions: an intermediate agent (E) was in the middle of the interactions and can

perform as an agent to maintain ICM in crisis move on from transition to transformation in ICM (as was the case of the former internal officer during JICA interventions). Until now, he acts as an intermediate agent that connects the villagers and government. On the other hand, in AV, the intermediate agent is the same person, the head of village. This condition might be less robust then BV as it can be affected by political changes within the village and hence place barriers on ICM sustainability.

Quantitative analysis of key governance factors by utilizing the GE allowed the research to score the degree of importance and re justified the village results. This can be argued as an important task in order to rank priorities and urgencies of key governance factors of ICM that is locally specific and based on the GE's experiences on ICM in North Sulawesi. This can reflect the ideas of what factors should be done first and on what conditions. As a result, Table 6.1 provides summary of the urgency status and priority of key governance factors of ICM.

Based on Table 6.1, some factors have been confirmed as the requirements of governance factors at the village level. Participation, leadership and alternative incomes have been identified as the most concerns of villagers. All village interviewees have positive attitudes on these factors. It is clear that the requirements should be on the improvements of these factors. On the other hand, there are some other governance factors that have been discussed intensively under the SES framework which both positive and negative attitudes based on their current experiences. Those factors are issues of formal institutions; clear management boundaries; incentives and benefits sharing; enforcement; equity and fairness; cost of management and resource changes. Interestingly, less attention has been given to the factor of common shared goals and objectives. This has shown that villagers view the problems still on the short term benefits, less attention have been given to the long term achievements. Similarly, it shows that collective actions are done based on problems and less on the long term commitments.

Table 6.1. Summary of the urgency status and priority of key governance factors of ICM based on the mean value (x)

Status of factors	Factors from the GE
Reach agreements *(All parties have shared almost the same values for the level of importance).*	- Common shared goals and objectives - Formal institutions* - Participation**
Intermediary *(All parties have shared close values for the level of importance)*	- Networking - Conflict resolution mechanism - Clear management boundaries* - Incentive and benefits sharing* - Environment changes - Resource changes*
Contradictory *(At least two parties have a contradictive value for the level of importance)*	- Consistent rules and regulations - Leadership** - Enforcement* - Partnership - Informal institutions - Nested enterprises - Equity and fairness* - Social justice - Alternative incomes** - Cost of management*

Notes: ** = has been appeared as strongest points of key governance factors suggested by village interviewees. * = recognised as strong points of key governance factors suggested by village interviewees.

Based on the Pearson's r (r coefficient correlation), it is confirmed that those factors (in Table 6.1) that have been suggested as contradictory factors have more variations in their linear correlations with other factors. This means that, promoting those factors should go together and places attention to other related factors as well. An example of this is leadership. Leadership has the highest number of a strong positive correlation at 1 percent significance with other factors. Leadership was not mentioned in Ostrom's (1990) principles of institutional arrangements. However, leadership has been discussed in ICM literature as one success determinant for ICM. Referring to Table 6.1, it is clear that agreements on key governance factors are only to a few governance factors of ICM. Even though the importance degree of some factors are reasonably high, those factors need to be treated carefully as they can be contradictory, which affects their roles and how interviewees perceive the outcomes of ICM.

6.2.2. What differences exist in the perceptions of those factors among the key stakeholders?

Amongst the three expertise subgroups (GEG, GES and GEN), the patterns of key governance factors of ICM are different based on the mean value. The patterns are summarized in Table 5.25. From this table, it is clear there has been a different position in proposing key governance factors of ICM. From a government point of view, consistent rules and regulations should be the main factor that can promote the sustainability of ICM. On the other hand, NGOs workers do not consider that consistent rules and regulations should be the main factors for better ICM implementation.

In the socio-cultural aspects, social justice has been valued to have a lower degree of importance in key governance factors of ICM. However, the pattern amongst sub-groups is different. From Table 6.2, it seems there is an agreement between GEN and GES that social justice should have a higher degree of importance in promoting ICM sustainability (GEN - $x = 88.75$ and GES - $x = 8.20$). However, this is not the case for government officials. Social justice was accorded only $x = 5.50$ for the degree of importance. For the factor of equity and fairness in resource allocations, Government and NGO provided a lower degree of importance (GEG – $x = 6.75$ and GEN, $x = 6.50$). However, scientists provided a high value for this factor with a score of 9.20.

Table 6.2. Three different patterns of key governance factors of ICM suggested by sub-group (government, scientist and NGO)

Sub-groups	Range of means value	Highest mean value	Lowest mean value
Government	9.50 – 5.50	Consistent rules and regulations	Social justice
Scientist	9.20 – 7.60	Enforcement Equity and fairness	Informal institutions
NGO	9.25 – 5.25	common shared goals and objectives	Consistent rules and regulations
Communities	Strongest to lower degree	Participation Incentives and benefits sharing	Common shared goals and objectives

It is surprising that common shared goals and objectives have not been mentioned explicitly in the village interviews. Even when it was asked to them, many interviewees could not remember a committed vision of their ICM. However, all interviewees mentioned that they have developed the vision. However, almost all villagers agreed that ICM should promote better participation in the village. Villagers should be empowered therefore they can promote better ICM implementation in the future. Similarly, the villagers valued that ICM has brought benefits to them. Their current involvements in ICM are because of the incentives and benefits that they can perceive.

To sum up, from the table, we can infer the ways that interviewees valued the governance factors were heavily influenced by their role in conducting ICM which therefore, affected how stakeholders valued the outcomes. NGO workers have weighted greater values on the second order of governance: institutional arrangements specifically on the construction of common shared goals and objectives. That is because NGOs viewed the ICM as **'an agreement'**. Therefore, in their roles, NGO workers believe that there should be a dynamic and adaptive process on ICM. One agreement builds to another agreement. Notably, NGOs believe that ICM is a process for a long period of time.

Along the line of NGO workers, government officials have also valued the institutional arrangements in particular consistent rules and regulations to have the highest degree of importance. This has been affected by the ways government officials understand their roles in ICM. They believe that their roles should provide facilitation and to some degree as implementation agents. They believe that ICM can eliminate conflicts. Therefore, government officers believe ICM as **'tools'** to be used in coastal management. Government officials are more concern to outputs that can be quantified which means some ICM processes can be shortened.

