

## Stakeholder Analysis of Mangrove Management in Tangerang Coastal District, Banten, Indonesia

**ABSTRACT:** Mangrove ecosystems have the important ecological, economic, and social functions that need consideration in coastal development. Mangrove forests provide essential functions and services to coastal populations, such as protection of the coastal zone and a variety of timber and non-timber forest products. However, mangroves in Tangerang coastal district, Banten, Indonesia are being degraded by human activities brought about by a range of stakeholders. The complexity of stakeholders creates problems through various government departments having overlapping jurisdictions. This study aimed to develop strategies to increase the role of stakeholders in the management of mangrove ecosystems in Tangerang Regency. Stakeholders were identified from interviews obtained through a snowball sampling method. In the coastal district of Tangerang, there are 12 different types of stakeholders involved in mangrove management from government to local people. Each of these stakeholders has an interest and influence in mangrove management. Lack of coordination among stakeholders often results in the variety of management activities. The study recommends the strategies to increase the role of stakeholders through improved coordination, information, and collaboration among stakeholders.

**KEY WORD:** Stakeholder, management, mangrove, Tangerang coastal district, government, local people, coordination, information, and collaboration.

**RESUME:** "Analisis Pemangku Kepentingan tentang Pengelolaan Hutan Bakau di Daerah Pesisir Tangerang, Banten, Indonesia". Ekosistem hutan bakau memiliki fungsi penting secara ekologis, ekonomis, dan sosial yang perlu dipertimbangkan dalam pembangunan daerah pesisir. Hutan bakau berfungsi dan melayani secara esensial bagi masyarakat pesisir, seperti perlindungan wilayah pantai serta variasi produk hutan timber dan bukan timber. Bagaimanapun, hutan bakau di daerah pesisir Tangerang mengalami kerusakan oleh aktivitas manusia. Banyaknya jumlah pemangku kepentingan yang berkepentingan dengan hutan bakau sering menciptakan masalah melalui lembaga-lembaga pemerintah dan mengakibatkan tumpang-tindih kewenangan. Penelitian ini bertujuan mengembangkan strategi untuk meningkatkan peran para pemangku kepentingan dalam pengelolaan ekosistem hutan bakau di Kabupaten Tangerang. Para pemangku kepentingan diidentifikasi dari wawancara yang diperoleh melalui sebuah metode sampel efek bola salju. Di daerah pesisir Tangerang, terdapat 12 pihak pemangku kepentingan berbeda-beda, yang terlibat dalam pengelolaan hutan bakau mulai dari pemerintah hingga masyarakat setempat. Masing-masing pihak memiliki kepentingan dan pengaruh dalam pengelolaan hutan bakau. Kurangnya koordinasi antar pemangku kepentingan sering menyebabkan keragaman dalam kegiatan pengelolaan. Penelitian ini merekomendasikan strategi untuk meningkatkan peran para pemangku kepentingan melalui peningkatan koordinasi, informasi, dan kolaborasi diantara mereka.

**KATA KUNCI:** Pemangku kepentingan, pengelolaan, hutan bakau, daerah pesisir Tangerang, pemerintah, masyarakat setempat, koordinasi, informasi, dan kolaborasi.

### INTRODUCTION

Mangroves are the only trees that are capable of thriving in salt water and form unique intertidal forests at the edge of land and sea. Mangroves, defined as "tree, shrub, palm, or ground fern, generally exceeding one half meter in height, and

which normally grow above mean sea level in the intertidal zone of marine coastal environments, or estuarine margins" (Duke, 2006), constitute one of the most threatened ecosystems (Farnsworth & Ellison, 1997; Valiela, Bowen & York, 2001; Alongi, 2002; and Duke *et al.*, 2007).

