

CHAPTER 2

Theoretical Relevance and Literature Review

This chapter reviews four theoretical concepts and related studies to discover the work of mangrove restoration policy in the Central Coast of Vietnam. First, the concept of decentralization is applied to examine the power relationships in natural resources management and the level of local participation and how it works on a national and local scale. Next, the concept of environmentality is used to clarify the way the government governs mangrove forest management, how this governance approaches mangrove restoration, and to what extent scientific knowledge and local knowledge is used. After that, the concept of local knowledge is used to examine how local environmental knowledge has been implemented in the past up until the present and how it is linked to environmental governance and the way local people participate to mangrove restoration projects. Lastly, the politics of scale is used to clarify why scale matters through the three concepts above and how scale works in different contexts. Related studies in the field of local participation in mangrove restoration and local knowledge, mangrove forest and livelihood strategies are also reviewed to support my argument.

2.1 Review of Theories and Concepts

2.1.1 Decentralization of Natural Resources Management

The concept of decentralization has been discussed widely since the 1980s. At the very beginning, decentralization was viewed as a tool to transfer power from the central government to local administrative units (Cheema and Rondinelli, 1983; Chusak and Vandergeest, 2010). It is seen as a means to achieve political-economic and policy objectives (Agrawal and Ribot, 1999). However, decentralization is a term that is not easy to be clarified.

Ribot, 2002 claimed that decentralization is an act in which power is transferred from the central government to lower administration in a national political system (Johnson, 2001; Larson, 2008). Decentralization was also looked as a transferring of decision-making authority and financial responsibility to lower levels of government (Meinzen-Dick and Knox, 2001; Chusak and Vandergeest, 2010). To sum up, it can be said that there are two aspects of decentralization. Firstly, decentralization refers to the process of power transferring from the highest level to the lowest level in the administration structure. Secondly, power is distributed among different institutional groups such as local government and civil society among others. In this thesis, I concentrate only on the distribution among local government and local community. In addition, there are many types of decentralization. In my thesis, I concentrate on the decentralization of natural resource management.

The decentralization management model of natural resources has been discussed increasingly since the mid-1980s (Larson and Fernanda, 2008). It has become a dominant theme in the discussion of natural resources policies for the purpose of the government in terms of development and conservation (Agrawal and Ostrom, 2001; Chusak and Vandergeest, 2010). According to Chusak and Vandergeest (2010) there are two types of natural resource decentralization -administrative decentralization and political decentralization (democratic decentralization). In this thesis, I will examine the level of participation in decision-making, implementation processes and a shift of power for environmental justice. Political decentralization is addressed as follows,

This form of decentralization refers to representative and downwardly accountable local actors who have autonomous, discretionary decision-making spheres with the power and resources to make significant decisions pertaining to local people's lives (Ribot, 2002; Johnson, 2001; Larson and Fernanda, 2008: 216).

The result of political decentralization will increase local autonomy, the involvement of local people in natural resource management, and the privatization of services (Battergury and Fernando, 2006). However, decentralization is not a simple process as many scholars have pointed out previously; it needs a linkage among its components: social actors, power, and accountability. The involvement of all actors with clear understanding of the power in the decision-making process and with accountability upward and downward will help decentralization work effectively. In the case where the shift of power is unequal to the actors without accountability, this will transform the decentralization process to a hidden centralization process. The reason comes from many aspects in decentralization. It can be a difference in the scale in terms of power control and access to resources when the local context is different than the global or national context. It can be the overlapping of responsibility among stakeholders in Vietnam such as the case mentioned in the statement of problem above. It is a fact that decentralization in natural resource management links directly to property rights and power relations (Chusak and Vandergeest, 2010). Agrawal and Ostrom (2001) point out that when local people gain the rights to access resources, the issue of power and participation will be solved and decentralization is likely to work well. In order to get that outcome, power relations should be transferred equally among the actors. However, in reality, power relations just work between powerful actors, and the powerless actor is normally excluded. Therefore, in my point of view, NGOs should be the bridge between the government and local people in terms of power distribution because, in general, local people do not clearly understand the policy and do not know what happens in the higher institution. So in this case, NGOs will help the local people have a better understanding about local rights, what they can and cannot do under the government policy.