The different pattern of governance factor is provided by the communities. It seems that communities are interested on the third order of governance: based on the construction of values and images. Communities viewed ICM as **'a promising condition'** that can help them to improve their quality of life, especially economic and ecological conditions. There has been strong willingness to implement the ICM

(i.e. CBCRM) based on the benefits that communities can receive, directly or indirectly. However, sometimes individual expectations do not meet with group expectations. Furthermore, community expectations for ICM are enormous. Consequently, problems exist when supporting programs disappear and communities are not at a stage where they can be independent managers.

Finally, it appears that scientists (in their roles as a neutral agent that provides scientific information and data) values for governance factors are laid in the middle between second and third order of governance. This confirms the ways that scientists typically view ICM. Basically, scientists see ICM as **'systematic procedures'** that should be followed with certain theories/formulas. Therefore, in implementing ICM, certain conditions should be followed first before another.

6.3. Recommendations

This research has explored the urgency on finding key governance factors of ICM as well as provided insights on how ICM and governance have been practiced. Some recommendations that can be suggested based on this research findings are:

1. This research depicted some empirical information on how local governance has been operated. It seems that, ICM has not been mainstreamed into the local governance systems. ICM is still seen as the project efforts. Therefore, it is suggested that ICM should perform as the part of basic delivery system at the local level. By doing so, government support can be justified in particular for financial supports and political supports.

2. For the practical purposes, it seems that formal institutions as the nested enterprises have been voted to have less degree of importance, although scientific respondents still propose this factors. Therefore, close analysis of this factor can be valuable to promote ICM at multi-level of government.

3. For the broader context of ICM and coastal governance, none of literatures mentioned about Integrated Coastal Governance (ICG), which the researcher felt that this topic will be interesting to explore in the future. Justifications of ICG should be done based on empirical evidence which data and information from this research can be used as the preliminary findings.

6.4. Summary

It can be concluded that key governance factors are not well-understood at the local level. Based on the analysis of the first order of governance (day to day affairs), ICM generally takes place only for the purpose of achieving project outputs. Process and outcomes are generally shortened due to project design limitations. However, the current situation of ICM has contributed to the knowledge building of coastal conservation and the need of better management of coastal resources. At the moment, communities have accepted ICM because of the promises and economic benefits that they might receive from its implementation.

It is obvious that ICM at the local level relies on the functions of intermediate agents. However, the roles of this proposed component in building resilience of coastal management at the village levels has not been investigated comprehensively. Therefore, further research in the field of coastal governance is required.

Similarly, the patterns of key governance factors have shown significant differences both amongst suggested factors and clustered people: government officers, scientists, NGOs workers and communities. However, further investigation is required as this research only provides a snap-shot of conditions for a particular time period. Therefore, understanding the proper interactions of key governance factors may prove necessary for broadening the knowledge of ICM sustainability and may bring a new term of Integrated Coastal Governance as a new field of ICM from the perspective of social science.

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APPENDICES

Appendix. A. North Sulawesi Map and Targeted Villages (Atep Oki and Basaan I/Basaan)
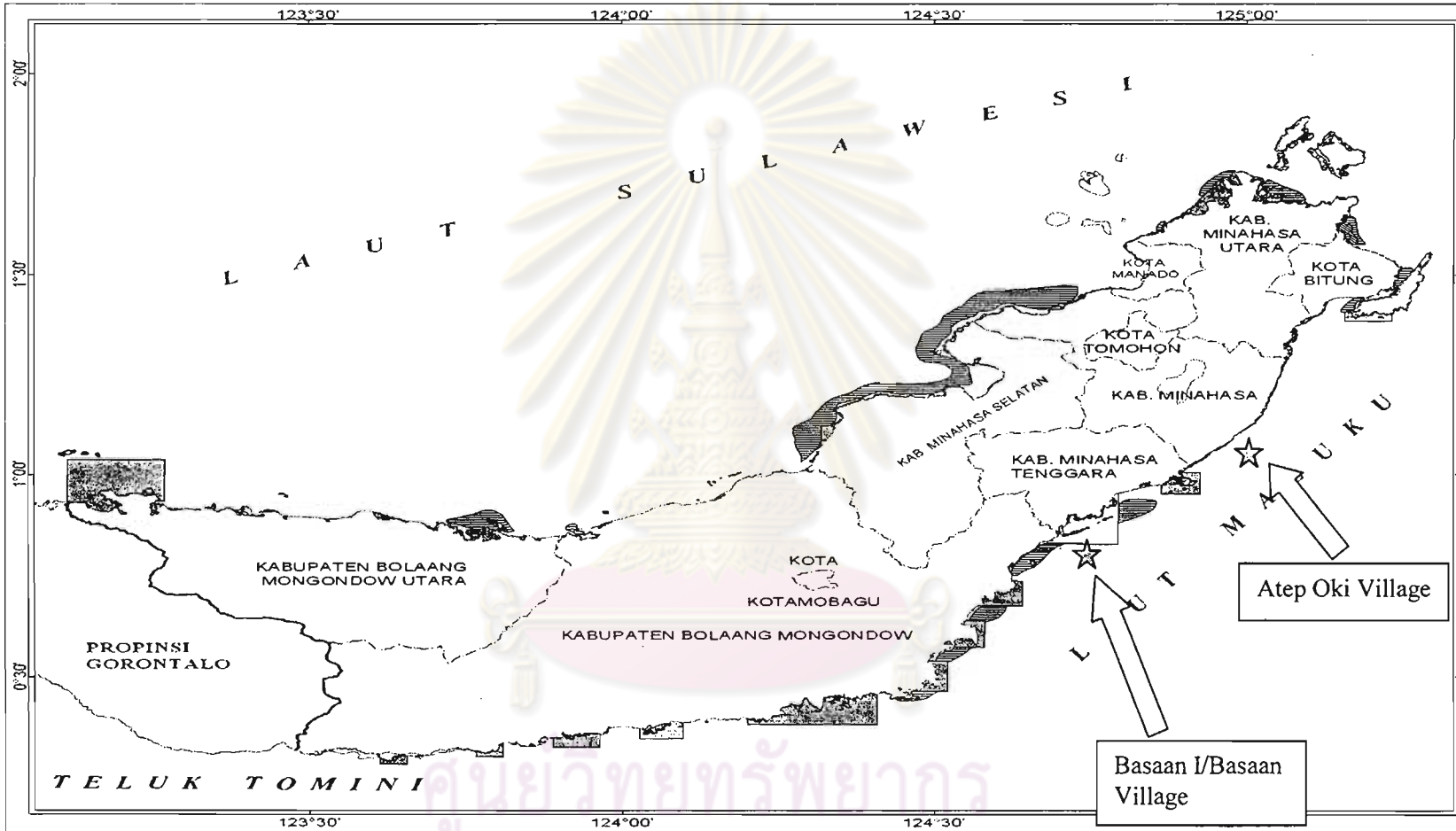
Source: *Bappeda Sulut*, 2007

Appendix B. Atep Oki Village Profile.