*About the Author:* Muzani, M.Si. is a Doctoral Candidate at the IPB (Institut Pertanian Bogor or Bogor Agricultural University), Jalan Lingkar Akademik, Kampus IPB Darmaga, Bogor, West Java, Indonesia. For academic interests, he can be contacted via e-mail at: [muzaniunj@yahoo.co.id](mailto:muzaniunj@yahoo.co.id)

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Mangrove ecosystems provide habitats for numerous animals and micro-organisms (Cannicci *et al.*, 2008; and Nagelkerken *et al.*, 2008), that live in close interaction with the mangrove vegetation (Bouillon *et al.*, 2004; and Kristensen *et al.*, 2008). Mangrove forests provide essential functions and services to coastal populations, such as *protection of the coastal zone* (Badola & Hussain, 2005; Dahdouh-Guebas *et al.*, 2005b; Olwig *et al.*, 2007; Barbier *et al.*, 2008; and Kaplan, Renaud & Lüchters, 2009) and *a variety of timber and non-timber forest products* (Bandaranayake, 2002; and Walters *et al.*, 2008).

According to the latest information, the mangrove vegetated area in Indonesia is amounted to 3.2 million hectares (Hartini *et al.*, 2009). On the other hand, Ministry of Forestry in 2007 reported that potential area to be planted by mangrove, including mangrove vegetated area, is estimated at 7.8 million hectares (30.7% in good condition, 27.4% moderate-destroyed, and 41.9% heavy-destroyed). The destroyed of them are caused by several kind of causes, mainly by conversion to the other uses.

Mangrove ecosystems that exist along the coast of Tangerang, Banten, Indonesia are threatened with destruction. Approximately 60-70 percent of the existing mangrove forests along the northern coast of Tangerang are badly damaged. The destruction of mangrove forests is caused by the conversion of land to farmland (4,740.79 ha), the exploitation of the many sandy beaches in coastal areas of Tangerang regency, and the rise of a number of projects in the construction of the shoreline. This situation has resulted unstoppable abrasion and seawater intrusion that destroyed most of the farmers efforts.

The destruction of mangrove forests in the coastal areas of Tangerang is compounded by a lack of oversight and the increased needs of the community in the use of timber and forest. Public perception of the existence of mangrove forests is still low and aspects of land ownership are the social factor that adds to the complexity of the management of mangrove forests in the region.

As a result of unclear land ownership, there is conflict between stakeholders. Horizontal conflict occurs between people and businesses, and vertical conflicts among local governments. A further issue is the lack of enforcement when land is used in ways that are not in accordance with the layout plan that has been prepared. Policy makers do not consider the value and function of mangrove forest and the factors causing mangrove destruction in Tangerang. Dissemination of mangrove forest conservation policy has been poor, so the public is not aware of any such policy.

Government institutions in Tangerang do not function adequately and need enhanced capacity. Until now, there is no institution that has the authority and competency to manage and conserve mangrove forests in an integrated Tangerang. This is causing an overlap of activities at field level and a lack of clarity over jurisdiction when problems occur.

Data from previous studies of institutional issues of mangrove forests in Tangerang are as follows: (1) There is no institution that manages mangrove in an integrated way; (2) Economic and social institutions have a role in improving the welfare of the community; (3) Management has not been supported by data and information about mangrove forests; (4) There is no policy to encourage the use of land in an optimal and sustainable way with regard to the preservation of the mangrove ecosystem; (5) Institutions have a narrow remit and perspective towards management; and (6) The role of government in resolving conflicts between agencies, employers, and the community has not been optimal.

Regulation is a factor affecting the behavior of stakeholders utilising mangrove forests. Performance management of mangrove forest is the output of regulation. There are some rules related directly and indirectly to the management of mangrove forests. There is a regulatory hierarchy ranging from statutory law to village regulations, which are based on the allocations of mangrove use to different stakeholders by the mangrove forest management authority, the determination of

the substance of the settings and conversion of mangrove forests mangrove, forest utilization mangrove settings, rehabilitation of mangrove forest, and mangrove forest protection and security.

Mangrove forest management issues in Tangerang include: (1) the conversion of forest land into ponds, rice fields, homes, and gardens by the local community; (2) more dominant economic considerations resulting in a change of land use; (3) the lack of government support in terms of law enforcement; (4) a lack of appreciation of the importance and function of mangrove forests; and (5) the low level of income of communities around the mangrove forest.

In mangrove management, stakeholders form a very important institution. Institutions are a system of organization and control over resources and simultaneously establish relationships. Therefore, institutional efforts to optimize the management of mangroves should be pursued as an alternative to enable the preservation of the mangrove ecosystem. Given the importance of mangrove forests for ecological functions and benefits, and for the well-being of coastal communities, it is necessary to ensure sustainability for the integrated management of mangrove forests.