As noted before, decentralization of natural resources management is a trend in both developed countries and developing countries (Agrawal & Ostrom, 2001; Larson, 2002; Benjamin, 2008), and many aspects of this field have

decentralized power structures (Agrawal & Ostrom, 2001; Benjamin, 2008). However, the outputs of decentralization are still limited (Benjamin, 2008). For example, in a case study of Forest Land Allocation Program in Vietnam, when the government tried to decentralize forest management by redistributing forest land to local communities and households, the local elites used their power in order to seize the land. This caused an unequal distribution of the land between the powerful and powerless people (Phuc, 2010 cited in Chusak and Vandegeest, 2010). That is why decentralization does not work well under a good policy. The idea of natural resources decentralization is to bring the state closer to people and try to benefit from the redistribution of centralized management authority (Larson, 2002). Therefore, it is necessary to build clear linkages between traditional and modern governance institutions and between the state and the people without causing inequality in ethnicity, social status or gender (Benjamin, 2008). There is also a link between decentralization and environmental governance. In order to make decentralization in natural resources management, the government needs to establish clear environmental governance models. When new governance has been issued, in which power is transferred downward from the central government to local institutions, at least in principle, local people can raise their voice to the higher institutions (World Bank, 1992; Batterbury and Fernando, 2006). As mentioned at the beginning, decentralization is also a state distribution of power control and is not enough on its own for a healthy environment. Therefore, it needs a form of environmental governance called environmentality or eco-governmentality (Agrawal, 2005).

2.1.2 Environmentality: a Form of Environmental Governance

As I mentioned above, there is a link between decentralization in natural resources management and environmental governance. Environmental governance is addressed as follows, according to Lemos and Agrawal, 2006:

Environmental Governance is synonymous with interventions aiming at changes in environment-related incentives, knowledge, institutions,

decision making, and behaviors. More specifically, we use ‘environmental governance’ to refer to the set of regulatory processes, mechanisms and organizations through which political actors influence environmental actions and outcomes. It includes the actions of the state and, in addition, encompasses actors such as communities, businesses, and NGOs (Lemos and Agrawal, 2006: 298).

It can be seen that environmental governance is a complicated process. It needs the inter-relationships among institutions with discussion of knowledge for decision-making processes. These are processes or mechanisms that work with the related organizations in sharing power. It is not the responsibility of the state alone but all stakeholders must be involved. Although there are many aspects of environmental governance that have been discussed, the concept of environmentality has been chosen for the thesis discussion. Environmentality was mentioned in Luke’s article about Geo-Power and Eco-Knowledge in 1995. In his point of view, “in some case, the environment is ‘Nature’ for commoner, but it is also ‘society’, or more accurately, ‘Nature-as-transformed-by-Society’ (Luke, 1995: 6).” And discourse of knowledge and power is a part of ‘transformation of human life’. “The environment, according to Foucault, can be divided into biological and historical (Luke, 1995: 11).” In human history biological dimension always links with historical development. Luke also mentioned Foucault’s governmentality and conservation and their links in environmentality, in which bio-powers and geo-powers, ecological and historical, govern the environment.

And then, Agrawal (2005) mentions environmentality again in his book ‘Environmentality: Technologies of Government and the Making of Subjects’. According to Agrawal (2005), environmentality is an application of Foucault’s governmentality and bio-power.

Environmentality is a union of environment and Foucauldian governmentality, the terms stands for an approach to studying environmental politics that takes seriously the conceptual building

blocks of power/ knowledge, institutions, and subjective. The analysis builds on existing writings by political ecologists, common property theorists (Agrawal, 2005: 8).

