



Bi-annual Project Progress Report  
of  
Integrated Coastal Resources Management in Pathew District  
(ICRM-PD)

Compiled by

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## Bi-annual Project Progress Report

- Project title** : Integrated Coastal Resources Management in Pathew District (ICRM – PD)
- Program Categories** : Programs under the ASEAN-SEAFDEC FCG Mechanism
- Program Title** : Capacity Building of Human Resources and Participation in Integrated Coastal Resources Management
- Duration of Project** : 5 years (October 2001 – December 2006)
- Executing Agency** : Department of Fisheries, Ministry of Agriculture and Cooperatives, Thailand
- Cooperating Agency** : SEAFDEC/TD
- Funding Agency** : Japanese Trust Fund (the FCG scheme)  
DOF Thailand (Co-financing)
- Proposed Budget** : USD 36,550 (Under Japanese Trust Fund input – year 2005 only)  
USD 10,000 (Special 5 year program SDI-4 – year 2005 only)  
Baht 15,200,000 (DOF Malaysia Input – for 5 years)
- Reporting period** : **January to June 2005**

## **1. GENERAL ACCOUNT**

This term is a significant turning point in the project operation. The critical issue, organization of the Phakklog Fishers Group and upholding Sub-groups, has taken place successfully. With the organization of such a core group who will play the key role in CBRM, the fishers have gradually become acquainted with its concept.

Otherwise, the project has progressed on the right track as a whole and compatibly with the project design under the project phasing out program. In relation to this particular program, various institutions, organizations and groups have become involved in the project operation so as to take it over step by step. They are; Chumphon Marine Fisheries Research and Development Center (CMDEC), Marine and Coastal Resources Research Center (MCR), Provincial Fisheries Office (PDOF), Chumphon Fisheries Enforcement Unit / ODF (CFUE), Fisheries Technological Development Div. / DOF (FTDD), District Agricultural Organization (DAO), Sub-district Administration Organization (SAO), Prachaupkirikan Coastal Aquaculture Research and Development Center (PAC), Royal Project (RP) and schools.

The Japanese professor employed as a consultant to evaluate the project activity, especially in coastal fisheries resources management visited the project and inspected the activities.

Various marine biological survey data in 2003 and 2004 were compiled and published.

The first fishermen's general assembly was held.

The first Phakklong Fishers' Group (PFG) meeting was held.

The first Sub-fishers' Group (SFG) meeting was held in each group.

The current zoning arrangement was reviewed.

Local business promotion by the women's groups is progressed, especially in the group 6.

The scheme of experimental Babylonia shell culturing commenced.

The scheme of a crab bank is progressed producing tangible results.

A monitoring survey on ARs was carried out.

The release of fish fingerings was carried out.

The 1<sup>st</sup> IC meeting was held.

The study tour mission from the sister project in Langkawi, Malaysia visited the project site to inspect the activities and exchange the views with fishers.

The mission to participate in the Steering Committee meeting for the sister project visited the project site to inspect the project activities.

## 2. ACTIVITIES

Activities have progressed in line with the Action Plan in general as shown in the Annual Activity Monitoring Sheets in 2005 to be found in Annex 1.

### 2.1. Baseline survey

The regular marine biological survey was conducted monthly in the project area by CMDEC for 8 types of different fishing gear; e.g. crab trap, squid cast net, shrimp trammel net, mackerel gill net, squid trap, mullet gill net and anchovy cast net. However, the visiting project consultant, Prof. Fushimi, suggested that a data collection exercise with the cycle of once a month was not sufficient to obtain such data but it should be repeated every fortnight. As the CMDEC had not enough manpower to increase the data collection frequency, it was determined to conduct an additional survey by the SEAFDEC/TD Liaison officer in between. This practice has been carried out since May after the CMDEC provided the Liaison officer with simple training in data collection methodology.

The impact after enlargement of the crab trap mesh size has been monitored through the marine biological survey. The data was analyzed in September 2004 and was published in March 2005 in the Thai language. According to the survey data, it is obvious that the average carapace length of crab caught has increased and the ratio of immature size crab caught has been decreased (for more information see the report).

The fish landing data for squid caught by both squid traps and cast-nets for the period of 16 months from January 2003 to April 2004 was analyzed in September 2004 and the result was published in March 2005 in the Thai language.

The fish landing data for shrimp caught by the trammel net in 2002 and 2003 was analyzed in September and the result published in March 2005. It is noteworthy that the CPUE per boat per trip (this does not constitute a scientifically accurate indicator though) in 2003 increased by 61.4% compared with that of 2002. (Ref. 2.5.)

