LOCAL KNOWLEDGE AND FISHERY MANAGEMENT

This report aims to elaborate some local practices of fishery management in Indonesia, which are based on current local custom as well as local agreement used as the basis of fishery management. During its history, fishery management in Indonesia in fact began with the initiative from the local community's understanding (local knowledge; customary knowledge) and later was institutionalized using the customary law system. in the process of development, these local practices have changed dynamically in terms of cultural, social, economical aspects and related cases of bio-ecological changes of water ecosystem as the base of fishery activities as management subject. Using in-situ investigation approach, a critical reference towards the possibility of local institution adoption in formal fishery management is conducted. Through this, some entry points are identified, towards local institution-based fishery management according to Laws No 31/2004 about Fisheries, article 6 in particular.

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CONTENTS

ACKNOWLEDGMENT

We are deeply indebted to all of the local fisheries leaders in various fishery management units in Indonesia who have involved in several group discussions related to the contribution and role of local knowledge and wisdom in fishery management. Sharing of information, knowledge and experiences during the discussions have enriched our understanding of the importance of local knowledge in fishery management. We would also like to thank the secretariat of ICSF, Brussels and FAO-Aceh for giving us the opportunity to get involved in the discussions and also develop this report.

This report is intented to complete the understanding of and information on the numbers of local fishery management practices in Indonesia, especially related to the local knowledge and institution both in the form of customs as well as agreed forms of fishery management measures. Primary and secondary information is the main sources of this report, so further updated information should be considered in the future. We would like to express our sincere thanks also to Prof. John Kurien and Dr. Chandrika Sarma of ICSF, who have never got bored in their effort in assisting, giving comments on and improvement of this report.

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Authors

SUMMARY

1. Introduction

During its history, fishery management in Indonesia in fact began with the initiative from the local community's understanding (local knowledge; customary knowledge) and later was institutionalized using customary law system. Marine custom law practices such as Sasi in Maluku, Panglima Laot in Aceh or Awig-Awig in Bali and Nusa Tenggara Barat are few of the many more examples of fishery customary system. Even in Panglima Laot case, the regime has been able to last for more than 400 years throughout various governmental eras, from kingdom, Dutch colonialization, Indonesian pre-independency, Indonesian independency, New Oder, until now.

As time develops, these practices have been reduced by the governmental command and controlling regime, especially during 1966-1998. Not only was it experienced by fisheries in particular, but also it was becoming one of the centralistic state managements. The State had determined that the term 'village' was a must as the smallest entity of an area. In fact, however, in Aceh there is so called *Meunasah*, *Nagari* for West Sumatra, etc. As a consequence, the local community role was reduced, to become only an object of development rather than a subject. The reduction had made fishery management inefficient. The conflict among fishermen as well as the degradation of fishing resources is one of the problem resulting from the centralized fishery management The imbalance between the state's role and community's in fishery management has become an important debate which later underlies the collaboration among parties in fisheries (fisheries co-management and fisheries decentralization).

According to some references, fishery co-management initiation generally started from the lack of fishing resources as a consequence of open access regime. Later, it became the main factor of in-joint tragedy in fishery community (Hardin, 1957). The status and potency of fishery resources has become complex after human intervention due to demands, followed later by exploration and exploitation of fishing resources. Without management, exploitation tends to damage the fishing resources. Given this condition, a sustainable fishery shall be needed to repair its management system. Co-management system is an integrated system of right acknowledgement, partnership of entire fishery stakeholders, including the needs of accommodating the

system of knowledge in fishery management. Local knowledge/custom[1] has become a challenge in implementing fishery management system in Indonesia.

In the meantime, it can not be established that fisheries is a complex system and involves many parties, as Prof. Walters has stated: "*....most fisheries problems are complex and contain human as well as biological dimensions. Too frequently we see the consequences of trying to deal with complexity in a fragmentary or narrow way. Management plan based on the soundest of biological information fail when it is discovered that fishing pressure cannot be controlled because of unforeseen political or economic constraints. Economic policies fail when unforeseen biological limits are exceeded. In short, fisheries represent dynamic (time varying) systems with interacting components....*"(Walters, 1980 in Adrianto, 2007). Thereby, its management has to involve other stakeholders such as fishermen, government, non-governmental institutions, academicians, and other fishery stakeholders (traders, fish processing producer, etc), which is a normal thing. This background made the system to become a process of collecting the interests of the whole stakeholders. Later, the fishery management evolved into fisheriy governance.

Legally, National Act No 31/2004 on fisheries has stated clearly that its management has to be conducted using partnership principles as stated in Article 2 Rule No 31/2004 as follows: "fisheries management shall be conducted on the basis of benefit, fairness, evenness, integration, openness, efficiency and sustainable preservation". Further, fishery management has to consider local custom as stated in Article 6 Rule No 31/2004 on fisheries as follows: "fishery management for fishing and breeding shall consider the local custom practices as well as community involvement". Both phrases clearly state that fishery management has to be conducted based on fairness and partnership as well as local custom, as the base in the implementation of fisheries co-management in Indonesia.

Based on the description above, the frame of implementation management has already been available, but the implementation still needs a stronger political support, with ecosystem and sustainable management principles as the bases. This paper is written mainly to explore the knowledge of local custom as an inspiration for the formal fishery management in Indonesia through governmental institution tools, and resources users in a frame of fishery co-management. To reach its goal, this paper is prepared as follows. Chapter I consists of the urgency in understanding of effective fishery management, adopting local knowledge, co-management based. Chapter 2 presents a theoretical frame of local knowledge adoption in fishery management. Chapter 3 describes the fishery management

[1] According to Gadgil, Berkes and Folke (1993) in Berkes (1995), local/traditional knowledge is cumulative knowledge and *beliefs* inter generationally on community live in regards with nature and with themselves.

frame in Indonesia using local knowledge, presenting twelve types of management. Chapter 4 describes the frame of local knowledge adoption into up-to-date fishery management and its future opportunity. Chapter 5 presents some conclusion pointers from the adoption of local knowledge in fisheries management in Indonesia.

2. Theoretical Frame of Local Knowledge and Fishery Management

Custom is a social tradition, where its group uses it as a tool obtained by everybody along with convictions so that it becomes a customary law (Setiady, 2008). Also, Soekanto (2001) stated that customary law is part of the custom, it is well said that customary law is the implementation of law awareness, especially in the community life of simple culture and social structure. Thu, historically and philosophically, tradition and customary law are considered as the implementation of a state characteristic and the manifestation of a nation's soul (*volkgeist*) from the community of related country from generation to generation (Setiady, 2008 and Wignjodipoero, 1967).

Customary law has two elements : (1) reality, meaning that at the same situation, it is always practiced by the society; and (2) psychological, i.e. there is a belief among the community that the custom holds a legal power (Wignjodipoero, 1967). Thus, it is these elements that create legal obligations (*opinioyuris necessitatis*). Further Wignjodipoero (1967) explained that in the society there are three forms of customary law: (1) unstated law (*jus non scriptum*) as the biggest part; (2) stated law (*jus scriptum*) as small part, such as rules made by kings or sultans; and (3) elaborated description of stated law, usually resulting from a research result.

Meanwhile, Hilman Hadikusumah as refered to by Setiady (2008) said that normative customary law in Indonesia shows some patterns as follows: (1) traditional (It is practiced from generation to generation until the present time and is still valid and kept by the related community); (2) religious (The law is religious in nature (*magis religius*) – legal behaviors and principles are connected to the belief in the invisible being and or the teachings of the One God; (3). togetherness (it is communal, meaning that it emphasizes the collective interests in which personal interests are covered in the communal interests (one for all, all for one); (4) concrete and visual (The first terms means real and clearly tangible, while the second means visible, open and not hidden); (5) open and simple (Open means being able to accept the elements from the outside if they are not against the substance of the law itself. Simple here means humble, uncomplicated, with little red tape or administration and even mostly unwritten, easy to understand and implement based on trust); (6) changeable and adjustable (The customary law continues to grow and develop like the life itself. The customary law of the past had rather different contents, thus an indication of development; (7) uncodified (Most custom laws are not written although some are recorded in local languages, and some are even without systematic records but just as a guidance and not

absolutely implemented by the members of the society, except for the law that is from the God; (8) mutual deliberation and agreement (The custom law emphasizes the presence of mutual deliberation and agreement inside a family, among relatives and neighbors in starting and completing work, particularly in terms of justice in getting a solution to a conflict).

According to Gadgil, Berkes and Folke (1993) in Berkes (1995), traditional knowledge is the accumulation of knowledge and beliefs from generation to generation about social life among individuals as well as between society and its surrounding. Simply put, local knowledge is a knowledge used by a community to survive in a certain type of environment (Pameroy and Rivera-Guieb, 2006). This definition can be used as the terminology for *local knowledge, indigenous knowledge, traditional ecological knowledge,* and *rural knowledge*. While Johnson (1992) in Pameroy and Rivera-Guieb (2006) described local knowledge in more details as "a knowledge which was built by a social group from one generation to another in its relation with nature and nature resources". The local knowledge includes all things related to environment, social knowledge, politic and geographic.

Meanwhile, Ruddle (2000) stated that practices in local/customary knowledge-based fishing management have at least four general characteristics : (1) having lasted for a long time at a certain place (specific of the particular location), adopting local changes and in some cases in very detailed; (2) practical, oriented to social behaviors often very specific to certain types of resources and fish considered very important; (3) structural, having strong awareness of resources and environment that in some aspects in line with the scientific concepts of ecology and biology, such as those in the context of ecological connectivity and aquatic resources conservation; (4) so dynamic that the practices are adaptable to ecological changes and pressures (ecological perturbations), and later adopts the adaptation towards such changes into the core of local knowledge as the basis od fishing management.

Based on the description above, the right of *ulayat* or traditional knowledge is part of the customary law concept. This is because the right of *ulayat* is an entity of authorities and obligations for a community of custom law related to the land and water in their area (Saad, 2003). Further, Saad mentioned that at least there are three main elements in the right of *ulayat.* First, the community as the subject of the right of ulayat is a structured and permanent community having self-authorization and tangible and intangible wealths. *Second*, leadership institutions which hold public authority and civil administration over an area of *ulayat* right. In a community which is not yet controlled by a greater authority such as acollective government of villages or a king's authority, the institution is managed by local officials. However, when a legal community is under the control of a certain authority, the relationship between the community and its territory will change into a legal relationship. (Ter Haar, 1985 refered in Saad, 2008). *Third*, an area which is

an object of the right of *ulayat and* consists of land, water and its resources in it. The area is in reality occupied and the harvest from it is used for livelihood og the related community.

3. Some Practices in Fishing Management based on Local Knowledge

We compile some topics on local knowledge-based fishing management in Indonesia based on a number of existing customary institutions as well as non-customary institutions. Table 1 shows the list of the institutions used for the materials of discussion on the adoption of fishery management in Indonesia.

Table 1. List of Customary Institutions in Fishery Management in Indonesia

No	Name of Fisheries Management System Institutions	Locations
1	Sasi Laut	Ambelau Island, Buru, Maluku
2	Mane'e/Mani'o	Talaud, North Sulawesi
3	Rompong	Spermonde Islands, South Sulawesi
4	Awig-Awig Tanjung Luar	Tanjung Luar, West Nusa Tenggara
5	Awig-Awig Lombok Utara	Gili Indah, West Nusa Tenggara
6	Panglima Laot	Nanggroe Aceh Darussaalam
7	Lamalera Whales Hunting	Lamalera, East Nusa Tenggara
8	Co-management of Maninjau Lake	Agam District West Sumatera

In the discussion of custom institutions in the management of fishing resources in Indonesia, we use general principles of fishery resources management developed by Ruddle (1999). The description of the principles could be seen in Table 2 below.

Table 2. General Principles of Fishery Resources Management (adapted from Ruddle, 1999)

No	Components/Principles	Description
1	Territorial system boundary	How a customary institution defines the boundaries of a resources system
2	Rules System	What rules are applied by the customary institutions in the management of resources, their history, and development process
3	Right System	What are the right systems regulated in resources management including access rights, management rights, use rights and other fundamental rights.
4	Sanctions System	What types of sanctions are applied in the context of rule enforcement among the custom members
5	Monitoring and Evaluation	What activities are part of monitoring and evaluation and how they are practiced to maintain a sustainable fishery management regime
6	Authority System	Who holds the authority in managing the resources and institutions to operate a sytem of regime

In regards to the custom institutions-based fishery management in Indonesia, there are some situations related to the general principles of fishing resources management described above. Briefly, the results of analysis on the condition of existing custom institutions in relation to the principles of fishery resources management are presented in Table 3.

Table 3. Summary of Customary Based Fisheries and Coastal Management Regime

No	Customary Institutions	General Principles					
		System Boundaries	Rules System	Rights System	Sanctions System	Monitoring System	Authority System
1	Sasi Laut in Ambelau Island Maluku	Legal custom decisions, boundaries include estuary, coastal area boundaries, village borders	Decisions based on a long-lasting traditional law since 1600; indicated by the opening and closing of harvesting certain fishing resource and sea	Consisting of Sasi Laut (Marine Sasi), Sasi Darat (Terrestrial Sasi)	Sanctions decided on the basis of custom values	Monitoring and evaluation conducted by custom institutions *(King and Leader*)	Conducted by a King and Chief/Leader as the highest institution in operating the sasi
2	Mane'e/Mani'o	Legal custom decision, the limit is village borders	Rules are made based on activities of fishing, rules are decided by a village leader; signaled by the opening and closing seasons)	Rights given by the village Leader to the community only for self consumption instead of business interest	Sanctions decided by the village Leader/custom chief	Monitoring by the village Leader/custo m chief	conducted by the village Leader/custom chief
3	Rompong	Local agreement, coastal waters	Based on *Punggawa-Sawi* (patron-client) relationship	Rights given to the parompong holders and fishermen who would like to catch fish	Sanctions based on Relationship of Punggawa-Sawi	Monitoring by the parompong holders	Conducted by Punggawa (Patron)

No	Customary Institutions	General Principles					
		System Boundaries	Rules System	Rights System	Sanctions System	Monitoring System	Authority System
				around parompong			
4	Awig-Awig Tanjung Luar	Custom law and Local agreement	Based on local custom values (awig-awig) and strengthened into formal regulation such as local government regulations	Given to local fishermen (access rights, use rights)	Decided by the local custom institutions through local organization of fishermen, i.e. KPPL	Conducted by KPPL	Conducted by KPPL
5	Awig-Awig Lombok Utara	Local agreement	Based on local custom values (awig-awig) and strengthened into formal regulation such as local government regulations	Given to local fishermen (access rights, use rights, and management rights)	Decided by the local custom institutions through local organization of fishermen, i.e. LMNU	Conducted by LMNU	Conducted by LMNU
6	Panglima Laot Aceh	Custom agreement, non-administrative boundaries	Based on local custom values since 400 years ago	Rights are allocated by Panglima Laot (access rights, resources allocation, use rights)	Based on custom values, solved by "Majelis Peradilan Adat" (marine custom courts)	Conducted by Panglima Laot	Conducted by Panglima Laot
7	Lamalera Whales	Sea Boundaries,	Based on local custom values in	Rights given to LAMAFA (whale	Sanctions are not documented but	Conducted by Likatelo (local	Conducted by Likatelo

No	Customary Institutions	General Principles					
		System Boundaries	Rules System	Rights System	Sanctions System	Monitoring System	Authority System
	Hunting	System of village boundaries	whale hunting	hunters)	firmly held up by the community	custom institution)	
8	Co-management of Maninjau Lake, West Sumatera	Administrative boundary of village around the lake, the ecological border is the water of Maninjau lake and its river	Put into the Act of Bupati Agam No. 22 /2009 about Maninjau lake management based on community agreement	The rights for utilizing water and environmental services of the lake for various activities are given to local community and private sectors according to Bupati Act No. 22/2009	Sanctions are already established in Bupati Act No. 22/2009	Conducted by the government, by involving local community around the lake	Conducted by local government involving the active role of community groups such as Mina Bada Lestari Group

1. INTRODUCTION

In the course of its history, fisheries management in Indonesia in fact initially occurred from local community's understanding (local knowledge; customary knowledge) and later was institutionalized using customary law system. Sea custom law practices such as Sasi in Maluku, Panglima Laot in Aceh or Awig-Awig in Bali and Nusa Tenggara Barat are a few of the many examples of fisheries customary system. Even during Panglima Laot case, the regime was able to last for more than 400 years, throughout various governmental eras, starting from kingdom era, Dutch colonialization era, Indonesian pre-independency, Indonesian independency, New Oder era, until now.

As time went by, this practice was reduced by the government order and the control of the regime, especially during 1966-1998. This was experienced not only by the fisheries management but also by the central management. The government determined that the term "village" was a compulsory to indicate the smallest entity of an area. For example, in Aceh there was a so called Meunasah, whereas in West Sumatera there was Nagari. As a consequence, the local community role was reduced to become an object of development, rather than a subject. The reduction has made the fisheries management become inefficient. The conflict among fishermen, as well as degradation of fisheries resources, is one of the problems deriving from the centralization of fisheries management. The imbalance of the government's role and the community's role in fisheries management has also caused a crucial debate which later has created a collaboration of various parties in fisheries (fisheries co-management and fisheries decentralization).

According to some references, fisheries co-management initiation was started from the lack of fisheries resources as a concequence of open access regime. Later, it became the main factor to in-joint tragedy of fisheries community (Hardin, 1957)[2]. As presented at ***Figure 1***, the status and potency of fisheries resources become complex after there was a human intervention due to demands, followed later by the exploration and exploitation of fisheries resources. In this mismanagement condition, exploitation has made fisheries resources to collapse. This case was the reasons that evoked the

[2] See Hardin's about *tragedy of the commons* which has created some controversies. Some controversies come from a disagreement of many people that all individuals will always act selfishly as Hardin's said.

sustainability of fisheries.. However, with awareness, the desire to repair the fisheries management system appeared. Fisheries co-management is one of the fisheries management repairing system, integrated with the right acknowledgementand partnership of all fisheries stakeholders, including the needs to accommodate all systems of knowledge in fisheries management. In this case, the adoption of local/customary[3] knowledge becomes one of the challenging points for the fisheries co-management systems to be applied in Indonesia.

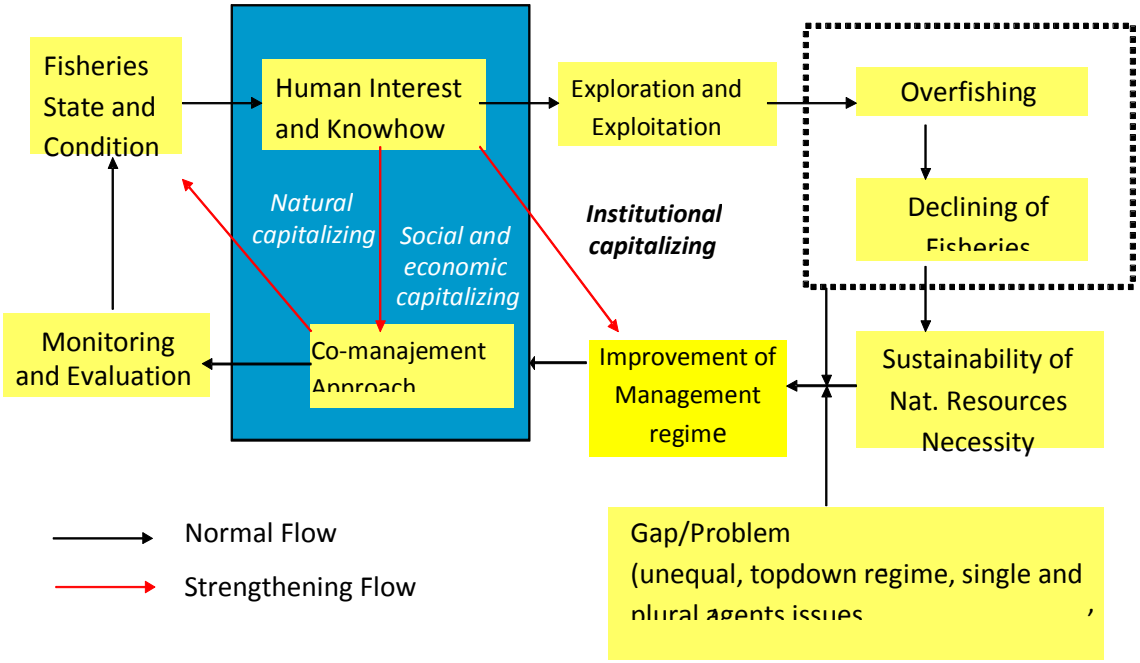
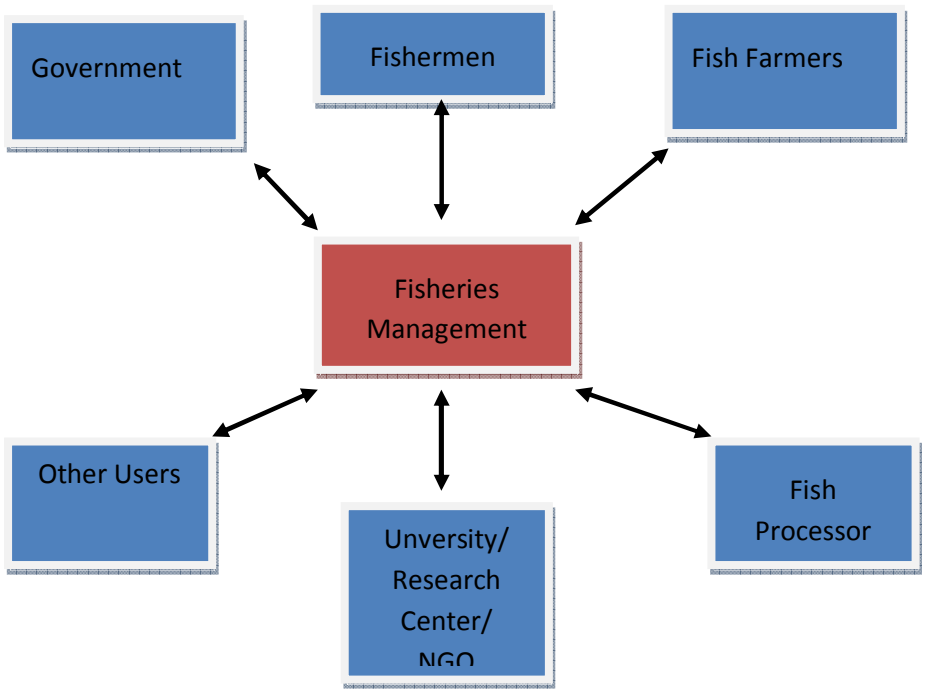


Figure 1.. Functional Outflow of Fisheries Co-Management Needs (Adrianto, 2006)

[3] According to Gadgil, Berkes and Folke (1993) in Berkes (1995), the local/traditional knowledge is a cumulative knowledge and beliefs descended from generation to generation about society life, individually between the society member and the relationship between the society and their environment. For example in Indonesia the distribution of crab capture activity between border dragnet and drift dragnet in Gambus Laut Village, Asahan Regency, North Sumatera Province (PKSPL-IPB, 2005). The border dragnet was used on the 6^{th} – 10^{th} day each month, and the drift dragnet used on the 11^{th} – 20^{th} day, and so on. This distribution is considered according to the month of islam calendar.