According to Malette (2009), eco-governmentality is Foucauldian governmentality's application to the natural world with a core concern in bio-power. In this concept, Foucault examined how government uses power to rationalize the ecological system. Eco-governmentality focuses on how government constructs the environment using the dominant knowledge named "scientific knowledge". In this case, there is an on-going debate about how knowledge can be situated in specific areas with specific interactions. Eco-governmentality has both hegemonic and neoliberal part (Agrawal, 2005; Ward, 2013)

Moreover, Foucault's (2003) analysis the governmentality about the state exercises bio-power. Neoliberalism, by contrast, constitutes a novel approach to the exercise of bio-power with very different methods on the reflection of subjective behavior to the state goals and population. Thus, environmental governance is under the control of the state, which directly affects local people's life. According to Tania Li's book *'The Will to Improve'*: "the field of power in Michael Foucault term is defined as 'conduct of conduct', government is the attempt to shape human conduct by calculated mean" (Li, 2007: 5)." Government uses means to make people believe in their ideas and acceptance of Government practices is affected by national and international institutions. In addition, "when power operates at a distance, people are not necessarily aware of how their conduct is being conducted or why (Li, 2007: 5)," they just follow the government ideas. In the case of mangrove restoration, the government provides knowledge about a healthy environment to serve global and national goals in terms of ecosystem services. However, when the policy goes to local people, they think more about their livelihood than ecological services.

All in all, in an environmental sense, the government forces people to think about conservation and the ecological value more than the other aspects,

such as social, economic, and cultural. The governance has been driven by market mechanisms such as REDD + or PES. For example, in mangrove restoration, the government tries to make people aware of the mangrove forest and of the value of the mangrove ecosystem according to scientific knowledge and to a lesser extent, combining local knowledge. However, this effort does not yet worked effectively. It is believed that local knowledge has been used for a long time, not only as environmental knowledge but also for the local livelihood and culture. Therefore, the solution for a good combination of scientific and local knowledge is an urgent task for these projects.

2.1.3 Local Knowledge in Response to Environmental Governance

Spiegler, 2003 state that local knowledge is “the capacity for effective action in a domain of human actions (Spiegler, 2003: 535; Taylor and Loë, 2012).” According to Yos (2003), local knowledge in terms of resource management is a key part of the relationship between human beings and nature, that is, the interaction of human ecology when people and nature support each other.

In addition, according to Nygren (1999), local knowledge is situated knowledge. She argues that knowledge production should be recognized as a process of social negotiation, one that involves multiple actors and complex power relations. Local knowledge is situated knowledge because it is happening all the time and changes in response to the changing situation in a community from era to era. Moreover, it can be viewed as a continuous process of change, adaptation, and contestation and combines the traditional and modern, the situational and the hybrid and the local and global knowledge – all integrated together to create a complex local life (Nygren, 1999). Local knowledge in mangrove forests is not only for ecological conservation but also for community culture and people’s livelihood. People’s livelihood does not fit to traditional knowledge alone; they are also situated with knowledge to cope with changing circumstances. They use their traditional knowledge combined with new insights for a better solution

under the changing circumstances. For example, in the case of mangrove restoration, they use the mangrove forest for their livelihood, but under the effect of climate change, they also built sea wall to protect their forest.

However, government considers local knowledge in a lower status when scientific knowledge is dominant in the world and local knowledge is poorly considered in state governance (Taylor and Loë, 2012). In the book 'Seeing like a State', James Scott claimed that the state views forests simply as revenue source, such as timber and fuel for economic purposes (Scott, 1998). Other important factors are missing from the state perspective, such as flora and fauna in forest ecosystems as well as human interaction. It means that in scientific forestry, the economic aspect is the most important focus while environmental, social, or cultural aspects are excluded. However, the fact is that the government demonstrates that scientific knowledge is more important than local knowledge so that they can claim resources, excluding local knowledge. Knowledge can turn someone who was previously forest user into a forest destroyer because of the economic concepts of scientific forestry, and the law is hidden under this action (Peluso, 1992). In this case, if local people cannot demonstrate their knowledge as a tool of environmental conservation and livelihood strategies, they will be excluded from mangrove forests. Scientific knowledge is a global innovation, however much scientific knowledge has been used as a tool of the central government and is not a good way for natural resources management (Forsyth and Walker, 2008). Therefore, it needs the integration of local knowledge and scientific knowledge into environmental decision-making because environmental knowledge is very difficult to produce without referring to political and social contexts.