## PROBLEM FORMULATION, RESEARCH QUESTION, AND METHODS

There are many problems that stakeholders face with mangrove management in Tangerang, Banten, Indonesia. Many stakeholders are dependent on the roles and services of the mangrove ecosystem. If effective management does not materialize then, of course, the problem of overlapping authority among stakeholders cannot be avoided. To overcome these problems, we need to strengthen the role of stakeholders involved in the management of mangroves in Tangerang.

Based on the previous description, a problem can be formulated as follows: "What is the strategy of strengthening the role of stakeholders in order to achieve integrated mangrove management?" The problem is, then, translated into the

following research questions: (1) Who are the stakeholders involved in the management of mangroves in Tangerang?; (2) How can strategies to enhance the role of stakeholders in the management of mangroves in Tangerang be classified?; and (3) How can optimization be implemented?

The research aims: (1) to classify and determine the role of stakeholders in the management of mangrove ecosystems in order to avoid overlapping of authority; and (2) to analyze the strategy of strengthening the role of key stakeholders in the management of mangroves in Tangerang.

Application of the research is designed to: (1) enrich the concept of coastal resource management, particularly in the institutional aspects of mangrove resources; and (2) the results of this study of the role of stakeholder engagement strategy formulation is expected to be used as input in Tangerang coastal development, as well as other coastal areas in Indonesia.

This study focused on identifying stakeholders and formulating alternative strategies for strengthening the role of stakeholders in the management of coastal mangroves in Tangerang. Activities were carried out on the northern coast of Tangerang regency from March to July 2013. The data were collected by in-depth interview and discussions with key informants. Besides this, participant observation was used to determine the activities of coastal communities in Tangerang regency.

The results obtained by the two techniques of data collection were, then, analyzed descriptively. The focus of the research was stakeholders associated with mangrove management in Tangerang regency. Stakeholders were identified with a snowball sampling method. Stages for the identification of stakeholders, according to M.S. Reed *et al.* (2009), are as follows:

*First, List of Stakeholders:* data sources that can be used to make the list is the result of observations, information from a variety of community, and survey results.

*Second, Interests:* interests which can be identified through what is expected of

them and what can be gained by stakeholders.

*Third, Success or Failure Stakeholder:* influence the success or failure of the activities were measured using the following parameters in *high* (if stakeholders have the ability to veto a decision) and *low* (if stakeholders do not have the ability to affect the achievement of objectives).

*Fourth, Participation Opportunities:* views of the authority of each organization involved in the management of resources.

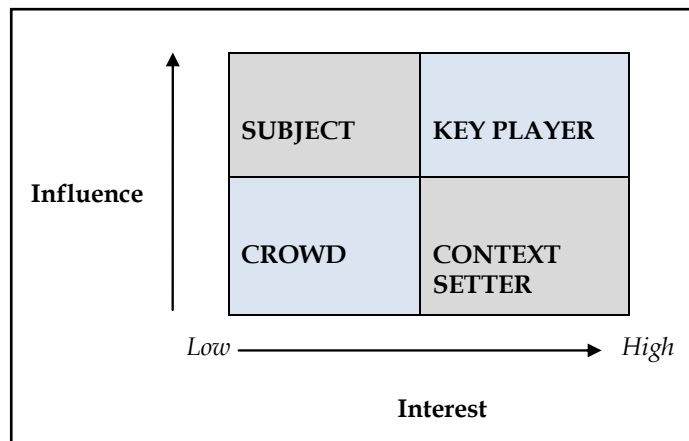
Institutional core functions of task analysis were conducted to explore stakeholders' perceptions of how well government organizations exercise their rights and responsibilities based on their tasks and to identify overlapping duties in the management aspects of the mangrove forest. Stakeholder analysis of the basic tasks using the 4R's, namely: Right, Responsibility, Reward, and Relationship (Bryson, 2003).

*About the Stakeholder Categorization.* Further, stakeholders were classified based on their position in the management of mangroves. The two criteria used were influence and interest and stakeholders could be grouped into the following four categories: (1) Subject stakeholders who have a high level of influence and low interest; (2) Key players are stakeholders that have a high interest rate and high influence on a phenomenon; (3) Context setting stakeholders have low influence and high interest; and (4) the Crowd stakeholders that have low interest and low leverage.

