

Experience in the Zoning of Fish Cage and Shellfish Culture Areas

Phattareeya Suanrattanachai¹
Jinda Petchkamnerd²
and
Sayan Auimrod³

ABSTRACT

The demarcation of coastal areas in Pathew Bay officially proclaimed by the Chumporn province. Local fishers, fish-farmers and other stakeholders utilize these areas for fishing, cruising boat and engaging in fish cage culture and shellfish culture. The Chumporn provincial office of fisheries proposed the concept of the zoning of fish and shellfish culture to all local stakeholders. Objectives of this concept are to control numbers of fish-farmers and numbers of fish cages and areas. The concept of aquaculture zoning areas composed of two purposes. The first purpose was to change allowable areas for utilizing only shellfish culture areas cited in the provincial proclamation. This area should be changed to a purpose from shellfish culture areas to be community (Tambol) culture areas. The second purpose was to designate coastal zones for utilize as fish and shellfish allowable culture areas that local stakeholders have marked, considered and agreed by local people's consensus. The preparation of aquaculture zoning areas predicates two steps that are 1) at the Moobaan based step is to achieve the sharing of common interests and satisfaction of local users and stakeholders and 2) at the Tambol (sub-district) step is to strengthen the community needs and requirement through Ao.Bo.To.'s approval and contribution.

Keywords: aquaculture zoning areas, local people's consensus, Moobaan based step, Tambol based step, Ao.Bo.To.

¹ *Socio-economic Section, Research Division, SEAFDEC/TD*

² *Chumporn Marine Fisheries Research and Development Center*

³ *Fishery Extension Officer, Provincial Office of Fisheries, Chumporn Province*



1. The Rationale of Aquaculture Zoning Areas

1. The coastal areas of Pathew Bay effectively proclaimed by the Chumporn provincial demarcated zones are fundamental fishing ground areas. All local fishers, fish farmers and other stakeholders always utilize these areas for fishing operations, cruising and engaging in fish cage and shellfish culture.
2. Conflict between fishers and fish farmers seems to be becoming a serious problem in Tambol Pakklong. Fish farmers and newcomers try to extend the areas of fish cage culture. The newcomers marked areas to reserve them for their own fish cage culture use. Some of these marked areas encroach into the cruise track of fishing boats. And some of these marked areas are used as anchorage for fishing boats in the monsoon season to avoid any disasters from strong winds.
3. Figure 1 shows the utilized areas for fishing grounds in Ban Thungmaha Bay. This figure illustrates the cruise track of fishing boats, fish cage culture areas and shellfish culture areas. Fish farmers set fish cages along the areas of Ko Iang Island. These fish farmers have household registrations at Moo 1, Moo 6 and Moo7.
4. Any increase in newcomers into fish cage culture and areas without control may not give a reasonable incentive to both fish farmers and newcomers. Moreover, this may cause severe conflict among fishers, fish farmers, newcomers and other local stakeholders. Thus, the project staff and local government officer proposed the concept of the zoning of fish and shellfish culture to all local stakeholders. This concept has the objective of controlling the numbers of fish-farmers and the numbers of fish cages and areas. Therefore, it is a strategic tool to alleviate conflict between fishers and fish farmers on utilizing the fishing grounds in the Thungmaha Bay.

2. Proposing the Concept of Aquaculture Zoning Areas

5. The Chumporn Provincial Office of Fisheries officer proposed to the local stakeholders two concepts of aquaculture zoning areas. The first concept was to change the purpose of utilizing culture areas cited in the provincial proclamation. This proclamation allows local stakeholders only to carry out shellfish culture in the area (the DOF' area, see *Figure 1*). Actually, fish farmers mostly engage in fish cage culture rather than engage in shellfish culture. This area should be changed to a purpose from a shellfish culture area to be a community (Tambol) culture area.
6. The second concept was to designate coastal zones for use as fish and shellfish culture areas that local stakeholders have chosen, considered and finalized by consensus. This was to extend areas for culture engagement to local stakeholders. Therefore, this concept would be a method to manage the utilization of fishing grounds and control any increase in aquaculture engagement.
7. Chumporn Provincial Office of Fisheries officer anticipated that these visionary management concepts may contribute to local users and stakeholders so that they gain benefit distribution and equitably engage in capture fisheries and aquaculture establishment.