In the case of mangrove forests, mangrove is considered as a common property rights, which is accessible by every local villager. Mangrove forests play an important role in local community. Local use of mangrove forest resources is varied and significant (Armitage, 2002). People rely on the resources of mangrove forests, such as firewood, food, and timber. The

coastal ecosystem plays an important source for onshore and offshore fish species and directly or indirectly supports local livelihoods through this function (Tuyen et al., 2010). Armitage (2002) found that mangrove forests contribute to household income more than the formal wage economy. However, scientific knowledge does not recognize the important social and culture aspects of mangrove forests with the local people, which cause conflict between the state and local people when conservation projects are initiated. This means that local people claim of knowledge is a tool to negotiate with the government in the context of the economic era debate. So, the question here is how can local people negotiate with the government to protect their local knowledge?

One aspect that should be considered in this situation is the practice of politics. This is a tool to resist governmentality. It means that even the government has management tools and many technologies of government. At least in terms of governmentality, the idea of the practice of politics still works in which some people do not agree that the policy will lead to the change of the direction and the change of the outcome of the project, keeping in mind that there are usually unintended consequences. Moreover, people should use politics as a tool to negotiate their rights of life, such as livelihood strategies (work, land, and income). Negotiating livelihood strategies here means local people use their knowledge to negotiate with the state for a better solution for their livelihood.

Turnbull (1997) introduced the concept of knowledge space in which he began by recognizing that knowledge production is a social activity as well as a social history of space (Anan, 2008). Concept space means how that the same concept can be applicable to different situations and includes both the places of knowledge and of power production in the sense that they are contested spaces associated with complex social relations (Anan, 2008). It means local people have to generate a new knowledge space to prove that local communities cannot live without mangrove forest and that they have their own knowledge to take care of the forest. This kind of knowledge

should be respected in the era of climate change for a good combination of local knowledge with scientific knowledge creates contested knowledge. Lastly, knowledge should be put in the right context.

2.1.4 The Politics of Scale

“The politics of scale refers to the situations where different actors contest the spatial extent and resolution of information and decisions, and contrast this with the politics of place and position (Lebel, Garden, and Imamura, 2005: 9).” Scale not only refers to ‘regional scale’ or ‘national scale’, but also relates to globalization, localization, regionalization, which is called ‘politics of scale’ (Clifford et al., 2009: 218). Scale here is interpreted by different actors, and it depends on how they construct scale and how politics shape the scale-making process. Scale, in this thesis, is the bridge among three main concepts: decentralization, environmentality, and local environmental knowledge. There is a linkage among them, although it is hidden under the surface. As mentioned above, decentralization is about the scale in terms of power control and access to resources at different levels. Power will be transferred to different actors in different levels. Power is transferred from global to national to local. Each scale has different actors with different understandings about the policy. There is hope that this kind of power transferring will produce good environmental governance (Lebel, Garden, and Imamura, 2005). Governance is issued by the government and is transferred to the local level. Scale, here, means local and national levels in which governance is interpreted in different levels and different contexts. Moreover, in the context of the national level, scientific knowledge is dominant, and local knowledge is a tool of local people at the local level. However, local knowledge is normally looked as being of a lower status in comparison with state knowledge. The scale here matters because “whatever scale is selected, geographers always realized that results obtained at one scale are not enough (Clifford et al., 2009: 213).” All scales need to be taken into account under any policy or governance.

Additionally, as Crang (1999) pointed out in 'Local Matters, Global Vision', there is always a difference in terms of global and local thinking. From a global perspective the view is on world issues, while local views are about their local problems. While global thinking is about modernization and the use of scientific knowledge to solve environmental problems, local thinking is about development as sustainability and livelihood improvement. Thus, scale is important here. It needs to consider the relation between global and local thinking. For example, this study looks at the local level and concentrates on one particular place which is not the same as another place in local governance or especially in terms of local knowledge and development interpretation. Global and national levels think about climate change adaptation or carbon sequestration, whereas the local level thinks about how to get livelihood security. These different views cause a problem in terms of how global, national and local levels can cooperate for a good outcome from projects or policy. However, it is always possible to have a discourse between the global and the local levels.

2.2 Review of Related Studies

There are many studies about mangrove forests in general and mangrove restoration specifically. While some studies look at the field of natural sciences, such as biological diversity, the potential of mangrove forest in natural disaster reduction, or the application of GIS and RS to mangrove management, others concentrate on the field of social sciences, such as the cultural, social, or economic aspects of mangrove forests by different actors. This thesis combines both natural science and social science tools to study how decentralization and environmental governance work in the local scale in comparison with the global, national and regional scales. In addition, GIS and RS is applied for the analysis of mangrove forest areas in the combination with quantitative and qualitative approach in the study site in order to have a big picture in both qualitative and quantitative perspectives.