In the meantime, it is undoubted that fishery is a complex system and it involves many parties. According to Prof. Walters : "*....most fisheries problems are complex and contain human as well as biological dimensions. Too frequently we see the consequences of trying to deal with complexity in a fragmentary or narrow way. Management plan based on the soundest of biological information fail when it is discovered that fishing pressure cannot be controlled because of unforeseen political or economic constraints. Economic policies fail when unforeseen biological limits are exceeded. In short, fisheries represent dynamic (time varying) systems with interacting components....*"(Walters, 1980 in Adrianto, 2008). Therefore, the fisheries management cannot be separated from the people such as fishermen, government, organization/non-government organization, academics, other fisheries parties (traders, fisheries manager groups, etc). In that context, the comprehension that fisheries involve many parties and agent is a common thing. This framework becomes an important promoter of co-management to confront all stakeholder's desire (***Figure 2***). With those complexities, the fisheries management context then evolved into the fisheries governance[4].



[4] Kooiman, et.al (2005) defined the governance as the whole interaction between the public sector and the private sector to solve the societal problems and create the social opportunities. In fisheries context, the governance can be defined as some of regulations in law, social, economy, and politics used to regulate the fisheries sector.

Figure 2. Involvement of many parties in Fisheries Management (Adrianto, 2007 adopted by Berkes, *et al.*, 2000)

In the legal plan, Laws No. 31/2004 about fisheries clearly mentions that the fisheries management is done with partnership principle, as attached in article 2 : "the fisheries management is done according to the benefit base, justice base, partnership base, even distribution base, integrity base, openness base, eficiency base, and continous conservation base". Next, the fisheries management also has to consider the customary law and local wisdom as issued in Laws No. 31/2004 about fisheries, article 6 in particular : "the fisheries management for fish capture and fish cultivation has to consider the customary law and/or local wisdom and also the society partake". These legal phrases clearly issue the justice and partnership benefit, based on the local wisdom and customary law which become implementation bases of fisheries co-management in Indonesia.

From the above explanation, it is clear that the forming and implementation of fisheries management plan in Indonesia are based on local knowledge and done in a collaborative way. However, in the fisheries management implementation there still needs a stronger political support according to the continous fisheries management principle and ecosystems. This paper is written with the main aims to explore the local/traditional knowledge of fisheries management in Indonesia. It will be used to identify the adopted process of local/customary knowledge to inspire the formal fisheries management in Indonesia through the government institution and the user resources society in co-managament systems.

2. FRAMEWORK THEORY ON LOCAL KNOWLEDGE AND FISHERIES MANAGEMENT

2.1. Local Knowledge: Definition and Approach for the Fisheries Management

Custom is a habit of society, and the community groups gradually institutionalize it as a custom which should apply to all members of the society, and this is equipped with the sanctions so that it becomes the customary law (Setiadi, 2008). Soekanto (2001) states that customary law is part of the customs; therefore, it can be said that customary law focuses more on the concretisation of law than on the law awareness, especially in societies with simple social and cultural structures. Thus, historically, philosophically, custom and customary law are considered as a manifestation or reflection of the personality of a nation and become the embodiment of the soul of the nation (volkgeist) of the society of a country from time to time (Setiadi, 2008 and Wignjodipoero, 1967).

Customary law has two elements, namely: (1) elements of reality indicating that custom is always the same and obeyed by the community; and (2) psychological element indicating that there is a belief in people meaning that a custom has the force of law (Wignjodipoero, 1967). Therefore, this element will lead to a legal obligation (opinioyuris necessitatis). Furthermore, Wignjodipoero (1967) explains that there are three forms of customary law in the customary law community life, namely :

1. The uwritten laws (jus non scriptum), which play the biggest role.
2. The written laws (jus scriptum), which play only a small role, such as laws and regulations issued by the kings or sultans.
3. Written legal arguments, which are generally the results of the researches that are compiled in a book.

In the meantime, Hilman referred by Hadikusumah Setiady (2008) reveals that the normative customary laws of Indonesia in general show the following patterns:

1. Traditional
   Traditional customary laws indicate that they are inherited from generation to generation and are still valid and will be retained by the people concerned.
2. Religious

Religious Customary laws (religious magical) indicate that the behaviors of law or legal rules are related to the beliefs in the supernatural and/or based on the teachings of beliefs in God Almighty.

3. Communal
   Customary laws are communal indicating that they focus more on the common interests in which private interests are included in common interests (one for all, and all for one).
4. Concrete and Visual
   Concrete customary laws indicate that they are clear and tangible and visual customary laws indicate that they can be seen, transparent, open, and not hidden.
5. Open and Modest
   Open and modest customary laws indicate that they are able to accept the entry of elements that come from outside provided they are not contrary to the spirit of the laws. Meanwhile, modest means simple, not complicated, and they do not require a lot of paperwork. Moreover, most of the rules are unwritten, easily understood and implemented based on mutual trust.
6. Changeable and Adaptable
   Customary laws keep growing and developing like life does. The contents of the old customary law are relatively different indicating the existence of the development.
7. Uncodefication
   Although some contents of the customary laws are not written, but some of them were recorded in the local script, and some have been compiled in books but not in a systematic way. They are merely used as guidelines and do not have to be absolutely carried out by the members of the society except those related to the commands of Almighty God.
8. Deliberation and Concencus
   Customary law prioritizes the deliberation and consensus in the family, in relationships of kinship and neighborhood both in starting and in ending any work especially those related to justice in resolving disputes among the members of the community.

According to Gadgil, Berkes and Folke (1993) in Berkes (1995), traditional/local knowledge is the accumulation of knowledge and beliefs, which has been passed down from generations. It regards the lives of the community related to both inter-individuals in society and the relationships between the society and the environment. Therefore, local knowledge can be defined as the knowledge used by the community to survive in a particular environment type (Pameroy and Rivera-Guieb, 2006). This simple definition is also used for the terminology of *local knowledge, indigenous*

knowledge, traditional ecological knowledge, and rural knowledge. Meanwhile, Johnson (1992) in Pameroy and Rivera-Guieb (2006) defines local knowledge in more detail as "knowledge that is built by community groups and inherited in relation to its relationship with nature and natural resources". Local knowledge includes all of the knowledge related to the environment, social science, politics and geography.

Meanwhile, Ruddle (2000) states that the practice of local/customary knowledge has at least 4 common characteristics, namely, (1) this practice has been carried out for a long time, empirical, and conducted in a place (specific to a certain location), and has adopted the local changes; also, in some cases, it is very detailed; (2) this practice is practical and oriented at community behavior, and frequently, it is specific to the type of natural resources and certain fish species that are considered very important; (3) this practice is structural and has a strong awareness to resources and the environment, so in some respects, it is in accordance with the ecological and biological concepts. For example, in the context of ecological connectivity and conservation of aquatic resources; (4) this practice is so dynamic that it is adaptive to changes and ecological perturbations, and it adopts the adaptation to changes into the core of local knowledge which becomes the basis for fisheries management.

Based on the above discussion, customary rights or traditional knowledge becomes parts of the conception of customary laws. This is because customary rights are a series of authority and obligations of a customary law community, which is related to land and water located within their territory (Saad, 2003). Furthermore, Saad says that there are at least three basic elements of customary rights, namely: ***First***, the legal community as the subject of customary rights is a regular community where its nature is fixed, and has its own power and wealth of visible and invisible materials. ***Second***, institutions of the leadership have public and civil authorities over the area of customary rights. In societies that have not been influenced of larger powers such as a joint government of villages or the royal power, the institutions are run by local authorities. However, when the legal community is under a particular governmental power, the relationship between the legal communities and their land turns into a legal relationship (Ter Haar, 1985 referred to in Saad, 2008). ***Third***, the region is the object of customary rights, which consist of land, waters and all natural resources contained therein. This region is a typical region that is significantly occupied and its resources are collected for the life of members of the relevant law society.

Wahyono (2000) concludes that the customary right of sea has three main variables, namely: ***First***, the region. The arrangement of sea area rights is limited not only to the area width border but also the exclusivity of the area. This exclusivity may also be

applied for the marine resources, technology used, and level of exploitation or temporary restrictions. ***Second***, right-holding units. The right-holding units vary widely from their individual nature, kinship groups, village communities to the state. This unit relates to the transferability that is how the exploitation rights are transferred from one party to another party and the equity that is the division of rights into a single unit of the right holder. ***Third***, the legality and enforcement. In legality, the subject of discussion is the legal basis for the application of customary rights of sea where in some cases, the rules are written. While in other cases, the customary rights of sea are the extra legal practice because they are based on the habits of the community, which do not apply any formal rules.

2.2. Legal Basis of Local Knowledge

Meanwhile, the next problem is how the position of local knowledge/custom is in the systemization of modern fisheries management. As pointed out by Berkes, et.al (2001), some regimes of modern fisheries management post-UNCLOS 1982 and the Code of Conduct for Responsible Fisheries (CCRF) are based on "the best available scientific information". Within this framework, the needs of data become very important, while in some cases, there are some fisheries management practices considered in the category of "dataless management". Such practice does not mean that there is no information or data used in running fisheries management. In this context, the role of local/custom knowledge is very important Although no local knowledge is found at a location of fishery management, the fishery stakeholders have information and ideas in improving the existing fisheries in that region (Johannes, 1998 in Berkes, et.al, 2001). Like the scientific knowledge, local knowledge in the context of fisheries management is also considered as a weakness. Rivera-Pameroy and Guieb (2006), for example, say that the application of local knowledge rarely obtains criticism because the beliefs of the local communities are always right so that management practices carried out by the communities, in some cases, can always be justified. In some cases, it has been found that the local people carriy out activities damaging the environment and natural resources. Next, local knowledge is criticized in the context that the local communities have a good understanding of the environment and natural resources around them since they have lived in the resource systems for many generations so that they have local knowledge accumulation. In some cases, some local people from immigrant groups often have less knowledge of local resource systems. In the context of this criticism,

it is expected that the management of fisheries combines the local knowledge and scientific knowledge.

In the context of national law, recognition of customary rights is evident in the laws and regulations, including:

1. Law Number 31 Year 2004 on Fisheries
   According to Article 6 paragraph (2), the management of fisheries for the benefit of fishing and fish farming should consider customary laws and/or local wisdom and pay attention to community participation. In the explanation of Article 6 paragraph (2), the customary laws and/or local wisdom are taken into consideration in fisheries management as long as they are not contrary to governmental laws.
   In addition, in Article 52 it is stated that the government regulates, encourages, and/or conducts fisheries research and development to produce knowledge and technology required in the development of fisheries so that it becomes more effective, efficient, economical, highly competitive, and environmentally friendly, and appreciates the traditional wisdom/local culture.
2. Law Number 27 Year 2007 on Management of Coastal Areas and Small Islands
   National legal recognition on customary rights or the local wisdom and indigenous people is stipulated in Law Number 27 Year 2007, which includes:
   - Article 7 Paragraph (3) states that:
     Community engagement is based on norms, standards, and guidelines made through both formal and informal public consultation and/or customary deliberation.
   - Article17 Paragraph (2) states that:
     Provision of HP-3 as referred to in paragraph (1) must consider the interests of the sustainability of Ecosystems of Coastal Areas and Small Islands, Customary Communities, and the national interest and rights of peaceful crossing for foreign ships. In the explanation of the rules, it is mentioned that Customary Communities are a group of Indigenous Coastal Communities living in certain geographic areas because of their ties to their ancestral origin, the existence of a strong relationship with the Resources of Coastal Areas and Small Islands, and the value system determining the economic, political, social, and legal regulations.
   - Article 18 states that:

HPI-3 may be given to: (a) an individual Indonesian citizen; (b) a legal entity established based on the Indonesian law; or (c) Customary Communities.

- Article 21 Paragraph (4) states that:
  Operational requirements as referred to in paragraph (1) include the obligations of the holder of HP-3 in: (a) empowering communities around the location of activities; (b) recognizing, respecting, and protecting the rights of customary communities and/or local communities; (c) noticing public's right to gain access to the finish line of the beach and estuaries; and (d) conducting rehabilitation on damaging resources in the HP-3 locations.
- Article 28 Paragaph (3) states that:
  Conservation of areas as referred in paragraph (2) which has the characteristic as one unit of ecosystem is held to protect: (a) fish resources; (b) stops and/or migration path of other marine biota; (c) an area governed by a specific customary such as sasi, mane'e, sea commander, awig-awig, and/or other terms of a certain customary; and (d) a unique coastal ecosystem and/or susceptible to change.
- Explanation of Article 36 Paragraph (6) item a states that:
  Society has an important role in surveillance and control of Coastal Areas and Small Islands Management through the management plan based on cultural customs and practices, which are common or already existing in the society.
- Article 60 Paragraph (1) butir c, states that:
  In Management of Coastal Areas and Small Islands, the public has the right to manage its natural resources of the Coastal Areas and the Small Islands based on the existing customary law and they are not contrary to the laws and regulations.
- Article 61 Paragraph (1), states that:
  The Government recognizes, respects, and protects the rights of customary communities, Traditional Society, and Local Wisdom for Coastal Areas and Small Islands, which have been used by generations.
- Article 61 Paragraph (2), states that:
  Recognition of the rights of Customary Communities, Traditional Society, and Local Wisdom as referred in paragraph (1) may be used as a reference in the sustainable Management of Coastal Areas and Small Islands.
- Article 64 Paragraph 2 states that:

The parties through consultation, expert evaluation, negotiation, mediation, conciliation, arbitration, or through the customs/habits/local wisdom carry out settlement of disputes outside the court.

3. Regulation Number 60 Year 2007 concerning Conservation of Fish Resources
   According to Article 9 paragraph (1) item 2, it is stated that the determination of the waters conservation areas as referred to in Article 8 paragraph (3) is based on social and cultural criteria, including level of community supports, potential conflicts of interest, potential threats, local wisdom and customs. In addition, Article 18 paragraph (1) states that the government or local government based on its authority in managing waters conservation areas as referred in Article 15 paragraph (1) may involve the communities through partnerships among the units of management organization with the community groups and/or customary communities, non-governmental organizations, corporations, research institutes, and universities.

3. LOCAL FISHERIES MANAGEMENT: SOME PRACTICES IN INDONESIA

3.1. Sea *Sasi* with Mosque Base in Ambalau Island, South Buru Regency

3.1.1. General Site Description

a. General Description of Ambalau Island.

The Ambalau Island is a small island located in the southeast area of Buru Island in Maluku (coordinating at 3°52'17" Star South and 127°12'12" East Longitude). Administratively, this island becomes one of the sub-districs of South Buru Regency. The Ambalau sub-district consisting of 7 (seven) villages i.e. Siwar, Selasi, Elara, Lumoy, Masawoy, Ulima and Kampung Baru is as wide as 306 km where the center of the sub-districts is located in Waelua. This Ambalau Island was formed because of the volcanic process, and this island consists of coral sloping due to the elevation of the ocean base in the surface. The villages are located in the beach area, under the steep hills, 750 m under the sea level.

Ambalau has considerably rich sea ecosystems especially its beautiful corals, various kinds of coral fishes, and wide and thick mangrove forests (especially in Siwar and Elara Villages). However, because of its location in Banda Sea and its volcanic forming process, the distance between the beach and gully is reasonably close and steep, and the sea water of this area is very clear. These figures show us about the region study maps.

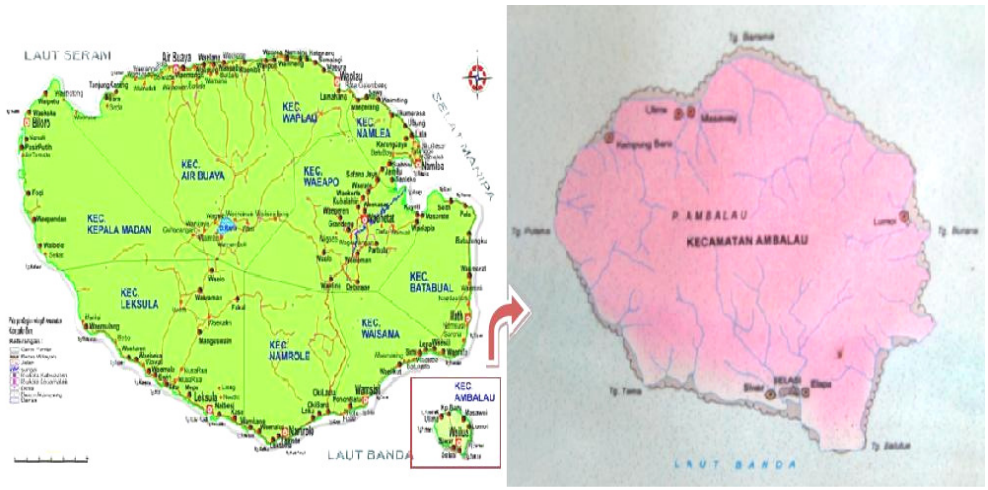


Figure 3 Ambalau Island and its position around the Buru Island Maluku

Like other communities in Maluku region, the people of Ambalau Island depend greatly on their natural resources and environment to fulfill their needs. Most people in this island have farming and plantation as their daily life-sources. Although Amabalau Island is surrounded by the sea, t only a small number of its communities depend their life on fisheries. The village' mountainous slope is mostly covered by plantations such as clove, coconut, cacao, and nutmeg. The dry agricultural farming includes corn, mustard green, and sweet potato planted between the clove plant, cacao plant, and nutmeg plant. As one of the Maluku communities, the staple food for Ambalau Island community is sago.

Besides earning their income from the farming and plantation, the Ambalau Island communities, especially those in Masawoy Village and Ulima Village catch fish in the Ambalau Island waters as their food sources for their families. There are a number of communities becoming the fishermen and sell their fish catch products to the traders of Namlea Village or barter them with the local community. The main fish catch product of this island is tuna.

The number of Ambalau Island communities until June 2009 based on the information by the Ambelau Sub-district Staff, is approximately 9,590 people (BPS Buru Regency, 1998) as presented at the table below..

Table 1 Data of the Number of Villagers in Ambalau Sub-district, South Buru Regency

Village Name	Family	Man	Woman	Total Villagers
Siwar	217	610	562	1.172

Selasi	160	590	584	1.174
Elara	403	1.284	1.326	2.610
Lumoy*)	±175	±450	±500	±950
Masawoy	168	437	401	838
Ulima	271	697	710	1.407
Kampung Baru	276	726	716	1.442

Notes: *) The estimate data was obtained from Mr. Latif Loilatu, Ambalau Sub-districts staff because the official data are not available yet.

