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## **THEORETICAL FRAMEWORKS FOR STRENGTHENING LARGE MARINE FISHERIES MANAGEMENT: THE CASE OF SULU- SULAWESI SEAS**

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**BOGOR  
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# THEORETICAL FRAMEWORKS FOR STRENGTHENING LARGE MARINE FISHERIES MANAGEMENT: THE CASE OF SULU-SULAWESI SEAS

Luky Adrianto<sup>1</sup>

## 1 INTRODUCTION

The Sulu-Sulawesi Sea is one of the semi-enclosed Large Marine Ecoregion (LME)<sup>2</sup> which has area of about 333,200 km square and bordered by Indonesia, Malaysia and Philippines. Sulu-Sulawesi Marine Ecoregion (SSME) also has potentials value of fish stocks and very important for providing livelihood as well as foods for more than 45 million of people live in the regions. However, the ecoregion's biodiversity and productivity are in the decline because the unsustainable means and levels of resource uses have exceeded the ecoregion's capacity for natural recovery (WWF-SSME, 2004a). Thus, the decline of fish stocks in the SSME can threaten food security in third countries.

In order to overcome the problems mentioned above, it is drafted SSME Ecoregional Conservation Action Plan (SSME ECP). The vision of the establishment SSME ECP, are: (1) A marine ecoregion that remains to be globally unique and a center of diversity, with vibrant ecological integrity, including all species assemblages, communities, habitats and ecological processes; (2) A highly productive ecoregion that sustainably and equitably provides for the socio-economic and cultural needs of the human communities dependent on it; and (3) An ecoregion where biodiversity and productivity are sustained through the generations by participatory and collaborative management across all political and cultural boundaries. Objective SSME ECP, are:

- a. Establish management strategies and coordinated institutions for effective ecoregional conservation;
- b. Establish a functional integrated network of priority conservation areas to ensure ecological integrity;
- c. Develop sustainable livelihood systems that support marine and coastal conservation across the ecoregion;
- d. Shape economic development compatible with biodiversity conservation;

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<sup>2</sup> Sulu Sulawesi Marine Ecoregion (SSME) is synonym of Sulu Sulawesi Large Marine Ecosystem (SSLME)

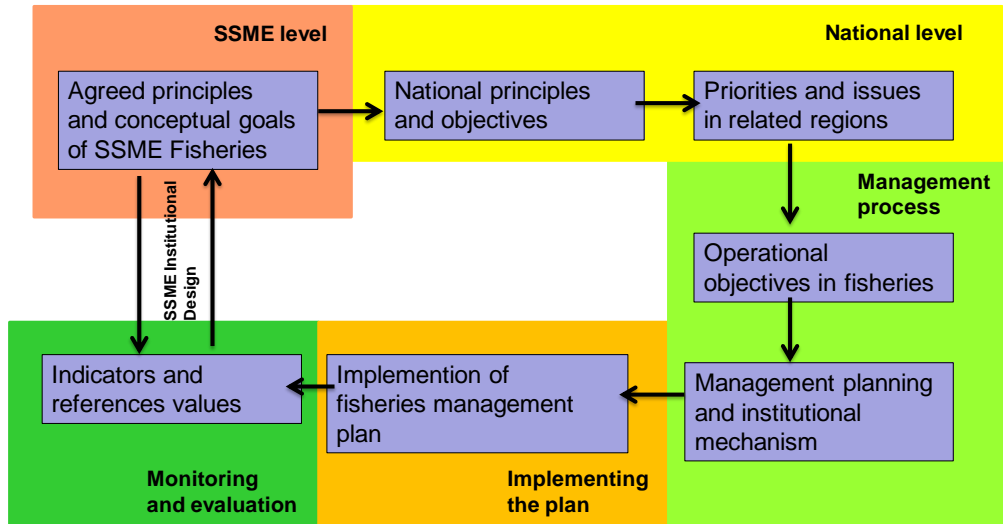
- e. Enhance understanding of biodiversity resources and factors affecting them to form basis for management decisions;
- f. Develop communication, education and outreach program and strategies to motivate people to take conservation action;
- g. Develop sustainable financing mechanism to support cost of conservation and resource management;
- h. Build and enhance capacity of stakeholders to effectively manage the conservation of SSME;
- i. Implement coordinated protection of threatened marine species to ensure maintenance of viable populations and protection of critical habitat; and
- j. Improve coastal, oceanic and other types of fisheries resource condition and management by developing a framework strategy, institutions and appropriate interventions.

Based on the vision and objectives SSME ECP, required to strengthen the mechanism of resources governance for the sake of ecological and socio-economics sustainability of the SSME, it is needed to provide an institutional framework for the SSME through an appropriate approach which suit with the social-ecological system of the SSME especially those which related to the characteristics of ecological and community system of connected regions.