The coastal environmental surveys were conducted in April and June in the 10 set stations by MCR. The parameters employed in the surveys were transparency, temperature, salinity, dissolved oxygen, nutrients and total suspended solids. The interim conclusion of the survey result shows that the water quality is within the limit of normal.

The sea grass survey was conducted and the species identified was *Halodule uninervis*.

As for the survey on coral, the abundance survey was to follow in the wake of the initial survey done in 2002. However, it has not taken place by MCR as they have been so much involved in the rehabilitation program from the tsunami disaster this year.

### 2.2. Encourage and extend the CBRM concept

#### Organization of Fishers' Groups

Realizing that the CBRM had not been functioning within the originally designed framework of project, the establishment of a new fishermen group in the project operational area was attempted. In doing so, the first Fishers' Group Assembly was organized on 18<sup>th</sup> /19<sup>th</sup> January

with 59 participants. In this assembly, the expected function and framework of the fishers group within the CBRM exercises were thoroughly explained to the participants. It was agreed to establish a Pakklong Fishers' Group (PFG) and five Sub-fishers' groups (SFG) which were divided by different types of fishing method and to uphold the PFG as listed below. All participants are separated into these 5 sub-groups; i.e. squid trap fishing, crab gillnet fishing, crab trap fishing, mackerel gill net fishing and squid and anchovy cast-net fishing, with an elected provisional Leader, Vice-leader and other committee members. These committee members are expected to organize the first Sub-fisheries Group meeting to be held at local level later. The detailed proceedings of the assembly are seen in Annex 2.

Following the general information and orientation given at the 1<sup>st</sup> Fishers General Assembly held on 18<sup>th</sup> /19<sup>th</sup> January, the Sub-Fishers' Group (SFG) meetings were held on 21<sup>st</sup> –24<sup>th</sup> February at the project site. A separate meeting by each fishing group was held for a few hours to form the fisher sub-groups as listed below and the election of a leader, a vice-leader, a secretary and other committee members (normally 5 persons) was conducted.

Table 1: Pakklong Sub-Fisher's Group (SFG)

<u>No.</u>	<u>Name of SFG</u>	<u>Number</u>	<u>Main village</u>
01.	Crab trap	27	Moo. 7
02.	Crab gill net	13	Moo. 7
03.	Tamthong Coastal Fisheries	32	Moo. 3
04.	Squid trap	18	Moo. 1, 2, 3,5, & 7
05.	Squid cast / anchovy cast net	49	Moo. 1, 4 & 6
06.	Mackerel gill net	18	Moo. 1 & 6
07.	Aquaculture (Fish cage culture)	8	Moo. 1 & 6
	<u>Aquaculture (Green mussel culture)</u>	<u>10</u>	<u>Moo. 1</u>
	Total :	175	

The mode of grouping at the sub-group level was thoroughly discussed at the first Fishers' Assembly and it was agreed to group fishers by fishing methods rather than communities. This mode of grouping was considered more practical in the case that the fishing communities were scattered in the limited area like that of the project. Each member shares the common benefits and problems to be tackled and it is easy to consolidate their ties. Therefore, the organization of SFG followed in that way, except in Village No.3 where a fishers' group was once organized and functioning until two years ago. The fishers of Village No.3 were so adamant to unite as a community rather than split into different fishing groups and eventually it was agreed to retain the fishers' group of Village No.3 as it had been as the name of Tamthong Coastal Fisheries after reorganization. In such a way, 175 fishermen in total became the members of respective SFGs. The detailed description on this meeting was dealt with at length in Annex 3.

Following the SFG meeting, the 1<sup>st</sup> Pakklong Fishers' Group (PFG) meeting was held on 22<sup>nd</sup> March. In this meeting, the executive members including a chairman, a vice-chairman, a secretary etc. were elected. In addition to those, the sub-district leader (Kamnan) was also included in the executive members in the capacity of advisor. Thereafter, the establishment of the PFG was declared. Also, some other related issues are discussed at this meeting as described at length in Annex 4.

### Review of the present zoning arrangement

Taking advantage of the occasions of organizing fishers' groups, a review of the current zoning arrangement was made with discussion among the participants in the general assembly on 18<sup>th</sup> –19<sup>th</sup> January. The views were split into three, i.e. (1) satisfied with the current arrangement, (2) needs to expand up to 5 km from the shore line and (3) needs to expand the same as the one in Bang Saphan (10km), and no definite conclusion could not be drawn at this assembly. The participants were in agreement to consider in depth at the level of fishers' sub-group.