It is important to determine which stakeholders can work together. To see a picture of the position of stakeholders in the management of coastal mangrove in Tangerang stakeholder matrix can be used in figure 1.

## RESULTS AND DISCUSSION

*First, stakeholders involved in the management of mangroves in Tangerang.* According to M. Asikin (2001), stakeholders



**Figure 1:**  
Matrix and Influence Stakeholders and Their Importance  
(Source: C. Eden & F. Ackermann, 1998:122)

are parties whose interests are affected by both positive and negative impacts caused by a policy. The impact of those affected can be divided into three parts, namely: primary, key stakeholders, and stakeholder support. Meanwhile, R.K. Mitchell, B.R. Agle & D.J. Wood (1997) suggested that a stakeholder group of individuals who can affect and are affected by the achievement of a specific goal. Stakeholder analysis is the collection of information from individuals or groups of people influential in deciding, classifying information and systems, and assessing the likelihood of conflict between interest groups.

Based on the results of stakeholder identification obtained from interviews with a snowball sampling method there are 12 stakeholders in Tangerang regency, Banten, Indonesia concerned with the management of mangrove forests. Stakeholders involved in the management of mangroves in Tangerang district can be seen in table 1.

Based on the stakeholder list, mangrove management in Tangerang regency, Banten, Indonesia involves various stakeholders ranging from government to local communities. The diversity of stakeholders involved in the management of mangrove forests with different interests will bring consequences to the growing complexity of mangrove management; therefore, requiring an institution to regulate the



**Table 1:**  
Stakeholder Management of Mangroves in Tangerang, Banten, Indonesia

No	Stakeholders
1	Department of Fisheries and Marine
2	Department of Environment
3	Perum Perhutani ( <i>Perusahaan Umum Perhutanan Indonesia</i> or Public Enterprise of Indonesian Forestry)
4	Cultivators
5	University
6	Head of Village
7	BAPPEDA ( <i>Badan Perencanaan dan Pembangunan Daerah</i> or Department for Regional Planning and Development)
8	Department of Public Works
9	NGOs (Non-Governmental Organizations)
10	DPRD <i>Kabupaten</i> (Legislative Assembly at Regional Level) Tangerang
12	Local Community

Sources: Research Analysis (2013).

behavior of mangrove stakeholders in order to jointly realize the mangrove management in accordance with the objectives set by regulations and regulations.

**Second, the principal tasks of stakeholders.** Analysis of the basic tasks was used to identify the extent of local government authority as well as the extent to which various interests and influences impact on the management of mangroves in Tangerang, Banten, Indonesia.

Main duties will also determine the pattern of inter-organizational coordination as it pertains to the rights and responsibilities of the organization and form of involvement in the activities of an organization. According to N. Uphoff (1986), an agency's performance can be measured by how the agency can complete its main task. The main tasks in Tangerang district stakeholders can be seen in table 2.

**Third, the importance and influence of stakeholders.** There are 12 institutions involved in the management of mangroves in the Tangerang district, Banten, Indonesia: (1) Department of Fisheries and Marine Resources; (2) Department of Environment; (3) *Perum Perhutani* or Public Enterprise of Indonesian Forestry; (4) *Penggarap* or Workers; (5) Universities; (6) Village Chief; (7) BAPPEDA or Department for Regional Planning and Development; (8) Public Works Department; (9) NGOs or Non-Governmental Organizations; (10)

DPRD *Kabupaten* Tangerang or Legislative Assembly at Regional Level in Tangerang; (11) Local Communities; and (12) Community Leaders.

In general, stakeholder management consists of mangrove and non-governmental organizations and local governments. Stakeholders may include organizations or social groups and local communities. Based on importance and influence, M.S. Reed *et al.* (2009) classified stakeholders into 4 sections, namely: subjects' stakeholders, stakeholders key players, stakeholders, and stakeholder context setter crowd.

According to the level of interest and the ability of stakeholders to influence the success or failure of an activity, in this study, the influence of interests and stakeholders are identified based on the authority of their main task in making decisions related to the management of mangrove forests. Information about the importance of stakeholder involvement and the level of influence in Tangerang district, Banten, Indonesia is presented in table 3.