This paper aims to contribute to the theoretical framework for strengthening institutions and introduce reforms to catalyze implementation of policies on reducing overfishing and improving fisheries management in the Sulu-Sulawesi Marine Ecoregion (SSME).

## **2 APPROACH AND METHODOLOGY**

Ecosystem approach to fisheries management would be used mainly for guiding the institutional development mechanism for the SSME as presented in **Figure 1**.



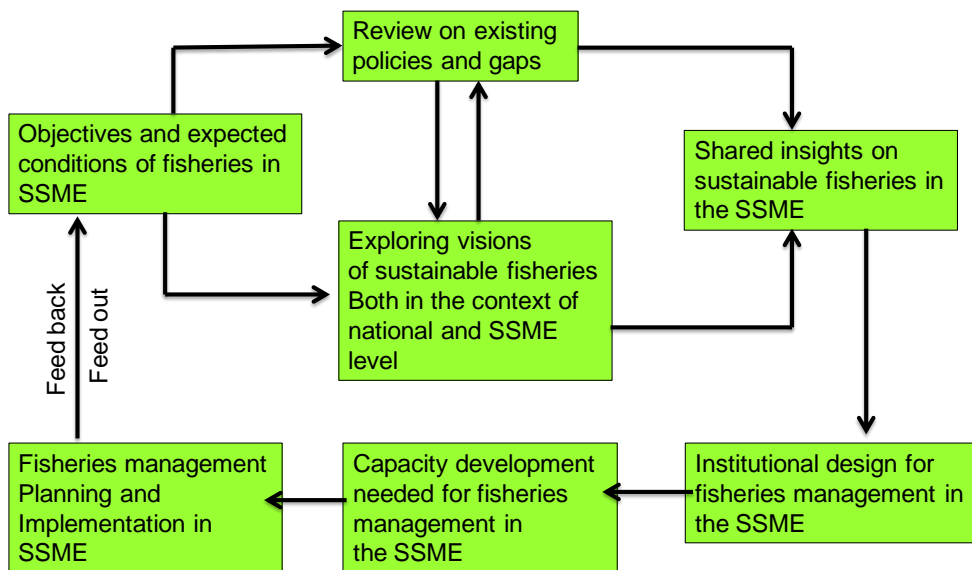
**Figure 1** Approach Used for the Development of Institutional Mechanism of Fisheries Management in the SSME (Modified from FAO, 2003)

In order to implement the approach as showed in **Figure 1** above, we would conduct institutional scoping according to the level of governance mainly in the national level of three countries. **Table 1** shows the initial plan of institutional scoping.

**Table 1** Institutional Scoping for Implementation of Ecosystem Approach to Fisheries Management in SSME.

No	Level of Institution	Country	Name of Institution
1	National level of institution	Indonesia	<ul style="list-style-type: none"> <li>Ministry of Marine Affairs and Fisheries (DG Capture Fisheries, DG Marine, Coastal and Small Island, DG Surveillance of Marine and Fisheries Resources, Research Center for Capture Fisheries)</li> <li>Ministry of Foreign Affairs</li> </ul>
		Malaysia	<ul style="list-style-type: none"> <li>Department of Fisheries Sabah</li> <li>Ministry of Tourism, Culture, and Environment, Sabah, (Environment Protection Department)</li> </ul>
		Philippines	<ul style="list-style-type: none"> <li>Department of Environments and Natural Resources</li> <li>Bureau of Fisheries and Aquatic Resources</li> <li>Mindanao Economic Development Council</li> </ul>
2	Regional Level	Jakarta	<ul style="list-style-type: none"> <li>ASEAN Secretariat</li> </ul>
		National Committee of Sulu Sulawesi Marine Ecoregion	<ul style="list-style-type: none"> <li>Indonesia National Committee of Sulu Sulawesi Marine Ecoregion</li> <li>Malaysia National Committee of Sulu Sulawesi Marine Ecoregion</li> <li>Philippines National Committee of Sulu Sulawesi Marine Ecoregion</li> </ul>
		Malaysia	<ul style="list-style-type: none"> <li>SEAFDEC Secretariat</li> </ul>

Another main approach would be used to conduct this consultancy is fisheries co-management approach combined with an ecosystem-based fisheries management approach. According to Adrianto (2009), fisheries co-management could be used as an appropriate process and tools for providing sustainable mechanisms of fisheries management in the situation of complex and multi-stakeholders resources uses as found in the Sulu-Sulawesi Marine Ecoregion. **Figure 2** below presents the framework for developing fisheries management measures based on the combination between ecosystem approach to fisheries and fisheries co-management would be used as the main approach for this consultation.