At the sub- fishers' group meetings on 21<sup>st</sup> –24<sup>th</sup> February, further discussions were made on this issue and the outcomes were brought over to the 1st PFG meeting on 22<sup>nd</sup> March 2005. The committee of the PFG was of the opinion that the zoning arrangement should be maintained as it was in view of the fact that no significant disturbance had been witnessed with the present framework.

An approval of the zoning arrangement for aquaculture fisheries in Pakklong is still pending until the Seafood Bank scheme under DOF has finalized. The detailed DOF's intention on this scheme is described in Item 9 of Annex 2 (Report of the First Fishers' General Assembly).

### Activity of the Crab Bank

The idea of the Crab Bank was originally introduced by the NGO Thai Environmental Institute under the project "Mangrove Conservation in Tungmaha Bay". Since then, it has been developed by crab trap fishermen in a way that all gravid crabs are deposited in a cage until they spawn. The crabs after discharging eggs are sold to the markets. Of this sale, 50% is reserved as the group fund, while 40% is used for the repair and maintenance of the cages and 10% is spent for feed. There are 15 members now. Aimed at reviewing their activity from scientific points of view and providing the fishers technical advice for improvement, a Japanese professor who is a specialist in crab biology was invited for technical evaluation and consultation from 3<sup>rd</sup> to 8<sup>th</sup> May. He inspected the site of the crab bank and interviewed responsible fishermen. In general, he was deeply impressed by the initiative taken on their own motivation and committed to invite the leaders to Japan from their own fund to observe the crab bank activity in Japan.

The leading fishermen of the sister project in Malaysia made the study tour to the project operational area in Chumphon in June. During the study tour, an inspection of the crab bank scheme was made at the village number 7. The mission was so impressed with the impact given by the scheme motivated by the fishermen themselves that the introduction of a similar system was discussed on the spot with the leader of the crab bank. A request was made to him to make a visit to Langkawi to give technical advice when they initiate the scheme in the future.

### Establishment of a Local Enforcement Unit (LEU)

It was envisaged to establish a Local Enforcement Unit (LEU) in the project area to control illegal fishing just like the one in Bang Saphan Project. To do that, the Ao.Bo.To. was to contribute a fund for the construction of the LEU office in Pakklong and DOF Enforcement unit based in Chumphon covering three provinces, Surattani, Chumphon and Prachuapkirikan Provinces, provides training to the fishermen in Pakklong. Under this scheme, the training course in local enforcement activity was undertaken by the Enforcement Unit to the selected 50 fishers for 3 days from 8 to 10 June including the study tour to Surattani.



### 2.3. Encouragement of local businesses

#### Village No. 1

The diversification of fish based products was further promoted and the variety of the products has now reached almost 10 kinds. The packaging materials were also improved. The certificate of Good Manufacturing Practice (GMP) was also awarded at the end of 2004. However, the bookkeeping and accounting system are still weak and further follow-up work is necessary. They are unable to submit the transaction sheets for the 6 months from January to June 2005. The regular members are 10 women.

#### Village No. 4

The main products are dry flowers and some patties called *pankhlip* and *thongmoun*. Also, they prepare flower and colour fabric decoration on the occasions of banquets, weddings and funerals by request. However, their transaction is very meager as seen in the following table. The mean income per head is only Baht 28.10 per month. However, this may be because of the housewives in the group 4 are generally fully engaged in the rubber plantations and can hardly afford to spare their time for the group work. The regular members are 8 women.

Table 2: Transaction by Group No.4

Month 2005	Gross income (Baht)	Expenses (Baht)				Income W/O labour cost (Baht)	Share divided	
		Raw material	Transport	Others	Sub-total		Member	Amount (Baht)
January	1,120	600	75	0	675	445	8	56
February	1,208	600	75	40	715	493	8	62
March	0	0	0	0	0	0	0	0
April	1,200	740	50	0	790	410	8	51
May	0	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0	0
Total:	3,528	1,940	200	40	2,180	1,348	24	169
Average:	588.0	323.3	33.3	6.7	363.3	224.7	4.0	28.1

#### Village No. 6

The main business is batik printing which began in June 2004 after being trained by a professional printer. The business is running well in producing various batik printed materials like clothes, shirts, T-shirts, bags and handkerchiefs. As seen in the table 3, the average monthly share per member reached as much as Baht 2,170 which is a considerable amount as they are normally working 3 to 4 hours a day after finishing their own work (mainly rubber plantation). The member are 185 women in total but the active and regular members who are participating in this group work account for 5 to 7.