General

Atep Oki village is a village within Minahasa Regency with a total land area of 75 hectares. Atep Oki is about 62 kilometers from Manado, the capital city of North Sulawesi and 26 Kilometers from Tondano, the capital city of Minahasa Kabupaten. This village was formalized as a village in 1969. Before that time, it was a hamlet of Kayuroya village. Atep Oki village has a long sandy beach (2.5 kilometers) which is suitable for beach recreational tourism. This sandy beach has an ecological function for the habitats of green turtles (resting and laying eggs).

Photo B.1. Sandy Beach in Atep Oki Village

Coastal issues

Coastal spaces and resources in Atep Oki village have been used for many purposes such as fisheries, tourism and conservation such as village marine sanctuary.   As the interaction of people and the resources are intensive, there are some crucial issues and problems related to coastal management such as:

- Mangrove cutting for firewood, housing, etc.
- Unfriendly fishing practices such as bomb fishing, poisons, and coral mining
- Green turtles hunting and destruction of its habitat
- Lack of law enforcement
- Lack of village infrastructures
- Less information related to environment education
- Poverty

These crucial issues are believed have close relations to the socio-economic conditions of the villagers in Atep Oki.

Photo B.2. The village jetty – as one of management issue in Atep Oki. This jetty was constructed through MCRMP.

Socio-economics

In 2008, the population of Atep Oki is 750 persons divided into 128 households. The number of men and women is 399 persons (53.20 percent) and 351 persons (46.80 percent) respectively. The population is composed by 436 people (58.13 percent) in the workforce age (21 to 60 years old); 50 people (6.67 percent) are categorized as ageing

population (above 60 years old); 76 people (10.13 percent) is under five years old; and 188 people (25.07 percent) are in the school age.

In term of education level, the following results are: villagers that have not finished primary school (17 percent); finished primary school (54 percent); finished secondary school (7 percent); finished high school (19 percent) and continued to a university degree (2.41 percent).

The existing village infrastructure is minor. There is only a primary school and secondary and high schools are about 7 kilometres from the village. There is no health centre in this village. Recently, the village improved its sanitation systems including toilets. The village has managed to have 10 public toilets and locally managed water systems installed.

The composition of village livelihood activities is illustrated in Table B.1: farmers (23.44 percent), labors (23.44 percent); fishermen (22.66 percent); middlemen in fisheries (17.18 percent) and remaining occupations (30.46 percent). The ethnic majority of fishermen are Tidore (North Maluku) and sangir ethnics however currently many are married with other ethnics such as Minahasan; Mongondow and others.

Tabel B.1. Households and livelihood activities in Atep Oki Village

Occupations	Number	Percent
Government officials	5	3,91
farmers	30	23,44
Fishermen	29	22,66
Crafts	6	4,68
Middlemen (fisheries)	22	17,18
Labors	30	23,44
Others	6	4,68
Jumlah	128	100

Appendix C. Basaan I/Basaan Villages Profile

Political background.

Basaan I village is a unique village that has been affected by the political changes in the decentralisation era in North Sulawesi Province. This village has been dramatically affected by decentralisation policies. In 2001, Basaan I village was separated from Basaan village and during the past ten years, Basaan I village has been managed under three different Kabupatens.

Prior to the decentralisation era, Basaan I village was managed by the Kabupaten of Minahasa. After decentralisation, during the period of 2001 to 2006, Basaan I was included as part of the administrative territorial of South Minahasa Kabupaten. Recently, Basaan I village became part of the South East Minahasa Kabupaten and experienced a new Bupati election. The complexity of political conditions has influenced the state of coastal governance in this village.

Photo C.1. Beach and fishing boats in Basaan I.

Ecosystems and resources

Basaan I village has a complex ecosystems of mangrove, seagrass and coral reef. The coverage of mangrove in this village is reasonably high (300 – 500 trees/Ha) and consist of several species such as: Avicennia officinalis, Bruguiera gymnorrhiza, B. parviflora, Ceriops tagal, Rhizophora apiculata, R. mucronata, R. apiculata, R.. stylosa, Scyphiphora hydrophyllacea, Soneratia caseolaris dan S. alba. (BAPPEDA SULUT 2007). Mangroves in this village have both ecological and economic values to the villagers. The villagers rely on this ecosystem for their firewood, housing, medicines and others.

It is difficult to find information related to the condition of seagrass in North Sulawesi. This has been proved as well in Basaan I village. However, visually, seagrass ecosystems are found in this village. Some species that are structured this ecosystem in Basaan I village are *Thalasia emprichii, Enhalus acoroides, Cymodocea sp, Syringodinium sp, Halodule sp, dan Halopila sp.*

Information related to coral reefs in Basaan I village is very limited. However, based on the literature (JICA, 2002, CRMP, 2003 and CRITC – 4 North Sulawesi, 2002), the conditions of coral reefs in North Sulawesi in particular Belang – Kotabunan (Basaan I village is included) are categorised from poor to good and almost none is considered to have excellent conditions. The degradation trend of coral reefs in North Sulawesi is continuing to happen as bomb fishing, cyanide use and coral mining are still undertaken in many villages. However, a report from BAPPEDA SULUT (2007) showed there has been some improvement in the resource condition in Basaan I village. Indicators are the increasing numbers of fish from the family of Chaetodontidae. Others coral fish that have been identified are from the families of Labridae, Scaridae, Acanthuridae, Balistidae, Pomacentridae, Caesionidae, Lutjanidae, Letrinidae, Pomachantidae, Serranidae, dan Haemulidae. Others biota are from the families of Tridacnidae, Conidae, Ophidiasteridae, Strombidae, Arcidae (BAPPEDA SULUT, 2007).