Classification based on the level of stakeholder involvement and influence in the interests of mangrove management was done in the district of Tangerang, Banten, Indonesia. Stakeholders based on the level of interest and influence were categorized into 4 groups of stakeholders based on the influence and importance matrix, included in the quadrant to determine the subject

**Table 2:**  
The Principal Tasks of Stakeholders

No	Stakeholders	Main Tasks
1	Department of Fisheries and Marine	(1) Perform technical policy in keeping with the scope of their duties; and (2) Responsible management of aquaculture land use, licensing.
2	Department of Environment	Coordination of environmental control programs
3	Perum Perhutani ( <i>Perusahaan Umum Perhutanan Indonesia</i> or Public Enterprise of Indonesian Forestry)	Supervision of forest management
4	Cultivators	To work the land
5	University	Implementation of the College's <i>Tridarma</i> , namely: teaching, research, and community service.
6	Head of Village	Provide care, guidance, and supervision in the community, based on the PP ( <i>Peraturan Pemerintah</i> or Government Act) No.72 Year of 2005.
7	BAPPEDA ( <i>Badan Perencanaan dan Pembangunan Daerah</i> or Department for Regional Planning and Development)	(1) Cooperating agencies; and (2) Assist regional head within the regional administration in bid development planning, research, and development area.
8	Department of Public Works	(1) Implementing some authority in the Department of Public Works and of spatial planning; and (2) Provide guidance and supervision.
9	NGOs (Non-Governmental Organizations)	Empowering communities, education, and aspirations.
10	DPRD <i>Kabupaten</i> (Legislative Assembly at Regional Level) Tangerang	Implementing legislation, budgeting, and monitoring.
11	Local Community	(1) Actors/subjects in mangrove ecosystem management activities; and (2) Provide input to the government for the development of mangrove ecosystem management

Sources: Research Analysis (2013)

(*subject*), a key player (*key players*), liaison (*context setter*), and the audience (*crowd*). This was done to determine which stakeholders can cooperate and stakeholders who are at risk for failure events. Quadrant matrix stakeholder positions can be seen in figure 2.

Based on the matrix level of interest and level of influence who finished quadrant A (*subjects*) are stakeholders in Tangerang regency, with a high interest rate and a low level of influence, that are Community Leaders and Local Communities. Special initiatives are required to protect their interests, because they are the parties that receive the greatest impact from an activity, but lack the power to influence change. Increased capacity and increased awareness of mangrove forests, as one of the life support systems, is one of the efforts that can be taken to involve stakeholders in the mangrove forest management activities in the district of Tangerang.

The B quadrant position (*key players*) in Tangerang consists of the Department

of Fisheries and Marine, Department of Environment, *Perhutani* (Indonesian Forestry), Cultivators, Department of Public Works, and Village Heads. This stakeholder group is the most critical because both interests and influence are high. B quadrant is occupied by many stakeholders as compared with quadrants A, C, and D. The number of those who act as *key players* have great potential in the management of mangroves, because of good cooperation needs to be done in order to mangrove management activities can achieve the expected performance.

Position of quadrant C (*context setter*) is stakeholders in Tangerang regency with a low interest rate and a high level of influence that includes BAPPEDA (*Badan Perencanaan dan Pembangunan Daerah* or Department for Regional Planning and Development) and DPRD *Kabupaten* (Legislative Assembly at Regional Level) Tangerang.

