

Dynamic of Mangrove Forest Management in Paklok Bay, Phuket, Thailand.

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Abstract. This paper aimed to explore the successful dynamic and analyze the condition of mangrove forest management, Paklok Bay, Phuket, Thailand. The method used was qualitative research. The data collection was carried out by observation, interview, and group discussion. The research result revealed that the dynamic of mangrove forest management in Paklok Bay could be classified into 5 stages, which were, 1) the crisis of living, 2) the formation in public space, 3) the social movement, 4) the community welfare, and 5) the development of the institution. For the successful condition, it was caused by strength and continuity of the community leader, the roles of religious organization, the public benefit, and the support from external agencies.

Keywords: Mangrove forest, Mangrove forest management, Paklok Bay

1. Introduction

Thailand is a resourceful, diverse, and bio-complex country. Diversities of forest system cover many parts of the country from mountain in the north to the coast in the south as the Thai proverb said “in the water there is fish, in the fields there is rice”. Diversities accentuate Thailand full of cultural diversity and develop to folk wisdoms for maintaining their live under the natural state in each area (Visut Bimai, 2005). Due to the diversities, some reflect from the mangrove forest. The mangrove forest is ecosystem of several plants and animal kinds living together. It is important to humans, animals and the ecosystem as a whole since it is the source of energy, source of woods and herbs, habitation of aquatic animals, such as shrimp, fish, scallop, etc. Moreover, it is the nursing source of aquatic animals, balance Preservation of marine and coastal ecosystem (Department of Marine and Coastal Resources, 2011). Mangrove forests in Thailand cover many parts of Eastern, Central, and both sides of Southern Thailand. Especially, the southern mangrove forest covers 40% of coastal area, and it is mostly found in the Andaman west coast which includes Ranong, Phang - Nga, Satul, Trang, Phuket and Krabi provinces (UNEP, 2005).

However, the growth of single linear economy which has been supported by the government since the first National Economic and Social Development Plan is one of the causes which makes the mangrove forest in the country has been decreased. The statistics of mangrove forests in the Andaman Sea in 2002 found that this area was covered by 1,133,621.10 acres and it was reduced to 1,104,892.87 acres in 2010. The province which had the reduction of mangrove forest the most was Ranong province (9.33%), the second was Satun and Trang provinces (5.80% and 3.16%, respectfully) whereas PhangNga and Phuket province had the increase of mangrove area about 4.29% and 4.04%, respectively (Department of Marine and Coastal Resources, 2012). This is in accordance with the report of the Office of National Economic and Social Development Board (2011) found that “the marine and coastal resources were exploited and deteriorated which affected the revenue of the region”. This problem was caused by over-potential fishing, illegal fishing, shrimp farming, coastal aquaculture, construction of infrastructure, and the release of sewage into the sea, etc.

In case of Phuket, mangrove forest had been reduced after the age of tin mining which ever made income through Phuket province a long time ago hasn't been important anymore until now. Therefore, it's necessary to find out new economic resources. It was found that coastal areas of Phuket were covered with natural resources and very attractive. These things pushed Phuket to become a new tourism place where it has been promoted by the government since the Forth of National Economic and Social Development Plan. With this

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reason, the coastal areas are bought by capitalists to settle resorts, hotels, marinas, etc. At the same time, the exported fishery such as shrimp farming has grown rapidly which makes a result of loss through the mangrove forests increasingly.

Paklok Bay, Phuket province is one of the areas affected by the problem mentioned above. It is located at the eastern of Phuket Island which is a part of Pang- Nga bay. The reduction of mangrove forests and the coming of commercial fisheries vessel affected the villager's way of life. Some villagers had to lose their lands and moved to become the labors in the city, some were suffered from debts. Moreover, it caused the social problems such as drugs. Consequently, the people in Paklok Bay had to sort out the problems by themselves. They had mutual collaboration and also with external organizations such as government agencies, and Non-government Organization (NGO.). They later set up the community organization to operate mangrove forest management, and secure the stability of people in the community. Therefore, the objectives of this research were to explore the dynamic of mangrove management, and analyze the successful condition of mangrove forest management, Paklok Bay, Phuket, Thailand.

2. Methods

This research was a qualitative approach. The study was conducted in 2 communities, which include Ban Bang- Rong, and Ban Paklok, Paklok Bay, Paklok sub-district, Thalang district, east of the Phuket island, Thailand. The mangrove forest in the Paklok bay of both communities was plentiful. Nonetheless, the management on mangrove forests of both communities was different depending on each context of community. The people in Ban Bang-Rong were mostly Muslim while the majority of Ban Paklok was Buddhist. Hence, this religious factor influenced the management of mangrove communities because of the different styles of culture and also the support by external agencies. The data collection was carried out by interview and group discussion through the community leaders, group leaders, members and groups of community, as well as observation of context in the community which included landscape, transportation, economy, social and community interactions of the various activities.