3. Preparation of Aquaculture Zoning Areas

8. The preparation of aquaculture zoning areas predicates two steps that are 1) at the Moobaan based step and 2) at the Tambol (sub-district) based step (see *Chart 1*). In the Moobaan based step, this is to give strengthen to procedure for local users and stakeholders' consideration, the sharing of common interests and to achieve satisfaction among local users and stakeholders. The Tambol based step is to strengthen the community needs and requirements through Ao.Bo.To's certification and contribution.

3.1 At Moobaan Based Step (Step 1)

Key Approaches: The Moobaan based step places emphasis on two approaches. One is the people's participatory approach and other is an awareness building approach. This step follows the demands of the new Thai constitution proclaimed in 1997 that local users and stakeholders must participate in the decision-making process of community development and management plans and actions. Local people's consensus is at the Moobaan based step and can be conducted through village (Moobaan) meetings until all local people are satisfied and give their agreement.

Main Issues of Local People's Pre-consensus: The Chumporn Provincial Office of Fisheries officer and the LBCRM-PD project staff pay attention to this local people's consensus at the Moobaan based step. All concerned officers and staff facilitate local users and stakeholders to participate in debate to give their opinion and to share common interests through on-site meeting arrangements. The first on-site meeting was on 19 August 2002 and the second was on 29 August 2002 (*Table 1*). The two main issues of the meeting were 1) to change the objective of area utilization under the Chumporn provincial proclamation, 2) the feasibility of designated aquaculture areas.

Application of Participatory Resource Assessment (PRA): The Chumporn Provincial Office of Fisheries officer and the LBCRM-PD project staff organized an on-site meeting. They applied PRA to assess and debate the feasibility of aquaculture area arrangements. A fishing ground map that was provided by the project staff was a helpful and visual tool for all audience and participants to use and offer their opinions to achieve the satisfaction of their common interests (see *Figure 1*). The organizing officer and staff, local users and stakeholders exchanged information of coastal area utilization and its limitations. Local users and stakeholders can mark the location of resource utilizing areas, where there are sand dunes and the where they may be avoided, etc.

Result of the First Local People's Pre-consensus meeting: *Table 1* shows the results of the local users and stakeholders' pre-consensus (Yamao, 2002). Local users and stakeholders debated issue No. 1 that the objective of area utilization under the Chumporn Provincial Proclamation should be changed from shellfish culture only to be for aquaculture. They proposed that aquaculture areas should be divided into two main areas. One area is for fish cage culture areas, which should be 300 rai, the other is for shellfish culture in which the area should be 600 rai. They generally agreed that a monsoon-avoidance place should be assigned to allow a safe place for fishers. They also agreed that regulation be used to control and manage the aquaculture areas.

1 rai= 0.16 ha

Site Selection: The Chumporn Provincial Office of Fisheries officer guided local users and stakeholders in electing representatives of each village to join the officers in conducting site selection in the sea. These representatives took the responsibility as a committee of the community to select the sites of aquaculture areas. These representatives joined local officers and the LBCRM-PD project to select the sites by using the GPS for marking the sites.

The representatives contributed fully in site selection, which was based upon their customary life and knowledge of the fishing grounds. They recommended which sites should be marked and selected to support aquaculture operation. *Figure 2* shows the site selections that are the results of the local government and local representative participation and consideration. Six designated areas and locations were presented to all local users and stakeholders to ask for their second agreement.