**Figure 2** Framework of Study (modified from Adrianto, 2010)

### 3 THEORETICAL REVIEW ON INSTITUTIONS AND FISHERIES MANAGEMENT

#### 3.1 The Common and Need of Management Institutions

As mentioned by Motos and Wilson (2006), fisheries management is just one of a whole group of activities by which people tried to address the problems of the commons. The problem of the commons itself has been recognized long time ago since for example the Aritoteles's "Politics" written in 350 BC. One of his important phrase in the article mentioned that everyone thinks chiefly of his own, hardly at all of the common interests, and only when he is himself concerned as an individual.

As the name implies, the commons is anything owned by a group. Motos and Wilson (2006) addressed that many natural resources, including fisheries, are not owned by individuals, but are shared by a community group of users, are also

commons. Furthermore, resources which are diffuse and give unpredictable yields that are low in unit value are more likely to be commons. Commons tend to be found where the costs of exclusion are high in relation to the unit value of the resources itself, where the ratio is low then one is much more likely to find a private property regime (Bromley, 1991). Motos and Wilson (2006) then made clearly that fisheries tend to stand out in the that driving force behind their being maintained as commons is more often the relatively high costs of excluding other users rather than the relative low value of the resources itself.

Management of fisheries resources is needed whenever the resources can be exploited or subtractable, meaning that the opportunity of using the resources would be reduced by other's uses of the resources (Motos and Wilson, 2006). Regarding this, the lack of stewardship of fisheries resources due to the lack of ownership is considered as one of important reason of the need of management for fisheries resources. There are numbers of empirical studies regarding to the implications of various management regime for any types of fisheries throughout the world.

### 3.2 Institutional Dimensions in Fisheries Management

According to Motos and Wilson (2006), the research on insitutional design was about developing the tools for natural resources management, including fisheries. Some references noted that institutions can be seen as a big picture as social scientiests use the term of institutions, while it can be seen also as a small behaviour patterns of managing a type of resources systems such fisheries. Institutions consists of cognitive, normative, and regulative structures and activities that provide stability and meaning to social behaviour (Scott, 1995). Furthermore, Jentoft (2005) mentioned that fisheries are made up of families, firms, communities, social networks, private organizations (NGOs), research institutes, government agencies and legislative bodies which all of those entities are all termed institutions. In the meanwhile, Jentoft (2005) also addressed that institutions can be generally perceived to include shared symbolic systems, such as language, religion, law and science. It is sometimes also reasonable to refer to social fields such

as the markets, civil society and the state as institutions. Different perspectives have different definitions of institutions, but the key point is that institutions affect social behaviour in different ways (Motos and Wilson, 2006).

In the context of natural and environmental resources management, there are three dimensions of institutions i.e. (1) **the degree of to which they incorporate hierarchical governance mechanism**. In some cases, especially which those are in the developed countries, fisheries management regimes are most fundamentally a form of hierarchical government systems in which a central agency representing a government makes decisions, which have a legal backbone

and enforcement mechanisms conducted by government institutions (Motos and Wilson, 2006); (2) **the degree to which they incorporate market-oriented governance mechanism**. In this context, fisheries management regime is formed by market-oriented value such as that fishing decisions is made depending on how market can determine how much and what kind of fishing should be done to maximise the benefits of the whole society (Motos and Wilson, 2006); and (3) the degree to which they incorporate civil-society governance mechanism. Regarding to this regime, fisheries resources are managed by the collaborative paradigm which derives from the advantage of communications and information sharing made possible by a richer set of relationships than those presupposed by the market or hierarchical governance approaches alone (Motos and Wilson, 2006).

### **3.3 Institutional Design in Fisheries Management**

As stressed by Motos and Wilson (2006), institutional design in fisheries management tends to be categorized into two types, i.e. (1) property rights as the basis of good management regimes; and (2) community approaches.

#### **3.3.1 Institutional Design Type 1 : Property Rights as the Basis of Good Management Regimes**

In the context of fisheries management, the earliest response were developed based on the premise that the absence of defined property rights is the key of understanding the fisheries problem (Motos and Wilson, 2006). In this regards, by defining property right for the certain fisheries area, the construction of institutional regimes could be undertaken. Many definitions of property rights, including of that de jure and de facto rights of individual or group of individual to a flow of benefits from asset, with at least a partial right to exclude others (Grafton, 1996; Motos and Wilson, 2006).

From the history of fisheries management, the complexity of fisheries problem can be solved using the think of property rights as a bundle of attribute (Motos and Wilson, 2006). The characteristics of property rights such as transferability, exclusivity, security, durability have made the right based fisheries management existed for long time. In this context, there are three kind of right units i.e. area, input and output (Motos and Wilson, 2006). Area or territorial use rights in fisheries (TURFs) conveys the right to fish within a specific area. Such rights could be limited to the use of particular gear of types or species or rights holders (Motos and Wilson, 2006). Meanwhile, Motos and Wilson (2006) explained that fishing inputs rights granted the holder the right to use certain inputs or fishing gears, frequently in selected areas and/or fisheries and at specified times. Furthermore, fishing outputs rights gives the holders a specific rights to harvest a specific amount of fish each year or season (Motos and Wilson, 2006). In the context of institutional design for fisheries management in SSME, this rights approach in fisheries could be

useful for understanding the dynamics of actors/agents in fisheries which are represented by the country.