3. Research Result

3.1. The social and culture of Paklok Bay Community.

The study result could be divided into 2 parts according to the purposes of the research. However, before mentioning the result, the author would like to propose the social and cultural characteristics of Paklok Bay community to be the primary information of this study briefly as follows:

Phuket province was famous in terms of global tourism place. It is the largest island of Thailand. The island was surrounded by 32 smaller islands. The total area was 570.034 square kilometers. About 70 percent of the space was mountainous, and only 30 percent was the plain area. There were the beautiful coasts and beaches in the western while in the east the land was full of saturated soil and mangroves. The county was divided into 3 districts, 17 sub-districts, 96 villages, and 44 communities (in municipal area). Furthermore, there was 1 provincial administration, 11 municipalities and 7 Sub-district Administrative Organization. The main industry of Phuket in the past was tin (it was slow after the year 1985 when the tin price was decreased by half) while rubber, fishing, and tourism are becoming the core parts of income to Phuket province today and the future. Because Phuket has long history, so this place was the habitation of varied groups of people who had different cultures, arts, and even excellent food. 35 percent of the population was integrated between Buddhist and Muslims. it isn't surprised to see Buddhist temples and Mosques in general. In addition, there were Chinese, Europeans, Indians and Arabs, as well as Chao Lae (sea gypsy who were the native people living normally in around Phuket Island, Krabi, Phang-Nga, Trang, Ranong, and Satun province) (Phuket provincial officer, 2012).

Paklok Bay was located in the east of the Phuket Island, Thalang district, Phuket Province. However, there were only 4 communities which adjoin the Paklok Bay, which were, Pak-Cheed, Paklok, Bang-Rong, and Yar-Mu. For geographical characteristics of Paklok Bay, the west side of the community was surrounded by mountains a kind of natural forest. People living here planted such as durian, pakria, mangosteen, etc. These plants were sources of income and the resources feed the people in Phuket Island. There were not only

the mountains but also the plain area with the road of 4027 to cut through the area as well as households and shops along the route. Next to the plain area, there were coconut plantations and mangrove forests and the sea of Paklok. The last area, it was the Paklok Bay with seagrass area around 1,000 Rai and dugongs. For this reason, the main occupation of the people in Paklok Bay community was linked or related to the natural resources from the top of mountain to the seacoast. Moreover, in this area, there were varied groups of people living together peacefully especially Buddhists, Muslims, and Chinese people. The majority was Muslims, the second was Buddhist. The most important, religion was regarded as significant influence towards the mangrove forest management.

3.2. The dynamic of mangrove management

Dynamic of mangrove forest management in Paklok Bay community could be classified into 5 stages, which were, 1) the crisis of living, 2) the formation in public space, 3) the social movement, 4) the community welfare, and 5) the development of the institution. The details were as follows:

The first state, the crisis of living, This was the stage which people were affected clearly by the loss of mangrove forest and the reduction of aquatic animals in the sea. The effects were caused by allowing the concession of mangrove forest and commercial wood charcoal in 1976, Shrimp farming, and commercial fishing vessels in the Paklok Bay. These affected the people in Paklok Bay in terms of losing their own land, depts., and leaving their homeland to be labours in the city.

The second stage, the formation in public space, for this stage, some of villagers got effects such as losing their land, drug problem, leaving their homeland, etc. thus the leaders of community started to talk to one another informally to solve the problems. They used mosques, temples, local coffee shops, etc. as the meeting points. From a little talk informally, it became formal meeting at last. They assumed although the activities in the village could develop their economy, it would affect in a negative ways in the long run through the village, hence they had to find out the solutions to reserve their typical way of life.

The third stage, social movement, for this stage, the local fishermen who were the people in Paklok community established the Marine and Coastal Resources Preservation Group in 1997 since they realized that the capitalists started using high technology fishing devices such as trawl and floating seine to catch the aquatic animals in the sea. Moreover, the shrimp farming started and destroyed the mangrove forest where were the aquaculture place for sea animals. Hence, in 1998, the community began to concern about the ignorance of governmental organizations which did not pay attention on this issue. They then recruited volunteers to seize the capitalists who were opening the mangrove forest areas to do the shrimp farming by themselves and sent those capitalists to the police. Unfortunately, the police rejected the case and did nothing by giving the reason that it's not their business and released the intruders. The villagers thus realized that no one could help them if they themselves didn't turn to help to one another. Then they established the Marine and Coastal Resources Preservation Group. During that time, the community was supported by the NGO officials to set up the group and met the governor and related governmental organizations for consultancy as well as having the field study trip in several places, such as Ban LaemMakham, Sikau district, Trang province, where was a model of mangrove forest management. Later, in 2000, the villagers developed their group to be the Marine and Coastal Resource Preservation Center. There were 20 committees to participate in issuing the rules and regulations.