Table 1 First Pre-Consensus of Local People in Tambol Pakklong: Zoning Allocation and Management for Coastal Aquaculture

Pre-consensus of Moo 1 and 6 (19 August 2002)	Pre-consensus of Moo 2,3,5 and 7 (29 August 2002)
1. Change the provincial proclamation made in 1984, from allowed areas for shellfish culture to be allowed as areas for coastal aquaculture	1. Change the provincial proclamation made in 1984, from allowed areas for shellfish culture to be allowed as areas for coastal aquaculture
2. Zone of allowed areas for coastal aquaculture to be divided into two main areas: 2.1 for shellfish culture about 600 rais 2.2 for fish cage culture about 300 rais	2. Mandate regulation or ordinance to manage coastal aquaculture needed
3. Zone for fish cage culture and shellfish culture must be clearly defined.	
4. Provide place for fishing boats to avoid destructive monsoon winds.	
5. Elect a representative of each village to establish a group/committee to consider: 5.1 Zone for shellfish culture and fish cage culture to be clearly defined. 5.2 Look for a place to avoid destructive monsoon winds for fishing boats.	

Adjustment of Site Selection: The Chumporn Provincial Office of Fisheries officer recommended that the six designated areas should be reduced from six areas to be five areas (see *Figure 3*.) This was to make it easier to manage and control the areas. Then, the project staff presented the results of the designated area map (*Figure 2*) and the recommended areas map (*Figure 3*) to local users and stakeholders to debate upon which types of designated areas they were happy with and satisfied their common interests. After they finished their debate on the designated areas, they proposed that areas 1, 2 should be combined together and that these areas should be expanded. (see *Figure 4*.)

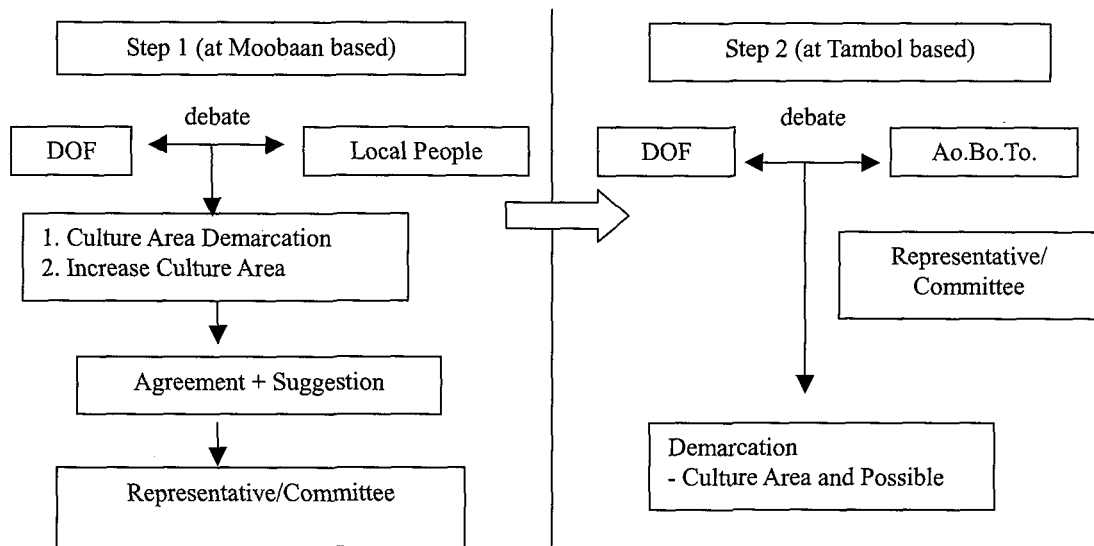
The LBCRM-PD project staff are currently following up the results of the internal agreements from seven Moobaans in the project. The project staff has results from Moos 2, 3, 4, 5, 6 and 7. The project staff are waiting for the internal consensus of Moo 1 that will be held in March 2003.

3.2 At the Tambol Based Step (Step 2)

Propose the local people's consensus to Ao.Bo.To: The Chumporn Provincial Office of Fisheries officer will summarize a final local people's consensus on the designation of aquaculture areas. Then, the officer will call for an on-site meeting at Tambol level. This is to debate and finalize the local people's agreement on the areas. The final agreed map would be a tool to give a profile of aquaculture area designation to Ao.Bo.To. At this on-site meeting, it is anticipated that Ao.Bo.To will comprehend and contribute to the community's common interests. Then, the local organization will appoint an official leader of the community to manage and control the designation of the aquaculture areas.

