

**School-Community's Participation in Mangrove Reforestation and Conservation in Thungmaha Bay, Pathew District, Chumporn Province**

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**ABSTRACT**

School-community's participation in mangrove reforestation and conservation in Thungmaha bay is collaborative project among local organization, community leaders and adjacent communities. The conservative network of mangrove forests is key local organization to lead handling local resource base management and protection. The network is core organization to communicate with local government officers, non-governmental organization and community to manage mangrove forests and marine resources. Main tasks of the network categorize into mangrove forest resources, awareness building and marine resource management. The network establishes crab cage bank activity to enhance numbers of crab recruitment to the sea. Collapsible crab trap fishers contribute this activity that they leave fertilized crab into the crab cage bank. After crab delivered eggs into the sea, the fishers can harvest crab and spend income of crab selling for arranging welfare for the fishers' group. Fish habitat is also established to demarcate 3,000 m coastal areas and to be assembling place of aquatic resources. Tires are used as material of fish habitat construction attached with concrete box. Implementation of these two activities leads local fishers aware of importance of coastal and aquatic resource management and development. Pakklong Ao.Bo.To. adopts these two activities into master development plan of the Pakklong sub-district.

**Keywords:** Mangrove forest conservation and management, conservative network of mangrove forests, fish habitat, crab cage bank

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## **1. Introduction**

1. School-community's participation in mangrove reforestation and conservation project in Thungmaha bay, Pathew District, Chumporn Province is a collaborative project between Mangrove forests conservation club in Thungmaha bay and Chumporn Environmental Education Center. These two local organizations collaborate to implement mangrove reforestation and conservation activities in Thungmaha bay. They also kept taking care of 6,552 rai (1,048.32 ha) of mangrove forest areas since 1997. They received funds from Ministry of Science, Technology and Environment.

2. The School-community's participation in mangrove reforestation and conservation project in Thungmaha bay conducted through information dissemination campaign to local people and students. This was expected them to be aware of importance of mangrove forest conservation and environment surrounding to community. The project activities placed an emphasis on learning process and practice. Therefore, the activities included strengthen of people and youth's participation in-group. Manpower of each group is very important to contribute the mangrove reforestation and conservation.

## **2. Importance of Target Areas and its Problems**

3. Mangrove forest areas in Thungmaha bay are one-fifth areas of national mangrove forest conservative areas, which belong to Chumporn provincial territories. This area is under control of Ministerial Act No. 836, 1980. This mangrove forest areas has 8 km along the coastal areas of Pathew District where is also huge and important nursery ground of aquatic resources. This area also consists of primary productivity that convinces fishers to engage in fisheries and other stakeholders enjoy eco-tourism and study natural resource educational areas.

4. Unfortunately, mangrove forest areas in Thungmaha is de-forested by an expansion of shrimp farming engagement where is totally getting large and larger about 2,000 rai (320 ha). Besides, there was road construction (from Ban Thungmaha Moo1, Ban Bosamrong Moo 2 and Ban Tha-ad Moo7).

5. Impact of mangrove de-forestation affected to reduce productivity of aquatic resources. The reduction of aquatic resources caused to local people migrated out from their village and gave up engaging in fisheries. Some people made reservation on mangrove forest areas and personally held the right for his/her utilization without getting permission from government. This cause led to decrease number of tourists visited in the mangrove forest areas.

## **3. Concept of the school-community' participation in mangrove reforestation and conservation project**

6. The school-community's participation in mangrove reforestation and conservation project adopts concepts of local people's participation and self-awareness on sustainable coastal resource management and conservation. Local people's participation is tool to facilitate all fishers and stakeholders in all communities to finalize their common interests. Local people's self-awareness is important and contributive tool to encourage local people keep managing and conserving local resources for sustainability.

## **4. Target areas and target group**

7. Target areas: Mangrove forest areas for conservation and enhancement

- 1) The national mangrove forest areas for conservation in Thungmaha bay, this area has total areas around 6,552 rai (1,048.32 ha). However, the areas have total de-forested areas around 2,000 rai (320 ha).

- 2) The national mangrove forest areas are divided to provide and decorate for natural study site areas. The natural study site areas of the mangrove forests locate in Ban Thungmaha (Moo1), which is around 5 rai (8 ha). Pakklong Ao.Bo.To. and Chumporn provincial office of Royal Forestry take responsibility to manage and maintain the study site areas.