Source: Temporary Monthly Report of Ambalau Sub-districts, June 2009

Based on the lineage, the Ambalau Communities are divided into two types i.e. the indigenous communities and outsider communities. The outsider communities that moved to Ambalau Island came from Bugis, Buton, and Java. Like in other areas in Maluku, the Ambalau Community also distinguishes the linkage line based on patrilineal system and it is mentioned on the last name which becomes the family name (soa). There are some family names in Ambalau Island such as Booy, Tukmuly, Saliu, Loilatu, Soulissa, Souwakil, Latuconsina, etc.

This lineage is influenced by the Regent shape system (a government system from Dutch Colonization) and by the local customary system. The local customary system has divided roles based on the family name where there will be a person bearing a certain family name who becomes the king, kewang, captain, village chief, etc. Besides, that role part will be descended to his family members and will not be given to other family name members. For example, in Ambalau, the Latupati is owned by the Loilatus and the village chief is owned by the Booys.

Based on its sovereignty system, South Buru consists of 4 types of sovereignty including Masarete, Ambalau, Fogi and Waesama. Based on the present administration distribution, the Fogi Sovereignty covers the Head Madan area, and the Masarete Sovereignty covers the Leksula and half of Namrole area. The Waisama Sovereignty covers the other part of Namrole area and Waisama, and the Ambalau Sovereignty covers all Ambalau Island areas. Each sovereignty has its own king, latupati, capitan and religion leaders. However, because of the law and regulation, the smallest governmental unit is village. In Ambalau, the king leads the village, and the sub-district head leads the whole island areas whose position is higher than the king (head of the village), and latupati acts as the customary head. Because all people of the Ambalau Island are Moslems, the mosque imam also plays role as the head of the religion.

The culture of Ambalau Island is not very different from that of the other areas in Maluku, and its characteristic as the archipelagic society which is very close to the sea can be seen. Besides , the ***pela gandong*** culture system is used as the basis for the lineage boundary and as the orientation to carry out daily activities. According to the Ambalau's genealogy, and based on its pela gandong system, the Ambalau people have the ***pela*** with their relatives in Nusa Laut Island in Maluku Center Regency. Some agreement of customary regulation becomes the orientation of the community livelihood whereas the customary leaders include LATUPATI, KING, and RELIGION LEADER. The valid customary law in this region is SASI Law.

3.1.2. The History of Ambalau Sasi

The law or the regulation of SASI in Ambalau is the same as that in other areas in Maluku. It has been enforced for many years since the datuks (ancestor) era, but it is hard to track down the authentic information in which year it was initially enforced.. The old generations of the community did not know about the origin of theirancestors, except that sasi is a local customary law which has been decended for generations since their ancestors lived in this area. Based on the literature study, the development of the sea sasi is slower than that of the land sasi because the "negeri" (village) in the beach area/coastal area is a new negeri/village developed in Maluku. Formerly, the old negeri was located in the mountain area not in the beach area, and this is the reason why the sea is not really necessary in sasi systems. However, in accordance with the coastal country development, the community should consider the sea sasi systems.

The sasi system in Ambalau was derived from the two kinds of resources that are from land area called the LAND SASI, and from sea area called the SEA SASI. The Land Sasi manages the forest resources (wood and rattan), farming and plantation areas (coconut, clove, cacao, and nutmeg) whereas the Sea Sasi manages the utilization of sea products such as **kima** (*Tridacna*)**, lola** (Trochus niloticus)**, sea slug** (Holothuroidea)**, lobster** (*Nephropidae*), and these sea products are common properties for the Ambalau people.

The sasi laws especially the land sasi law (forests and farming) can be found is enforced in all villages in Ambalau Sub-district, and it still runs effectively. Although all the villages are located in a beach area, not all of the villages in Ambalau have the effective institutional structure for sea sasi law since only 3 villages that own this structure i.e. the Siwar village (sasi for lobster), Ulima village, and Masawoy village (sasi for kima, lola,sea slug and lobster).

In practice, the sea sasi in Ambalau Island has been understood and valid for many generations. In its implementation, the sasi has become the effective regulation mechanism because the Ambalau people greatly respect the customary law in the same way as they respect their religion law (Islam). However, sometimes, there are several violations of sasi rules and sanctions which occur.

The purpose of land sasi is to have a strong economic regulation of the communities; however, the sea sasi in Masaowy village and Ulima village is not focused on the economic regulation activity because they prefer to focus on conservation and social needs. Therefore, it can be seen that the sea sasi will be exercised if the people need money for the mosque rehabilitation, for community activity or building, and for the development of the main facilities of the village.

The Sasi in Ambalau Island has undergone the institutional evolution. Initially, sasi was only concerned about the tradition, but in the present time, sasi has become the practice of social life together with the religion institution. Church sasi is found in Haruku and Kei and the mosque in Ambalau through the Mosque Imam plays a very important role. Therefore, it is common if the sea sasi in Masawoy village and in Ulima village is called **The Mosque-Based Sasi.**

3.1.3. The Sasi Regulation and Work Mechanism in Ambalau Island.

a. Territorial System Boundary

The sea sasi in Masawoy and Ulima village is especially exercised to forbid the catch of the sea biota such as **kima, lola, sea slug, and lobster**. However, this sea sasi system is not found in the other sea areas.. Basically, the Masaowy and Ulima people do not catch and consume these four types of sea biota, so they usually consume tuna and coral fish. However, because the economy value of the four commodities is reasonably high, many outsiders catch them. As a result, this activity must be controlled to prevent the extinction of these commodities. That is the reason why the sea sasi is more concerned with conservation and social needs to build the main facility and mosque than with the economic society needs.

The territorial boundary system which has been regulated by the sea sasi and becomes the sasi regulation authority in Masaowy and Ulima village includes the sea area around these villages with the land area boundary signs made of natural materials such as cape, coral, and island upright to the sea, whereas

the boundary for the boundary from the land to the sea is as far as the *meti* i.e. the ebb tide boundary area. The *meti* area as the boundary area indicates that the four fish types of biota from this sasi area cannot be exploited. However, the sasi has not decided the specific measurement regarding the width and length of the boundary area.

b. The Rule System and Its Implementation

The sasi laws (land and sea) in Masaowy and Ulima village have not been written, resulting in no standard regulations. Nevertheless, all the people in this village understand this customary law. The essential part of the sea sasi is to manage all the people in Masaowy and Ulima village or people from other villages. They are not allowed to catch **kima, lola, sea slug and lobster in** both Masaowy and Ullima areas. If they break the rule, they will be taken to the customary court and mosque court to be punished. Since then, the sasi is valid and the punishment will end if there is an announcement that sasi is open.

Sasi opening and closing mechanisms:

1. The sasi closing mechanism is announced by the Mosque Imam or the Religion Head and sometimes followed by the traditional ceremony attended by the latupati, king, and all the communities. This ceremony aims to inform the communities that sasi implementation will be done and to expect that all people will obey all the valid customary law and regulation.

   The sasi closing process is prefaced by the community discussion, and it is usually carried out in the mosque led by the king and mosque imam to discuss the right time to do the sasi closing process. In this discussion, they will agree on the right time to do the sasi closing ceremony and how long it will be closed. One of the considerations to determine the sasi closing time is the commodity condition, such as its circle of life.

   The sasi closing tradition ceremony held includes a prayer ceremony in the mosque, and it will be informed to the society when the sasi is to be implemented. The duration of the sasi closing time depends on the discussion result based on the resource sasi types. For the Sea Sasi, the closing sasi time is held for 2 years or when the people can see the Sasi Sea is ready to open and advantageous for the communities.

2. The first thing to do before opening the sasi is to discuss the mechanism which is the same as the sasi closing ceremony., The decision making is based on: (a) regular system i.e. the time is based on the earlier agreement; (b) idea or request from the community or the outsiders i.e. the idea is based on information that the resource sasi is ready to open; (c) the interest of the community needs such as the village or the mosque needs some fund to build the village/mosque or to hold a mosque activity. The community catches the commodities together from the sea. The sea catches are then sold to fund their needs.

   The sasi opening mechanism is also the same as the sasi closing one, which is announced in the mosque, prefaced with a prayer, and then the community starts to catch the opening sasi commodity until it is closed.

   The sasi opening ceremony depends on the opening sasi type. For example, the opening time for sea sasi is about 1 week, and the time for land sasi is only 2 to 3 days.

c. The Right Systems

In sasi system, the limits of the management right in the sea sasi in Masaowy and Ulima Village are not made by persons who have the right to own the sea because the sea in this village has already become the common property; consequently, the sea is not managed exclusively by one person. However, the community is still allowed to enter the sasi area as long as they do not catch the four fish types of sasi biota. The thing that is managed in the sasi system is only on right to use.

Beside this right, there are other rights in which the community has the right to participate in such as in the decision making process and in the supervision of the sasi implementation i.e. by reporting every violation to the king or mosque imam. In this case, the community becomes the social-controllers or public investigating officers who have the right to report and become the witness of sasi violation to the competent customary institution to make decision about all the sasi opening and closing activities.

d. The Sanction Systems

. In the process of determining sanctions, it is preceded by the trial of offenders. This is to ensure the truth, where the accused is given the right to defend himself and if the witnesses can prove the violation, the sanction is

decided upon soon. Violations of sasi will be given two forms of sanctions, namely customary sanction and economic sanction. The customary sanction is given in accordance with the rules applicable in the area, while the economic sanction is given a fine in accordance with the amount of damage and losses caused by violations of the sasi.

The fishermen who violate the sasi will be given sanctions i.e. fines and penalties. The minimum fee for the fine of sanctions is as much as the damages caused by such violations. Fines will become the income for the mosque and can be used for the prosperity of the mosque and the community as a whole. For violations of sea sasi, the amount of fines has not been decided yet, but for the land sasi, it is set for Rp.75.000 for each violation for one incidence.

In addition to the fines, the customary sanctions are also established through discussion. Some of the customary sanctions are as follows:

- Offenders are required to scratch the stone in front of the mosque for about 3 hours, starting from Dhuhur prayer time (around 12 p.m.) to the 'Asr time (around 3 p.m.). The penalty is used to prove that if he is not guilty, the accused will not be hurt, and vice versa.
- Indirect customary punishment is the effect that the transgressor obtains as a result of his violation; for example, he will be seriously ill, suffered and eventually dead.

e. Monitoring and Evaluation Systems

Sasi monitoring and supervision are carried out together. In this system, there are equality rights including the supervising rights. The mechanisms are as follows: sasi is effectively valid when it is already announced and decided by the head of mosque. All the people are bounded to that sasi regulation, including the king and mosque imam. The community that finds any sasi violation by other people will report it to the king and mosque imam.

3.1.3. The Authority System/Organization Structure of Sasi Implementation in Ambalau Island

The sasi management organization structure is not well-known in Masaow and Ulima village. Informally, all the community members agree that all decisions have to be discussed first. Then, the result of the community discussion is placed as the highest sasi customary supremacy law.

The highest customary arrangement institution is hold by the Latupati (king council), covering all Ambalau Island areas. The Latupati's authority becomes the supremacy customary authority regarding the land's boundary, the benefits of opening the forest area for mining activity, and the boundary conflict between villages. For internal conflicts in one village, they are solved by the king from the village.

Authoritatively, the sasi institution is embedded to each village administration (king and kewang) and mosque imam. This is shown that there is a balance among the government, customary leader, and community leaders (religion leaders) as the sasi right is held by the community. However, the mosque imam has a higher authority because in the sasi closing and opening announcement, the violation settlement is held in the mosque, and the judge position is held by the mosque imam.

Although these two villages posses a separate region, but in practice, the sasi implementation is managed together because the distance between these villages is reasonably close. The sasi structure is almost the same as the executive-judicative systems where the king acts as the executive and the mosque imam acts as the judicative. The sasi institutional structure in Masawoy and Ulima village is shown in Figure 4below.

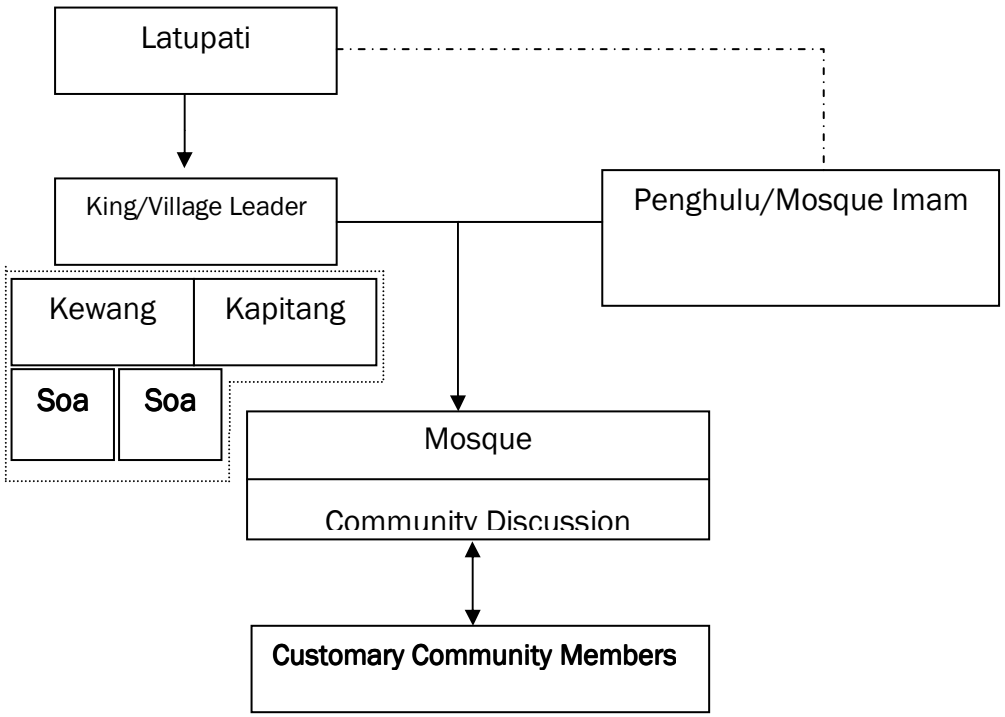


Figure 4 Sea Sasi Institutional Structure in Ambalau Island

3.2. *Rompong* Exclusives in Barrang Caddi Island, Makassar

3.2.1. Location General Description

Geographically, Spermonde Island is located in the southern area of Makassar Strait i.e. in the north-west coastal area of Sulawesi. The coral island is spreading from north to south in a row with beach mainland of Sulawesi Island (Van Vuuren, 1920a, b in de Klerk, 1983). The Spermonde Island has various kinds of corals as 78 genera and sub-genera of corals are found in this area, with the total of 262 species (Moll, 1983).

In the mean time, for fisheries sector, the dominant fishing equipment used in Ujung Tanah Sub-district, Makassar, and South Sulawesi Province includes:

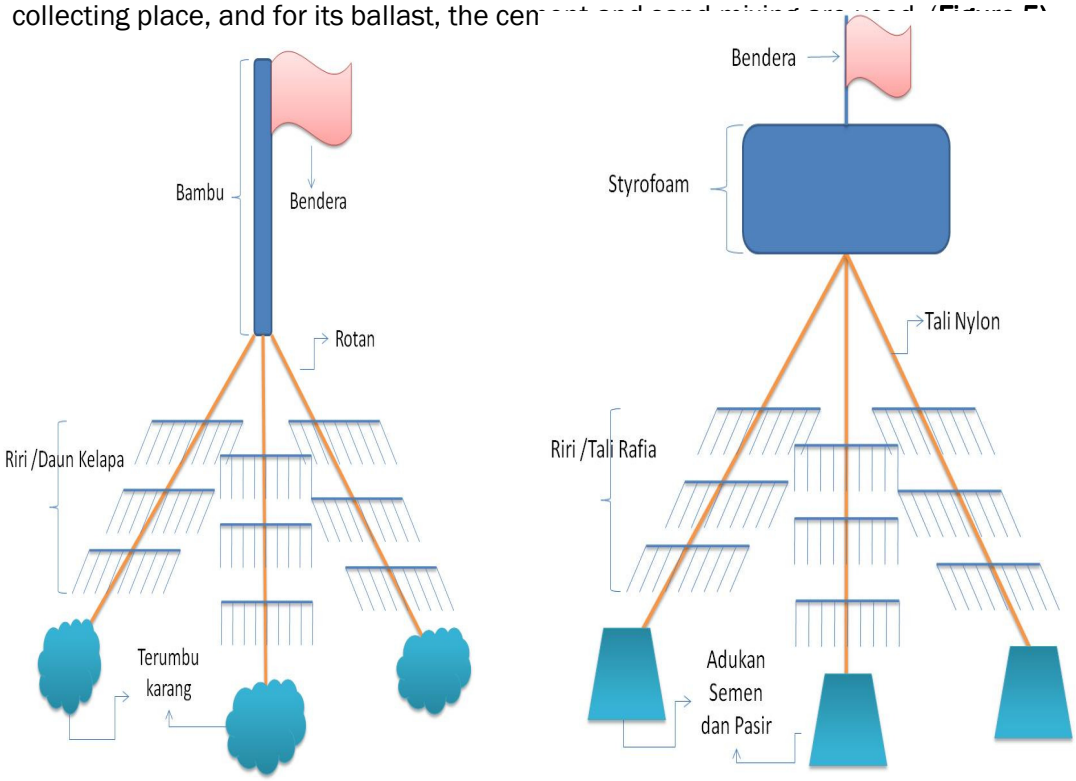
- Fishing-rope
    - Fishing-rope is mostly used to catch pelagis fishes such as mackerel, tuna and squid.
- Gills Dragnet
    - Besides being used to fish, gills dragnet is mostly used to catch small crabs (*Portunus pelagicus*)
- Cantrang
    - Cantrang is a demurral fishing gear where its operating principle is the same as the trawl i.e. by pulling the fishing equipment to stir up the waters substrate.
- Purse seine
    - Purse seine or commonly known as Rengge/Gae (Makassar local language) is mostly used to catch pelagis fishes.
- Bagan
    - Bagan operated using the boat is called boat-bagan (2 boats) and Rambo-bagan (1 boat). This equipment is operated in the night using lamp to attract fish.
- Beside all the fishing equipment mentioned above, sometimes people also use bomb and potassium to catch the fish.

3.2.2. The *Rompong* History in Barrang Caddi Island

Rompong or *Rumpon* in fishing activity in Spermonde Island (in general) and in Barrang Caddi Island (in particular) is a tradition which has been known for many generations. *Rompong* is used as the fish collecting equipment, and fish inside the *rompong* will caught by the fishing-rod or dragnet.

The *rompong* tradition is a tradition to issue the fish resource management rights in an area whose boundary has been settled by an agreement. From the *rompong* making process to the *rompong* assembling process, the process has been changed from past time to present time. Beside the differences between past-time and present–time rompong materials and shapes, the rompong making and assembling process is also changing. In the past, when the community wanted to make a rompong, the people have to obey the ritual tradition, but in the present time, the people obey the ritual tradition less than before.

The changing process can be seen on rompong shapes and materials. The past-time rompong was made of bamboo (used as the signs in sea surface), rattan (used as the *riri* (coconut leaves) installation), coconut leaves functioning as the fish collecting place, and coral as the ballast. The present time rompong is made of Styrofoam (used as the sign in sea surface), nylon rope as the *riri* installation and as the fish collecting place, and for its ballast, the cement and sand mixing are used. (**Figure 5**)



a. Past-time Rompong b.Present-time Rompong

***Figure** 5 Rompong* Materials and Shape in Past time (a) and Present time (b)

3.2.3. *Rompong* Method and Management Mechanism in Barrang Caddi Island

a. Territorial System Boundary

In *rompong* system, the property right of the area around rompong applies, and the rompong is built by the rompong owner (*parrompong*). This means that nobody is allowed to catch fish in radius of 1 hectare – 10.000 m^2 without the permission from the rompong owner; however, the ownership is not permanent, because that property right is only valid as long as the rompong is settled. By then, the *rompong* tradition is a possession claim behavior several waterworks area.

Figure 6 Fishermen who do the fishing capture using the fishing-rod in one *rompong* in Barrang Caddi Island.

b. The Rules System

In *rompong* system, there is no written regulation between the *parrompong* and the fishermen or among the *parrompong* themselves. In *rompong* installation, each *parrompong* is concerned about the existing *rompong*. Besides that, there are differences between the *parrompong*s about the distribution in the fish catch yields. The common ratio between *parrompong*

and fishermen is 20:80. That means that when the fishermen can catch fish for 100 kg, the 20 kg is for the *parrompong* and the 80 kg for the fishermen.

c. The Right System

As mentioned before, in *rompong* system the property right applies. In this case, a *parrompong* has the right to give access to the fishermen or for sport fishing activity. The *parrompong's* rights are as follows (Saad reffered by Satria, et.al, 2002):

- *Parrompong* has the possession right to fish around his rompong area
- The claim of that are can be inherited and granted.
- For the abandoned *rompong, the fishermen* still have to ask for the *owner's* permission to catch fish around his *rompong* area.

The *parrompong* obligations are as follows:

- Giving a chance to others for sailing in his territory area.
- The *parrompong* has to give a chance for others to use fishing equipment.