The Chumporn Provincial Office of Fisheries officer will facilitate the presentation of the community (Tambol) agreement on the designated areas to the Province and cabinet for their consideration and official approval (see *Chart 1*).

Chart 1 Process of People’s Decision-making on the Demarcation of Aquaculture Zoning Areas



4. Limitations of Aquaculture Area Designation Management

4.1 Carrying Capacity of the designated areas

9. The carrying capacity of the designated areas is a key factor to use in considering and regulating rules for area management. This is because some designated areas cannot find local users and stakeholders to engage in aquaculture and gain reasonable incentive on their investment because of inappropriate geographic and physical factors.

4.2 Sharing of Common Interests among Local users and stakeholders

10. Local users and stakeholders have deficiency in their understanding of the environmental impact of aquaculture operations. This environmental impact is very crucial information to remind local users and stakeholders to share their interests and set effective investment plans and rules to avoid the effects of environmental impact.

5. Conclusions:

11. This type of management is supportive strategy to reach achievement with Activity II (Encourage and extend the locally based coastal resource management). Effectiveness of designated area management is expected to alleviate conflict among fishers and fish-farmers. Therefore, this management is helpful to control the numbers of fishers and the numbers of fish cages and the number of stocking aquatic fingerlings that automatically and naturally justified by the carrying capacity conditions and the geographic and physical factors. This type of management is a creative pattern that can modify the concept of management to application to other coastal resource managements.

12. The procedure of aquaculture area designation through local people’s consensus and Ao.Bo.To’s acceptance give a valuable lesson and experience to government officers, the project staff, local users and stakeholders to formulate other related coastal management models. Lessons and experiences gained through this establishment, is a practical lesson that develops and educates local users and stakeholders to



understand the benefits of the participatory approach and to enhance awareness building in coastal resource management.

13. Designation of aquaculture zoning areas is a sample component that uses for coastal management. This component may not be actually adopted to applicably manage coastal areas in another communities. Simple procedure of aquaculture area designation, which is under collaboration of local users, stakeholders and local government officers, can be formulated. Actually, lesson gained through the designated areas in Thungmaha Bay took repeated step at Moobaan based step to reach the agreement of local users and stakeholders.