### **3.3.2 Institutional Design Type 2 : Community Approach in Fisheries Management**

As strongly mentioned by Motos and Wilson (2006), although right based fisheries management has been recognized as the central element in fisheries management institutions, several other perspective in insitutional design has been constructed using the importance roles of civil society in fisheries. This options of paradigm is developed under the facts that within the property rights regime, there is also overfishing happened at least same with those which is in open access regime. In this regards, attention has turned toward other institutions and management systems surrounding the commons (Motos and Wilson, 2006). Furthermore, it can be revealed also that the focus has changed to what it is said as mobilizing the dynamics of community in fisheries management.

Adrianto (2007) mentioned that fisheries management cannot be separated from the idea that aquatic ecosystems, fisheries resources and human resources as an interconnected unit. For example, fisheries management cannot exist if fisheries resources are extinct and the ecosystems upon which they depend are degraded, and in the same time fisheries community as the main actors within the system also plays important role in the fisheries dynamics. In this context, the principles governing the interactions between aquatic ecosystems and society need to be understood. By understanding these interactions, we can lay the foundation for fisheries governance and appreciate the importance of achieving equilibrium between the sustainability of fishery resources, ecosystem health and the socio-economic conditions that determine the quality of life of resource users. In this regards, institutional design for fisheries management in SSME could also use the second type of design by exploring the dynamics of community within the regions including as of objectives, interests and shared vision and mission among the community.

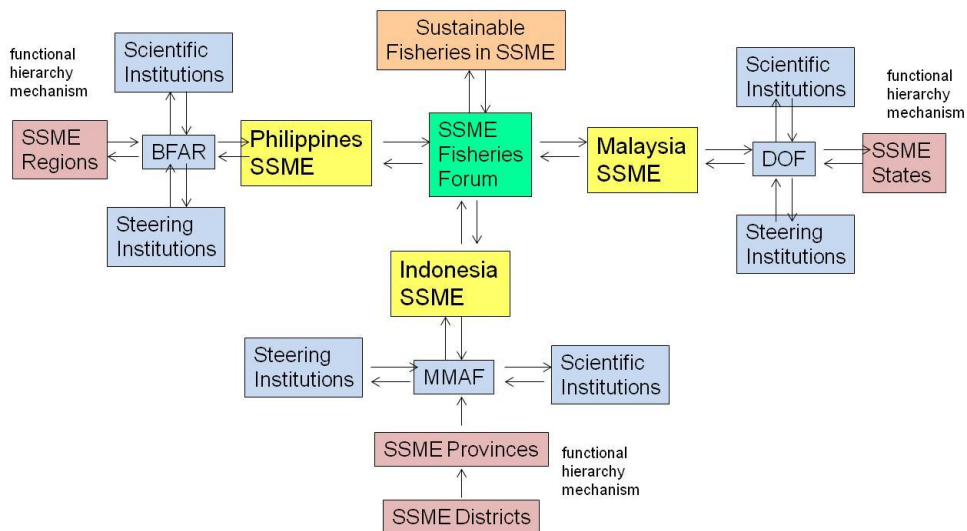
## **4 INSTITUTIONAL DESIGN FOR FISHERIES MANAGEMENT IN SSME**

Using the framework of Motos and Wilson (2006), the institutional design for fisheries management in SSME started by identifying the elements of institutional construction for fisheries management as elaborated below. It consists of (1) degree of incorporating hierarchical governance mechanism; (2) degree of incorporating market-oriented governance mechanism; and (3) degree of incorporating civil-society governance mechanism.

#### 4.1 The Degree of Incorporating Hierarchical Governance Mechanism

In the context of hierarchical governance mechanism, institutional design for fisheries management in SSME is proposed in terms of “functional” hierarchical mechanism rather than in the form of “absolute “ hierarchical governance mechanism. In this regards, functional hierachical governance mechanism defined as the active delivering process and mutual communication among the three countries in regards to managing the fish resources in the specific area as of SSME. In this mechanism, the active delivering process and mutual communication are undertaken using high level meeting in the context of countries representative in the field of fisheries and marine resources management authority. The institutional framework of this element of institutional design is presented in **Figure 3** below.

As presented in **Figure 3**, the elements of hiarchical governance mechanism focuses on the implementation of function integration (“T” type of integration). In this regards, management of fish resources in SSME is driven by the coordination mechanism between national government and local government through integrated fisheries planning and development. Relationship between central government and local government is central issues in this element of institutional design.