2.2.1 Overview of Local Participation in Mangrove Restoration

Under the era of the “Sustainable Development” debate, there are a variety of studies concentrating on the field of natural resources management, and mangrove restoration is one focus area. Mangrove restoration has been looked at as a tool of “Sustainable Development”. This phrase has been discussed since the 1980s, widespread in the reports of international consultancies and the agencies that employed them. It has been looked at in a variety of ways. In terms of mangrove forests, in the industrial economic era, a large area has been destroyed because of economic development projects such as shrimp farming. As a result, humans have been facing more serious natural disasters. Realizing the importance of mangrove forests, the government claims that mangrove restoration is a must-do in the era of climate change and sustainable development. However, the success in mangroves restoration has remained very limited, mainly due to a lack of cooperation among stakeholders and insufficient skills by forest activists as well as inactive community participation in mangrove restoration (Memon, 2011). This problem is likely to happen in many countries when government conducts reforestation projects without acknowledging the missing links with local involvement (Datta, 2012). One of the reasons for this problem is that there is no stakeholders’ meeting before mangrove reforestation implementation. Additionally, the state is only concerned with the interests of a small group of land owners without considering the impacts on other sectors (Stone, 2008)

The government and other powerful agencies have their own particular worldview and, through the use of language create an image of mangrove restoration in order to serve their conservation purposes. However, they forget to embed environmental aspect with the economic and social aspects of these restoration projects. As Mills (2003) pointed out in his chapter ‘Discourse’ about Foucault views, the distinction between true and false is a power relation: the ones who are being regarded as ‘experts’ have the right to the truth, whereas the rest who possess no power are denied this right. In

the case at hand, the government concentrates on conservation aspects, claiming that mangrove restoration is a priority in this era. As Foucault has pointed out, the combination of power and knowledge shapes the truth. The language chosen by the government influences the thinking of citizens in order for them to adopt the government's worldview (Mills, 2003). The government has the power and, therefore, entertains only the knowledge and ideas of its choice.

In addition, it is not only the policy toward mangrove restoration but also the tenure of the policy that influences the security of programs. Forests are considered as a common property in many countries. Common property, according to Hardin's (1968) hypothesis in 'Tragedy of the Commons', is managed by the state regime and is considered as a "bundles of ownership" in which the rights to access among stakeholders is overlapping (Roy et al., 2013). It is a fact that local people use mangrove forests in their everyday livelihood with insufficient rights because of unsustainable property rights regime. There are no clear rights to the use of the mangrove forest or what they will get from these projects in 5 or 10 years. Therefore, local people just participate in mangrove restoration as an obligation. For example, in Vietnam, forest land is managed by the state and by industrial-agricultural-forestry enterprise associations. State policies regulate forests and their products as national assets, owned by the state. Therefore, local people do not have rights to manage and use either forestland or forest products (Truong and Orlando, 2010).

Moreover, there is no clear connection set up about the relationship between the forest and people and the relationship between sustainable forest management and the property rights regime (Roy et al., 2012). According to Ostrom and Schlager (1996), forests are a common property and both the costs and the benefit should be shared among stakeholders because if the government or local people do it separately, it would be costly or have a zero return (Ostrom and Schlager, 1996). Hann (1998) claims that property is a formal construct but can be very informal in a different perspective. It

might be formal in theory, but it can practice informally in reality. Property not only relates to the law, it is actually associated with society and culture in reality (Hann, 1998). Therefore, the property rights regime should be embedded in the state-forest relationship (Roy et al., 2012).

One more discussed here is when all the forest belongs to the state, local people can sometimes collect Non-Timber Forest Products (NTFPs), such as catch fish in the mangrove forests, but there is no tenure security, which leads to no livelihood security. They have no rights to access mangrove forests legally, and they cannot control it. 'Access' links to property rights in natural resources management. The definition of 'Access' is addressed in Ribot's and Peluso's paper in 2003 as following: 'Access' means 'the *ability* to derive benefits from things', and later as: 'the *right* to benefit from things'. Following this definition, access is more akin to 'a bundle of powers or abilities' than to property's notion of a 'bundle of rights'. It includes a wider range of social relationships that constrain or enable benefits from resource use than property relations alone." (Ribot and Peluso, 2003: 153). In the case of mangrove restoration, local people cannot access the forest because they have no power acknowledged by the government policy.