Beside that, Saad reffered by Satria et.a; (2002) explained that beside all the obligations above, the *parrompongs* are free from other obligations apply in South Sulawesi area such as paying some retribution to the local government.

d. Sanction Systems

The sanction of *rompong* tradition in Barrang Caddi Island is flexible, because for all violations or misunderstandings carried out by the fishermen in fishing activity are solved among themselves. But for a *rompong* tradition outside the South Sulawesi area, the parrompong will attack the fishermen who trespass the rompong using stones and their boat will be drowned and their dragnet will be burned.

3.3. *Awig-Awig* in North area of West Lombok

3.3.1. Location General Explanations

Administratively, Lombok Island is divided into four cities/regency areas such as Mataram City, West Lombok Regency, Center Lombok Regency and East Lombok Regency. The width of Lombok Island is 4, 738.70 km^2 or 23.51 % (including small islands around it) of the whole West Nusa Tenggara Province landmass (20, 153.15

km2). The landmass of Lombok Island is smaller than that of the Sumbawa Island (15, 414.45 km2) or 76.49 % of the whole West Nusa Tenggara Province landmass (including small islands around it).

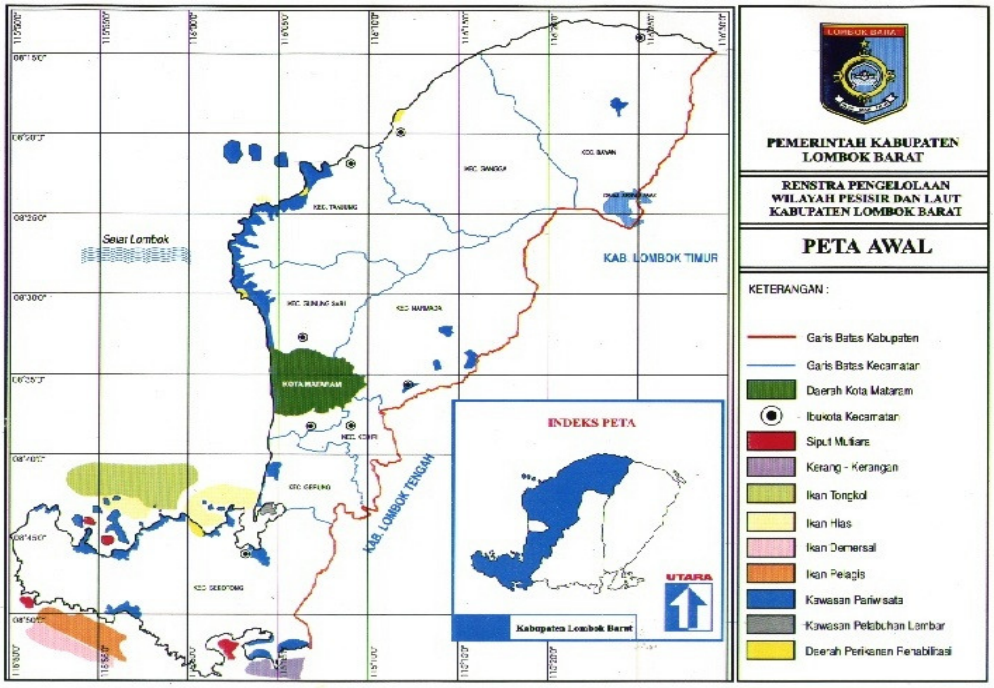


Figure 7 West Lombok Regency Map

Geographically, West Lombok Regency is located in 8⁰ 112'-8⁰55' LS and 115⁰ 46'-116⁰' 28 BT and bordered with Java Sea in the northern side. East Lombok Regency and Center Lombok Regency are in its east side, whereas Hindi Ocean in the south side and Lombok Strait and Mataram City are in the west side. The landmass of West Lombok Regency is 3, 001 km2 consisting of 1, 649.15 km2 land and 1, 352.49 km2 waterworks with the beach line length of 182 km2 and surrounded by 22 small islands. West Lombok Regency topography consists of hills and mountains, spreading out from north and east areas to the west area of this regency with the Rinjani Mountain at the top (3, 775 m altitude), and Mareje Mountain (716 m altitude) in the west area spreading from east to west.

Generally, West Lombok Regency has a tropical climate, with uneven distribution of rain in all areas. For example, in the center of West Lombok Regency, it rains more often than in the north or south area of West Lombok Regency. In the center area of West Lombok Regency, the rainy season occurs from November to April, and the dry season occurs from May to October. In the north and south areas of West Lombok

Regency, the rainy season occurs from December to March, and the dry season occurs from April to November.

3.3.2. *Awig-awig* History in North Area of West Lombok Regency

Historically, the West Lombok communities have their own local wisdom to manage their natural resources and give sustainable benefits for themselves. All the natural resources exploitation activity whether it is in the land or is the sea is always related to each other as can be seen in their custom or r behavior when the communities carry out the rice harvest ceremony and fish catch activity in the sea.

The harvest ceremonial behavior is very strong in the communities as can be found in Pamenang, Tanjung, Gangga, Kayangan and Bayan Sub-districts. This cultural activity starts from the "*telu* time Moslems" behavior which is centralized in Bayan where the Bayan people have mostly become the religion leaders for generations.

The customary regulation in this society is unwritten, including the fishery resources management regulation. The customary regulation function on this management is not only to make the communities obey the customary law, but also to make them understand that all the human activities should be based on the environment capacity. This means that customary regulation has ecological, social, economic and political functions. The communities of West Lombok North area manage their fishery resources by *sawen, sawenan* or *nyawen* ceremony. The existence of *sawen* ritual ceremony has eventually disappeared in accordance with the social, economic, and political conditions in Indonesia.

According to Solihin (2000), periodically the existence of *sawen* ritual ceremony is divided into three periods, namely, (1) since the Sasak presence until 1965 (old-socialpolitical era) ; (2) in 1966-1999 (new-sociopolitical era); and 2000 – present (reformation era). In the new-sociopolitical era period, the practice of *sawen* ritual ceremony disappeared. There were some factors which influenced the loss of *sawen* ritual ceremony in that era: ***Firstly,*** there was modernization of the way of thinking of the communities. The students' contribution greatly influenced the existence of the *sawen* ritual ceremony. They thought that *sawen* activity was only a wasting time activity; furthermore *sawen* is reputed to break out the Islam regulation although in this ritual ceremony the Koran was read as an appreciation of gratefulness to Allah SWT. Also, during the ceremony, throwing the buffalo head into the sea took place. Besides, all students (from formal and informal educational institutions) have already replaced the "*telu* time of Moslem people" that strongly hold the north sasak customary law.

Second, the economic and political conditions in Indonesia. In 1965, the Communist Party rebellion had destroyed the society economic system, and that period was called the bankcrupt period because it was very hard to get something to eat at that

time. In this period, the *sawen* ritual ceremony was being abandoned, and in the end it dissapeared for a long time However, this activity started again in the middle of year 2000, in the April-May period.

In the regional autonomy era, the revitalization effort of the customary regulation or local wisdom in the coastal communities has increased. This has been influenced by the conducive political condition and involves the communities as the wisdom planners and implementers.

3.3.3. Awig-awig Working and Management Mechanism in North area of West Lombok Regency

a. Territorial Boundary System

The territorial which is managed by the *awig*-awig is about 3 miles from the beach (land) and it has an exclusive characteristic, because any exploitation of fishery resources activity must be based on the settled regulation. The 3-mile zone is allocated especially for fishermen who use small- scale fishing equipment, indicating that fishermen who use murami dragnet, payang, gillnet are not allowed to catch fish in that zone. The capture zone boundary has been settled by *awig-awig* using the sign or natural boundary materials (e.g. the use of corals in the 3-mile zone).

b. The Rule System

In practice, the development of fisheries management is based on local wisdom although many ulayat rights are extinct due to the government regulation which has a centralized characteristic in new-socialpolitical era. According to Law Number. 22/1999 sections 3 and 10 which had been revised to Law Number.32/2004 section 18 regarding the regional govenrment. The regional government has the right and obligation to create a sustainable fishery resources management, and each regional government should make a clear development regulation model for the coastal and sea areas.

As it is known, the region that has a local wisdom or CBM management model only needs to be equipped with the Co-management. The cultural and social conditions of the region must be identified and the differences of the coastal and sea conditions from each area must be consideren before the fishery management regulation is made. These must also be taken into consideration in the making process of *awig-awig* of North Lombok Fishermans Deliberation Organization (NLFDO) in North Lombok waterworks area in which the *sawen* ritual ceremony has taken place before. For further information, the reconstruction and revitalization efforts of the sea ulayat rights in North Lombok area can be seen at **Figure 8.**

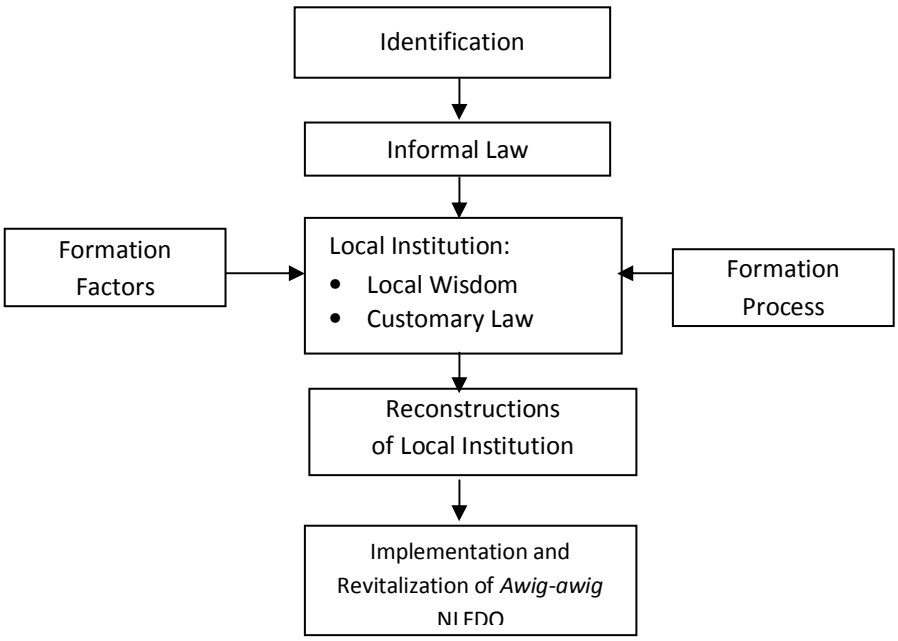


Figure 8. Reconstruction and Revitalization of Sea Ulayat Right in North Lombok (Source : Solihin, 2002)

Currently, the strenghtening of *awig-awig* in fishery management in North Lombok is influenced by the conflicts as their main issues. Conflicts in fishery resources utilization are caused by the ecological damages, demography (the number of the population is increasing), less job opportunity, legal political environment, and the changes in technology and market commercialisation . The formation factors in making of *awig-awig* can be seen at **Figure 9.**

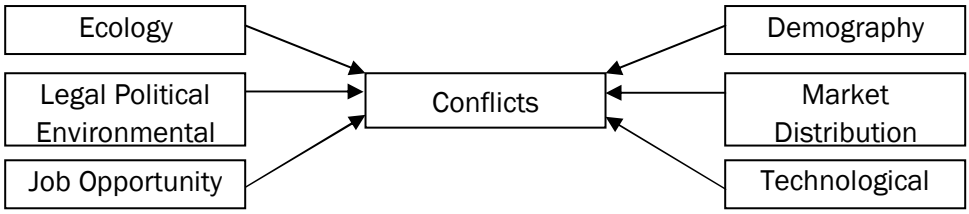


Figure 9. *Awig-awig* Strong Factors

Based on the conflict factors in the coastal communities, the North Lombok people realize that they had to make improvement on their resources utilization system. Therefore, they created a written *awig-awig* regulation as the rule in fisheries utilization to ensure the sustainable coastal development.

Awig-awig part regulates the collective management as tjethe collective consciousness in North Lombok Coastal Area Communties. The collective consciousness in *awig-awig* is more influenced by the ecological damages. This means that *awig-awig* is a fisherman's ecologically adaptive strategy which is intended to allocate the available resources in the fisherman's environment so that social-economic pressures can be reduced.
In the mean time, merging all subdistricts in North Lombok is a common thing for Sasak communitty. In Sasak customary communitty, that villagesmerged in one region to handle communitty needs has been known for a long time, and it is called the village-unity (*dorpsgeenschap*) reflecting in a comunal right that is the sea ulayat right (Mahrus, 2001).

In writing the *awig-awig* for all waterwork areas in North Lombok the region involved the governmental elements such as Marine and Fishery Affairs Agency at the Subdistrict and Villages and the fishermancommunities as well. The fisherman communities are more important than the governmental elements. The details for the writing of *awig-awig* can be seen at **Figure 10**

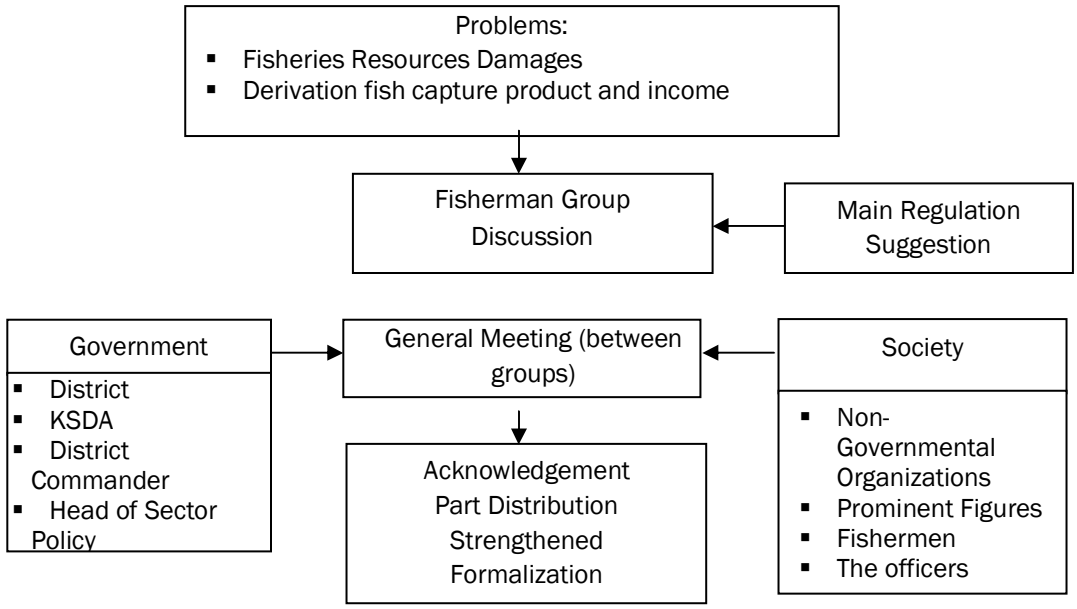


***Figure 10**. The Awig-awig Making Process (Source: Solihin, 2002)*

Derivation of fish catch yield was caused by the use of unfriendly fishing equipment. This made the fisherman communties wanted emphatic rules in fishery and coastal utilization in order to make a resource conservation and increase the fishermen's income. Every problem is directly solved by the team leader by organizing the fisherman group disscussion in each village.

The organization establishment and composition of the management team was carried out in March, 12th 2000 attended by fisherman groups from three subdistricts i.e. Pamenang, Tanjung and Gangga. The result of this meeting indicated that on March 19th 2000, the general meeting would be held by the fisherman groups in Patuh Angen Kandang Kaok, Tanjung Village, and Tanjung Subdstrict.

The General Meeting on March 19th was attended by all the stakeholders concerning with the coastal and marine resources utilization such as Marine and Fishery Affairs Agency, the Police, Babinsa, the Heads of Subdistricts , and the village leaders in North Lombok Area. The meeting was led by the head leader commitee in ex-officio who were responsible for establishing and legalizing the awig-awig of fisheries utilization in North Lombok Area. The result of this meeting was signed by the exclusive head leader committee, Hadi Sasmita and the secretary Datu Setiajati. Next, it was signed by all fisherman groups in three subdistricts, that is Pamenang, Tanjung and Gangga and acknowledge by the Subdistrict heads and Village leaders.

In this general meeting, the focus was more on the bombing activity and the use of potasium in catching fish; therefore, the written agreement reached was only to regulate these two destructive capture methods (bomb and potasium). In addition, for the operational area and other fishing equipment such as fishing rod or dragnet are regulated by the unwritten agreement. The written agreement results or the *awig-awig*s which have been approved are as follows:

- When a transgressor is caught using bomb and potasium , the person will be caught and brought to the competent party in the subdistrict area. Here, he must write a statement letter stating that he will not repeat this action anymore (bombing and using potasium to catch fish). The transgressor also must pay the fee (maxImum of Rp. 10,.000,000,-)
- If the transgressor still uses bomb and potasium to catch fish for the second time, the fisherman community will catch him and destroy his fishing equipment.
- If the transgressor still breaks it for the third time, the fisherman community will punish him by hitting him but not putting him to death.

b. The Right System

The right characteristic of property ownership in fishing activity in awig-awig area is individualist. That means that everyone has right to do fish catching activity as long as the equipment is appropriate with the awi-awig zone agreement. For

outsider fishermen who catch fish in this area should have a permit letter from North Lombok Marine and Fisheries Affair Agency by paying the retribution fee and legal permit letter fee.

When issuing the permit of fish catching in a three-mile zone, the North Lombok Marine and Fisheries Affair Agent will discuss first with the NLFCI (North Lombok Fisherman Council Institute). This is intended to avoid conflicts between outside fishermen and local fishermen. Beside that, the discussion also means to create a cooperation between the outside fishermen and local fishermenand will create a good relationship in fish catching activity.

c. Sanction Systems

The sanction systems in *awig-awig* agreement:

- When a transgressor is caught using bomb and potasium , the person will be caught and brought to the competent party in the subdistrict area. Here, he must write a statement letter stating that he will not repeat this action anymore (bombing and using potasium to catch fish). The transgressor also must pay the fee (maxImum of Rp. 10,.000,000,-)
- If the transgressor still uses bomb and potasium to catch fish for the second time, the fisherman community will catch him and destroy his fishing equipment.
- If the transgressor still breaks it for the third time, the fisherman community will punish him by hitting him but not putting him to death.

The government thinks that the third point of *awig-awig* sanctions is inhuman and it must be changed. However, the community believes that the sanction is reasonably effective because it makes the transgressor feel alert and will not repeat it. Based on the result, the fee sanction percentage was issued at the general meeting (see Table 2)

The transgressor who has been under arrest is taken to the beach/land area and directly taken into the court by one NLFCI member. The assembly process must be completed by such evidence as fishing equipment, and fish catch yields t (maximum of 2 fishes), and the decorative fishes are released back into the sea., Also, the transgressor is allowed to take his other fish yields with him.

Table 2. Allocation of Money in *Awig-awig* ?

No.	Fee Recipients	Percentage
1.	LMNLU?	25 %
2.	Office of Local Sub-district	1 %
3.	Office of Head of Local Sector Police	1 %
4.	Local District Commander	1 %
5.	Local Village	1 %
6.	Member Groups (13 groups)	21 %
7.	Fish Catch Operation Cost	50 %
Total		100 %

Source: NLFDO, 2001

The sanction mechanism given to the transgressor was arranged based on the community agreement. According to that agreement, every fisherman who sees the *awig-awig* violation has to report it to the NLFCI local officers. Fishermen who see the violation while they are at sea have to reach the shore immediately to report the transgressors' fishing equipment. The fishermen that see the violation while they are in the beach have to report it to all community members and the NLFCI officer. Following this, the NLFCI officers and the government officers such as ARMY and the policemen start to chase the suspected transgressor.

The election of the district leader to lead the meeting is directly carried out by the fisherman communities and the NLFCI officers in the violated area. During the persidangan process, the NLFCI officers invite the village leaders i.e. the Head of Military Area, and the Head of Sector Police. However, the local government's role is only to monitor the assembly meeting process, and the fishermen give large contribution that the leader can consider when making a decision.

In that assembly meeting, the suspected is allowed to raise his objection about the sanction that has been decided by the council leader. After the hearing session between the terdakwa and the fishermen, the council leader gives the sanction and issues a declaration letter stating that he will not repeat the violation. For the fee sanction, if the terdakwa does not have money to pay it directly, his boat and fishing equipment will be confiscated and they will be returned to him after he pays the sanction fee. The assembly meeting process conducted by the NLFCI officer can be seen at Figure 11.