**Figure 3** Institution Framework for the Degree of Incorporating Hierarchical Governance Mechanism

In this type of institutional design, the relationship of between government unit in any level in each country would be a central. In the case of Indonesia and the Philippines, it is more showed from the dynamics of decentralization regime. While, in the case of Malaysia, due to its form of administrative those which is in federalism, the relationship between national and local government can be easier to



be predicted. **Table 2** presents the roles and responsibility of each institutional actors in the form of functional hierarchical governance mechanism.

**Table 2** Role and Responsibility of Institutional Actors in the Form of Functional Hierarchical Governance Design

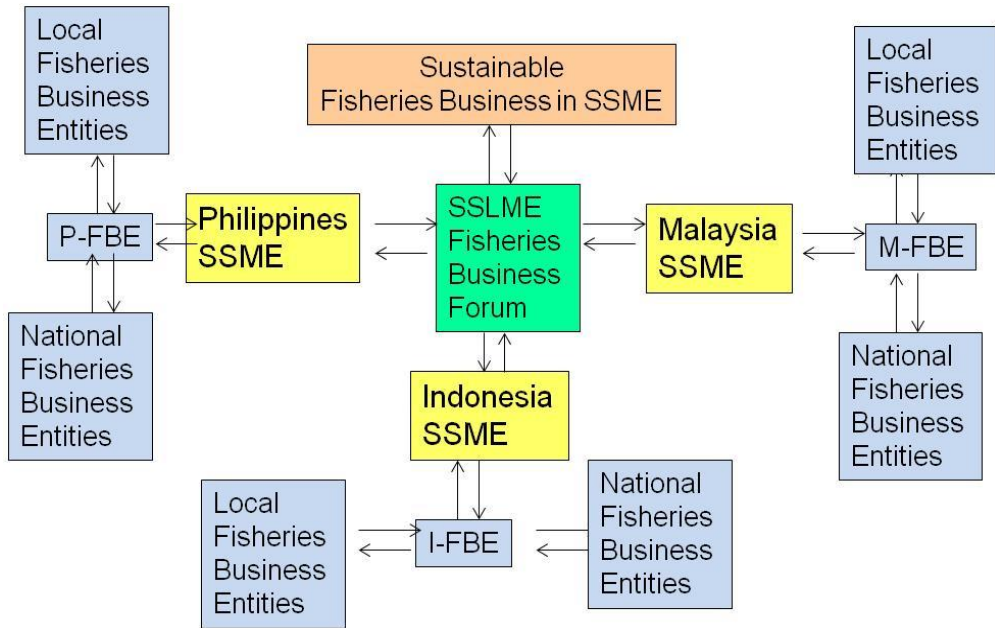
No	Country/Region	Institutions Actors	Name of Institution	Roles and Responsibility
1	Indonesia	Focal point	Ministry of Marine Affairs and Fisheries (MMAF)	Coordinating and organizing the taks of governance for fisheries resources in the SSME country's region (Indonesia) at any level of government.
		Steering Institutions	Ministry of Foreign Affairs (MFA), Ministry of the Environment (MoE)	Supporting the coordination and functional policy integration among the national government units (NGUs)
		Scientific Insitutions	Research and Devopment Center for Conservation and Fisheries Resources Management, Ministry of Marine Affairs and Fisheries	Coordinating joint research and investigations for the sake of producing realiable data of fisheries in the Indonesia's SSME towards sustainable fisheries development in SSME.
		Local Government Unit (Province)	Province of East Kalimantan, North Sulawesi Province, Gorontalo Province	Coordinating and organizing the taks of governance for fisheries resources in the SSME country's region (Indonesia) at provincial level of government.
		Local Government Unit (District and Municipality)	All of those district which has coastal line.	Implementing plan of action related to fisheries management
2	Malaysia	Focal Point	Department of Fisheries (DOF)	Coordinating and organizing the taks of governance for fisheries resources in the SSME country's region (Malaysia) at central and state level of government.
2	Malaysia	Steering Institutions	Ministry of Foreign Affairs	Supporting focal point in the context of managing fish resources in the Malaysia SSME.
		Scientific Institutions	National research center dealing with fishery research	Coordinating joint research and investigations for the sake of producing realiable data of fisheries in the Malaysia's SSME towards sustainable fisheries development in SSME.
		Local Government Unit (State)	Sabah Fisheries Agency	Coordinating and organizing the taks of governance for fisheries resources in the SSME country's region (Malaysia) at state level of government.
3	Philippines	Focal Point	Bureau of Fisheries and Aquatic Resources	Coordinating and organizing the taks of governance for fisheries resources in the SSME country's region (Philippines) at central and state level of government.
		Steering	Department of	Supporting focal point in the

No	Country/ Region	Institutions Actors	Name of Institution	Roles and Responsibility
		Institutions	Environmental and Natural Resources	context of managing fish resources in the Philippines SSME.
		Scientific Institutions	National Fisheries Research Center	Coordinating joint research and investigations for the sake of producing reliable data of fisheries in the Philippine's SSME towards sustainable fisheries development in SSME.
		Local Government Unit (Region)	Luzon, Mindanaou and Visayas	Coordinating and organizing the taks of governance for fisheries resources in the SSME country's region (Malaysia) at regional level of government.
4	SSME (Sulu Sulawesi Marine Ecoregion)	Agregat Fisheries Management	SSME Fisheries Forum	Coordination and sharing the information and lesson learned on the fisheries management practiced in the region.