Coastal spaces and resources in Basaan I village have been used for many purposes such as fisheries, tourism and conservation such as village marine sanctuary. As the interactions of people and the resources are intensive, there are some crucial issues and problems related to coastal management such as:

- Mangrove cutting for firewood, housing and others.
- Unfriendly fishing practices such as bomb fishing, poisons, and coral mining
- Lack of law enforcement
- Less information related to environment education

These crucial issues are believed have close relations to the socio-economic conditions of the villagers in Basaan I.

Socio-economics

The population of Basaan 1 village is 1,132 persons (593 men and 539 women) with Bajo and Minahasa as the ethnic majorities. The number of household is 325 with the average of family member of four persons. It means that the family planning of two children has been successfully implemented in this village.

The composition of village livelihood activities are farmers (65 percent), fishermen (30 percent) and others (5 percent). The ethnic majority of fishermen are Bajo (from South Sulawesi) however nowadays many of them have married with other ethnics such as Minahasan and Sangir, Mongondow and others.

In term of education level, villagers have low education level because the majority of people had primary school education 40.17 percent; followed bye secondary high school (33.13 percent), and high school (12.01 percent). Unfortunately, there are also villagers with no education (11.66 percent. Only 3.18 percent has a university degree (3.18 percent).

Basaan I/Basaan villages have limited public infrastructure such as education, banks,public transport, health, waste and sanitation facilities. For example, the two

villages only have primary and secondary high school buildings in Basaan I village. This village has no bank. Transportation facilities, including roads to this village, are not in good condition. The majority of households do not have toilets. Floods occur frequently in this village (Respondent BV1, BV2 and BV3, personal communication, 11th July 2008).

Photos C.1. Housing in Basaan I.

Photos C.2. The seawall constructed by communities and supported by provincial water resource agency.

Appendix D. An invitation for key persons to choose nominees for the group of experts.

<date>

Dear <name>

My name is Bernadetta Puspita Devi. I am a student in MAIDS program, Chulalongkorn University, Bangkok – Thailand. I am now conducting a study *"Key Governance Factors for Integrated Coastal Management at Local Level in North Sulawesi, Indonesia"*. The aims of this study are: To identify key governance factors that can lead to achievements of positive ICM outcomes in North Sulawesi, Indonesia and to determine perception differences among the key stakeholders toward governance factors in ICM.

This research was arranged to have a group of experts that consists of the representatives of government officials, scientists and NGO workers. Therefore, the first important step for this research is to identify a group of experts that can assist the processes of this research. It would be greatly appreciated if you would assist to identify at least 10 individuals that you consider highly knowledgeable about the key governance factors of ICM at local level, North Sulawesi, Indonesia. Only you and four other individuals have received this invitation, therefore, your voluntarily participation is important to the success of my study. The criteria for the selections are provided below:

1. the nominees should have working experience in coastal management in North Sulawesi;
2. the nominees should have knowledge and experience or at least have visited in both villages (AV and BV) related to the issues of ICM;
3. the nominees should understand the issues of coastal governance at local level and;
4. the nominees should represent a clustered group of NGO workers, Government officers or Scientists.

From the list of 50 nominees (nominated by you and other four nominators), 15 knowledgeable persons most frequently identified will be selected for the panel and asked if they are willing to participate. A form for listing the names and contact information of recommended participants is attached. Your individual responses will be kept confidential. Your anonymity is assured while this study is being conducted.

If you have any questions or comments about this study, please do not hesitate to send email to puspitadevi@Hotmail.com. Again, I greatly appreciate and thank you for your assistance.

Sincerely,

B. Puspita Devi
Research MAIDS Student – Political Science faculty, Chulalongkorn University,
Bangkok - Thailand

Please list the names and contact information of each nominee

Name	Affiliation	Basis of nomination/nature of expertise and reasons for being a nominee	Contact Information (telp/email/address)
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

Appendix E. Open-ended questions for Preliminary interviews

General

1. In your opinion, what is *coastal governance*?
2. What are the major problems in (*integrated*) *coastal governance*?
3. Based on your views, what are *key governance factors* that are important for the achievement of ICM outcomes? Please identify in which scales (village, regency, province) those factors are applied? Are there any differences?
4. Based on your views, what are the criteria that are considered as positive outcomes of ICM in North Sulawesi?

Authority and Power

5. Where and on what basis decisions on the allocation and use of coastal areas are made?
6. Does the legislation authorize user groups to define boundaries for their exclusive access?
7. Does the legislation provide general guidelines within which user groups can devise and legally implement locally appropriate management rules?
8. Does the legislation provide for participation of user groups in developing and implementing surveillance and enforcement methods?
9. What are the responsibility of Government, Private, Community and NGO? What are the legislations as a basis for responsibility?

Coastal governance at village level

10. What do you think about coastal governance at village level?
11. Are there any success indications of ICM effort at village level? Would you please name some villages?
12. In terms of the relevant resource are there or have there ever been any restrictions concerning whom has rights to harvest the resource?
13. Are the rights restricted to a) an area or region? b) a particular species? c) use of a particular gear? d) certain recreational activities? e) other (specify)?

Appendix F. Questionnaire for the village respondents

Institutional arrangements

1. What are the major problems of coastal management at the village?
2. Are there any formal institutions for coastal management in the village?
3. Are there any informal institutions for coastal management at the village?
4. What are the current institutional arrangements problems at the village?
5. In your opinions, what are the potential future problems regarding the institutional arrangements at village level?
6. Are there any formal village regulations/ordinances for integrated coastal management? Have those regulation been implemented? How about the law enforcement? Is there evidence of graduated sanctions?
7. Are there any informal rules and norms for coastal management at the village?
8. Do you have the mechanism of conflict resolutions?
9. Do you have common shared goals and objectives for integrated coastal management?
10. Have you ever heard goals and objectives of ICM at the village, or other levels such as regency or provincial levels?
11. Have you ever heard about village ICM management plan? Do you think the village development has followed the plan? Do you think other people in the village have known about these planning documents?
12. Can you identify the boundaries of coastal management in the village (e.g. the boundaries of marine sanctuary or other zoning system)

Socio cultural factors

13. What is the meaning of participation?
14. Have you ever participated in the ICM activities? what kind of participation (money, labor, or others?
15. Do you think ICM has promoted better participation? Are there any problems surrounding this issues?
16. What is your opinion related to equity and fairness in resource allocations? Will you be able to have a fair access to resources and other benefits of ICM?