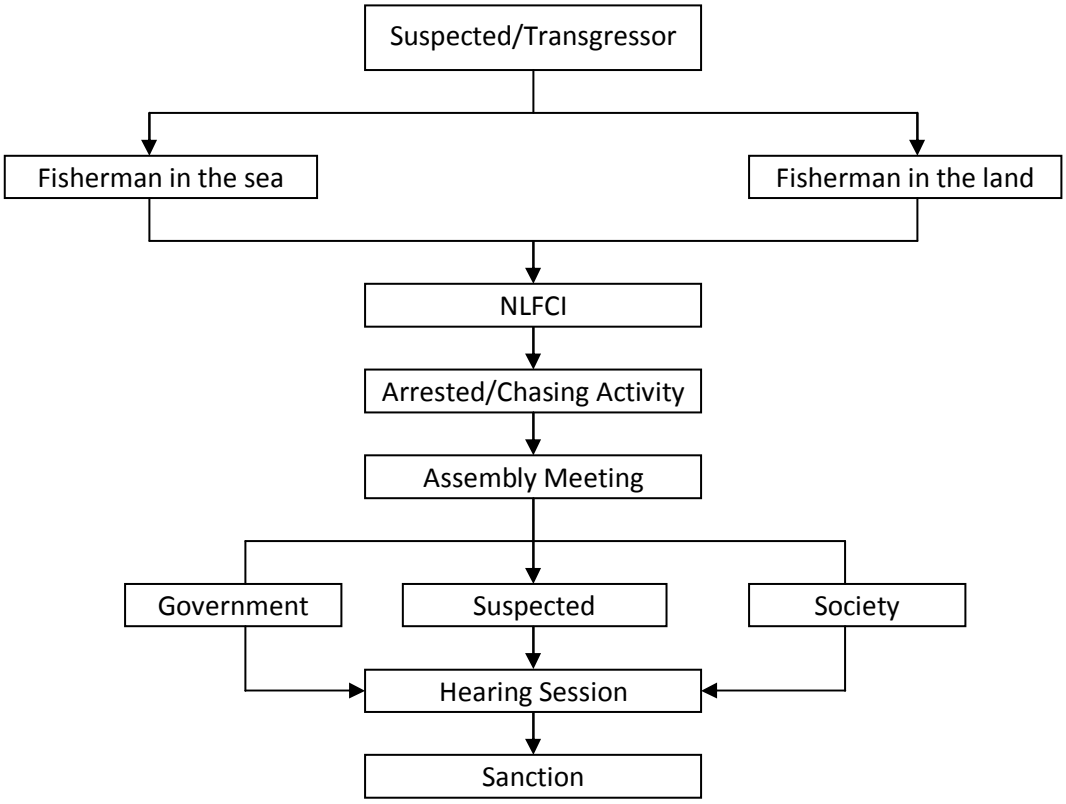


Figure 11 The A*wig-awig* Sanction Mechanism Distribution (Source: Solihin, 2002)

d. Monitoring and Evaluation System

The daily monitoring system is conducted by the NLFCI officer. As shown in Figure 3.10, the security division has to monitor the daily monitoring activity.

e. Authority System

Although awig-awig implementation is influenced by the s*awen* ritual ceremony and the fisheries utilizationis based on the local wisdom, the *awig-awig* legality source is still influenced by the Sasak Community ritual tradition. The source of awig-awig is from the local community awareness about the waterworks damages which has been used as the main income for the society. Law No. 5/1979 about the Village Administration which has been erased all local institution in village and orchad, then the exist customary regulation will be transfered becoming an important regulation in signing in the *awig-awig* agreement by the village and subdistrict staff. The shifting regulation is influenced by the formal laws that require any legal products to get the legality of

authorities. Although the awig-awig implementation now is uncompatible with the original, but the awig-awig characteristic as law, made by the local agreement is not lost.

The institution which is approved by the community to organize *awig-awig* in relation to fisheries management in North Lombok is Fisherman Council Institute of North Lombok or abbreviated NLFCI. In accordance with the letter No. 06/LMNLU/V/2000, LMNLU management consists of: (1) protective covering advisory of Pamenang Muspika District, Tanjung and Gangga Districts and the village heads of Pamenang, Tanjung and Gondang; and (2) daily management chairman, vice chairman, secretaries I and II, treasurers I and II as well as sections of maritime security, beach cleaning,, social welfare, conservation and rehabilitation of the sea (**Figure 12**).

Meetings of the organizational structure of LMNLU are the highest decision making forum which is attended by all the fisherman communities of North Lombok. This function of this forum is to select the daily management committee until the next period, and the conference meeting is held every 3 years. The result of the conference agreement is a mandate from the board to the daily management in general and to the chairman in particular. . Since the application area of awig-awig is very broad, the chairman's role is merely to coordinate the implementation of awig-awig in five districts. Vice chairman's role is taking over the position of the chairman if the chairman is not in or unable to carry out his duty. The role of the secretaries and treasurers is to assist the chairman in running the administration of the institution.

Meanwhile, in running the administration of awig-awig, the chairman is also assisted by several sections whose job functions are in accordance the agreement. They include: (1) the section of a maritime security patrol which is responsible for the maritime security monitoring, including catching and reporting any fisherman who breaks the *awig-awig* regulation to an administrator of the region; (2) the section of coastal cleanliness which plays a role in increasing public awareness about the beach so that the community keeps the environment clean and controls the back or boat storage, (3) the section of the social welfare which plays a role in the distribution of funds for the activities of fishermen at Tasyakuran; and (4) the section of conservation and rehabilitation coral reefs by creating artificial reefs through the governmental programs. In executing their functions, of all the sections work together (and are not separated from each other).

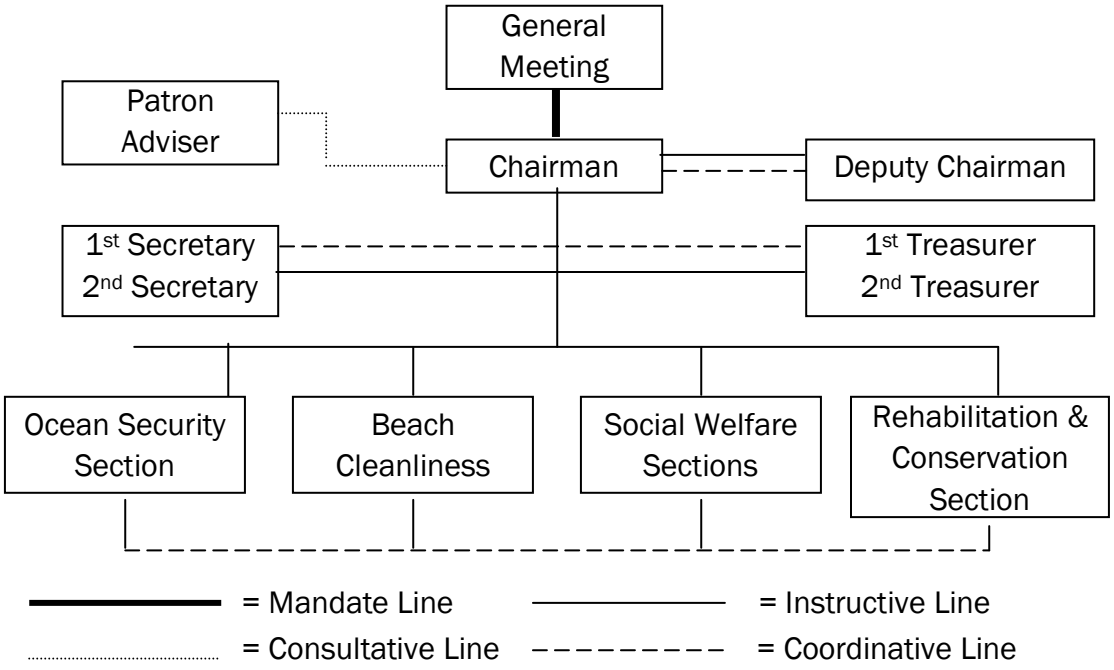


Figure 12. LMNLU Organization Structure

3.4. Marine Customary Law/Sea Commander (Panglima Laot)

3.4.1. Preface

The existence of Marine Custom Institution in Nanggroe Aceh Darussalam is not only accepted by the fisherman communities but also by the regional and central governments. Law No. 44/1999 on the third part states the implementation of the special local government of NAD Province. Article 7 mentions that each area is allowed to form its Customary Institution in its area and accepts the existing Customary Institution appropriate with the situations. The specific local government of Nanggroe Aceh Darussalam is forced with Law No. 11/2006 on Aceh's Government and its descendant such as Qanun No. 10 on Customary Institution.

Based on that, the NAD Government made a Local Regulation No. 7 Year 2000 where Chapter II Section No.5 and Article No. 1 states that the existing and developing customary institutions in the society will be maintained, utilized, managed, empowered and standardized.. Thereby, the existence of marine

customary institutions/sea commander officially becomes the customary law of marine management.

3.4.2. The History of Marine Customary Law/Sea Commander

The history of implementation and existence of marine customary law/sea commander (it is then called the sea commander) existed a long time ago and was at a low ebb from time to time. In the beginning, sea commander law was established in the Sultan Iskandar Muda period. Based on that case, the history of sea commander was divided into two periods i.e. before and after the independence of Indonesia.

a. Period Before the Independence of Indonesia

According to C. Van Hollen Hoven (1976), Sea Commander was one of the official institutions organized by the government (Aceh Sultanate), and at that time, there was a regulation organizing how far the fisherman could go fishing. The sultan gave a regulation letter to Ulee-Balang (the same level as the regent/mayor at present) to regulate marine customary law and to promote a sea commander. This shows that the existence of sea commander was accepted and protected by the state's law. The consequence of accepting the sea commander was all law norms had to be obeyed by the people under the authority of Sultan Iskandar Muda.

The substance of the marine law was directly connected with the implementation and benefits of the fisheries resources. Implicitly, the marine customary law was to explain that under the Sultan's authority, the sea resources were developed for his people's welfare. In the beginning of the implementation, the sea commander only inspected in certain areas called "Lhoks" or estuaries, where fishing equipment and prohibitions on fishing became the priority in this mechanism of implementation. Based on the law of sea commander existing at that time, the primary objectives of the law were (1) to collect taxes in port; and (2) to mobilize war.

b. Period after the Independence of Indonesia

After the independence of Indonesia, the government interest in marine customary law and sea commander became less although the sea commander's existence was still maintained and applied by the fisherman in a traditional way. The ignorance of the new independence government on the sea commander gave an impression that the government wanted to change the old tradition with the latest modern tradition. However, the community needs a social framework which has been made in the community (including the marine customary law).

Since 1972, the interest in the sea commander has increased slightly when the educational institution started to promote the sea commander's discourse. However, the existence of the sea commander is only as the technical organizer, but he does not have the capacity to authorize at the coastal areas.

The existences of marine customary law and sea commander was forgotten for a quite long time , however, they started to get their portion when the Local Regulation No. 2 year 1990 on finding and developing the marine resources traditionally, the habits of communities and local traditional institutions in NAD. This local regulation placed sea commander as the official governmental institution in NAD. This existence is forced by the Law Regulation No. 44 Year 2000 on specific implementation of NAD Province, where the development of custom life including the sea commander institution becomes one of the important parts in this law regulation. After tsunami, the marine customary law and sea commander become stronger. Some district level regulations (qanuns) were issued to strengthen the existing district level regulation. Aceh Qanun No. 9 Year 2008 on creates the development of custom life. Qanun No. 10 Year 2008 on customary manner institution explicitly approves that the sea commander institution as part of the customary laws t has been given some authority to regulate the customary law in sea.

3.4.3. Regulation of Marine Customary Law and Sea Commander

Marine Customary Law and Sea Commander that are regulating fishing, maintaining fisheries resources and other sea biota, and protecting fisherman communities in this area are needed by the fisherman communities to create conducive circumstances.,
Sea commander is definitely a person who leads the tradition, people habits in sea fishing, and lawsuit completion (NAD Local Regulation No. 7 Year 2000).

Marine Customary Law regulates the followings:

a. Territorial System Boundary

Marine Customary Law/Sea Commander authority is based on its phase and hierarchy which can be seen in the sea commander organization. The brief explanation about the sea commander area management based on its level is as follows:

- The Sea Commander at the provincial level has an authority territory in coastal areas; therefore, the authority of this sea commander is more coordinative, resulting in the absence of authority. He has a coordinative function, not a

customary function, because the customary function is handled by the Ihok and regent/mayor.

- The Sea Commander at the regency/municipality level has an authority in coastal areas possessed by the regency/municipality.
- The Sea Commander at the Ihok level has an authority in fishermen village coastal areas equal to sub-districts/villages.

b. Rule System

Currently, NAD applies the same marine customary law based on the agreement of all NAD sea commanders and it is valid in all NAD territories. However, each regency/town commander has their own regulation implementation in their area apart from the substances which can create conflicts between the regencies in NAD.

I. Marine customary law for fishing
The contents of this regulation law for fishing are as follows:

a. Forbidden days to sail include :
   - During the marine customary ritual meal held at least once every 3 years, depending on fishermen agreement and capability. Fishing is forbidden in this three- day celebration of ritual meal.
   - On Friday, and fishermen are forbidden to fish for one day.
   - On Eid Mubarak Day, and fishermen are forbidden to fish for two days
   - In Eid Qurban Day, and fishermen are forbidden to fish for three days
   - On Independence day on August 17th , and fishermen are forbidden to fish for one day
   - On December 26thto commemorate the tsunami disaster which attacked NAD on December 26th 2004.

II. Customary law is a daily manner for fishermen in carrying out their activities,
   - When the fishing boat or other fishing equipment is damaged, the fisherman has to give a sign by fluttering the flag to ask for help. If the fishermen in another boat see that sign, they have to help him as soon as possible.
   - When the boat is on fishing activities, the crews or the captain has to raise their hat as the “possession of the marine resources in fishing area”. This is intended to warn other boats coming closer and fishing at same area unless the first boat gives the permission or the area has a lot of marine resources. Another reason is to avoid other boats from destroying their fishing equipment.
   - If a fisherman is drowned, all the crews on the boats have to look for the drowned body at least for the whole day, and those who find the body must bring it to land.

III. Natural Conservation Customary Law

- It is forbidden for fishermen to bomb, give poison, toxins, use electricity, anesthesation, or other materials because it may damage the corals and sea biota.
- It is forbidden to cut trees in the coastal areas such as pine, pandanus, almond tree, mangrove, etc.
- It is forbidden to catch the protected fish/other sea biota, such as dolphins and tortoise.

IV. Marine Ritual Meal Customary or Kenduri Laot
Each region in NAD has their own specific variation and specialty of Marine Ritual Meal Customary, but it still considers the Islamic norms.

V. Drifting Material Customary
Everything (boat, panglong boat, etc) that has drifted at the sea and been found by fishermen must be handed in to the local sea commander for further handling.
Beside the rules, the marine customary law also arranges lawsuit completion mechanism in fishermen's life. If there is a conflict/lawsuit, Lhok/Village Sea Commander will resolve it. If at this level, the sea commander fails to resolve the problem, the fishermen can take the problem to Regency/City Sea Commander. This is a mechanism when the advice and opinion of the Head of Marine and Fisheries Affairs are taken into consideration.

c. Right System

In Marine Customary Law/Sea Commander system, the highest part is owned by the sea commander. In this institution, the sea commander's function is to hold responsibility in perpetuating the customary and habits in fishermen's community life and in bridging over the relationships between fishermen and the government. The duties are as follows:

- To maintain and supervise marine customary law and marine law rules
- To coordinate and supervise each fishing activity at the sea.
- To solve the disagreement/lawsuit in fishermen and his groups
- To manage and organize marine traditional ceremony.
- To preserve and supervise the cutting down of trees on riversides because fish will avoid these places
- To connect the fishermen and government in order to implement the governmental fisheries development.
- To improve fishermen's welfare.
- To arrange fisherman community's ritual schedule, such as marine ritual meal.

d. Sanctions System

In order to apply sanction and enforce the customary law, the interpretation of decision mechanism is taken by The Lhok Sea Commander. If the lhok sea

commander fails to solve the violation of customary law on the Ihok's authority, it will be taken over by the regency/city sea commander. Informally, the sanction can be done in specific mechanism where transgressor does not have to face the sea commander, but it can be solved by the lowest structure where the violation occurs. For example, if a problem happens between aneuk boat crews, it has to be solved by the head of aneuk boat. This sanction is not arranged in marine law, but it is only as adhoc process occurring in fishing activities. The applied sanctions if fishermen fish on forbidden fishing days include: (1) all fish yields are confiscated by the marine law institution and reduced by infraction fee; (2) they are not allowed to fish/sail minimally for 3 days and maximally for 7 days.

e. *Panglima Laot* Organization and Marine Customary Institution

The authority of marine customary law in all NAD regions is on Sea Commander and marine customary institutions. The organization structure consists of several levels. The highest level is Sea Commander, the 2nd level is Lhok Sea Commander, and in the 3rd level is Marinepawang, and in the 4th level is pukat diviner (Figure 13).

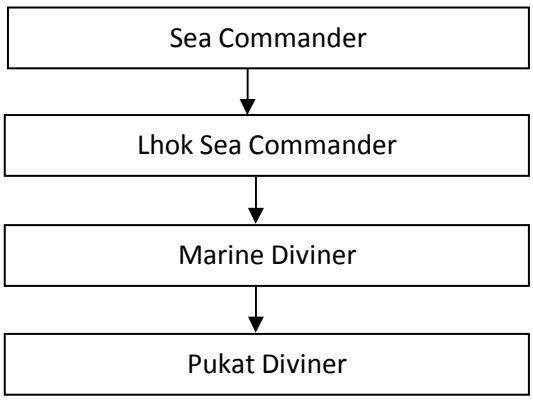


Figure 13 Structure and hierarchy of Sea Commander

a. Sea commander is also known as chik sea commander or chik laot, and it is the highest level in sea commander structure in NAD. The sea commander's responsible territory is regency/city district. The commander leads some Ihok sea commanders in regencies/city districts.
b. The sea commander is also called as abu laot who leads and has his own limited responsible territory i.e. at Ihok region of the fishermen residential areas and fishing areas. The territory includes coastal villages, several resident areas, sub-district areas or an island.
c. Marine expert is an expert who leads several pukat experts. Marine expert has districts and is responsible for a gampong (village), but there are marine experts who have more than one gampong since the gampong has only few people who work as fishermen or it has a small coastal area.

d. Pukat expert/bot expert is usually called only expert. Pukat expert leads pukat crews (boat crews) usually consisting of 12 people. Pukat expert has full authority and responsibility to manage all pukat crews. Pukat expert has to solve problems of his pukat crews.

In the NAD Sea Commander Conference in 2000 the sea commander structure was revised and improved so that the sea commander also exists at the provincial level. The purpose of improving the level of sea commander at the province level is due to the complex dynamics of the lives of the fishermen and the intention to balance the governmental hierarchy at the provincial level. The difference between the sea commanders at the province and regency/city levels is that the province sea commander does not have an instruction line with the regency/city sea commander. His duty is only to coordinate and support the solutions of all problems rising at all NAD sea commanders' level. In conducting the conference, the government established conference institutions at lhok and regency levels. The structure of the customary institutions is as follows:

a. Law Assembly of customary law in regency/city level consists of:
   - 3 advisors acting as patrons (Head of Marine and Fisheries Regency/Municipality Office, Head of Regency/City Customary Institutions of Aceh Culture, and Head of Regency/City f HNSI)
   - The sea commander (Head of Assembly Institution)
   - 1 Deputy Chairman
   - 1 Secretary of nonmembers of the institution
   - All lhok sea commanders
b. Law Assembly of customary law in Lhok level consists of :
   - 3 advisors
   - The lhok sea commander (Head of Assembly Institution)
   - 1 Deputy Chairman
   - 1 Secretary not a member
   - 3 institutional staff (members)

The conference involves the governmental elements including the Head of Marine and Fisheries of the regency/municipality, and this ensures the survival or existence of the marine customary law institution and marine customary law in NAD. This conference also involves the HNSI elements consisting of fishing businessmen as the representatives of the stockholders of the fish catch business. The purpose of this involvement is to involve and reserve ideas from the stockholders of this business in

implementing the marine customary law which will be economically and socially advantageous for all parties.