The type of functional hierarchical governance mechanism, in this instutional design, can be seen as strengthening and increasing the form and role of Trilateral Committe, especially in the context of subcommittee sustainable fisheries. As acknowledged in the Action Plan of SSME Project, the Trinational Committee was formed in 2006 immediately after the ratification of the Memorandum of Understanding by Indonesia, Malaysia, and the Philippines. The Trinational Committee then formed the Sub-Committee on Threatened, Charismatic, and Migratory Species; Sub-Committee on Sustainable Fisheries; and Sub-Committee on Marine Protected Areas and Networks.

#### 4.2 The Degree of Incorporating Market-Oriented Governance Mechanism

Similar with the context of hierarchical governance mechanism, institutional elements in designing fisheries management institutions in SSME can be also in form of market-oriented governance mechanism. In this context, economics and business entities both in local and national level should be in the form of sharing their vision and communication on how to ensure the sustainability of socio-economics of fisheries dynamics in SSME. It is designed as the forum of fisheries business entities (FBE) among countries and develop special mechanism for strengthening each other (**Figure 4**).

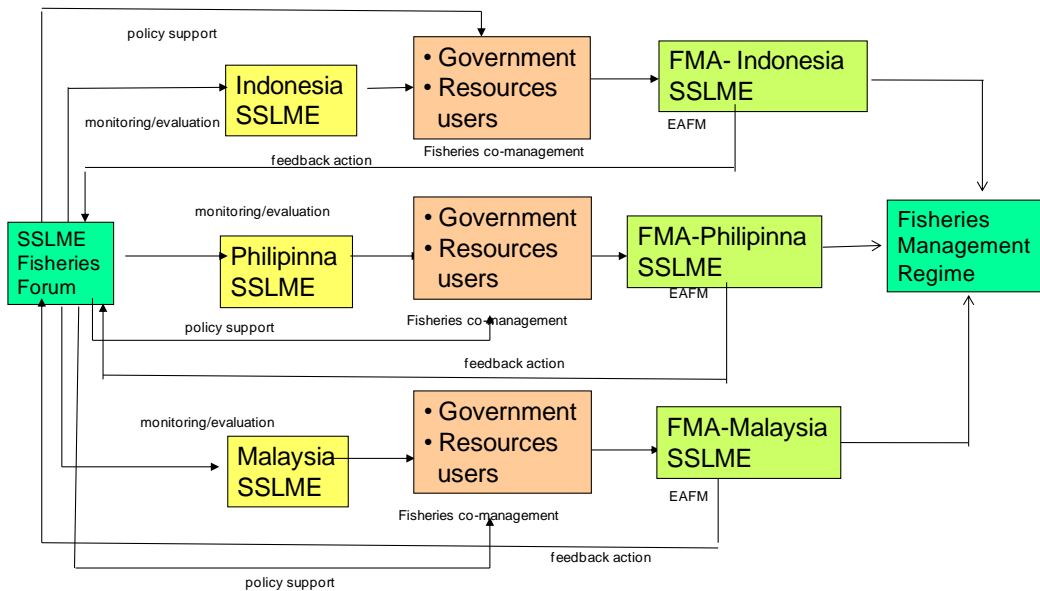


**Figure 4** Institution Framework for the Degree of Incorporating Market-Oriented Governance Mechanism

### 4.3 The Degree of Incorporating Civil-Society Governance Mechanism

This element of institutional design for fisheries management in SSME focuses on the involvement of community and stakeholders in collaboration with government (fisheries co-management regime). Borrini-Feyabarend, et al. (2004) define co-management as “a situation in which two or more social actors negotiate, define and guarantee amongst themselves a fair sharing of the management functions, entitlements and responsibilities for a given territory, area or set of natural resources”. Pinkerton (2003) suggest a concept of complete co-management as a context for discussing seven aspects that are key to such collective choice arrangements as follows : (1) Government as a co-manager plays a key and desirable role, and is ideally as engaged partner rather than a delegator; (2) Co-management, like management itself, involves far more than the control of fisheries effort; (3) sustainable co-management arrangements involve some control by community partners over the terms and condition of sale to fish buyers; (4) the successful exercise of rights on one level depends on the exercise of rights at higher and lower levels, including the right to participate in data collection/analysis and in setting policy agendas at the highest level; (5) co-management will ideally involve multiple horizontal negotiations leading to cooperate activities with other players and potentially greater democratization of civil society; (6) the power to exclude from some defined territory is optimal; and (7) complete co-management is based more on the collective rights of a group than on individual rights (Pinkerton, 2003).