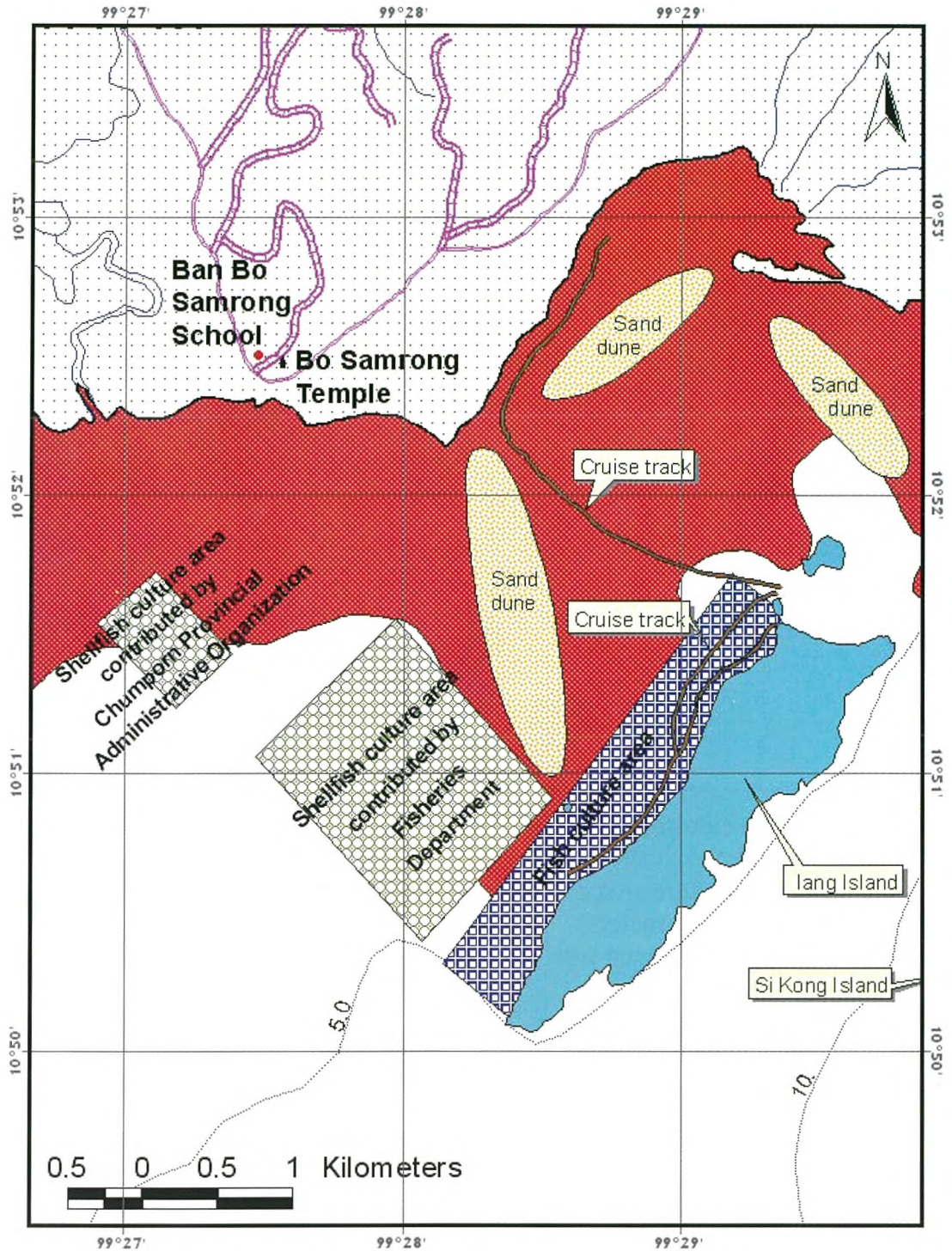
14. Any procedure of the designated areas must be simplified, since local users and stakeholders would easily adopt it. There should be a local users' group. Its members elect committee to take responsibility to consider area demarcation, allocation and management. This committee presents the group's agreement to Ao.Bo.To. Ao.Bo.To officially presents the agreement to get Provincial approval (if necessary, cabinet approval). This procedure does not seem reducing time-consuming for getting effective approval; however, with increasing degree of self-decision in the users' group, this would avoid time-consuming in long-term. (for collaboration between local users' group, Ao.Bo.To and local government officers => unnecessary) The LBCRM-PD may propose a viable model on the procedure of zoning and its management.

15. Local governments and the project plan to establish fish-farmers' group and strengthen this group by arranging training course and extension program. First action plan may be an extension program that emphasizes on voluntarily assigning number of fish cage and amount of stocking aquatic fingerling. This enables to avoid environmental impact and to reach a reasonable incentive returns. Then, this assignment will be developed as a rule of aquaculture area designation and management to carry out fish and shellfish culture for a long-term.