Economic and bio-physical factors

17. What kind of alternative income programs that have been promoted in the village? Did you face problems in these activities?
18. What are the economic benefits that you have perceived before and after the introductions of ICM in particular for alternative income programs?
19. Are there any costs after and before the implementation of ICM?
20. How about the benefit sharing of the profit of ICM? And how about the cost of management?
21. Can you identify ecological changes? Resource changes? Economic changes? Attitude and behavioural changes in the communities? Could you provide examples?

Appendix G. Questionnaire for GE

Dear Sir/Madam,
I would like to ask you series of questions as a part of my thesis of Master of Art in International Development Studies (MAIDS in Political Science, Chulalongkorn University). This survey is anonymous and all answers will be kept private and confidential. There are no right or wrong answers.

My research focuses on the governance factors for ICM implementation at local level in North Sulawesi, Indonesia. It has been widely reported that ICM sustainability has been slowing down in Indonesia, particularly under the supervision of local government as well as after project termination. Many authors in the field of ICM has suggested a new trend of governance and recognised the roles of privates, NGOs and local communities for the success of ICM implementation. Based on this idea, North Sulawesi province, specifically in Basaan/Basaan I and Atep Oki have been chosen as case studies to be analysed their governance factors and the interactions of social-ecological system at local level.

Another objective of this research is to discover on how an expert group (consists of government staffs, scientists and NGO workers) will value the key factors of ICM governance. In order to meet with this objective, you have been chosen to participate in this research based on your experience and knowledge. It is assumed that you have been familiar with the term and concept of Integrated Coastal Management (ICM) and the geographical context of North Sulawesi.

To make a systematic analysis, ICM governance factors in this questionnaire are categorised as institutional arrangement factors, socio-cultural factors and economic and bio-physical factors. ***It is required that each factor needs to be described freely based on respondent's perspectives on why it is important or not important and then please value them for the level of importance (1 to 10).***

I.   Personal detail

Name :

Age : 25 – 30; 31 – 35; 36 – 40; 41 – 45; 46 – 50; 51 – 55; 55 - above

Sex: Male (1) Female (2)

Education: SD (1); SMP (2); SMA (3); PT (4); Master (5); PHD (6)

Organisation: Government (1).........; Expert/Scientist (2)........; NGO (3).........;

Position/job title:

Formal leader (1)............; Informal leader (2)...........; Technical staff (3)............;
member of organisation….........; Development worker..............; individual………;
Others……

II. Key governance factors

The following questions are a list of governance factors under three categories namely, institutional arrangement, socio-cultural and economic and bi-physical factors. These categories have been developed based on literature review and open-ended questionnaire design. **Please answer each question by giving your value on level of importance from 1 (not important) to 10 (extremely important). Furthermore, please give your short comment (if possible example) based on your experience and understanding on each factor.**

	Institutional Arrangements Factors	Degree of importance 1=not important 10=extremely important									
A	Clear management boundaries	1	2	3	4	5	6	7	8	9	10
B	Informal institutions for collective actions	1	2	3	4	5	6	7	8	9	10
C	Formal institutions for collective actions	1	2	3	4	5	6	7	8	9	10
D	Consistent rules and regulations	1	2	3	4	5	6	7	8	9	10
E	Common shared goals & objectives in managing resources	1	2	3	4	5	6	7	8	9	10
F	Networking (jejaring / jaringan)	1	2	3	4	5	6	7	8	9	10
G	Partnerships (kemitraan)	1	2	3	4	5	6	7	8	9	10
H	Law enforcement & graduated sanctions	1	2	3	4	5	6	7	8	9	10
I	Conflict resolution mechanisms	1	2	3	4	5	6	7	8	9	10
J	Nested enterprises	1	2	3	4	5	6	7	8	9	10
K	Local Leadership	1	2	3	4	5	6	7	8	9	10
L	Others	1	2	3	4	5	6	7	8	9	10

2	Socio – cultural Factors	Degree of importance 1=not important 10=extremely important									
A	Social justice	1	2	3	4	5	6	7	8	9	10
B	Equity and fairness in resource allocation	1	2	3	4	5	6	7	8	9	10
C	Participation in decision making	1	2	3	4	5	6	7	8	9	10
D	Others	1	2	3	4	5	6	7	8	9	10

3	Economic and bio-physical Factors	Level of importance 1=not important 10=extremely important									
A	Alternative income	1	2	3	4	5	6	7	8	9	10
B	Incentives and benefits sharing	1	2	3	4	5	6	7	8	9	10
C	Cost of management	1	2	3	4	5	6	7	8	9	10
D	Environmental changes	1	2	3	4	5	6	7	8	9	10
E	Resource changes	1	2	3	4	5	6	7	8	9	10
F	Others	1	2	3	4	5	6	7	8	9	10

III. Please give your opinions and answers for the roles of State, NGO, Scientists/independent managers and Private for ICM sustainability

What are the roles of State (Government), NGO, Scientist and Private For ICM sustainability	
State	
NGO	
Scientists	
Private	
Community	

IV. Please give your opinions on the basis of ICM outcomes

Based on your knowledge, what is the positive and negative outcomes of ICM	
Positive outcomes	
Negative Outcomes *(if any)*	

Thank you for participating in this survey. I appreciated all your inputs. It has been a pleasure talking/corresponding with you. Hopefully, you have also enjoyed the interviewing/answering process.