**Figure 5** shows the diagrammatic views of the element of institutional design in the context of incorporating civil-society for fisheries management in SSME.



**Figure 5** Institution Framework for the Degree of Incorporating Civil-Society Oriented Governance Mechanism

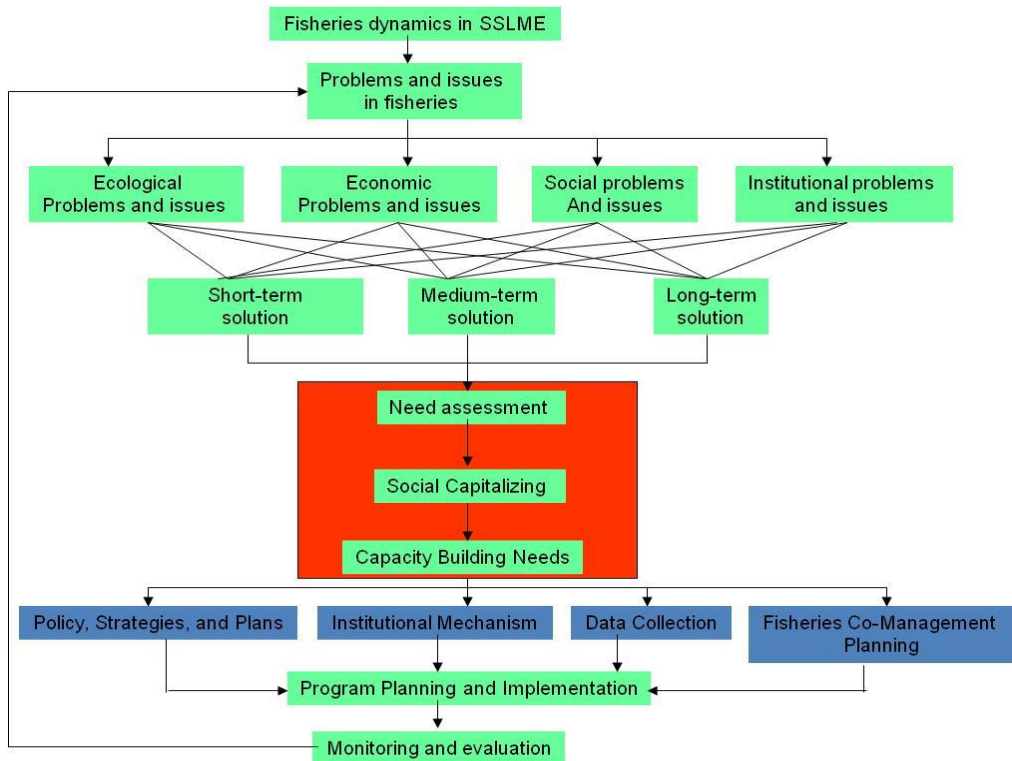
## 5 CAPACITY DEVELOPMENT NEEDED FOR FISHERIES MANAGEMENT IN SSME

### 5.1 The Need of Capacity Development

Some of the current weaknesses of fisheries management in SSME are the lack of success indicators in the fishery management system; the lack of a well defined integrated management program; and the lack of communication between three countries in the context of sharing responsibility and roles in managing the fish resources. In this regards, when formulating a institutional design using such fishery co-management plan, board of governments (fisheries forum) and fisheries resource users need to work together. Usually a mediator is required to assist the two stakeholders to formulate a co-management plan, at least in the early stages. The mediator is generally an individual or working group who originates from a research organization or a non-governmental organization.

Capacity development needed for managing fish resources in SSME can be driven from the issues and problems related to the fisheries including ecological, economics, social and institutional. All of issues and problems can be identified from TDA (*Transboundary Diagnostics Analysis*) which has been also undertaken for

SSME. Using the identification of ecological, social, economics and institutional issued and problems, three types of time framework can be then set up for determining the need of capacity development during short, medium and long terms. From these time frameworks, a set of capacity development program can be identified and categorized into 4 domain of capacity development namely (1) policies, plans and strategies; (2) institutional mechanism; (3) data collection; and (4) fisheries co-management plan. **Figure 6** shows the approach of capacity development needed for managing fish resources in the SSME.



**Figure 6** Approach for Capacity Development Needs for Managing Fish Resources in SSME

## 5.2 Capacity Development Program

Capacity development is defined as the process through which individuals, organizations and societies obtain, strengthen and maintain the capabilities to set and achieve their own development objectives over time (UNDP, 1997). In SSME context, the objective of capacity development is to strengthen and maintain capabilities to set and achieve the objectives of sustainable fisheries in the region.

