การจัดการประมงชายฝั่งโดยชุมชน : การมีส่วนร่วมของประชาชนในการจัดสรรพื้นที่เพื่อการเพาะเลี้ยงสัตว์น้ำ ในอ่าวปะทิว จังหวัดชุมพร

Locally Based Coastal Fisheries Management: People's Participation in Demarcation of Aquaculture Zone Management in Pathio Bay, Chumphon Province, Thailand

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บทคัดย่อ

การจัดสรรพื้นที่เพื่อการเพาะเลี้ยงสัตว์น้ำเป็นกิจกรรมหนึ่งที่ดำเนินการภายใต้โครงการจัดการประมงชายฝั่งโดยชุมชนที่ อ.ปะทิว จ. ชุมพร เพื่อแก้ปัญหาความขัดแย้งระหว่างชาวประมงผู้จับสัตว์น้ำ และผู้เลี้ยงสัตว์น้ำ ที่ใช้พื้นที่ชายฝั่งทะเลพื้นที่เดียวกัน กลยุทธการจัดการร่วม (Co-management approach) เป็นกลยุทธ ที่สนับสนุนให้เจ้าหน้าที่ของรัฐ ชาวบ้าน และผู้มีส่วนได้ส่วนเสีย ร่วมกันพิจารณาความเป็นไปได้ในการจัดสรรพื้นที่เพื่อการเพาะเลี้ยงสัตว์น้ำ โดยการทำประชาพิจารณ์ในชุมชน ทั้งนี้ทุกฝ่ายได้ถ่ายทอดข้อมูล แนวความคิดให้แก่กันและกัน โดยใช้กลวิธีแบบมีส่วนร่วมในการประเมินทรัพยากร (PRA) เพื่อประเมินการใช้สอยประโยชน์ของพื้นที่ชายฝั่งโดยใช้แผนที่ ชาวบ้านได้เสนอในที่ประชุมว่า พื้นที่อนุญาตสำหรับเลี้ยงหอยและพื้นที่สำหรับเลี้ยงปลา ควรมีพื้นที่ประมาณ 600 ไร่ และ 300 ไร่ ตามลำดับ มีการเลือกตัวแทนจากชาวบ้าน และเจ้าหน้าที่ท้องถิ่นของรัฐมาเป็นคณะกรรมการการจัดสรรพื้นที่เพื่อการเพาะเลี้ยงสัตว์น้ำ ซึ่งได้ร่วมกันจัดทำร่างแผนที่แสดงตำแหน่งพื้นที่ที่กำหนดให้เป็นพื้นที่เพื่อการเลี้ยงปลา พื้นที่เพื่อการเลี้ยงหอย และพื้นที่จอดเรือหลบลมมรสุมของเรือประมงขนาดเล็ก ร่างแผนที่นี้ได้ถูกนำเสนอในที่ประชุมประจำเดือนของหมู่บ้าน เพื่อแจ้งให้ทราบ และเพื่อรับข้อตกลงของชาวบ้าน หลังจากนั้น อบต. ปากคลองนำเสนอข้อตกลงของชุมชนต่อสำนักงานประมงจังหวัด เพื่อเสนอต่อสำนักงานจังหวัดชุมพร เพื่อขออนุมัติจากคณะรัฐมนตรีให้ประกาศเป็นพื้นที่อนุญาตเพื่อการเพาะเลี้ยงสัตว์น้ำชายฝั่งตามวัตถุประสงค์ที่ตั้งไว้

ABSTRACT

Demarcation of aquaculture zone management is proposed activity, which implemented under the locally based coastal fisheries management in Pathio District (LBCFM-PD) project, to reduce conflict between fishers and fish farmers using the same coastal areas. Co-management approach is facilitative strategy to encourage local government officers and the community people face together and participate in considering possibility of area demarcation for aquaculture zone management at the public hearing meeting in community. All participating parties share idea and information through Participatory Resource Assessment (PRA) to assess conventional coastal area utilization by using coastal area map. The local people proposed that the allowable area for shellfish and for fish cage cultures should be around 600 rai and 300 rai,