Best regards,

B. Puspita Devi – puspitadevi@hotmail.com
(MAIDS student, Political Science, Chulalongkorn University, Bangkok).

Appendix H. Pearson's r for all factors

		Age	Sex	Edu	Org	Pos	C	J	B	E	A	D	G	F	H	K	I	N	M	L	P	O	Q	R	S
Age	Pearson Correlation	1	.207	.746**	-.145	.040	.124	.048	-.431	.285	-.520	.282	.227	.413	-.115	.621*	.245	-.141	.478	-.074	.173	-.295	.193	.282	.334
	Sig. (2-tailed)	.	.497	.003	.636	.896	.686	.876	.141	.345	.069	.351	.455	.161	.709	.025	.420	.646	.099	.810	.573	.329	.528	.351	.265
Sex	Pearson Correlation	.207	1	.455	.202	.156	.210	-.086	.146	.237	-.180	.128	.371	.104	.106	.431	.253	.451	.585*	.113	-.077	.061	.243	.445	.378
	Sig. (2-tailed)	.497	.	.118	.509	.611	.492	.781	.634	.435	.556	.676	.213	.735	.730	.142	.404	.122	.036	.714	.803	.843	.423	.127	.203
Edu	Pearson Correlation	.746**	.455	1	-.118	-.279	.330	-.034	-.166	.279	-.212	.474	.366	.489	.008	.886**	.381	.139	.700**	-.138	.214	.086	-.029	.478	.365
	Sig. (2-tailed)	.003	.118	.	.700	.356	.271	.913	.588	.357	.487	.101	.219	.090	.980	.000	.199	.651	.008	.652	.483	.780	.926	.098	.220
Org	Pearson Correlation	-.145	.202	-.118	1	.299	-.483	.384	-.235	-.833**	.000	.207	-.509	-.645*	-.642*	-.200	-.701**	.774**	-.060	.083	-.309	-.590*	-.392	.000	.000
	Sig. (2-tailed)	.636	.509	.700	.	.321	.095	.196	.439	.000	1.000	.498	.076	.017	.018	.511	.008	.002	.846	.788	.304	.034	.185	1.000	1.000
Pos	Pearson Correlation	.040	.156	-.279	.299	1	-.369	.054	.046	-.141	-.321	-.388	-.063	.000	-.055	-.192	-.162	.300	.046	.268	-.009	-.232	.359	.093	.286
	Sig. (2-tailed)	.896	.611	.356	.321	.	.215	.862	.881	.646	.285	.190	.837	1.000	.858	.530	.597	.319	.881	.377	.975	.446	.229	.761	.343
C	Pearson Correlation	.124	.210	.330	-.483	-.369	1	-.014	.618*	.568*	.432	.227	.744**	.436	.632*	.419	.767**	-.219	.466	.107	.626*	.654*	.272	.436	.321
	Sig. (2-tailed)	.686	.492	.271	.095	.215	.	.963	.024	.022	.141	.457	.004	.136	.024	.154	.002	.472	.109	.727	.022	.015	.369	.137	.284
J	Pearson Correlation	.048	-.086	-.034	.384	.054	-.014	1	-.019	-.271	-.069	.386	.174	.040	-.101	.041	-.319	.284	.194	.577*	.484	-.088	.170	.141	.334
	Sig. (2-tailed)	.876	.781	.913	.196	.862	.963	.	.952	.371	.824	.193	.569	.898	.743	.894	.288	.347	.524	.039	.094	.774	.579	.647	.264
B	Pearson Correlation	-.431	.146	-.166	-.235	.046	.618*	-.019	1	.277	.561*	-.290	.448	.203	.553	.084	.357	.127	.343	.295	.555*	.665*	.230	.511	.480
	Sig. (2-tailed)	.141	.634	.588	.439	.881	.024	.952	.	.360	.046	.337	.125	.507	.050	.785	.231	.680	.251	.327	.049	.013	.449	.074	.097
E	Pearson Correlation	.285	.237	.279	-.833**	-.141	.568*	-.271	.277	1	-.219	-.041	.673*	.709**	.545	.446	.775**	-.514	.421	-.130	.243	.501	.436	.206	.154
	Sig. (2-tailed)	.345	.435	.357	.000	.646	.024	.371	.360	.	.472	.895	.012	.007	.054	.127	.002	.072	.151	.673	.425	.081	.136	.499	.615
A	Pearson Correlation	-.520	-.180	-.212	.000	-.321	.432	-.069	.561*	-.219	1	.092	.171	-.058	.191	-.120	.171	.160	-.107	.148	.323	.528	-.175	.235	.088
	Sig. (2-tailed)	.069	.556	.487	1.000	.285	.141	.824	.046	.472	.	.764	.577	.851	.531	.697	.576	.602	.728	.630	.282	.064	.566	.440	.775
D	Pearson Correlation	.282	.128	.474	.207	-.388	.227	.386	-.290	-.041	.092	1	.324	.267	-.340	.442	.243	.243	.384	-.242	.033	.069	-.266	.256	-.013
	Sig. (2-tailed)	.351	.676	.101	.498	.190	.457	.193	.337	.895	.764	.	.281	.378	.255	.130	.423	.425	.196	.426	.915	.823	.379	.398	.968
G	Pearson Correlation	.227	.371	.366	-.509	-.063	.744**	.174	.448	.673*	.171	.324	1	.788**	.594*	.510	.833**	-.105	.596*	.327	.645*	.754**	.581	.589	.554
	Sig. (2-tailed)	.455	.213	.219	.076	.837	.004	.569	.125	.012	.577	.281	.	.001	.032	.075	.000	.733	.032	.276	.017	.003	.037	.034	.049
F	Pearson Correlation	.413	.104	.489	-.645*	.000	.436	.040	.203	.709**	-.058	.267	.788**	1	.387	.656*	.724**	-.215	.617*	.085	.532	.609*	.439	.497	.457
	Sig. (2-tailed)	.161	.735	.090	.017	1.000	.136	.898	.507	.007	.851	.378	.001	.	.192	.015	.005	.480	.025	.782	.061	.022	.133	.084	.116