#### **5. Target group: categorized into two groups**

- 1) Target community: consisted of seven villages of two sub-districts in Pathew district. First target community is in Pakklong sub-district, which composed of 6 villages. Second target community is in Donyang sub-district, which attached only one village.
- 2) Target school: all schools locate in target villages and adjacent areas.

#### **6. Period of the project implementation**

From July 2001 to June 2003.

#### **7. Conservative Network of Mangrove Forests in Thungmaha Bay**

##### **7.1 Gained lessons from community: Towards coordination of multi-agencies to develop local resource base management**

8. Conservative network of mangrove forests was established after the mangrove reforestation and conservation project implemented in the first year. The members of the network consisted of community, school, local government agency and non-governmental organizations (NGOs). They categorized network's member tasks into three main fields. The first field relied on coastal and marine resources, second field relied on mangrove forest field and the third filed was awareness building and information distribution. This network arranges monthly meeting on 28<sup>th</sup> every month to discuss on work plan and exchange information.

##### **7.2 Goals of the conservative network**

9. Aims of the conservative network are to achieve sustainability and enrichment of local resource base in Thungmaha bay. This result to local people can avoid unemployment/ underemployment and earn more income to improve their livelihoods.

##### **7.3 Perception of the network**

- 1) Mangrove forest areas are place that are enrichment of biological and ecological areas.
- 2) Means of livelihood of local people in community depend mainly on local resource base in proper and cost-effective ways
- 3) Study and learning process on mangrove forest conservation and management should highlight on local knowledge and wisdom.
- 4) Encouragement of coordination of multi-agencies among government and non- governmental organization.

##### **7.4 Strategy**

- 1) Encourage community and coordination of multi-agencies including national level to participate in local resource base and environment management



- 2) Contribute mangrove forest and environment enhancement and management
- 3) Strengthen knowledge, awareness building and capacity building of local people including students
- 4) Establish Thungmaha data and information, knowledge and technology transfer center at Thungmaha bay
- 5) contribute establishment of financial source to promote Thungmaha bay development
- 6) Increase and create alternative job opportunity to reduce a dependence on marine resource in Thungmaha bay

## 7.5 Structure of conservative network of mangrove forests

### 1) Walk way for natural study

Construction of walk way for natural study has main objective to provide natural study site for students in local community. The study site is place that facilitates local students to learn and practice from real situation and visible samples. The students are expected to concretely comprehend characteristics of mangrove forest, its benefit and wealth. These results to students are aware of importance of mangrove forest to environment and eco-system.

### 2) Fish habitat and crab cage bank

Chairman and members of conservative network agreed to do self-protection for their local resource base from destructive fishing gear operation. They finalized to install fish habitat into coastal areas to protect an encroachment of destructive fishing gear operation, therefore, they build crab cage bank to enhance number of crab to the sea. Members of the network live in Ban Thungmaha Moo1, Ban Bosamromg Moo 2, Ban Thumthong Moo 3, Ban Bonrai Moo 6 and Ban Tha-at Moo 7 participated in building these two activities.

### 3) Fish habitat (*Ban Pla*)

Aim of fish habitat installation is to demarcate 3,000 m coastal areas to notice and verify an encroachment of trawl, push net and anchovy purse seine fishing boats. Other aim of fish habitat installation is to be assembling place of aquatic resources. The members of network used tyres as material of fish habitat attached 500 kg concrete box and sank them down to the sea bottom.

### 4) Crab cage bank (*Thanakarn Poo*)

Crab resources rapidly decline, because there is increase of collapsible crab trap in number. Beside, fishers caught all size of crab yield without selecting marketable and fertilized size. Crab cage bank is an activity to increase and enhance number of crab recruitment. Fishers engage particularly in collapsible crab trap donate small-sized crab and fertilized one into the cage bank. They can harvest crab in the cage bank after the fertilized crab deliver eggs into the sea. They can use income comes from crab selling to be fund for supporting crab cage bank operation.

Implementation of these two activities leads local fishers and other stakeholders aware of importance of coastal and aquatic resource management and development. Therefore, members of Pakklong Ao.Bo.To. adopts these two activities into master development plan of the Pakklong sub-district.