Quadrant D (*crowd*) in Tangerang is stakeholders that have a low interest rate

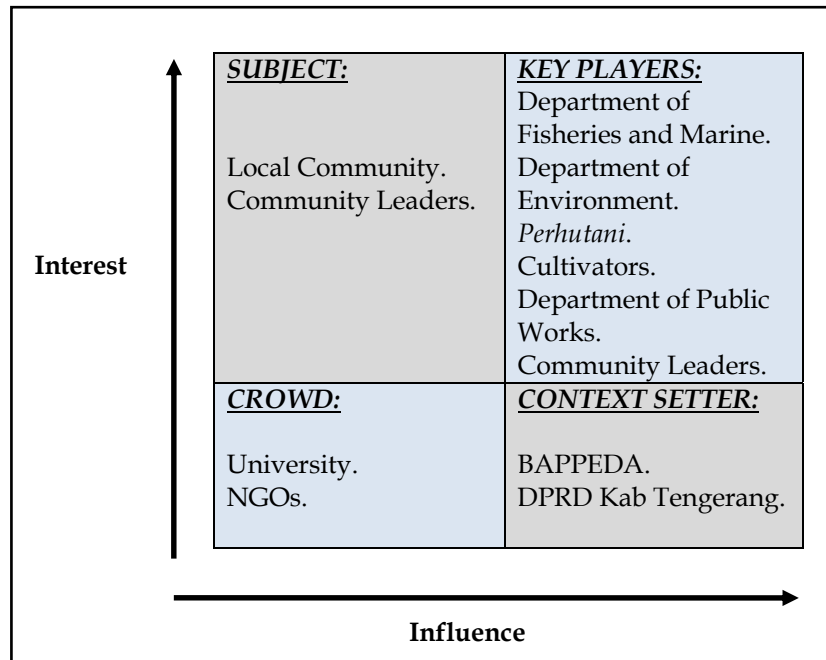
and a low level of influence such as Universities and NGOs (Non-Governmental Organizations). Stakeholders do not require intensive involvement in the achievement of activities but, where possible, monitoring and evaluation needs to be done periodically to determine their development interests.

**Fourth, involvement of stakeholders in the management strategy of mangrove.** Mangrove management and implementation is currently sub-optimal. J.M. Bryson (2003) argued that resource management is not optimal because of limitations in the role of stakeholders in determining policy.

Regarding the quadrant version stakeholders of M.S. Reed *et al.* (2009), influential stakeholders that determine policies contained in the management of key stakeholders and context setters comprises: the Department of Marine and Fisheries, Department of Environment, *Perhutani* (Indonesian Forestry), Cultivators, Department of Public Works, the Village Heads, BAPPEDA (*Badan Perencanaan dan Pembangunan Daerah* or Department for Regional Planning and Development), and DPRD *Kabupaten* (Legislative Assembly at Regional Level) Tangerang.

To optimize the role of stakeholders, that affect mangrove management policy, an engagement strategy is necessary that includes stakeholder participation and incorporates *key players* and *context setters* that can hinder or block the activity which impacts negatively on mangrove management activities in Tangerang. Participation is a process of stakeholders' involvement being able to influence and control policies that affect them.

Each stakeholder has a different level of involvement varies according to its



**Figure 2:**  
 Stakeholder Interests and Influence Matrix Based on the Main Tasks of Mangrove Management Organization in the District of Tangerang, Banten, Indonesia

weight. Weights in question are the degree (closeness) of stakeholders concerned with decision-making and the power of its influence on policy processes. The participation of stakeholders, who should be involved in the management of mangrove, can be seen in table 4.

Based on the above table the type of participation that can be done by key stakeholders in aspects of stabilization and the establishment, development, and management of mangrove area monitoring is to provide information, coordination, collaboration, and empowerment.

**About the optimization in providing information.** To optimize the role of stakeholders who will be able to affect the mangrove management policy as well as to impede or block the activities that have a negative impact on mangrove management activities should be conducted in Tangerang, and include *key players* and *context setters*.

Information and data is very important in carrying out mangrove management. Optimization has a role in providing information to key stakeholders about