In addition, the conflict happens not only between the government and the local but also within the community. There is conflict between local elites who can access exclusive property rights and who lost their access or could not access such resources. In the past, all local people can go to mangrove forests and collect NTFPs, crabs, fish, shrimp, and dry branches for firewood. After conducting the mangrove restoration, there is new conflict happening inside the local community as some can have access to the forest and others are denied access because of lack of power. In this way, the poor and the powerless are excluded from the mangrove and marine resources (Hue and Scott, 2008). As a result of this type of dispute, communities differ significantly in their responses to reforestation proposals. Many people respond that mangrove forests need to be restored, while others reply

that the forest do not need to restore anymore because they receive different benefits from these projects. Thus, local participation in mangrove restoration still varies, such as some participate actively in the first stage of implementation and then abandoned later or some refused to participate at the beginning. All in all, people more actively participate when the projects have a connection with livelihood security and have obvious benefits from that kind of project. Thus, training to clarify about a project's aim and raising awareness of local people is necessary here (Ekindi, 2008).

All in all, the top-down approach taken by the local government in mangrove restoration makes local people confused about their livelihood. People do not take care of mangrove forests because there is no clear sharing benefit system for them (Tuyen et al., 2010) and there is no livelihood security after conducting these projects.

Armitage (2002) pointed out that equitable property rights and access regimes are still limited because of the insufficient legal frameworks from the state and the ambiguous management in different levels of administration. Thus, an alternative solution for sustainable forest management in which the missing link between conservation and livelihood security is filled needs to be found (Roy et al., 2012). Co-management and decentralization can be a solution, in this case, in which cost and benefits are shared among stakeholders, power is transferred equitably, and there is a secure ownership for land owner (Roy et al., 2012).

2.2.2 Local knowledge, mangrove forest and livelihood strategies

Local people can use their knowledge to protect their traditional livelihood from the impact of mangrove restoration policy and its discourse on mangrove forests. Local people have their own livelihood strategies through which they perceive and learn about the environment, ecology and society. These are improved by the inter-relationships among humans and between humans and nature. Therefore, the meaning of livelihood is regulated by the activities, the assets and the access, that jointly define the living.

The relationship between local people and the place they have lived for generations not only illustrates economic interests but also deeper cultural and spiritual connections to that place. The question here is that without land security and ownership how can local people live sustainably? As pointed out above, the relationship between people and the place links their economy, society, and culture. In order to maintain that kind of relationship, local people need to have full rights of access to their resources. Without tenure security and land ownership, there is still a limitation of resources control of local people. Local people only have rights to access resources and do income-earning activities when they have a secure ownership. They cannot do it for one year and then their land be converted to a different type of land-use the following year. It is all about tenure security means. A household can have their own secure livelihood when they have their own ownership and they can control their resources.

Moreover livelihoods can be conceptualized as negotiated space used by local people to gain power to manage and control natural resources. They can struggle to get power and the rights to control the forest. In this case, they can use their knowledge in natural resources management. They can maintain both conservation and livelihood with their knowledge space.

Although multiple negotiation forms have already been used, they have not been beneficial in some contexts due to the domination by development policy which expresses the relationship between the economic, political, cultural and social dimensions. Therefore, to construct better livelihoods, people could have a choice of the assets and resources they have access to, so after that they have a choice of strategies (DFID, 1999). For instance, the emphasis on this spatial dimension of knowledge opens up the possibility of seeing knowledge more clearly as practices by knowledge producers. “The practices, especially through social strategies of negotiation, allow knowledge producers to create spaces that can generate new knowledge from heterogeneous and isolated knowledge (Turnbull, 1997: 553 cited in Anan, 2008: 5).” They can regenerate their knowledge and negotiate for their

livelihood strategies. They have to negotiate for better livelihood strategies under a new situation, and the concept of knowledge space can help them better understand how they may negotiate. The concept of knowledge space is also useful for understanding the multiplicity of knowledge (Anan, 2008).