PEMSEA (2000) suggested that there are numbers of capacity development forms including (1) skill and knowledge transfers (training, formal and informal education); (2) mobilizing commitment through field trip; (3) learning by doing through internship program; and (4) providing technical support from the SSME Fisheries Management Forum (SFMF).

As presented in **Error! Reference source not found.**, there are four elements of capacity development program derived for increasing the quality of fish resources management in the SSME i.e. (1) policies, plans and strategies; (2) institutional mechanism; (3) data collection; and (4) fisheries co-management plan. This section elaborates detailed action plan of capacity development according to each element of program as presented in **Table 3**.

**Table 3** Action Plan for Capacity Development Program for Fisheries Management of SSME

No	Element of Capacity Development Program	Name of Capacity Development Action Plan	Target Group	Time Framework
A	Policy, Strategies and Plans	Integrating Fisheries into ICM (Integrated Coastal Management)	Local government representative in fisheries issues	Short term
		Coastal Strategy and Implementation Plan	Local stakeholders in coastal and marine resources	Short term
B	Institutional Mechanism	Internship program in transboundary fisheries management	Local and national government unit in responsible in fisheries sector	Medium Term
		Training on Communication in Fisheries	Local fisheries facilitators	Medium Term
C	Data Collection in Fisheries	Participatory Stock Assessment Method	Local fishers, local fisheries government unit	Short Term
		Joint cruise in fisheries	Local and national fisheries research unit	Short Term Medium Term
		Technical support on fisheries allocation unit	Local and national fisheries research unit	Short term Medium term
		Disseminating fisheries data	Local and national fisheries research unit	Medium term Long term
D	Fisheries co-management plan	Training on Introduction to Fisheries Co-Management	Local fisheries stakeholders	Medium term
		Skill transfers on Ecosystem Approach to Fisheries Management	Local fisheries research unit, local fishers, local fisheries business entities	Medium term
		Fisheries livelihood training	Local fisheries household	Medium term
		Fisheries stakeholders mapping	Local fisheries stakeholders	Short term

## 6 CONCLUSIONS AND RECOMMENDATIONS

### 6.1 Conclusions

- In the context of SSME, fisheries plays important role in the regions socio-economics development through dynamics of fisheries-based livelihood among the fishers and other aquatic resources users in the three SSME countries i.e. Indonesia, Malaysia, and the Philippines. It has been revealed also that it is almost impossible to state that a fishery is fully successful in terms its management. Marine ecosystems and fish resources are of by nature very dynamics and incorporating high uncertainties, especially in the context of large marine ecosystems (LME). Furthermore, it is also difficult to set common objective of transboundary fisheries management such in SSME which consists of three countries. Even though there are some universal objectives of fisheries, each nations have different objectives. To increase the awareness of the parties towards the sustainability of fisheries in the region, a set of institutional design should be developed.
- The institutional design for managing fish resources in the SSME consists of three elements including (1) degree of hierarchical governance mechanism; (2) degree of market-oriented governance mechanism; and (3) degree of civil-society governance mechanism. The three types of institutional design should be adopted in regards to comprehensive sustainable fisheries management strategies to eliminate the conflicts, disputes and, in the long term, degradation of fish resources in the SSME. In order to strengthen the set up institutional designs, it is also needed a set of capacity development program. There are 4 capacity development program according to need assessment among the fisheries stakeholders, including (1) policies, strategies and plans; (2) institutional mechanism; (3) data collection mechanism; (4) fisheries co-management. Each element of program consists of number of action plans to ensure the good process of implementation

### 6.2 Recommendations

- It strongly recommended that capacity development can be used as strategic vehicle to strengthen the fisheries management institutions in SSME. It is undertaken following the actions plans identified for each element of capacity development programs and their time frameworks. Fish resources users, government and other stakeholders have to be generally committed to strengthen each others by giving enough rooms for discussions, collaborating research actions and intergrated fisheries co-management plan, especially fo the issues related to transboundary fisheries. It is better rather than fighting lengthy battles over whether or not the problem should be

addressed. In this regards, institutional mechanism should be worked according to the elements of institutional designs.

- To strenghten the tri-national cooperation as well as to build common understanding of the Sulu Sulawesi large marine management needed to develope capacity building program such training and workshop for the SSME Sub-committee and Trinationl committee to meet the institutional requirements for EAF in the SSME.
- Beside capacity building for the personal, the progam which aims to strenghten effective cooperation among three countries, Institutional strengthening program should also beginning to be initiated, but more in soft institutional arrangement (SSME Forum), for regional fisheries management, engaging all stakeholders (such as the fishery actor, civil society, national government etc.) in each the SSME Tricom meeting. This scheme is very important to implement the EAF institutional framework on Sulu Sulawesi Large Marine Management.

Management challenges are still identified and facing sustainable fisheries development in the SSME. All of institutional designed for managing the fisheries should be also monitored and evaluated in order to ensure the adaptive process of the fisheries management institutions in the region.



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