3.5. Shallow Sea Ecosystem Management Based on Sea Farming in Panggang Island, Seribu Islands of DKI Jakarta

3.5.1. General Description of the Location

Based on the geophysical and oceanographical conditions of Semak Daun Islands, it is possible to apply the pen culture systems, cage culture systems, longline and sea ranching. Cage culture can be applied in a sea area with a 5–17 m depth during the low tide period, and its sea flow speed is between 0.15-0.35 m/second with sand and stone as its basic substrate. Based on these criteria, the suitable area for cage culture system is in the waters close to the flood gate of the coral area in Semak Daun Island. At least there are 4 entrance and exit gates of water during the high and low tide periods such as Goba Tipis in the northern area, Nawi and Blencong in the southern area, and Goba Sempit in southwestern area, and the Goba Tipis gate is the most suitable area for cage culture. **(Figure 14)**

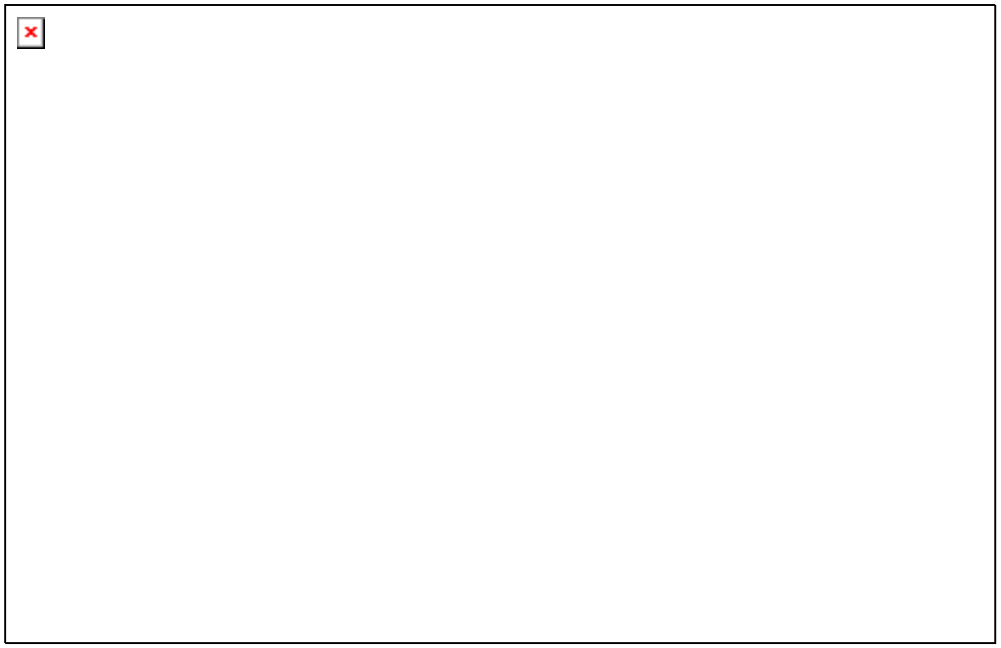


Figure 14. Systems, Location and Land Area Width suitable for Marineculture in the waters of Semak Daun Island

The fish cage location is in the laguna slope, not in the deepest water area (in the middle of the laguna). This is based on the results of sea substrate studies indicating that the bottom of the laguna contains relatively thick mud. The living corals usually covering the laguna slope are better than those at the reef flat or the mud flat. Therefore, it shows the the waters and ecosystem condition of the laguna slope is better especially for biota culture.

Furthermore, the suitable location for marine cultivation using cage culture sytems is in the waters at the southeastern part of Semak Daun Island or outside the Goba Sempit gate. This last location, although located in the outside of the deep coral waters, is relatively protected by the corals both in west season and east season. The supporting capacity of this area is high since it has a20-30 m depth deeper that the area located inside the deep coral water of Semak Daun Island. The waste of marine cultivation can be disposed to the bottom of the sea whereas the oxygen supply can obtained from the relatively strong sea flow (about 0.20-0.35 m/second). This can be seen from the the conditions of the corals which generally have masive shapes.

The potential area for cage culture development in Semak Daun Island, Goba Tipis gate and the north-western region of Semak Daun Island is 1.81 ha, 0.70 ha and 1.11 ha respectively. The potential area for cage culture system outside the deep coral waters is approximately 7.52 ha.

3.5.2. History of Sea Farming

The difficulties in obtaining fish experienced by both ornamental fish fishermen and fish fishermen are due to the fact that many fishermen from outside the Seribu Island such as from Bangka Belitung, Madura and Makassar use bigger and modern fishing equipment in catching fish in their area. The second difficulty is that overfishing occurs , and the fishermen have been affected by this since 1990. Mostfish yields are sold outside the Seribu Island area; as a result, the price structure depends on the buyers.. The fishermen of ornamental fishies observe that potas is still used, resulting in the decrease of fish yields in the past 20 years..

In order to overcome the problems above, the Sea Farming program is introduced to the fishermen. The sea farming development in seribu island is able to develop the local economy by agribussines concept. With agribussines concepts, we can growth the bussinessman participation in massive and continously ways. Thereby, the developing of agribussiness systems models can drag and give a double impact for society economics welfare.

In this concept, there are several sea farming cultivation systems that work in synergy, either in series or parallel. The systems include hatchery, sea ranching, enclosures, pen culture, cage culture (floating and permanent) and longline (seaweed and oysters). Perpetrators of these systems include the suppliers of seeds, embankment fishermen, collectors/carriers and consumers, while the guides of the systems include the government, cooperatives and researchers /NGOs/supporting agencies

With this sea farming system, the number of the seed suppliers and fishermen is increasing and they become more connected with one another. This will be very beneficial for the sustainability of the culvations and definitely for the local economic development. If viewed from the side of the fish collectors/carriers and the commodity marketing system, there are a number of people involved in this system as can be seen in the marketing activities of Kerapu fish (Figure 15).

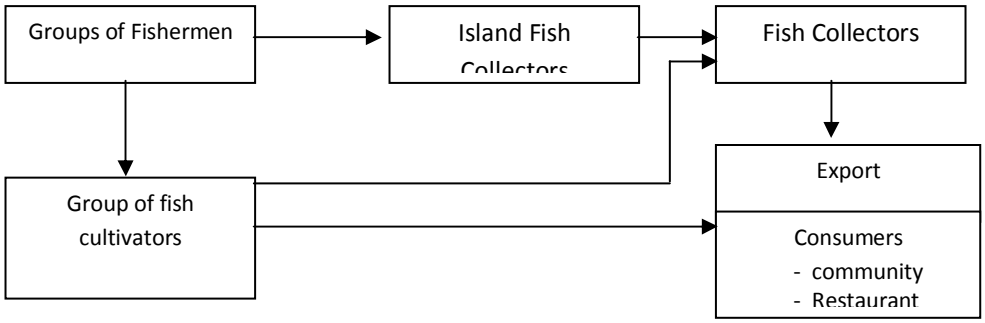


Figure 15. The Marketing Chain of Kerapu Fish

In general, the agribussines systems in sea farming can be developed as shown at Figure 16.

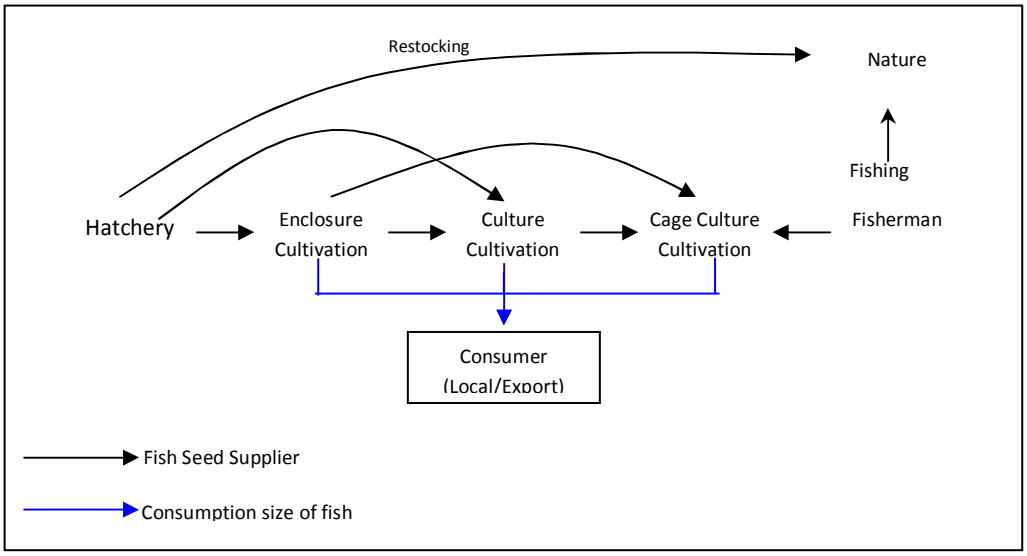


Figure 16. Agribusiness Systems Inter Cultivation Syatems in the Concept of Sea Farming

The advantages of the sea farming concept compared with the existing cultivication activites are as follows:

- The enlargement agent supported by many fish seed supplier, so it's continousment activities is maintaned. The business actors of fish

cultivation is supported by many suppliers of seeds so that the continuity of activities can be maintained

- The business actors are also able to obtain high quality fish seeds because the fish seedling process has been done in the cultivation area and the seeds are already adapted with the environment.
- The duration of fish cultivication becomes shorter because there is a diversification in fish size during harvest
- It is possible to apply multi cultivication systems by involving all community levels based on their desires and competences.
- The efficiency of natural resources utilization can be achieved through the application of the multi cultivication systems, for almost coral habitats can be useful for cultivication activities by concerning the environmental supporting capacity.
- The opportunity of the sustainability of the cultivication activities is higher because it involves a lot of Business actors.
- Possible development of other follow-up cultivation activities that can synergize with the concept of sea farming is also greater such as seaweed farming and oyster farming (pearl/fish consumption).

4. Sea Farming Management and Mechanism

a. Territorial System Boundary

Cultivated land areas designated as sea farming areas are all areas which have been established by the Regional Head preceded by the inventory and identification activities that involve communities and other stakeholders such as universities, NGOs and the private sectors. Determination of sea farming areas is based on function and condition of resources tailored to the physical condition of land, and cultural needs of the communities.

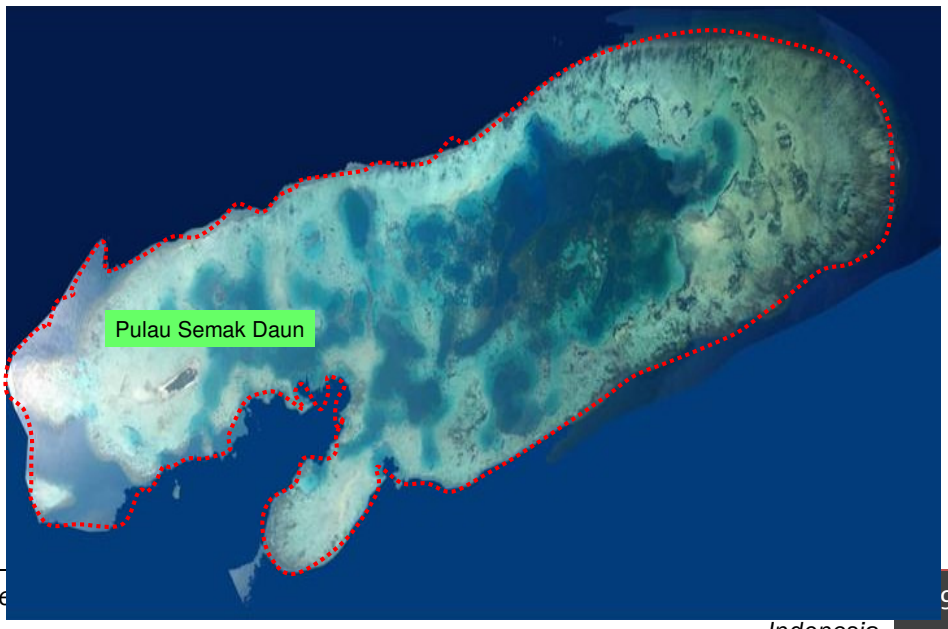


Figure 17. The Borderline of Sea Farming Management Areas in Semak Daun Island

In sea faming's frameworks, this borderline zone is becoming the foundation of sea farming implementation borderline zone settlement. Ecologically, this implementation area includes the shallow sea ecosystem zone (Goba) Tipis in the north area, Goba Nawi and Goba in the south area, and Goba Sempit in the west area. **Figure 17** shows us the sea farming implementation area in Semak Daun.

b. The Rule System

Overfishing is caused by high pressure of fishing activities on fish resources. To solve these problems we need an implemented breakthrough. One of the programmes is diversion activity from fishing to cultivation activities. Sea farming is a cultivation activity to change a coastal public paradigm about sea exploitation and the continuousimplementation of fisheries resources. The sea farming system, using approximately right-based fisheries, is an alternative that can open access to implementation resources,. Itit can avoidcause conflict among the fishermen and also avoidcause environmental damage. Therefore, sea farming is an alternativeimplementation of marine fisheries resources (marine culture) that can function as the main motor.

The function of marine culture is the supplier of fisheries resources., including the fisheries cultivation economy society activities, and it can increase fish stock enhancement. Therefore, sea farming is a sea shore implementation activities in coastal areas. Those implementation activities must be suitable with fisheries cultivation activities. One of the regions which applied the sea farming activity is the Administrative Regency of Kepulauan Seribu. The Administrative Regency of Kepulauan Seribu is surrounded by sea ecosystem in a small island. Therefore, the Administratve Regency of Kepulauan Seribu is a public administration area with an island governance system.

One of the most important aspects in the island governance system is to optimalize the implementation of sea area for society welfare in ecology, social, and economic aspects. The Administrative Regency of Kepulauan Seribu has its own vision as an island regency, by emphasizing the sea resources in its territory. This can be proved

by the fisheries and marine tourism that becomes the main motor of the economic activities in this regency.

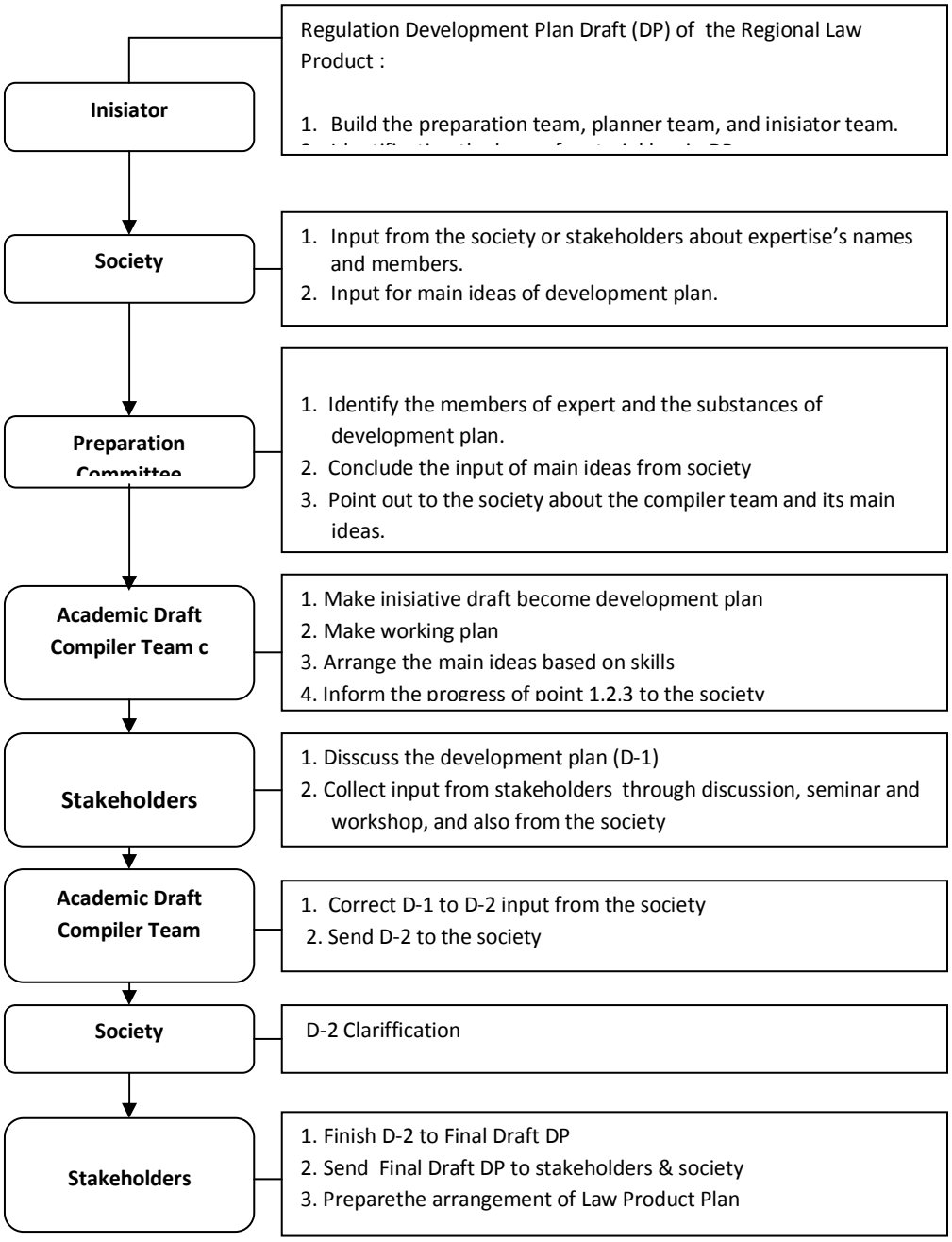


Figure 18. Regional Participative Regulation Arranging Phase

However, the most important prerequisite on the institution incentive plan is to give the sea farmers the rights to use and to get a continuous fisheries production. One of the most important pillars on the sea farming is strengthening the sea farming law and institution. These rights can be given by strengthtening the transparent and justice legal mechanism. This is needed to create the balance between individual interest and public interest in order to make a conducive situation in society. If the balance has been created, then the Lowe's law is to maintain condusive situation in the society for unlimited time. The Lowe's law in maintaining the balance can be done by assembling the law sanction, including to give incentive and disincentive. Thereby, Sea Farming law and institution strengthening become one of the most important things in this sea farming implementation framework in the Adminstrative Regency of Kepulauan Seribu.

c. Right Systems

Several rights have to be fulfilled in the sea faming management, such as :

- Sea farming working groups are allowed to use and manage their own sea farming area.
- Sea farming working groups are allowed to get development training in cultivation fisheries skill.

The Sea farming obligation includes such matters as :

- Sea farming working groups have to maintain the sea farming conservation and cleanliness.
- Sea farming working groups have to make an implementation report activity periodically from fish seedling until harvest to the institution chosen by Marine and Fisheries Affairs.

d. Sanction System

The sanction system has been approved by valid government's law and regulations, such as :

- Individual and corporation in the Adminstrative Regency of Kepulauan Seribu's jurisdictions have to obey all government's law and regulations;
- Every infringement of law from individual and corporation is prevailed by the valid government's law and regulation as its sanctions;
- Regency Regent is also compentent to give an authority to the Head of District Fisheries and Marine affairs and the Police Officer to trace all infringements of Regional Regulation of Sea Farming Management.

e. Monitoring and Evaluation System

The supervising and controlling activities are classified into two points i.e :

1) Internal Controlling by Sea Farming business groups and institutions :
   - The aim of sea farming internal controlling is to guarantee the marine and coastal resources can be carried out suited to sea farming's general plan and operational plan
   - The sea farming internal controlling activities can be done in a participative manner from all sea farming business groups and institutions.
   - The internal controlling is an independent working planevaluation program from sea farming business groups and facilitated by the regency government or the third party chosen by the regency government.

2) The controlling activities by the Regency Goverment :
   - The aim of sea farming controlling activities is to guarantee the coastal and marine resources management can be carried suited to the aims of the general and operational plan.
   - The regency controlling activities are carried out based on the management plan prescriptions.
   - The controlling result is applied to monitor the appropriateness of management implementation and management plan.
3) The controlling activities by the society
   - The society, individually or group can control the implementation of sea farming management activities.
   - The society has the right to propose a legal claim, if the sea farming management activities can harm the society and environment.

f. The Authority System

Sea farming organization is quite simple.It only consists of chairman, secretary, treasurer, security division, and public relation division. The security division is concerned about controlling and monitoring activities in Semak Daun area and also the culture facilitation safety. Public relation division is the connector between the internal and external of the organization.

3.6. *Lamalera* Society and Whale Hunting

3.6.1. General Description of the Location

Lamalera village is the only one village that owns the traditional whale hunter fisherman community. It, however, raises a question, "How can a giant animal be hunted with a simple way of hunt? Their hunting tradition has made people from around the world curious about it. The hunting tradition has become one of the main income generations for the community in this arid area.

Lamalera village location is in the south area of Lembata Island. This tradition has been inherited from generation to generation, but now the youth of the Lamlera village starts to forget this tradition and is more interested in western culture and globalization.

Lamalera village is located in the south area of Lembata Island, including Nagawutun District of Lembata Regency in Nusa Tenggara Timur (NTT). Geographically it is located in 23°5' and 8°30' longitude east, between Vovolatu cape and Nubivutun cape. Biophysically, this is an arid area consisting of big and small rocks, sedimentary stones (more than 5%) and planting areas. The beach condition is steep. They only have a small sandy beach, which is the place for the fishermen to tie up their boat and their whales. The condition of their island makes the fishermen strong, brave, and tough, physically and mentally . In front of this island is Lawu island, where the biggest whale habitat is located and it is also a migration route of 14 various kinds of whale, such as blue whale (balaenoptera musculus) and sperm whale (physeter macrocephalus).
The Lamalera village wide area is 1600 ha and divided into 2 villages, Lamalera A (consist of Lamanu, Fukalere and Teti Lefo village) and Lamlera B (consist of Onga Ona, Futunglollo and Lefo Bela village). Figure 3.16 shows the Lamalera location.