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respectively. Representatives were elected from local people in the community to take role as committee to join local government officers to mark the demarcated areas for aquaculture zone management. The draft of demarcated area map composes of two main areas based on the purposes of utilization. This demarcated area is also reserved place as a monsoon avoiding place for fishers to anchor fishing boats. Draft of demarcated area map is presenting to village people at the monthly village meeting to let all village people aware of the demarcated area preparation and to reach village people's agreement on the areas. Then, the Sub-district administrative organization (Ao.Bo.To) contributes local people's agreement and proposes the community's agreement to the provincial officer. The officer proposes the agreement to cabinet for an approval as provincial proclamation on the demarcation of aquaculture zone management.

Keywords: LBCFM, people's participation, demarcation of aquaculture zone management, co-management, PRA

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Remark: 1 rai = 1,600 sq.m. =0.16 ha =0.4 acre

INTRODUCTION

Locally Based Coastal Fisheries Management in Pathio District (LBCFM-PD) project is five year collaborative project between Department of Fisheries (DOF), Thailand and Southeast Asian Fisheries Development Center, Training Department (SEAFDEC/TD). This project is under the Fisheries Consulting Groups (FCG) scheme, which is agreement of ASEAN-SEAFDEC program. LBCFM-PD project has project site at Pathio Bay in Pakklong Sub-District, Pathio District, Chumphon Province. This project has three supportive objectives that first is the establishment of sustainable coastal resource management at local level; second is the rehabilitation of coastal resources; and third is the alleviation of poverty in coastal fishing communities (Yamao and Suanrattanachai, 2002). Framework of the project is based upon concept of Community-based Fisheries Management (CBFM) and Co-management (CM). Participatory approach is supportive tool to assist the project. The participatory approach would implement under the new Thai Constitution, 1997 that contribute local government officers, fishers and stakeholders participate in the decision-making processes of coastal resource management. The project sites are Area I (Bangbird to Lam Yai, 46 sq.km) and Area II (Lam Yai to Khao Bangjak,76 sq.km) of Pathio Bay (Figure 1). The cabinet gave an approval on the demarcated areas of the project sites, which mandated as the Chumphon provincial proclamation has been effective from since November 4, 2002. This proclamation prohibits an encroachment of illegal fishing such trawls, push net and cockle dredge net to operate within 3 km of the demarcated areas of the project site. However, conflict between local fishers and fish farmers, where use the same coastal areas within the project site Area II, are gradually getting large and larger. This is due to fish farmers and newcomers reserve the coastal areas for carrying and establishing fish cage and shellfish cultures. The Chumphon provincial fisheries officer proposed the demarcation of aquaculture area management to the community to reduce conflict among fishers, fish farmers and newcomers.

METHODOLOGY

The base line survey data composes of socio-economic data, oceanographic and environmental data analysis of Coastal Areas I and II in Pathio Bay, which data was from January to December 2002, are database and input-information.

These results of database analysis are scientific data and information to help local people and government officers to make a plan for implementing an establishment of demarcation of aquaculture zone management to reach all relevant stakeholders' interests.

RESULT

1. Conventional fishing gear and fishing grounds use in the demarcated project site

The result of the pre-survey of Pakklong Sub-District shows the top-three ranking of eight main types and rate of fishing gears engaging in seven villages of the Pakklong Sub-District that are indo-pacific mackerel gill net (21%), large cast net (18%), shrimp trammel net (13%) (Suanrattanachai *et.al*.,2002). The results of coastal area mapping survey clearly illustrate that fishers conventionally do fishing operation in the Area II both closed area season (15 February to 15 May) and post-closed area season (Figures 2 and 3, Arnupaphboon and Laongmanee, 2003). Figures 2 and 3 show that types of fishing gear operations are Indo-pacific mackerel gill net, mullet gill net, crab gill net, sand whiting gill net, collapsible crab trap, large cast net (squid cast net). Figure 4 pictures that fishing ground of Area II is area for carrying-out fish cage culture and shellfish culture and including cruising track for fishers. Various types of fishing operation and coastal aquaculture lead to conflict of interest among fishers-fishers and fishers-fish farmers.