Reference

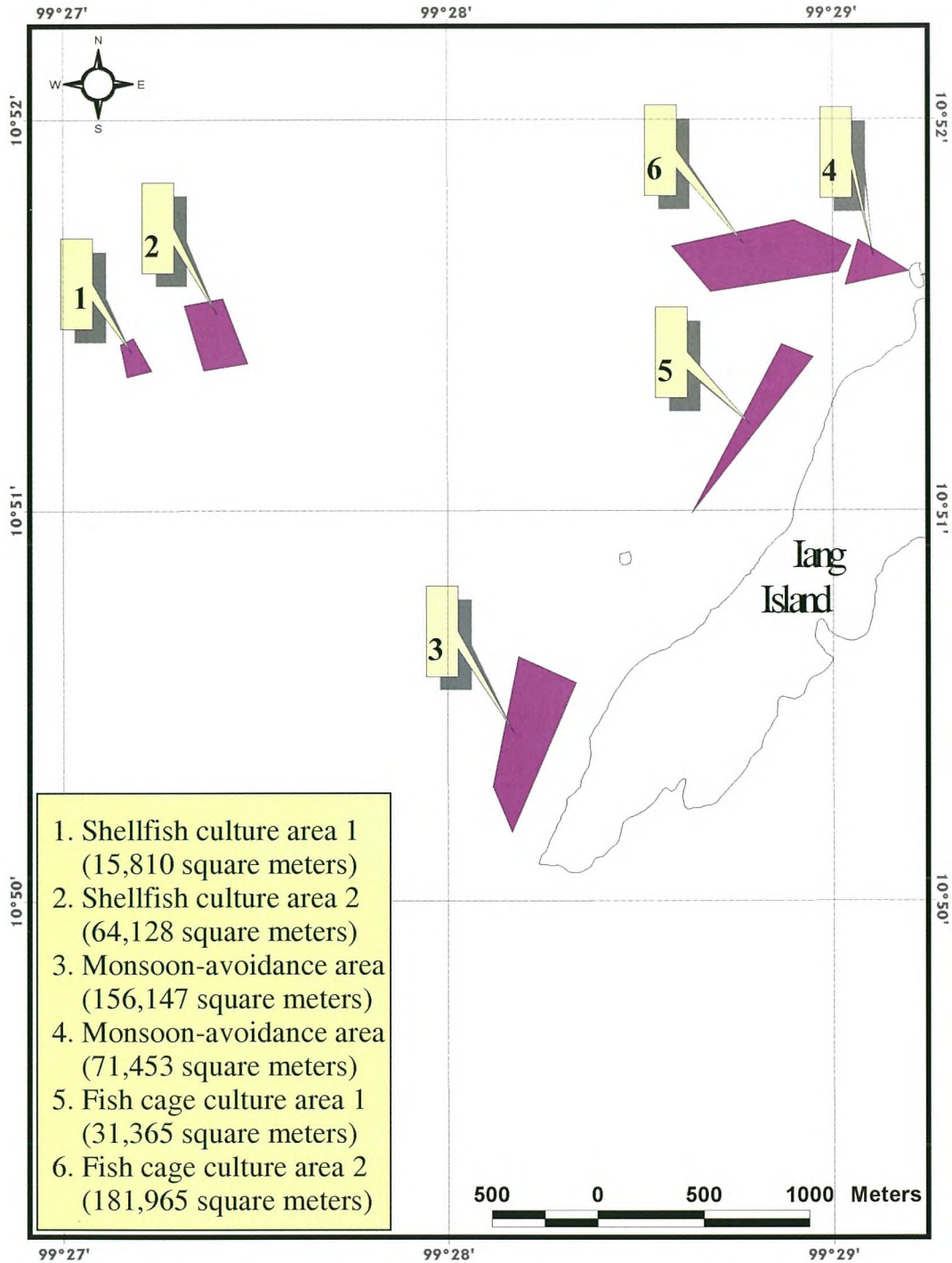
Yamao, Masahiro.2002.Quarterly Report No. 4 Jul.-Sept. 2002 of Locally Based Coastal Resource Management in Pathew District, Chumporn Province (LBCRM-PD).TD/RES/65, LBCRM-PD No. 12, October 2002. 30pp.

Figure 1 Utilization of Fishing Ground Areas in Thungmaha Bay.