Local knowledge should be seen as a strategic package of contestation and negotiation. It can be mixed with the other kinds of knowledge, and it is also situated under the change. Through their engagement in social forestry, people can generate different kinds of knowledge space in the community forestry movement in order to negotiate with the government. Under the concept of negotiation is the concept of practice. It means that local people do not only use their knowledge in only one way but in different ways. Although they have local knowledge, they still can adapt new knowledge to survive under different circumstances. They can adapt and practice many kinds of livelihoods by mixing different kinds of knowledge

Additionally, in order to negotiate for their livelihood strategies, they have to extend their networks and their social capital. According to DFID (2001), a livelihood of each household depends on five types of capital: natural capital, human capital, financial capital, physical capital and social capital. They have to strengthen their capital if they want to negotiate with the government. What capital do they have, and is this capital sustainable? Because the state and other powerful agencies, with their own interests, approaches, language and styles, generate discourse and meaning in development which is intended to serve their purposes of power, the government cannot see the potential in the local community strategies. This means that local people have to combine indigenous knowledge with scientific knowledge to reveal their belief in front of the government (Hirsute and Wyatt, 2004). Therefore, the diverse methods of livelihood have to be shaped by the natural and socio-economic conditions of a given region in order to generate new knowledge and adapt to the new situation.

Put in another way, local people have to demonstrate their sustainable livelihood in an economic, social, and environment perspective. In the

economic perspective, mangrove usage provides food and livelihood for local people. In terms of the social perspective, mangrove usage can be seen as a traditional livelihood, associated with the people from generation to generation. Additionally, besides its ecologically, societally, and economically crucial roles; mangroves also play an important role in the historical and cultural aspects (Datta, 2010). Local people usually associate development and conservation with making money. Thus, conservation is also linked to the negotiation for livelihood resources in the forest.

To sum up, local people can negotiate for their livelihood strategies and struggle to get access to resources by applying local knowledge flexibly or asking for alternative sources of livelihood. Thus livelihood-based mangrove restoration may be a solution for reducing the pressure on the mangrove ecosystem. Because it is believed that there is a direct link between local livelihoods and mangrove ecosystems, it is possible to pursue a positive attitude of local people toward sustainable mangrove management (Badola et al., 2012).

2.3 Conceptualization of Research

This examines the politics of mangrove restoration in which decentralization is one tool of the government to transfer the policy objectives and their power from the central government level to the grassroots level. However, in the local context, villagers have their own knowledge, customs, and culture. Therefore, the policy normally goes in different directions with what the local government imagines in the beginning. This is called practices of politics. In this study, decentralization is looking how forestry land policy and environmental governance is transferred to the projects themselves and how decentralization works in central government and how it play out in the local context. The government uses environmental governance to manage their policy. In this way, scientific knowledge always contributes as a government tool for their governance, whereas local knowledge is ranked at a low status, which causes the ineffectiveness of decentralization. When scientific knowledge is integrated with local knowledge, a new solution will emerge. This study also looks at the relationship between human and

nature from the historical background of the area. It is believed that environmental issues cannot be separated between politics and history.

The state forms the forestry land policy which causes conflict among stakeholders in terms of forestry land, which leads to tenure insecurity. Besides that, environmental governance uses scientific knowledge to form mangrove restoration projects, which also cause conflicts in terms of access to the forest and using forest resources. These reasons lead to the loss of the villagers' control of their natural resources and livelihood. The fact is that their livelihood has been based on local knowledge for a long time. In the present, they start to use scientific knowledge to adapt with the development of new knowledge. Their local knowledge is used not only for their daily livelihood; it is also used for culture, social, and environmental aspects. In addition, local knowledge and scientific knowledge is contested in some ways at different levels in daily life and in mangrove restoration in the past. Therefore, this study will try to find out the solution for combining both kinds of knowledge for a better solution in human-nature interaction. When the knowledge is combined, mangrove restoration projects will gain a better outcome.