2. Conflict between fishers and fish farmers in using the same fishing grounds

Numbers of fish farmers are 8 fish farmers live in Ban Thungmaha Moo 1, 2 fish farmer live in Ban Bonrai Moo 6 and 5 fish farmers live in Ban Ko Teab Moo 7 in Pakklong Sub-District. These fish farmers and newcomers make area reservation for carrying-out aquaculture. Therefore, the area reservation expansion overlaps with cruising track and fishing ground areas. The Chumphon Provincial fisheries officer proposed all users to participate in demarcation of aquaculture zone areas to reach all relevant stakeholders' interests. The officer called for a community meeting to open discussing appropriate demarcation of aquaculture zone areas to all parties concern. Objectives of the area demarcation are initially to control and limit areas for aquaculture and to reduce conflict between fishers, fish farmers and stakeholders (Suanrattanachai *et.al*.,2003).

3. Local people's participation in debate of aquaculture zone demarcation

The Chumphon provincial fisheries officer proposed two issues to the meeting. The first issue was changed of the objective of culture areas only for shellfish culture, which is under the Chumphon provincial proclamation, to be areas for carrying-out aquaculture. The second issue was official demarcation of allowable fish cage and shellfish culture areas. At the meeting, local people proposed that areas for fish cage culture should be 300 rai and areas for shellfish culture should be 600 rai. Therefore, fishers proposed that the monsoon avoiding place should be reserved to anchor fishing boat when monsoon season comes. The officers and local people participated in debate of aquaculture zone demarcation by using coastal areas map (Figure 4) through the participatory resource assessment (PRA) approach. Then, the representatives of each village of the community were elected to take role as community committee and joined the local officers to mark the position of area demarcation.

4. Size selection and process of debate on draft of area demarcation

Figure 5 displays positions of area demarcation where the committee and the local officers joined in marking the positions. Areas 1 and 2 are for shellfish culture. Areas 3 and 4 are for monsoon avoiding places. Areas 5 and 6 are for fish cage cultures. The local officers and committee adjusted the position of the areas to be areas as see in Figure 6 that areas 1 and 2 were combined and enlarged, therefore, area 5 and 6 were also combined together. However, objective of each area still remains the same as specified in Figure 5. The process of debate of area demarcation has two basic steps at local community level. The first step is at village-step. The Figure 6 reached local people's agreement that local officers presented this figure at the village meeting in all villages of the community. The second step is at sub-district step. After reached the local people's agreement, provincial fisheries officer, Ao.Bo.To. members and committee would finalize local people's acceptance of Figure 6. Then, the provincial fisheries officer will propose the area demarcation to the office of the Chumphon province and then get an approval from the cabinet to proclaim in the province.

5. Carrying capacity of coastal areas for aquaculture zone establishment and management

15 local fish farmers in Pakklong Sub-District mostly carry out shellfish (4 farmers) and fish cage cultures (11 fish farmers) which main aquatic species are groupers (*Epinephelus tauvina and E. bleekeri*), giant seaperch (*Lates calcarifer*) and green mussel (*Perna viridis*) (Laongmanee *et.al*., 2003). Local fish farmers gain self-experiences that they get much advantage of carrying-out grouper cage culture, this is because the marketable price is higher than the other two species and growth rate is more effective and faster. These are attractive factors to increase in numbers of fish farmer and fish cage and expansion of carrying-out areas. Table 1 illustrates the comparison of environmental condition between range of parameters, which are suitable for each aquatic species, and in Pathio Bay that are the results of marine environmental condition survey (Laongmanee *et.al*.,*Ibid*). Each parameter range of Pathio Bay is such temperature, dissolved oxygen, and salinity are not different range from the suitable parameter range to carry fish cage cultures. This is only chlorophyll parameter in Pathio Bay is lower than the suitable parameter range. This may cause the shellfish growth rate is lower than other culture areas. These parameters of Pathio Bay are indicator to denote and assess carrying capacity of the demarcated area for an appropriate aquaculture engagement and management. This is to avoid ineffectiveness-cost of the engagement and fish disease infection.