		Age	Sex	Edu	Org	Pos	C	J	B	E	A	D	G	F	H	K	I	N	M	L	P	O	Q	R	S
H	Pearson Correlation	-.115	.106	.008	-.642*	-.055	.632*	-.101	.553	.545	.191	-.340	.594*	.387	1	.000	.583	-.482	.083	.479	.600*	.680*	.697**	.017	.175
	Sig. (2-tailed)	.709	.730	.980	.018	.858	.024	.743	.050	.054	.531	.255	.052	.192	.	1.000	.036	.095	.789	.098	.030	.011	.008	.955	.568
K	Pearson Correlation	.621*	.431	.886**	-.200	-.192	.419	.041	.084	.446	-.120	.442	.510	.656*	.000	1	.443	.255	.830**	-.133	.331	.263	-.070	.655*	.526
	Sig. (2-tailed)	.025	.142	.000	.511	.530	.154	.894	.785	.127	.697	.130	.075	.015	1.000	.	.130	.401	.000	.666	.270	.386	.820	.015	.065
I	Pearson Correlation	.245	.253	.381	.701**	-.162	.767**	-.319	.357	.775**	.171	.243	.833**	.724**	.583*	.443	1	-.360	.440	-.123	.354	.718**	.395	.398	.216
	Sig. (2-tailed)	.420	.404	.199	.008	.597	.002	.288	.231	.002	.576	.423	.000	.005	.036	.130	.	.227	.132	.689	.236	.006	.182	.178	.478
N	Pearson Correlation	-.141	.451	.139	.774	.300	-.219	.284	.127	-.514	.160	.243	-.105	-.215	-.482	.255	-.360	1	.333	.103	-.081	-.119	-.381	.475	.397
	Sig. (2-tailed)	.646	.122	.651	.002	.319	.472	.347	.680	.072	.602	.425	.733	.480	.095	.401	.227	.	.267	.738	.792	.699	.199	.101	.180
M	Pearson Correlation	.478	.585*	.700**	-.060	.046	.466	.194	.343	.421	-.107	.384	.596*	.617*	.083	.830**	.440	.333	1	.033	.420	.253	.197	.801**	.676*
	Sig. (2-tailed)	.099	.036	.008	.846	.881	.109	.524	.251	.151	.728	.196	.032	.025	.789	.000	.132	.267	.	.914	.153	.404	.519	.001	.011
L	Pearson Correlation	-.074	.113	-.138	.083	.268	.107	.577*	.295	-.130	.148	-.242	.327	.085	.479	-.133	-.123	.103	.033	1	.676*	.210	.665*	.156	.535
	Sig. (2-tailed)	.810	.714	.652	.788	.377	.727	.039	.327	.673	.630	.426	.276	.782	.098	.666	.689	.738	.914	.	.011	.491	.015	.611	.060
P	Pearson Correlation	.173	-.077	.214	-.309	-.009	.626*	.484	.555*	.243	.323	.033	.645*	.532	.600*	.331	.354	-.081	.420	.676*	1	.543	.520	.475	.664*
	Sig. (2-tailed)	.573	.803	.483	.304	.975	.022	.094	.049	.425	.282	.915	.017	.061	.030	.270	.236	.792	.153	.011	.	.055	.068	.101	.013
O	Pearson Correlation	-.295	.061	.086	-.590*	-.232	.654*	-.088	.665*	.501	.528	.069	.754**	.609*	.680*	.263	.718**	-.119	.253	.210	.543	1	.285	.397	.304
	Sig. (2-tailed)	.329	.843	.780	.034	.446	.015	.774	.013	.081	.064	.823	.003	.027	.011	.386	.006	.699	.404	.491	.055	.	.345	.179	.313
Q	Pearson Correlation	.193	.243	-.029	-.392	.359	.272	.170	.230	.436	-.175	-.266	.581*	.439	.697**	-.070	.395	-.381	.197	.665*	.520	.285	1	.120	.388
	Sig. (2-tailed)	.528	.423	.926	.185	.229	.369	.579	.449	.136	.566	.379	.037	.133	.008	.820	.182	.199	.519	.015	.068	.345	.	.697	.190
R	Pearson Correlation	.282	.445	.478	.000	.093	.436	.141	.511	.206	.235	.256	.589*	.497	.017	.655*	.398	.475	.801**	.156	.475	.397	.120	1	.880**
	Sig. (2-tailed)	.351	.127	.098	1.000	.761	.137	.647	.074	.499	.440	.398	.034	.084	.955	.015	.178	.101	.001	.611	.101	.179	.697	.	.000
S	Pearson Correlation	.334	.378	.365	.000	.286	.321	.334	.480	.154	.088	-.013	.554*	.457	.175	.526	.216	.397	.676*	.535	.664*	.304	.388	.880**	1
	Sig. (2-tailed)	.265	.203	.220	1.000	.343	.284	.264	.097	.615	.775	.968	.049	.116	.568	.065	.478	.180	.011	.060	.015	.313	.190	.000	.

Note:

Number of respondents (N) = 13

** (Yellow): Correlation is significant at the 0.01 level (2-tailed). ; * (Green): Correlation is significant at the 0.05 level (2-tailed); (Grey) Correlation is significant at the 0.10 level (2-tailed).

A = common shared goals and objectives in managing resources; B = formal institutions; C = clear defined management boundaries; D = Network; E = consistent rules and regulations; F = enforcement; G = partnership; H = conflict resolution mechanisms; I = leadership; J = informal institutions and K = nested enterprises. L = participation in decision making; M = equity and fairness in resource allocations; and N = social justice; O = incentives and benefits sharing; P =alternative income; Q = cost of management; R = environmental changes and S = resource changes; Age = age of respondent; Sex = male/female; edu = education level; org = government officials (GEG), Scientists (GES) and NGO workers (GEN). Pos = position in organisations (formal leader; informal leader, individual/scientists, members of group, and technical staffs)

Appendix I. Government perspectives on their role and other parties

Government's perspectives	Roles of parties				
	Government role	NGO role	Private role	Scientist role	Community role
GEG1	- Has a function of 'pembinaan' – to teach and encourage communities - To facilitate programs - Empower the communities. This will help the communities to be independent at the end this will help to improve development as government has limited budget. - Provide stimulants (trigger factors)	- Has a function to develop a bridge between communities and government. - Has more 'free voice' and can be limited in expressing their ideas, so NGO has a control function. - NGOs can also express the voice of communities as they work closely with communities (but it can be politicized by other interests) - Can be a data providers	- Should have more roles in coastal management because they are the implemented agents in the field. - Laws and regulations should be enforced to them - Has roles in creating job opportunities - Provide direct investments for regional economics.	- Should provide reliable data and information as their works are used by stakeholders as their references. - Has role to do scientific inquiries and analyses as executive does not do think about theoretical in detail.	- Where the stimulants are given in order to encourage them in implementing the government programs. In doing so, it can increase 'the sense of belonging' to the programs. - Community should be involved in program implementation because it can reduce the costs of development.
GEG2	- Prepare the policies and programs in marine and coastal development - To facilitate the financial support for coastal	- To criticize government policies and programs - To share their experiences and	- As a target to be socialized about government plans. - Provide	- To provide justifications in supporting policy formulation. - To provide advice in	- As a recipient of the government programs - Provide local/basic support for ICM