**Table 3:**  
Stakeholder Interests and Influence in the Management of Mangroves in Tangerang, Banten, Indonesia

Stakeholder	The Involvement Interest	Influence
Department of Fisheries and Marine	<i>High.</i> Coordinator managers in the region	<i>High.</i> Policy makers
Department of Environment	<i>Low.</i> Not receive impact	<i>High.</i> Coordination the environmental monitoring
Perum Perhutani ( <i>Perusahaan Umum Perhutanan Indonesia</i> or Public Enterprise of Indonesian Forestry)	<i>High.</i> Coordinator manager	<i>High.</i> Policy makers
Cultivators	<i>High.</i> Receive benefits of mangrove	<i>High.</i> Not have access to policy
University	<i>Low.</i> Not receive impact	<i>Low.</i> Cannot influence decisions
Head of Village	<i>High.</i> As a coach mangrove communities	<i>High.</i> Government coordination and control of territory
BAPPEDA ( <i>Badan Perencanaan dan Pembangunan Daerah</i> or Department for Regional Planning and Development)	<i>Low.</i> Not be affected	<i>High.</i> Control implementation planning
Department of Public Works	<i>High.</i> Maintenance of infrastructure such as roads	<i>High.</i> Coordination of spatial planning
NGOs (Non-Governmental Organizations)	<i>Low.</i> Not be affected	<i>Low.</i> Can not affect the decision
DPRD <i>Kabupaten</i> (Legislative Assembly at Regional Level) Tangerang	<i>Low.</i> Not be affected	<i>High.</i> Support process local level decision-making
Local Communities	<i>High.</i> Receive the benefits of mangrove	<i>Low.</i> Do not have access to the policy
Community Leaders	<i>High.</i> Receive the benefits of mangrove	<i>Low.</i> Do not have access to the policy

Sources: Research Analysis (2013)

the existence of mangroves. During these organizations, the government is better informed than the internal external information. Stakeholders drawn from government tend to work in sectors and very rarely socialize with others. For example, there are differences in the data between the mangrove area used the DKP (*Departemen Kelautan dan Perikanan* or Department of Fisheries and Marine) in Tangerang regency with BLHD (*Badan Lingkungan Hidup Daerah* or Regional Environmental Body) Tangerang, may constitute evidence that the role of information exchange between government departments is poor.

Data sharing and working together is of critical importance. In addition, it is also important for the information needs of the local legislative bodies, i.e. DPRD *Kabupaten* (Legislative Assembly at Regional Level) Tangerang, that have a role in the approval of the conversion of mangrove areas so that the conversion of mangrove land can be controlled.

#### **About the optimization in coordinating.**

Further participation should be sought from *key players* through stakeholder coordination. Coordination means the two-way exchange of information between organizations to achieve goals more efficiently and effectively. Based on observations in the field, there are constraints in coordination between the Local Department of Education and Forestry Ministry Office UPT (*Unit Pelaksana Teknis* or Technical Implementation Unit), i.e. *Perhutani* (*Perhutanan Indonesia* or Indonesian Forestry), in mangrove management.

Departmental centric decision making leads to overlap between the Department of Fisheries and Marine in Tangerang with the Environment Agency and Unit Ministry of Forestry Tangerang (*Perhutani*). Each has a rare mangrove planting program. Overlapping programs indicate poor coordination between institutions involved in mangrove management in Tangerang.

Results from A. Sutrisno (2011)'s study found that policy coordination in forest



**Table 4:**

Matrix Mechanism Stakeholder Participation in Management Mangrove in Tangerang, Banten, Indonesia

Aspect	Participation Type		
	Information	Coordination	Collaboration
Determination and stabilization region	DKP. BLHD. <i>Perhutani.</i> <i>Dinas PU.</i> <i>Kades.</i>	DKP. BLHD. <i>Perhutani.</i> <i>Penggarap.</i> <i>Dinas PU.</i> <i>Kades.</i> DPRD Kabupaten Tangerang.	DKP. BLHD. <i>Perhutani.</i> <i>Penggarap.</i>
Management	DKP. <i>Perhutani.</i>	DKP. <i>Perhutani.</i> <i>Kades.</i>	University.
Development and supervision	<i>Kades.</i>	<i>Kades.</i>	DKP. <i>Perhutani.</i> <i>Kades.</i>

Sources: Research Analysis (2013)

**Notes:** DKP (*Departemen Kelautan dan Perikanan* or Department of Fisheries and Marine); BLHD (*Badan Lingkungan Hidup Daerah* or Regional Environmental Body); *Perhutani* (*Perhutanan Indonesia* or Indonesian Forestry); *Dinas PU* (*Pekerjaan Umum* or Department of Public Works); *Kades* (*Kepala Desa* or Village Head); *Penggarap* (Workers); and DPRD Kabupaten (Legislative Assembly at Regional Level) Tangerang.

management tend to use the vertical approach characterized by the highest levels of government organizations. This causes coordination failure between government departments as vertical coordination mechanisms tend to govern how the organization of centralized decision-making within an organization.