6. Conclusion

The preparation of aquaculture zone demarcation and management initially reduces conflict of interest among fishers, fish farmers and relevant stakeholders. They are aware of objectives of each demarcated area utilization. Now, the provincial fisheries officer are preparing and compiling eligible documents such are signature of local people's agreement in seven villages of Pakklong Sub-District, position map of demarcated areas and document of Ao.Bo.To. of Pakklong Sub-District's agreement to propose to the provincial office and then propose to the cabinet for their approval. Then, the Chumphon province can make announcement of the proclamation on the demarcation of aquaculture zone management. The scientific data are supportive information and indicative parameters to help Ao.Bo.To Pakklong Sub-District, local fish farmers and local government officer to participate in making an ordinance or regulation to control numbers of fish farmer, fish cage and numbers of shellfish to reach an optimum range of carrying capacity of coastal areas.

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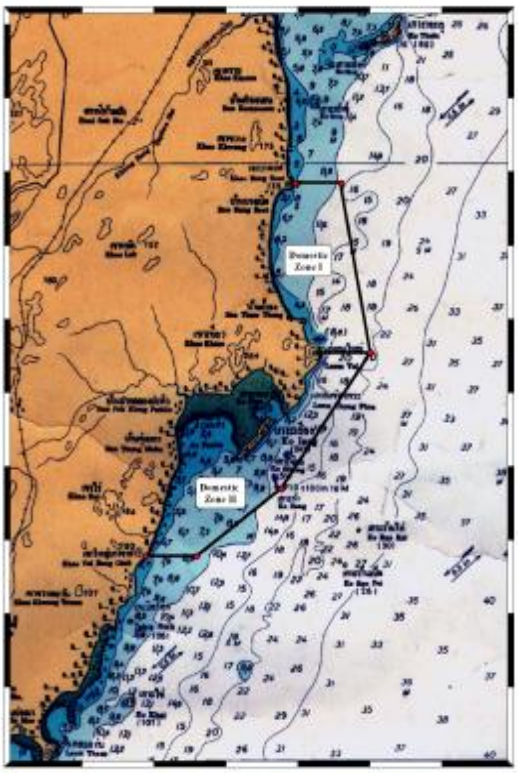

Figure 1. Location of the LBCFM-PD Project site in Pakklong Sub-District, Pathio District, Chumphon Province

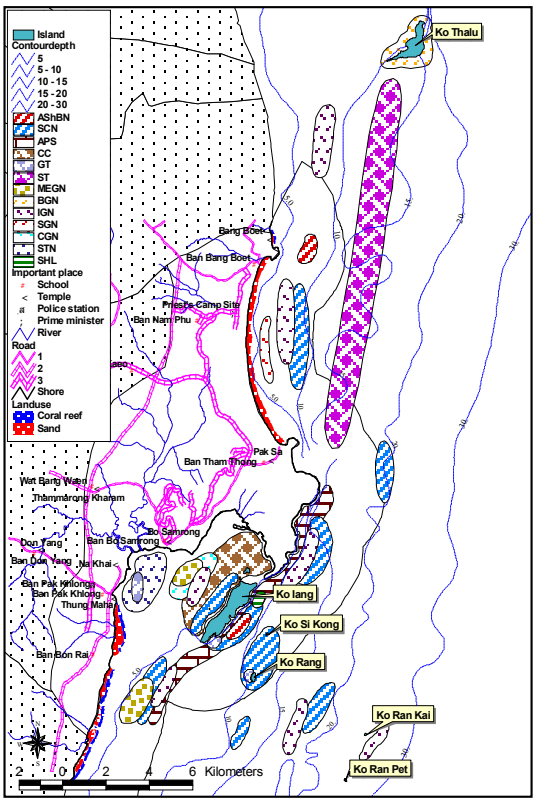

Figure 2. Fishing Gear Operation in the Fishing Ground of the LBCFM-PD Project site in May