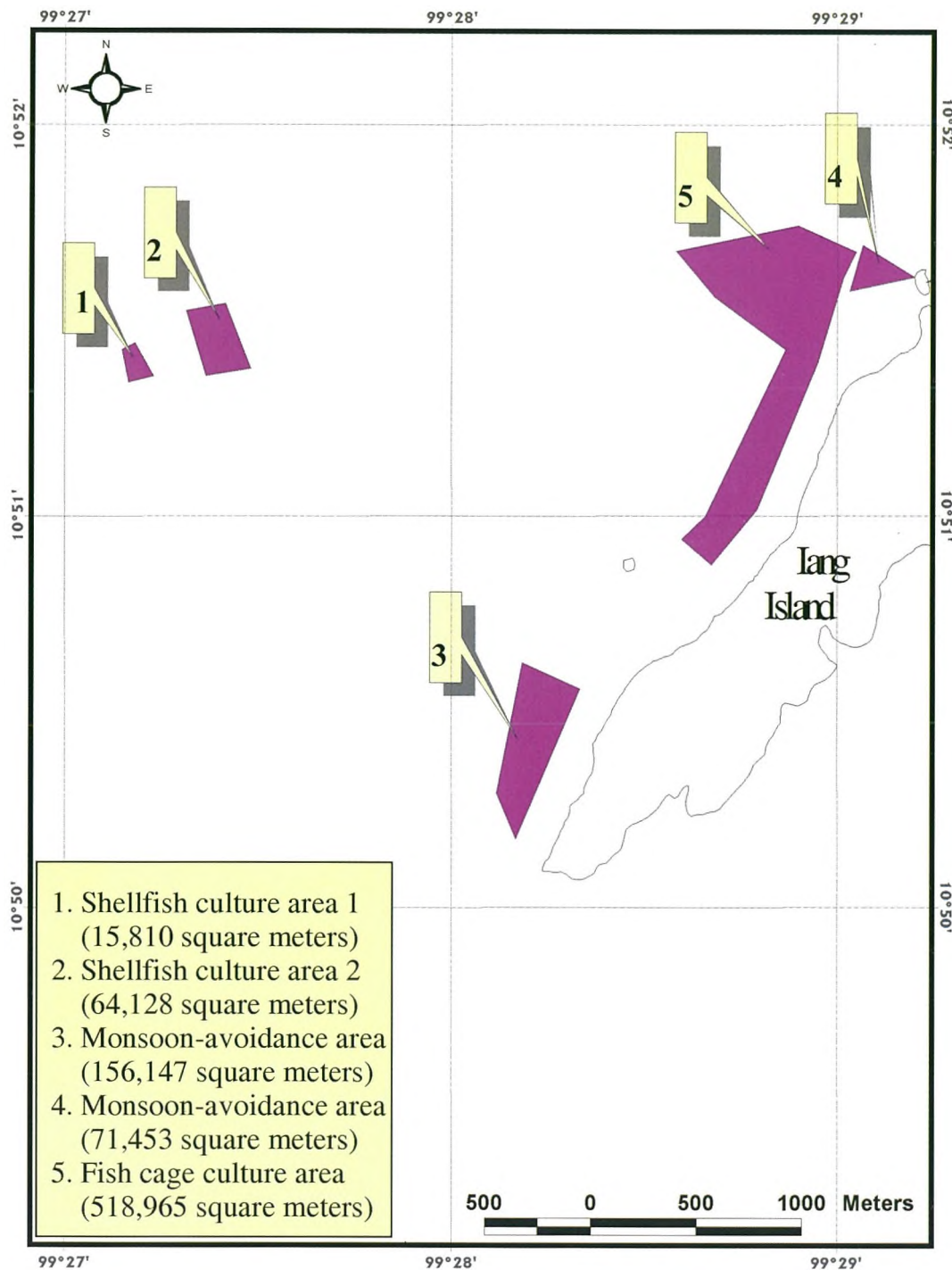
Arranged by Sukchai Amupapboon and Siripom Pangson, Research Division.
Southeast Asian Fisheries Development Center, Training Department. February, 2003.