The fourth stage, the community welfare, this stage happened when the group activities had been performed for a while. The problem happened because the numbers of members decreased gradually and it might get downtrend in the future. Therefore, there was the brainstorming among the community leaders to find out the ways and they agreed to have the connection between the preservation and the livelihood or the earning a living of the members since they still needed money and other necessities for their living. Thus, the community leaders started to set up the several groups to support the community welfare. The new activities were also related to mangrove forest management. For example, Ban Bang-Rong, there was a saving group organized under the Islamic principles. This was considered to be the first group established to solve the debt problem and the unsecured lives of the local people. Later, there was the eco - tourism group located around the mangrove forest of Baan Bang Rong. This group was established because the community wanted to let the members realize the benefits of mangrove forest preservation in the concrete ways. Moreover, this place

was used to welcome the visitors and the people who came to observe activities around the place. In addition, there were restaurants organized by the community housewives, daily shrimps and fish from floating baskets of local fishery group, the kayak group for visitors to enjoy the richness of mangrove forest, the boat tour group which would serve tourists to visit various islands in Pang-nga Bay. For Paklok community, there was the saving group with the interests allowed. This group was originated by the cooperation between the local people and the NGO. They got an idea from observing the activities in Chana District, Songkhla province. Furthermore, there was a fishing device foundation established in 1999 by the Fishery Department which supported the initiate finance for THB100,000. For the Rice Bank, it was established in 2000 by the Royal donation of Her Majesty Queen Sirikit in 1999. The activity, for example, the members bought rice from Phuket province but sold it to members in cheaper price than the price of marketplaces. And the last group, the Hand-Made Curry Paste Group established in 2000. At the beginning, there were 10 members housewives pasting the curry as per the market requested. The hand-made curry pastes of this group were delivered to the markets in Phuket and Bangkok province. The income they got would be shared among the group members.

The last stage, the development of institution, this was considered as a challenge of the community because the community had to tackle all new problems and deal with them together like the previous time. However, currently, Paklok Bay community was regarded as a place for observing activities, learning and exchanging the experiences of the students, youths and various groups of people. In addition, the members could improve their skills and exchange experiences with other groups all the time in order that they would have knowledge, and ability to develop their own group continuously further.

3.3. Successful Condition

The communities have successfully managed by using the community-based mangrove forest management (Western, David and Wright, R. Michael, 1994). This is because the communities could get the abundant mangrove forests back once again. Particularly, the mangrove forest at Ban Paklok Community was declared by the Department of Forestry for 2 plots while the mangrove forest at Ban Bang-Rong has not been declared to be the mangrove forest community yet. However, with the state of the mangrove forest it has been turned to be abundant area once again until it could be the resources of people to be able to earn a living like the previous time. For the commercial fishing vessels in the Paklok Bay, they have been disappeared absolutely. Therefore, people in the community could earn a living as usual although the place wasn't as abundant as the past time. For the success mentioned above, it came from the following reasons;

- The majority in the community upheld Islamic religion. They had the Masjid to be the center for managing the mangrove forest. The religion influenced significantly towards the community for the success of management.
- The community leaders have been working for their own communities for a long time and they cooperated to one another all the time.
- The strength among the community leaders and group leaders, so they could drive the group consistently with continuity.
- The external organizations, both governmental and private sections, such as Non-Government Organization (NGO), this organization had the cooperation with communities to support their own communities to have the sufficient power for driving themselves. Moreover, the external organizations helped and encouraged the local people and the community leaders to have mutual cooperation for driving the success together.

4. Conclusion

The management of mangrove forest preservation was the same as any other natural resources management which have to connect between the preservation and the livelihood of people altogether since people have to earn a living and still need their necessities, such as money, food, drug etc. which they can earn by themselves from their own mangrove forest. Moreover, when the people were successful in this mangrove forest management, they can deal with other problems by all experiences they got before. According to the research of Cherdchai Ongsakul (2005) about the mangrove forest management at Ban

Hau-Khao, Singhanakorn District, Songkla Province, it was found that the development of community and the way of life related to mangrove forest could be divided into three stages, firstly, the period before the renovation and conservation of the mangrove forest (before 1994A.D.) which was about the problem of mangrove forest reduction, realization of problems occurred in the community which caused the combination of groups. However, the groups were still small with informal leaders. Secondly, this involved with the mangrove - forest renovation and conservation (1994-1997 A.D.). For this stage, the state of community was changed into the city more and extended widespread. The last stage, this was the time after the mangrove - forest renovation and conservation (1998b A.D.-present). It was the stage of result from the mangrove forest management both in quantitative and qualitative results. This caused the land of mangrove forest which supported the eco-system to be recovered which made the result of natural abundance so that the local people could get the benefits by using the land to be the food resources, getting income from fishery. Moreover, the local people could realize the values of mangrove forest, perceive the sense of mutual possession towards the mangrove forests. And the most important, it increased the harmony among the local people of community.

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