Another point is the politics of scale. When the mangrove restoration is viewed in a different scale, it will have different meaning. In the case of mangrove restoration, governance or knowledge will be different in the global, national, and local scales. Each level has its own context, and the policy will go different ways from its original course. In addition, global, national and regional scales also remind local one to look at mangrove restoration in the higher level in order to gain lessons learnt from these levels and apply it into the suitable context.

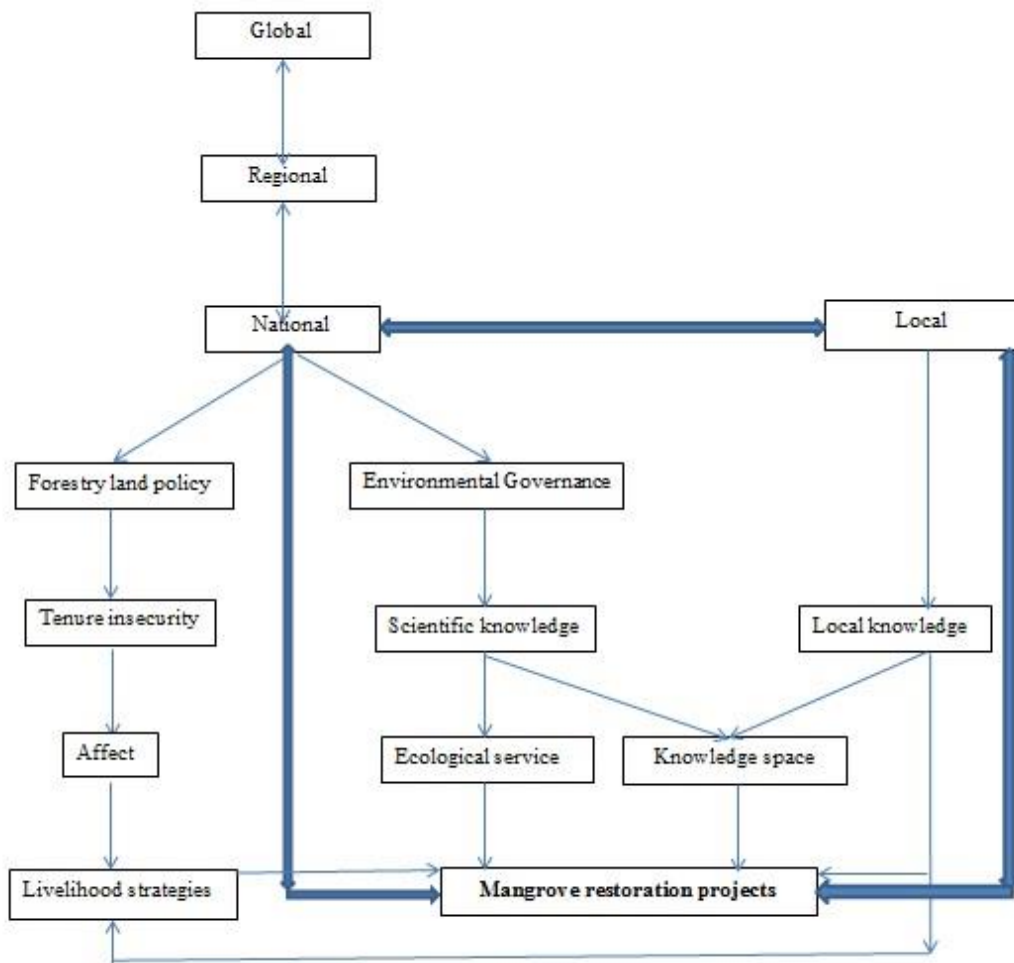


Figure 2.1 Conceptual Framework

2.4 Summary

In summary, this chapter first reviewed four relevant concepts including (1) Decentralization of Natural Resources Management; (2) Environmentality: a Form of Environmental Governance; (3) Local Knowledge in Response to Environmental Governance; and (4) The Politics of Scale as well as related studies in mangrove restoration in order to make a conceptual framework and give readers a picture of how the concept is going to be embedded in the study. Related studies were addressed to get the strong and weak points of previous studies in order to address a new aspect of mangrove restoration that this thesis intends to explore. After the introduction and literature review section, the next chapter will introduce the context of the study site by giving geographical, historical, as well as socio-economic characteristics in order to clarify the research site problem and underline the research questions.