Figure 2 Results of the First Conducted site selection



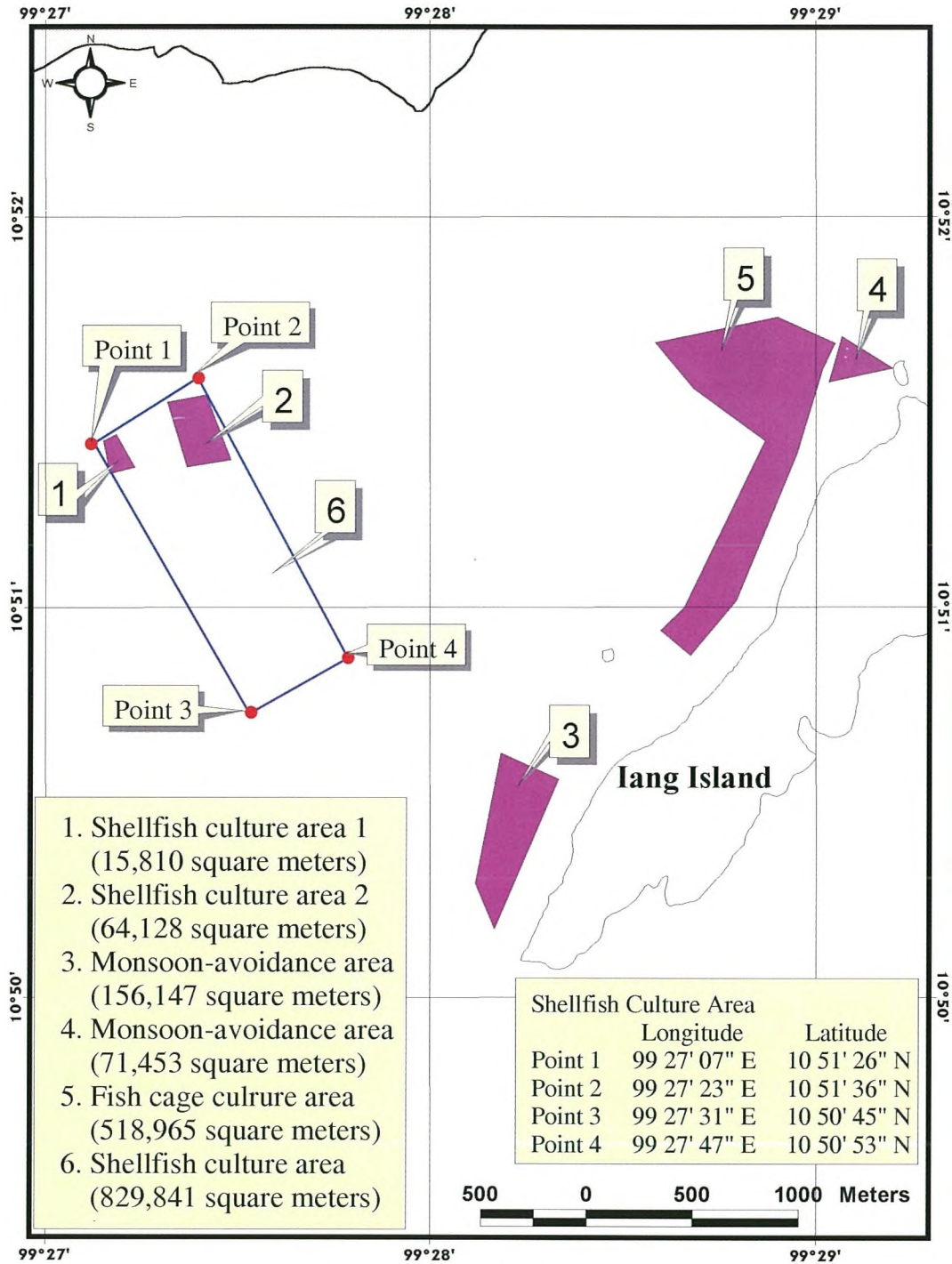
Arranged by Sukchai Arnupapboon and Siriporn Pangson, Research Division.
 Southeast Asian Fisheries Development Center, Training Department. February, 2003.

Figure 3 **Combination of Site Selection by
Local government's Recommendation.**



Arranged by Sukchai Arnupapboon and Siriporn Pangson. Research Division.
Southeast Asian Fisheries Development Center, Training Department, February, 2003.

Figure 4 Combination and Expansion of Site Selection by Community's Propose.



Arranged by Sukchai Arnupapboon and Siriporn Pangson, Research Division
 Southeast Asian Fisheries Development Center, Training Department. February, 2003.