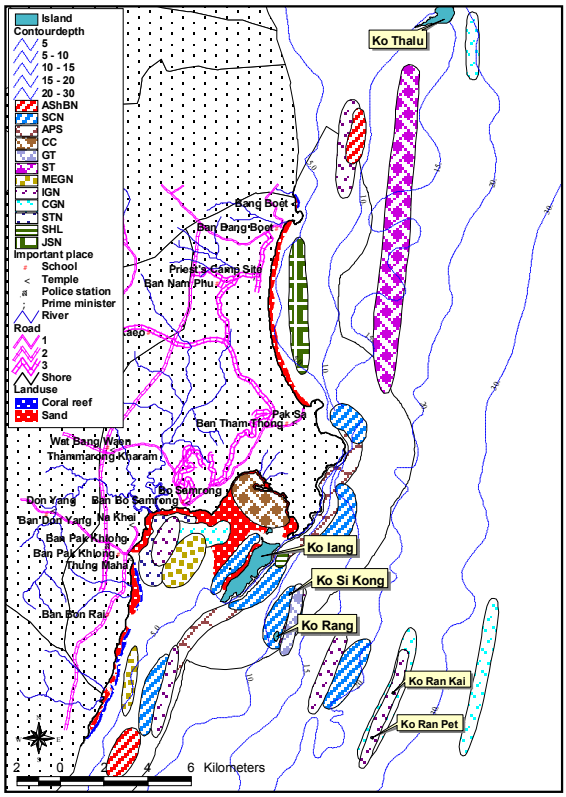

Figure 3. Fishing Gear Operation in the Fishing Ground of the LBCFM-PD Project site in July