Government's perspectives	Roles of parties				
-	Government role	NGO role	Private role	Scientist role	Community role
GEG3	- Provide and facilitate development programs in particular providing incentive for alternative livelihood programs.	- To work closely with the community - To criticize the government performance	- As an agent for regional economic development - Provide jobs and direct benefits to communities.	- Provide recommendations in policy and program formulations - As governor advisors - Provide technical support to communities	- As targets for government programs - To implement the programs - To protect the environment
GEG4	- To enforce laws and regulations in coastal management, however it is difficult as many parties are involved. - Many interests from sectors make the enforcement is difficult.	- As a partner of government in particular work directly with the communities - Has a freedom to express their ideas.	- To provide economic benefits and agents of development - In many cases, have been a major problem of environment degradation - Should follow the rules and regulations	- Are used as a independent agent in justifying issues and their solutions - As member of EIA committee. - Provide scientific recommendation and justification in policy formulation	- As a major actor in program implementation - Should get the benefits from investments such as jobs and direct supports in village

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Appendix J. Scientist's perspectives on their role and other parties

Scientist's perspectives	Roles of parties				
	Government role	*NGO role*	*Private role*	*Scientist role*	*Community role*
GES1	- In reality the roles of government are based on required orders from top executive leaders and national government level.	- Many NGOs perform based on 'sponsorship' (policies of agencies that give the funds)	- The roles of private are mostly different based on what profits that private can maximize	- Provide advices to governor in coastal management - Can contribute as 'think tank of government' based on scientific standards	- In many cases, communities want to participate actively in conserving their resource and environment, however level of education and economic has affected their actual actions.
GES2	- Government should perform as a facilitator in coastal management. To some extent, government should act as 'top-down' in order to bring parties together.	- NGOs can perform as a facilitator in particular to make 'a bridge' between government and community.	- As a partner of government and community.	- Scientists have to produce innovative researches that should be implemented to communities.	- Communities are the recipients of new innovations that are produced by scientists. Communities should be encouraged in the 'bottom – up' planning and management.
GES3	- Government has roles as mediator, facilitator and initiator. - Government has the authority to produce rules and regulations (?)	- NGOs can perform as mediator and initiator. However, NGO has a function to control government performance.	- Private sectors are field actors. In doing so, private sectors are more to profit oriented; therefore, their roles are for	- Scientists have functioned to analyze scientific data and supply to users. To critically access and examine the law	- Has a control function - As basis of data supplier - As a major actor in coastal management

Scientist's perspectives	Roles of parties				
	Government role	NGO role	Private role	Scientist role	Community role
GES4	- Should overtake ICM efforts that have been done by international agencies - Should provide financial support to communities in coastal management	- Work together with communities and give direct assistances	- Should be partner of communities but in reality has been a major agent that causes conflict with the local communities.	- Give a technical assistance to communities in coastal management - Provide a guideline in data collection	- As a major actor in implementing stages.

Appendix K. NGO perspectives on NGO role and other parties

NGO's perspectives	Roles of parties				
	Government role	NGO role	Private role	Scientist role	Community role
GEN1	- Have the authority to govern based on law mandates. In this sense, the government should be responsible - As a facilitator and catalyst agent - Role of executive which means has a function in implementation stage with certain rules.	- Has a role for community development and advocacy - The function of NGO is greater when government is not functioning well - Community empowerment and capacity building - Has a control function	- As a partner of government in economic development in particular for natural resource exploitation - Should ensure the benefits of their activities go to local people - Conduct CSR together with the NGO	- Provide recommendations in policy process	- Right and tenure holders - Should be the main actors in managing their own resources - Get the shared benefits from private - Get support from other parties with clear and fair rules.
GEN2	- As a main planner	- Has a control function in order to balance the interests of many sectors in particular to represent the interest of community.	- To generate shared economic profits, not only for business purposes.	- Should work in scientific corridors to provide 'fair' and 'honest' information to all parties.	- Should be the main actors in managing their resources. - The other parties should empower them so they can think about themselves.

NGO's perspectives	Roles of parties				
	Government role	**NGO role**	**Private role**	**Scientist role**	**Community role**
GEN3	- Should make sure that initiatives introducing by international agencies and other parties are maintained by government. Government should accompany the process after the project termination.	- has a control function in order to balance the interests of many sectors in particular to represent the needs and interests of communities	- To generate shared economic profits, not only for business purposes but also the welfare of communities	- Should be free from political interests in providing information - Should be an expert that can give 'fair' recommendation	- Should ensure the sustainability of the resources - Has the power to enforce the rules in their areas - Should be the main actors in managing their resources
GEN4	- It seems that the government only makes regulations and never accompany for the implementation stages. - Governments have the roles to be a coordinator in promoting collaborative management while the mechanisms of the collaborations should be made together with all parties.	- Has a control function - Provides inputs in coastal management based on field experiences. - Advocacy - Capacity building through training centers.	- Is important in generating economic benefits however, it should be selective in accepting private investments. - Private should share their benefits to local communities by providing 'grants' for livelihoods, and other basic services such as education and empowerment programs.	- As an independent agent that can provide scientific information. In some cases, scientific information is used to justify private interests.	- Should be a major agent in all stages of development (planning, implementing, monitoring and evaluation).

BIOGRAPHY

Bernadetta Puspita Devi graduated from Sam Ratulangi University, Indonesia in 1994 with bachelor degrees in marine science, faculty of fisheries. She involved in Marine Resource Evaluation and Planning Project (MREP) as a program officer in 1994. From 1997 - 2003, she was accepted as a government officer in Regional Planning and Development Office of North Sulawesi. During her career, she was pointed to become a project manager in several projects including Marine Coastal Resource Management Project (MCRMP – funded by ADB) in 2002, Integrated Irrigation Supporting Program (IISP – funded by ADB) in 2001, supporting programs for regional development (Provincial Budget) in 1999-2000. She was appointed as well as the counterpart person for international project in North Sulawesi such as CRMP (USAID) and InteCoReef (JICA).

During 2004-2005, she went to Australian National University (ANU) to pursue her postgraduate programs in Graduate Diploma of Environmental Management and Development (GradDip.EMD) and Master of EMD. Since come back from studying abroad, she was in-charged as the head of natural resources, irrigation and environmental management section, in Regional Planning and Development Office. Because of her position, she was members of several provincial committees (EIA committee, ICM board, etc) and also a coordinator for the development of strategic plan for less developed region in North Sulawesi. Based on her experiences, she felt that social –ecological interactions have become her new interests to support her tasks in the future, therefore, she decided to have further study in MAIDS, Chulalongkorn University.