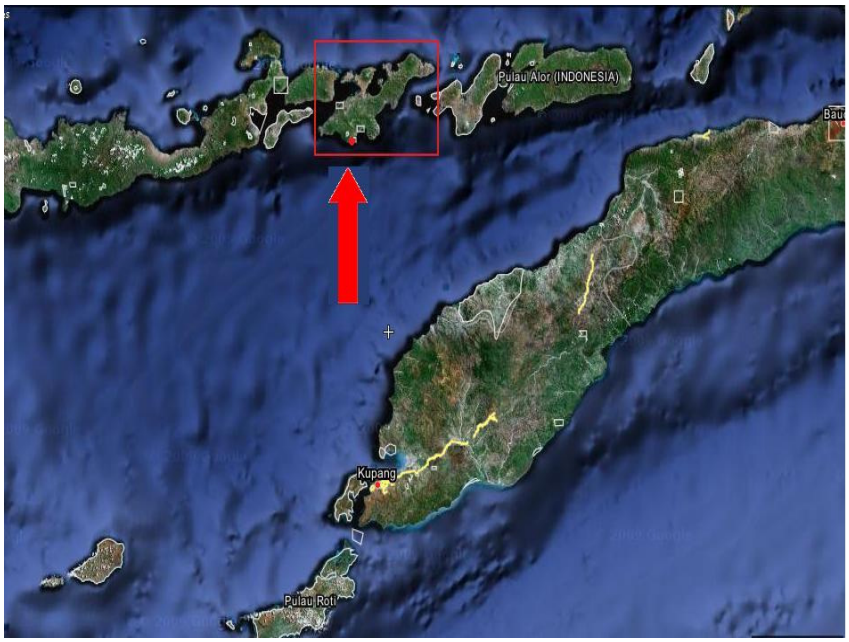


Figure 19. Lamalera village (the red box and spot) located in Lembata Island

3.6.1. Lamalera History

According to Oleona and Bataona (2001), Lamalera people consist of some clan community. They are not the original habitants of the Lembata Island; they come from outside of Lembata Island. The derivation of Lembata people can be tracked from their inherited artefacts. This exodus history can be found in Lia Asa Usu (derivaction song). This song is usually sang in a ritual ceremony of Bataona clan. This song tells about the main clan's ancestor in Lamalera starting from Luwuk Land until the south area of Lembata Island, and then they started to stay in this island. Their trip was not directly straight to Lembata Island, but they followed the Gajah Mada national fleet route to Halmahera and West Irian, and went south and dropped in Seram Island, Gorom Island, Ambon, Kei archipelago, Tanimbar archipelago and small islands in North Timor, and finally landed on Lembata Island.

From their heritagewe can see that Lamalera people come from Luwuk, South Sulawesi. They separated into several groups. Their exodus background was Majapahit kingdom which started to vanquish the Sulawesi Kingdom. These groups become the ancestors of Lamalera people such as The Bataonas, The Lamanudeks, The Tanakrofas, and The Lefotukas. They started to build the fisherman's village and genetic relationship system in this island until present.
Fishing is one of the main income generations for Lamalera people. This tradition has been inheritedfrom their ancestors. As fishermen, Lamalera people havetheir own unique and rare characteristic for their fishing catch; their specialization is to catch big fish such as whales. Their characteristic has become their heritage until now.

As the only traditional whale catcher, they are bind up with their tradition and their culture rules, such as the making of whale catching boat rules, which is called as *peledang* (tena *lamafaai*, in the local language). The preparation process of boat supporting tools, whale catching tools, until sailing activities and the capture product distribution process are bind up with their tradition. In this tradition there are several compulsory and taboo things.

3.6.2. The Working Mechanism and Rules in Ambelau Island

a. Territorial System Boundary

The whale fishing territory in Lamalera doesn't have a clear territory. It is located in Sawu Sea as the whale habitat. Sometimes the whales can be seen near Lamalera land, but sometimes the whales can be seen far from Lamalera land.

b. Rule System

According to Oleona dan Bataona (2001) there are several things to properly settle, such as :
b.1. Sailing period or *leffa nung*

The sailing period is from May until September (called *mussi lerra or leffa nung* = dry season). In this period, the whales usually can be seen in sawu waterworks.

b.2. *Leffa nung* Ceremony

Leffa nung is started with a cultural and religion ceremony. Three daysbefore the fishermen go sailing, the elders from two villages in Lamalera get together with the landlord (*tana alep)* to discuss about the ola nua problems (talking about the kind of main income of lamalera people). It is called *tobu nama fatta*. The landlord's part is important, because the ceremony cannot be conducted without them. They are described as the ancestors' spirit from Lango Fujio clan, the spirit that is believed to stay in Labaleka who can lighten the burden of their grandson, if allowed by *Ama Lerra Fulla.* They can be the mediator.

b.3. Boat and Tool Regulation Manner

- The boats making manner
- The special *peledang* (*tena lamafaai*) whale catcher boat making
- The boat tools preparation manner
- The whale catcher fishing tools preparation manner
- The sailing manner
- the capture product distribution manner

b.4. Sailing variation period

This period is an outside period of fishing time,. It is held from October to April. In this period, the sea and water condition is not possible for sailing, because the weather is hot and the wind is not good. But, sometimes fishermen still do sailing, with such recent activities as :

- *Plaeba elo*, a suddent sailing activity when the whales are seen in the sea.
- *Rai leffo tobi* is fishing around leffo tobi strait, south area of Flores Island coasts (oneday- and- night trip from Lamalera). the target is ray fish, and if they can find whales they won't hunt them in this period.
- *Rai duli*, is a fishing activity to catch any fish besides the whales, such as ray fish and dolphins.
- *Rai Fedda ge na Sajjo*, small fish fishing process such as tuna, using the fishhook string called *kelera. Sajjo* is catching the flying fish by using special fishhook string with chicken fur as the fish decoy.
- *Tiffa Puket* fishing using a puket to catch the sharks, ray fish, tuna fish and basic fish.

- *Bittu,* small fish fishing with fishhook strings.

b.5. Fishing Procedures

A. Whale Fishing Procedures :

- If the whales are seen in the sea, the first thingto do is hauling down the pole and sail. This is as a sign to people in the mainland that there is a boat that is ready to catch the whales.
- All crew is praying together, conducted by a *lama fa*. Then the lama fa splashes holy water to all boat's crew as the ablution. This is a taboo step since all the boat's crew is not allowed to say crude words, and it is also taboo to call a crew who has a name like a place such as Serani and Kupa. If the boat crew breaks these rules, it is believed the disaster will happen.
  (1) If they say the crude words they will not get a whale.
  (2) If they call someone whose name is like a place, they will be dragged into that place by the whale.
  - Lama fa starts to act. Lama fa walks in to hamma lollo and takes the stabbing position in the whale's body.
  - In stabbing step, Lama fa waits for crew's approvement to stab the whale. When lama fa stabs the whale, he also jumps into the water.
  - The last step is to wait for the whales to become frounded.

There are several forbidden things in whale hunting activities, such as :

- Do not hunt the whale in marriageable age, because in this age the whale is very wild and hard to stab.
- Do not hunt female whales
- Do not hunt infatuated whale couples.

b.6. Distribution of whale's captured product

The captured whale is dragged to the beach, and then the whale's body is distributed by the boat owner (*tena alep*), using this method :

- The whale's head for the landlord (*leffo tana alep*)
- Some portions for the boat crew (*meng alep*)
- Some portions for the boat owner's family (*rekka uma alep*)
- The joint portions for *rekka uma alep's* and *meng's* and also for people who help them when they are sailing and unloading.

3.7. Mane'e Regency, Talaud, North Sulawesi

3.7.1. Mane'e General Description

a. Mane'e Location

Mane'e activities are applied in Kakorotan Village, Nanusa District, Talaud Regency. Kakarotan village area is located in 9 separated spots in 3 villages. Kakorotan Island consists of Lenggoto, Ale'e, Apan and Dansunan,;in Tata island consists of Ranne (called national area), Abuwu and Ondenbui,;and Malo island consists of Melele and Sawan. This is the northest area of Indonesia, near the Phillipine's territorry. It makes the access to this island is quite complicated.

Intata Island is very quiet and there are no people who live in this area. Intata Island has a beautifull beach with clear sea water and white sands. The distance between the Kakorotan Island and Intata Island is about 200 meters, and it takes 5 minutes by boat. This island is separated with sea water when the uptide comes. To get to this island the Kakoratan people have to use a boat or motorboat. This is called Paradosa Island, which means Paradise Island. We are able to see the sea bottom and corals. Below is the Intata Island figure, where the Mane'e tradition is held.

Figure 20. Intata Island and mane'e tradition

c. Mane'e Tradition

People in Kakortoan village have a unique, unwellknown tradition called Mane'e. Mane'e tradition is a unique tradition to catch fish. In this tradition people are using the young coconut leaves and tree root rope. This tradition is centered in Itata Island . It has been carried out since hundreds years ago in May. It is hard to explain how to get many fishes using a simple fishing tool such as the young coconut leaf.

The type of fish that are mostly captured are grouper fish and snapper fish. The Kakorotan people try to get the fish as many as they can. However, Mane'e is not a mystic ritual,; the people believe that there is a natural connection between the young coconut leaf and the fish.

The main purpose is to arrange the time to catch the fish in the place that has been stated, and to maintain the fish ecosystem in this island. If there is no Mane'e ceremony people cannot catch the fish in this island. If they break these rules, they have to pay 500 hundred thousand rupiahs. Another aim is to create togetherness in the society.

Mane'e ceremony is started with a prayer from the elder, to wish that the ceremony can be conducted smoothly. The people start to create the fishing tool from the young coconut leaf to be used in this ceremony. This young coconut leaf will be used as a fishing tool. Together, people wrap this young coconut leaf with a mountain rope taken from the jungle. It is shaped as a fish tail and the boat starts to go along 1 kilometres the sea edge. Then people start to spread the connected young coconut leaf for 4 kilometres using the small boat and drag back to the beach while waiting for the subtide to come.

3.7.2. Mane'e Organization Mechanism

Territorial system boundary

Mane'e location is stated in coral waterworks (nyare). They are spread in 9 places in three islands. In Kakorotan Island : Lenggoto, Ale'e, Apan and Dansunan, in Intata Island : Ranne (also called as national area), Abuwu and Ondenbui, and Malo Island : Melele and Sawan. The Mane'e process is created in one ritual ceremony. In this ceremony, the members get together to make a Mane'e location plan, and then decide it.

Rule System

Mane'e word comes from *Se'e* word or *sasahara,* which means the declaration of people's agreement. Mane'e means an agreement declaration to carry out an activity together. It also means a ritual ceremony to prepare the fishing tools and fishing operation activity in the location that has been stated. Actually, Mane'e is the last part of law culture process called Eha' or fish harvest ceremony after they have obeyed the Eha' rules. Eha' word comes from e and ha. E means warning and ha means don't, so Eha' means a warning not to do something. There are 2 various kinds of Eha's law regulation : (1) Eha' land, the harvest closing time or land resource exploitation such as coconut, nutmeg, banana, papaya, cassava, etc; (2) Eha' Sea, a warning to close the fishing location and stop the fishing period. People are not

allowed to enter the beach and its coral area territory. Eha' is stated in a ritual meeting with the regional government and the religion institution. It has survived since the 16th century .

Right system

The fishing activity is usually done once a year on each location between May and June, when the sea condition is quite stagnant. The activity is carried out duringthe spring tide period, when the new moon or full moon appears. This stated time process is sometimes so complicated that it always leads to quarrel with the national officers. The fishing ground is protected or closed for one year. In that time, the local people t try to maintain the coral's growth and conservation naturally using the Eha' law culture. . The fishing capture products which have been collected in Mane'e ceremony will be distributed to the villagers and outsiders , if they still have any.

Sanction system

If there are villagers who are got caught to have broken the deal above, they will get moral sanctions, physical punishment, or pay the fine which has been stated by the customary law institution's assembly.

Monitoring and evaluation system

The Eha' officer's job is as a supervisor to do indirrect supervising and also monitoring the Mane'e location, because the society don't know the mangageha's identification.

Mane'e Manager Authority

The Eha' officer is called mangageha, as the supervisor who has been stated in the customary law meeting. This is the police officer of Eha' implementation. Mangageha is chosen every year from 10 clans, and their identification is hidden.

3.8. Local Inland Fisheries Management : The Case of Maninjau Lake, West Sumatera Province

Maninjau Lake, West Sumatera, a is natural volcanic lake which is formed as a consequence of volcano eruption in the large natural basin. This lake has been filled by natural rain for thousands of years so that it now forms the water system of Maninjau Lake. In this system, there are two basins, one in the southern part of the lake which is the deepest, 165 meters, and in the northern part which is the shallowest. The outlet system of this lake is only at the Batang Antokan River.

Hartoto (2009) mentioned that there are eleven functions of Maninjau Lake, from amenity services to economic and community resilience functions. Figure 21 presents the functions of the Maninjau Lake.

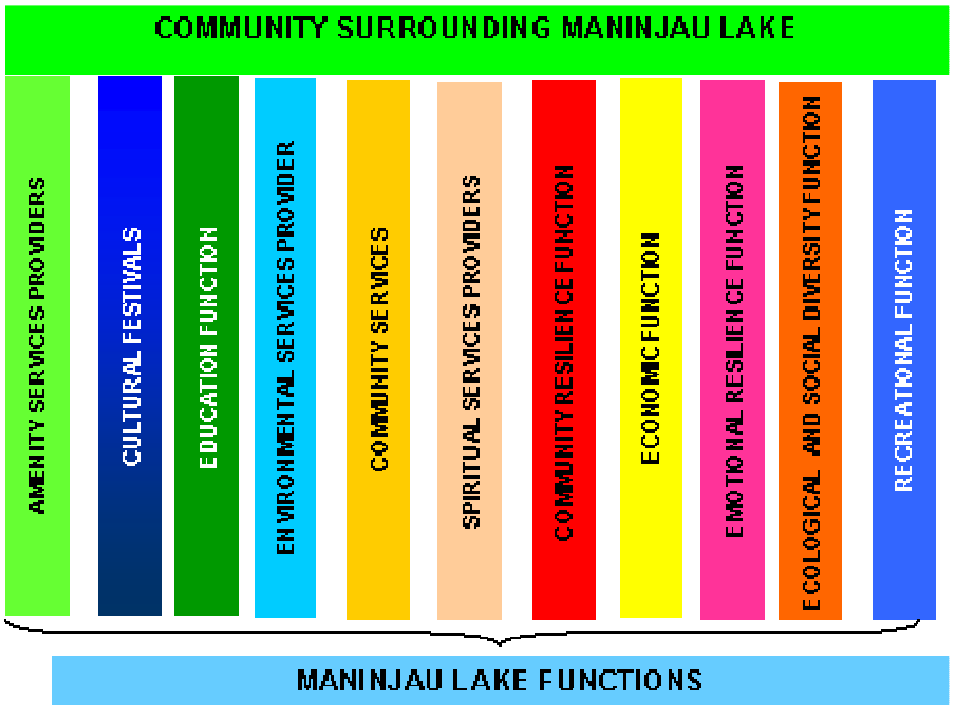


Figure 21. Functions of Maninjau Lake (Hartoto, 2009)

Fisheries co-management recently has been formed as an agreement between the fishers and the government to manage the fisheries in the lake. This process has been facilitated by the Research Center for Lymnology, Indonesian Sciences Institute (LIPI). Through this facilitation, a fisher group namely Mina Bada Lestari was established, and it consists of a number of small scale fishers. In summary, the development of Mina Bada Lestari employs five steps of activities including forming (*pembentukan*), brain storming (*tahap urun saran*), norming (*penetapan nilai-nilai*), implementation (pelaksanaan pengelolaan) and networking (*pengembangan jejaring*)(Hartoto *et al*., 2009b). ***Table 3*** shows the historical sequence of the forming of Mina Bada Lestari Fishers Group.

Table 3. Historical Sequence of Mina Bada Lestari Fishers Group, Maninjau Lake, West Sumatera

No.	Year	Activity	Note
1.	2005	• Issuing the basis comprehension such as : spiritual base, co-management, conservation principle and an organized fishermans. • Interpreting the fisherman's data participatively • Developing • Formating and naming the organization (May 22nd 2005) • Determining the Groups capital Rp 0,-	Strengthening the program released by P2L -LPI Researchers Team
2.	2006	• Further strengthening the organization by P2L-LIPI • making proposal to get the gill net from the government through the Agam District Animal husbandry & fisheries Departement, Rp 30.000.000,- worth • Exchanging information with the Directorate General of Capture Fisheries, in this case with Directorate of Fish Resources,Directorate General of Aquaculture Cultivation : Directorate Fish Health and Environment • Receiving modern fogging equipment, which is almost never used • Making Basuo Hall (a place together) to talk about member's problems. • Establishing the cooperation with National Consultant from TCP/RAS/3013-FAO Project"Addressing the Quality of Information in Inland Fisheries (AQUIIF)" • Conducting a participatively data acquisition (distribution of the daily catch) by the fisherman's wife in Mina Bada Lestari	• Receiving the assistance but certain technical specifications of the given net is not appropriate with the proposal (lower quality). • Launching a protest and direct contact to the equipment supplier and finally getting the appropriate equipment. • The transparancy demand in this system of service has made the Fisheries Departement get offended.

No.	Year	Activity	Note
		• Establishing weekly activities and members monthly dues	
3	2007	• Distributing Fisherman's Identity card from Agam District Animal husbandry & fisheries Departement • Receiving the AQUIIF FAO delegation's visit • Conducting the re-stocking of Bada Fish • Developing the riparian vegetation tree care system in Maninjau Lake • Developing the rasau production and rasau protected system number 1/7 from a total rasau amount.	• One of the first fisherman's groups who receive the Fishermans Identity Card in Indonesia • The first groups in Indonesia who implement the Protected Rasau System (1/7 from a total rasau amount) as the application of QS Al Araaf, section 163.
	2008	• Establishing the fisherman's wife organization called The Fisherman's Wife of Mina Bada Lestari • Receiving the capital assistance worth Rp 50.000.000,- from the Minister of Social Affairs of the Republic of Indonesia through the Cendekia Foundation. • Being not able to to the compliance of member payment Rp.5000/week • Warning, satire and science strenghtening from the P2L researchers. • Replacing the organization secretary because the old secretary and members have moved to another province so now there were only nine of them. • Recruiting the new secretary with higher education background than the other member (D3 level) • The Rasau quality is not good and strong, it is destroyed by the waves and stolen by fishermen from other communities	• This capital assistance almost caused the destruction of social capital and the spirit of the groups, because 50% of the funds received is invested to the floating net keramba (KJA) and another 50% to develop the Ettawa goat farm. This investment technically and culturally failed because all the goats worth Rp. 25.000.000,- died for many reasons. • The group members realized that they needed more qualified secretary to run the organization.

No.	Year	Activity	Note
5.	2009	• Making new rules : such as Bada-day fishing together held on every Monday Night where the catch was submitted for processing in Asri Mandiri Groups and the sales revenue used as financial capital to run the organization. • On Tuesday morning the mutual cooperation was held to make stronger Rasau protection and production and also collect the plastic waste from the lake • Making several decisions for future. • The amount of collected capital until July 2009 was Rp 29.000.000,-. This fund was loaned to the members with an interest for the benefit of its members.	• Giving a dispensation to the secretary, who is physically is not really strong, and not always present on every fishing activity on Monday night.

As part of co-management, the government then adopted the local agreement into the district head decree No. 22/2009 regarding the Maninjau Lake Management as presented in ***Table 4*** below.

Tabel 4. Some Strategic Articles enacted in District Head Decree of Agam, No 22/2009 regarding the Maninjau Lake Management

No.	Article No.	The mandate of relevant article	Explanation
1.	2	The scope of district regulation consists of the utilization efforts, recovery, controlling and wáter lake conservation.	This includes four conservation dimensions in utilization world.
2.	3	Multi-function utilization of lake such as: fisheries, conservation, tourism, electrical energy sources, transportation, recreation, wáter sport, research and other environmentaly-friendly activities.	It already includes many environmental services from Maninjau Lake.
3	4	The principles of management such as : sustainability, harmony, harmony and balance, alignment,	Value system based on human agreement not based on divine values.

No.	Article No.	The mandate of relevant article	Explanation
		protection of public interest, empowerment and partnership, legal certainty and justice, transparency and accountability.	
4.	6	Determination of zoning lake: border, tourism, cultivation, buffer and protection.	It's related to the actual spatial which has no determination of zoning criteria.
5.	8, paragraph 2	Conservation includes protection of water catchment areas, prevention and controll from pollution, protection of biodiversity, protection of occupational lake water container and demarcation of lake, management and maintenance of lake area.	Article about dimension habitat protection and mitigation in Maninjau Lake.
6	9	Lake Utilization management	Tecnical setting of social service setting in Maninjau Lake.
7	10.	Tourism	Protecting tourism sector from threat from other sectors
8	11	Regulation related to Floating Cage Net (KJA) system : Paragraph 1 : the utilization of KJA is appropriate with carrying capacities. Paragraph 2 : the carrying capacities to KJA is about 6000 slots or 1500 units Paragraph 3: the KJA ownership per family is maximum of 2 units (1 unit = 4 slots, 1 slot = 7x7x2.5 m) Paragraph 4: the KJA placement locations are according to the cultivation zone Paragraph 5: KJA is placed 50m from the lakeseide in west area (Nagari Tj Sani, Batu Nanggai) and 100 m for east coast (Nagari Koto Malintang, Koto Gadang, Koto Kaciak, Duo	The first regulation in Indonesia which regulates the quantity of the carrying capacity of the lake waters product rules and regulation. The first regulation which helps to organize the maximum amount of karamba ownership units. The article embodies the principles of justice in lake-waters management.