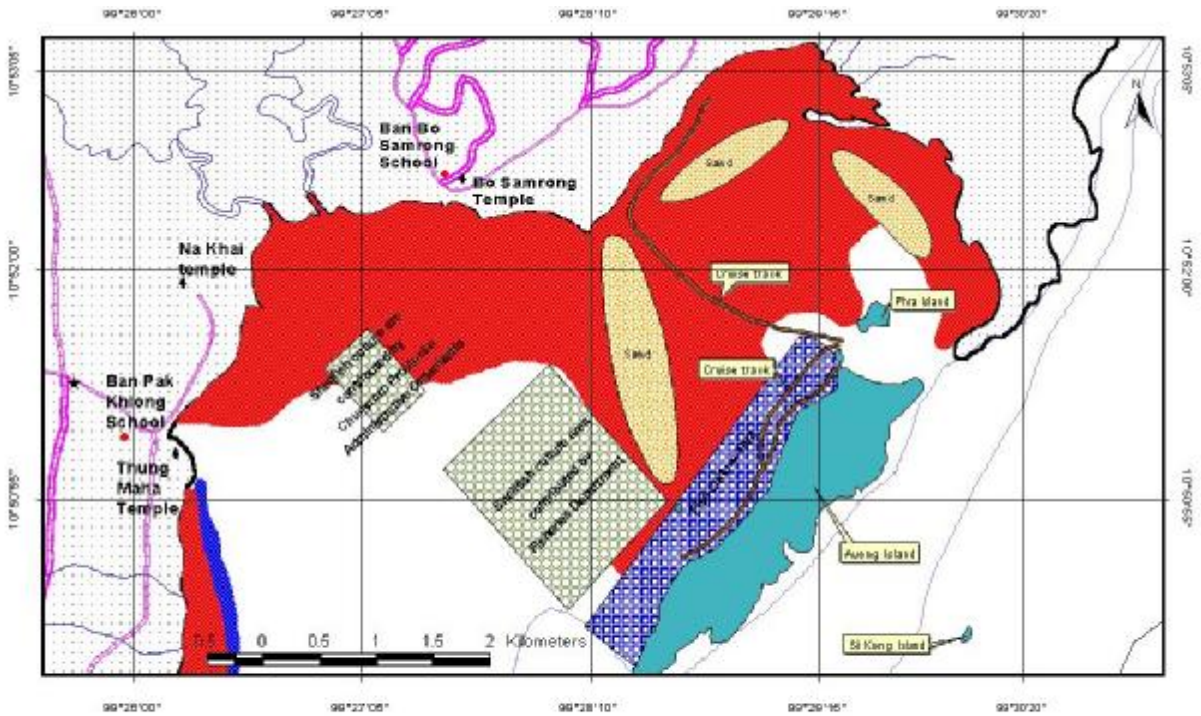

Figure 4. Utilization of the LBCFM-PD Project site Area II by Type of Engagement

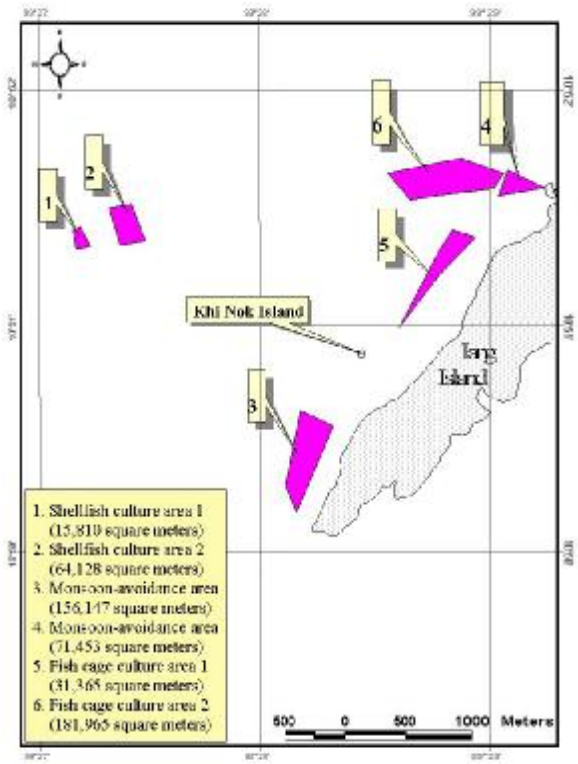

Figure 5. Position of Area Demarcation for Fish cage and Shellfish cultures for debating in the Pakklong Sub-district

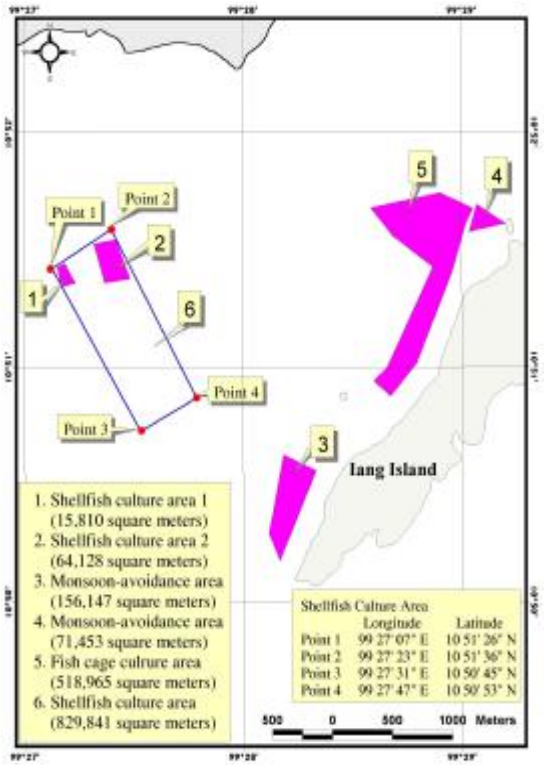

Figure 6. Adjustment of the Position of Area Demarcation for Fish cage and Shellfish culture

Table 1 Comparison Between Environmental Condition in Pathio Bay and Range of Parameters Suitable for Each Species.

Parameter	Grouper	Giant seaperch	Greeen mussel	Blood cockle	Pathio bay
Temperature (c)	26-33	<33	24-33.5	21-33	27.55-34.82
Salinity (ppt)	20-32	Both fresh and saline water	13-32	13-32	29.23-33.59
Dissolved oxygen (mg/l)	5	5	3.8-8	3.8-8	4.1-7.27
pH	6.2-8.5	6.2-8.5	6.8-9.3	6.8-9.3	7.74-8.6
Transparency (m)	-	-	0.1-1.5	0.2-1.8	0.3-2.5
Chlorophyll (mg/m^3)	-	-	6.5-25.1	6.5-25.1	0.97-9.53

Remarks: Environmental condition in Pathio bay are from station in the bay at surface water only