To optimize the management of mangrove coordination horizontal coordination is needed that coordinates the actions or activities between organizations. Horizontal coordination is chosen because of the ease of communication so that the time required to reach an agreement is more efficient. A working group needs to be established. The working group is a group of people who interact with each other together to achieve a particular goal.

**About the optimization in implementing collaboration.** The next step is to perform the role of collaboration and cooperation in the management of the mangrove. Collaboration in the management of mangrove is very important, because there are limited resources in each organization. Collaboration that occurs must include knowledge sharing, learning, and an agreement towards resolving a problem.

The government's role in collaboration is to synergize the activities of mangrove management in Tangerang.

To streamline stakeholder participation should be prioritized on the follow-up efforts are well established institutionalization. Governments need to develop institutions through two aspects:

*First*, preparation of the framework and laws providing for the rights, obligations, procedures, and mechanisms for stakeholder participation. This legal framework is necessary to give validity and political legitimacy for stakeholders on the one hand, and the limitations of rights, obligations, and their authority on the other. To ensure the effectiveness of legal provisions that need to be drawn up at the level of implementing regulations.

*Second*, preparation of procedures and mechanisms for participating as technical manuals and guides for both stakeholders and policy participation in the process. Covered in this technical guide is the criteria for granting a status for each of the relevant stakeholders for a specific policy substance which is in the process of policy making. Rights inherent in the status and authority of the stakeholders in accordance

with the restrictions provided by the laws and regulations that have been established. Stakeholders through capacity building and institutional strengthening efforts to increase their technical competence in accordance with their respective interests.

**About the strategy in an integrated mangrove.** In order to implement the strategy of sustainable mangrove forest management, the necessary support programs need to include all related agencies from the central to the village and other agencies. Development activities and infrastructure development is the authority of sectoral institutions. Often a variety of activities have been planned, but each one occurs independently. If these activities can be carried out jointly addressing problems that exist, there will be a synergistic cooperation. This requires good coordination at the site level, either on stage or in the planning stages of implementation in the field.

The integration of environmental management is a necessary condition for achieving environmental sustainability. This includes the integration between the center and regions and between regions. Efforts that are needed to realize this strategy include:

*First*, developing mechanisms of inter-agency cooperation and coordination of the institutional system that is transparent in the center and between regions. This mechanism must become the blueprint for management of mangrove forest resources and agreed together by all stakeholders and that is equipped with mechanisms for collaboration, and incentives and disincentives.

*Second*, set-up a cultivated area to avoid externalities that can interfere with the quality of the aquatic environment so that cultivation can be done sustainably. Further implementation of the commitment to build marine and coastal development program in accordance RTR (*Rencana Tata Ruang* or Planning for Space Order) and then providing support network infrastructure such as electricity, roads, and communications.

*Third*, increased stakeholder capacity

development, especially in the area of development, so that actors understand and perform tasks in accordance with applicable regulations with no conflicts with other parties.

*Fourth*, developing a single common mangrove management information systems related to all other sectors in all regions of Tangerang. The system is based on information technology which can be accessed by all agencies, either to obtain information or to provide information. Potential and condition of the waters can be identified quickly and accurately so as to improve the effectiveness of planning, implementing, and monitoring development activities in Tangerang, Banten, Indonesia.

## CONCLUSION

Condition of mangrove forests in Tangerang regency, Banten, Indonesia is now degraded. One obstacle in the management of the authority is overlapping institutional role in managing these ecosystems. Better stakeholder involvement is needed in the management of mangrove coastal areas in order to improve the lives of fishermen and other residents.

This study concluded that in the coastal district of Tangerang, at least 12 stakeholders are involved in mangrove management from government to local people. Each of these stakeholders has a different interest and influence in mangrove management. Lack of coordination between stakeholders is resulting in a variety of overlapping management activities. So that damage to the coastal environment can be overcome the Tangerang regency need to optimize the role of stakeholders who belong to the group of key players.

This study recommends strategies to enhance the role of stakeholders in the management of mangrove by engaging the participation of key stakeholders' players. This type of participation is expected to increase the role of coordination, information, and collaboration among stakeholders in the management of mangroves in the coastal district of Tangerang.

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(Source: [www.google.com](http://www.google.com), 17/10/2014)

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