No.	Article No.	The mandate of relevant article	Explanation
		Koto, Bayua, Maninjau, Sungai Batang), Maninjau Lake	
9	12	Sustainability of the lake area	Efforts to protect the interest and aspiration of present and future generation.
10	14	Banning the use of prohibited materials and equipment for fishing.	Related article about hábitat protection and fish stock.
11,	15	Maninjau Water Power is partly responsible for controlling and recovery of wáter pollution of Maninjau Lake.	Maninjau Water Power participation to manage Maninjau Lake.
12	16	Arranging the traffic-transportaion associated with fish	Controlling the effects of fish trade on road facility.
13	17	Licensing of Fish Cultivation	Capital to develop predictive control in fisheries management.

4. CRITICAL OBSERVATIONS OF LOCAL FISHERIES MANAGEMENT IN INDONESIA

4.1. Theoretical Framework

Local knowledge is a cognitive aspect in resource management institutions. This is the main aspect of the regulative ones, which consists of rules, rights, authority, and sanctions. (Satria, 2007). Then, the resource management regulation is created based on this knowledge. The rules in modern management such as MPA are based on the modern science knowledge. In the mean time, the rules in traditional management system are based on the society local knowledge. An example is an open-closed system in *sasi* and the forbidden rules of fishing for several times which are based on the society traditional knowledge about the resources. Figure 22 shows us about the theoretical framework of resource management by the society.

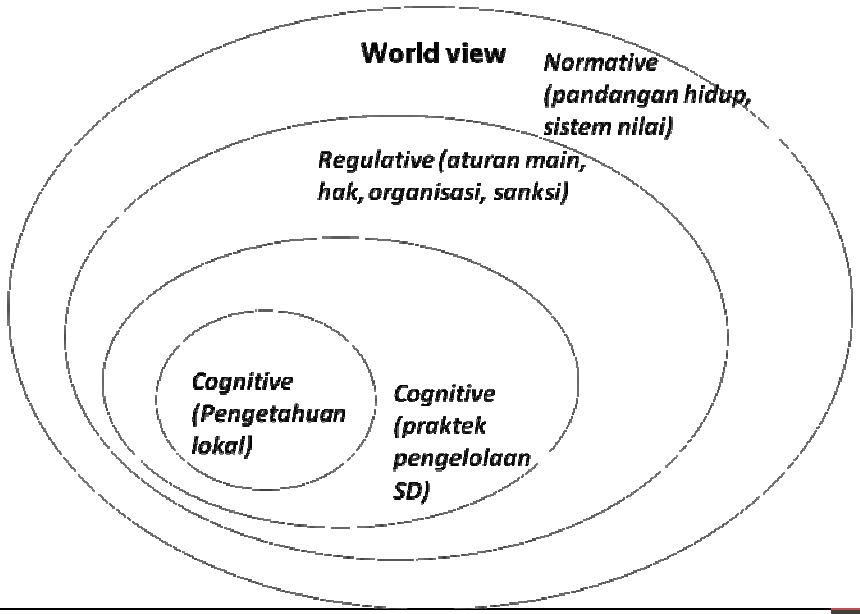


Figure 22 Resource Management Institution by the society (Satria (2007) modify from Berkes (2002) dan Scott (2000))

One of the interesting things is the sawen practice, which is the beginning of *awiq-awiq* in Lombok. It is also based on the local knowledge. Satria (2007), in his study, noted that Lombok has already known the sawen tradition or "sign" for a long time. For several periods there are forbidden rules of fishing, cutting the trees, or seedling. There are sanctions for those who break the rules. There are 3 *mangku* who manage the sea (sea mangku), jungle (mangku alas), and ricefield (earth mangku). They are called the regulative pillar in *sawen* system. This pillar cannot stand by itself, but it must be based on the well-known society knowledge. The base of that knowledge is the jungle function. That jungle is a *buana alit* and the "mother" of another ecosystem (sea and ricefield). Jungle is the water reservoir. If the jungle is broken, it will affect the coastal ecosystems. During that period, this knowledge caused the resources management system to be integrated; in other words, that sea, ricefield, and jungle have to be managed integratively. Lombok's society practice has proved to us that local society has their own way to manage their resources. Besides sasi and sawen, the local knowledge has become the pillar of Lamalera society to adapt with their nature. The whale hunting activity is not without basic knowledge. The society knows how to differ the *sperm whale* and *blue whale* only from the whale movement. They also know how to differ the whale gender quickly. According to Ruddle, the local knowledge of fishermen society is related with their knowledge about species characteristic.

4.2. Adoption of Local Knowledge into Fisheries Management

By *Design Principles of Resources Management* (Ruddle, 1999), the critical local institution/customary observation in fisheries management[9] is done in these substances : (1) the fisheries resource boundary system; (2) the right for resource user system; (3) the stated regulation for the continuity of fisheries activities; (4) the stated law enforce system; (5) monitoring and evaluation of fisheries management implementation itself; (6) the fisheries management

authority as the institution that is responsible for the fisheries management and implantation process and mechanism.

A. Resource Boundary System

In the formal fisheries framework[5], the resource boundary is discussed in the FMA context (Fisheries Management Area)[6] according to Law No.31/2004 article 5 particularly about fisheries. That article explains that the fisheries managemet area consists of Indonesia's waterworks; Indonesia Economy Exclusive Zone and rivers, lakes, basins, swamps can be used as a potential fisheries cultivication area in Indonesia. From the spatial context, this decision of resource boundary is very important especially when the society is involved. It is concerned with local knowledge about the resource boundary, especially in fisheries boundary area in fisheries activity. In this framework, the adoption of an institutionalization of local knowledge into an institutional custom/local fisheries management is needed, such as when the fisheries management plan is arranged. It is important to prevent the spatial jurisdiction intersection between the formal management fisheries and local-based institutional customary management fisheries. The best scenario is to transform the local-based institutional customary management fisheries into the formal management fisheries system.

B. The Resource User Right Systems

One of the key factors in fisheries dynamics is information and the knowledge about rights, because the management fisheries principle has to consider the right-based fisheries concept to guarrantee the justice and continuity of fisheries it self. According to Ostrom and Schlager (1996) in Adrianto (2006), at least there are two types of important right in management and utilization context that include the fisheries such as : (1) *use (operational-level) rights*, and (2) *collective-choice rights*. The first type refers to the fisheries operationalization, or in fisheries catchment it is concerned with fishing capture dynamics and process. In this type, there are several important rights, such as *access rights* which is the right to enter the fisheries catching, both in fishing ground area context or in one of the fisheries activity structures such as providing the main material, fisheries management, etc. In the use rights,

[5]Look at formal fisheries management definition in Law No.31/2004

[6] According to Minister Regulation No.1/2009 about Fisheries Management Region (FMR), Indonesia's waterworks zone devided into 11 FMR start from FMR 1 in Malaka Strait waterworks zone until FMR 11 in South Bali and Nusa Tenggara waterworks zone.

harvest right is also an important rigth. Although its contextual is different. The second ownership right is access and harvest rights. Both are the most important things in fisheries communitty.

The second type of rights is *collective-choice right*s which emphasizes on the fisheries management rights (*fisheries governance*) which are given to certain authority outside the fishermen communitty (*supra-community*). The authority holder is the local goverment in the economic context according to Law No. 32/2004 about management fisheries article no. 18 in particular. In fishermen relocation context, the second type of rights becomes very important because this right type is related to "who's the manager?" as the complement of the first right about "who's being managed?" which is used in the use rightstype. Besides the management rights, there are several important rights including the collective-choice rights category which is an exclusive right. Exclusive right is an authority right to determine the qualification of people who want to get the access right, harvest right and alienation right. Alienation right is the right to transfer and sell the managment right.

In the critical customary law of institutional observation context, the rights allocation is held by the local customary agreement institution, or by the local agreement to guarantee justice for all resource users. The Aceh Sea Commander for example, can determine the spatial rights for resource users in several Lhok areas. In the meantime, Parompong culture in South Sulawesi adopts culture law as rumpon allocation, and in Mane'e, North Sulawesi the allocation is given to the custom elders to decide who can fish in Mane'e area. In this context, fisheries management has to be adaptive about the customary agreement and or the local agreement which has been built from the local values. Thereby, other important efforts that have to be done is to formulate the local values as a shared vision of fisheries resource users in management areas.

C. Regulation System

The management fisheries fundamental essence depends on the regulation system for the fisheries management itself. In the regulation context, it includes the management measures as the implementation tools of management fisheries. This regulation system is arranged based on strategical issues and a priority to achieve the aims. According to Law No. 31/2004 about fisheries, the fisheries management plan is determined by the Minister including the fisheries management tools such as boat allocation, fisheries

resource allocation, etc. In this context, the adoption of local/customary institution in adaptive fisheries management forces is very important, especially when it is concerned with adaptive and participative fisheries management principle. The examples of the agreement regulations are the fisheries management case in Aceh Besar Regency through the institution sea commander who forbids using trawls and asks to change to fishing capture tools.

D. Sanction system and Law Maintainance

One of the important aspects in *good fisheries governance*[7] is law maintenance. According to Law No. 31/2004 about fisheries there is a quite hard sanction system for fisheries law infractions. As an example, the fisheries court becomes one of the most important law maintenance mechanisms,the formal law maintenance according to Law No. 31/2004 article no. 71 in particular. In adopted context of local/customary institution, law maintenance system has also to be designed into fisheries co-management plan, so the law maintenance will be effective and efficient because it can minimize the fund allocation by decreasing the law maintenance structural plan in one term condition. Therefore, the problem solution of law maintance infraction by local/customary institution can be one of the effective and efficient fisheries management mechanisms.

E. Monitoring and Evaluation Systems

Fisheries management is a continuous, iterative, adaptive and participative process. It consists of mutually concerned duty task and it has to be done to achieve the aims (Pomeroy and Rivera-Guieb, 2006 in Adrianto, 2007). In this context, the planning process has to be monitored, so that the plan can work appropriately with the programme, and it has to be evaluated in order to find out the success or failure of the system. Thus, the monitoring and evaluation process of fisheries management including sea farming is necessary to do.

Jacoby, *et al.* (1997) in Adrianto (2007) mention that Monitoring and Evaluation (MAD) plan is a continous feedback to fisheries management process which can produce feedback and feedout to fisheries stakeholders. The Jacoby plan

[7] Kooiman, et.al (2005) defined the governance as the whole interaction between public sector and private sector to solve the societal problems and to create the social opportunities. In the fisheries context, the governance can be defined as several regulations in law, social, economy, and politics to manage the fisheries management.

emphasizes the mutually concerned management process. It has a sequence characteristic, in which each sequence consists of feedback and will produce feedout to the stakeholders. (Figure 23).

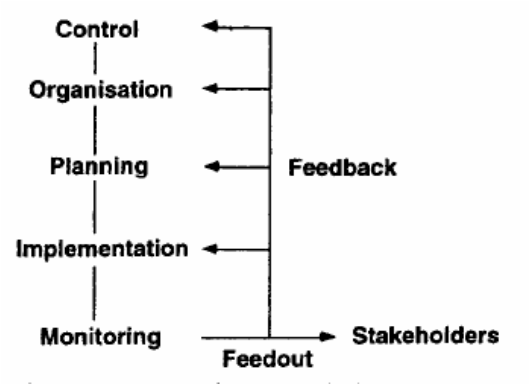


Figure 23. Monitoring and evaluation plan in frame of references fish stock (Adrianto, 2007, adopted from Jacoby, *et al.*, 1997)

According to Jacoby plan, et.al (1997) above, the controlling process, organization, planning, implementation and monitoring are designed through the local agreement, based on local customary value or local agreement value itself. In local/customary institution adopted context, the local values in fisheries management monitoring and evaluation become very important to be identified. This monitoring and evaluation system which has been done by the Awig-Awig LMNU community East Lombok Regency, for example, has inspired us about the effectiveness of local fisheries management.

From the explanation above, adoption from local/customary institution which has been initiated by the resource users and formal fisheries management conducted by the government needs the bridging mechanism. In this context, the fisheries management regime (fisheries co-management) can be one of the alternatives of fisheries management in Indonesia, because basically fisheries co-management focuses on the distribution of responsibilities between government and resource users.

4.3. The main current of Fisheries Co-Management in Indonesia

Borrini-Feyabarend, *et al.* (2001) defined the co-management as a situation where the stakeholders are negotiating, defining and guarranteeing the role distribution in management and responsibility of the area or resource systems. In this plan, the key words in the resource co-management are (1). It has pluralist characteristic, management approach by several parties; (2). The political and cultural processwhose main aim is to achieve the social justice and democracy in natural resource management; (3). a process that needs the basic conditions to build full access about information of relevant issues and choices, the freedom and capacity of organization, the freedom to deliver opinions and needs, an undiscriminative society environment, etc.

In fisheries context, fisheries co-management itself is defined as a management pattern where the goverment and the user groups share the responsibility in management and utilization of fisheries to create the balance of social and economy aims in fisheries and ecosystem conservation plan (Nielsen, 1996).

The responsibility distribution between government and fisheries agent varies from instructive type untill the informative type. According to Pomeroy and Rivera-Guieb (2006), there are 5 (five) big co-management types based on government and fisheries agent's role such as : (1) instructive; (2) consultative; (3) cooperative; (4) advisory; and (5) informative. Figure 24 shows co-management spectrum based on responsibility distribution between government and society in a diagramatic way

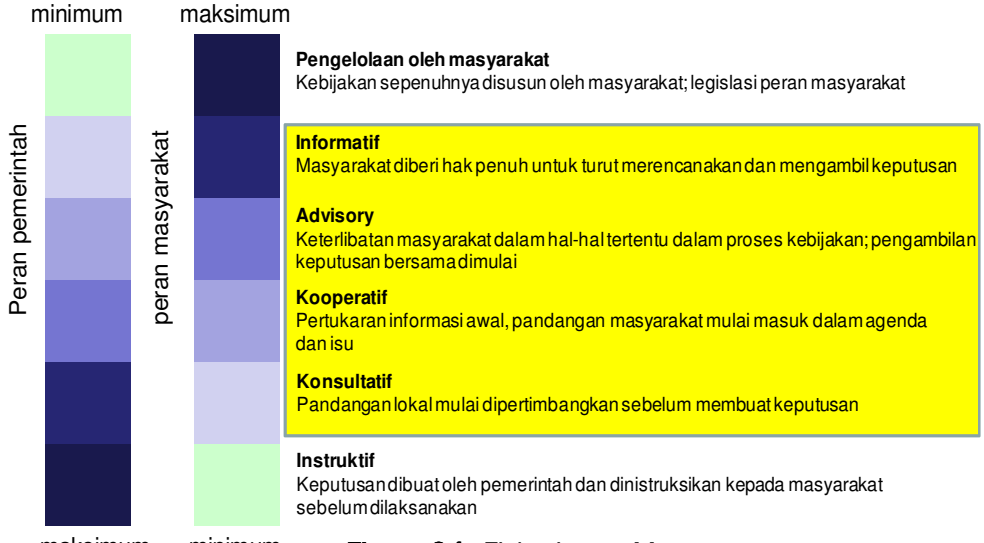


Figure 24. Fisheries co-Management spectrum

based on government and fisheries agent's role

The characteristic ofeach type in fisheries co-management is described on Table 5.

Table 5. Typology Spectrum of Fisheries Co-Management

No	Spectrum	Information
1	**Instructive**	This type happens when there are communication and an exchange communication between the government and fisheries agent. This type is different from the centralization regime where the dialog mechanism between the government and fisheries agent is in the form of instruction of information based on what has been decided by the government.
2	**Consultative**	There is a dialog mechanism between the government and the fisheries agent, but the decision maker is still in the government authority.
3	**Cooperative**	In this level, the government and fisheries agent work together to make decisions as an equal partner.
4	**Advisory**	In this plan, the fisheries agent gives an input in decision making about fisheries, and the government establishes the decision.
5	**Informative**	The governement delegates the decision making to the fisheries agent to be informed again to the government.

Source : Adrianto (2007) adopted by Pomeroy and Rivera-Guieb (2006)

One of the important things is the co-management which is not seen as the only fisheries management tool, but it is better to be seen as an adaptive fisheries management process to the field's change. Co-management is an increasing capacity process of the society and government in a democratic mechanism and it has a desentralization spirit (Pomeroy dan Rivera-Guieb, 2006). However, co-management is not a regulation product. Regulation is a co-management implementation tool, such as the one which is created by the agreement between stakeholders (government and fisheries agent society). This is because its character tends to a process than to a regulation product;besides, the co-management implementation varies in the context of expense and time, from planning until implementation.

The interested functionaries or usually called stakeholders in co-management are

defined as the personal, communitty or organization who are interested, involved, or influenced and being influenced (directly or indirectly) in fisheries resource management. In the co-management plan, the balance of the representatives and the stakeholders become one of the most important substance for the co-management to succeed (Adrianto, 2005; Pomeroy and Rivera-Guieb, 2006). The next question is which representative stakeholders will be chosen in the initiation plan and co-management implementation? This question can be answered by using the stakeholder analysis. This analysis will be given in another topic in this module. However, we have to consider that the stakeholder' election should represent the variety, interest level, and strong influence of the stakeholders in the co-management plan.

Generally, we can identify 4 kinds of key stakeholders in fisheries co-management i.e: (1) the resource utilization users, including fishermen and fish cultivators; (2) government, including the central and regional government; (3) other stakeholders including the society, boat owners, fish traders, fish processor agent, etc; (4) the changing agent including the self-supporting society organization, universities, research institutions, etc. **Tabel 6** presents the key factor of the four key stakeholders above.

Tabel 6. The key stakeholder's functions in fisheries co-management.

No	Key Stakeholders	Functions
1	The Fish Cultivator agent	- Identify the concerning issue of the society.
		- Lead and mobilize activities in co-management.
		- Participate in research, data collection, data analysis in fisheries co-management plan.
		- Execute the monitoring and evaluation ;
		- Execute the advocation of society needs about decisión making process.
2	Government	- Provide the legislation forces to guarantee the society's rights in participation of co-management plan.
		- Decide the management decentralisation shapes and process.
		- Provide the legitimation forces to management system in society.
		- Provide technical, financial, and illumination

No	Key Stakeholders	Functions
		assistance for co-management initiation.
		- Provide the resolution to the conflict existing between the stakeholders.
		- Provide the monitoring and evaluation mechanism based on local capacity.
		- Coordinate the local forum for stakeholders partnership in co-management plan
3	Other Stakeholders	- Identify the issue in the society, especially outside the fisheries society area.
		- Participatedin co-management planning and implementation;
		- Execute the information dissemination;
		- Execute the conflict management
		- Facilitate the society
4	Changing Agent	- Being the fasilitator for stakeholders in fisheries co-management planning and implementation process;
		- Excecute the society organization process in initiation or implementation of fisheries co-management.
		- Provide the consultation services for planning and implementation of fisheries co-management.
		- Provide the information and data which are needed in planning and implementation of fisheries co-management.

Sources : Adopted by Pomeroy and Rivera-Guieb (2006)

In practice, there is often a question like '*what are the differences between community-based resources management,(CBM) and co-management?'* Functionally, there are no differences between CBM and co-management. Both have their functional purpose to achieve the continous fisheries resource utilization, and to create a social justice in healthy environment and ecosystems. The difference lays on their strategic focus. CBM is people-centered and community-focused, while co-management focuses in both cases above and in partnership initiation issue between the government and fisheries resource society

users. Besides the strategic focus, the differences between CBM and co-management lay on their scale and scope. The co-management has wider scale and scope than CBM (from the society point of view) (Pomeroy dan Rivera-Guieb, 2006).

5. CONCLUSIONS

Fisheries management is an adaptive, participative process, and it is based on strong social fund among all the stakeholders. This adaptive and participative process is the prime identification of local/customary institution. In this context, the institutionalization of the local/customary institution in fisheries management is undoubtedly certain. This is because the local/customary institution not only has the value system that can bring benefits for the continuity of fisheries as the fisheries management purpose, but the adoption of local/customary insititution in fisheries management is also a constituent mandate of Law No. 31/2004 about fisheries.

In the context above, then the mainstream in fisheries management that is based on fisheries co-management becomes one of the important agendas that can give opportunity to local/customary institution to adaptto the formal fisheries management purposes or the other way round. To achieve this aim, all parties, the government and the fisheries resource users, need to have a commitment and keenness to build communication and to share visions for the national development of fisheries.

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