In addition to batik printing business, the training in tailoring the T-shirts was made in April by the Mobile Training Institute. This course was arranged by CMDEC and 17 members participated in this course

Table 3: Transaction by group No.6

Month 2005	Gross income (Baht)	Expenses (Baht)				Income W/O labour cost (Baht)	Share divided	
		Raw material	Transport	Others	Sub-total		Member	Amount (Baht)
January	65,250	36,600	150	30	36,780	28,470	6	4,745
February	37,800	20,060	100	30	20,190	17,610	7	2,516
March	19,939	9,760	100	30	9,890	10,049	7	1,436
April	24,180	12,420	50	30	12,500	11,680	6	1,947
May	21,200	12,870	50	30	12,950	8,250	7	1,179
June	18,126	12,071	50	30	12,151	5,975	5	1,195
Total:	186,495	103,781	500	180	104,461	82,034	38	13,017
Average:	31,082.5	17,296.8	83.3	30.0	17,410.2	13,672.3	6.3	2,169.4

### Babylonia shell culture

It is considered that the Babylonia shell culturing becomes more and more popular with increased demand in the markets boosted by development of the new export outlets to Taiwan and Hong Kong. Aimed at testing the applicability and economic viability, the project tried out an experimental culturing with a volunteer of the Aquaculture group of the PFG with technical supervision by the Chumphon Aquaculture Station.

To inspect the proper facilities and equipment necessary for the experiment, a visit to the Chanthaburi Coastal Fisheries Research and Development Center (CCFRDC) was made on 7<sup>th</sup> June by the SEAFDEC/TD team. CCFRDC has been playing a leading role in this field in Thailand fisheries and supplying fingerlings to the private sector. The team observed the hatchery center and experimental cages which gave a good idea for conducting an experiment in Chumphon. Further, a visit to the private Babylonia shell culturing firm in Chanthaburi was made to acquire the marketing information among others.

Based upon the findings and observations in the above inspection, agreements on the execution of the experimental Babylonia shell culturing were made between Chumphon Aquaculture Station (CAS) and TD and the PFG and TD respectively in June. It is expected to commence the experiment in August.

### Crab culturing

In an attempt to see to the economic and technical viability in swimming crab culturing, two experiments were simultaneously started in June. The one is by the Crab Trap Fishing Sub-group of the PFG which is partly supported by the DOF in providing necessary material and equipment. The other is private, conducted by a fisherman (the village leader of No.7). The former experiment is being done with 6 cages of 4 x 4 meters, 1 cage of 5 x 10 meter and 1 cage of 10 x 10 meter, of which 2 of the 4 x 4 meter cages and the 5 x 10 meter cage belong to the PFG. The private culture is an oval shape cage with dimensions of 36 meters circumference, in which 4,000 baby swimming crabs under 7.5cm are being cultured. The project is assisting him in monitoring the growth and mortality rates and the economic return.

In the former experiment, 1,200 pcs. of crab with the average size of 45 pcs./Kg (22.2gr) were deposited in the cage of dimensions 10m x 10m on 25<sup>th</sup> May. The crabs were stocked for 3



months and their growth rate was traced. The result showed that the average growth rate developed as 43.5gr.(95.9%) , 76.9gr.(246.4%) and 83.3gr.(275.2%) in one to three months respectively. This means that the most economical crab culturing term should be 2 months as proved its relative monthly growth rate; i.e. 1<sup>st</sup> month – 95.9%, 2<sup>nd</sup> month – 76.8% and 3<sup>rd</sup> month – 8.3%.

#### Eco-tourism

The three meetings were repeated among the fishers who envisaged entering into the home stay business in May and June. As a result, the The Home Stay Group was established in the village No.6 by 20 joining members and the committee members were selected. The Head of Sub-district is nominated as an advisor to the committee.

The training course for home stay business was conducted on 28 – 31 March including the study tour to Surattani. In this training course, 30 participants from the village No.6 were participated.

### **2.4. Enhance human resources capacity building and participation**

#### PFG

The first Fishermen's Assembly was organized on 18/19 January in the project site. As seen in the prospectus of Annex 2, there were three major subjects in the meeting; i.e. organization of the Pakklong Fishers' Group (PFG) and Fishers' Sub-groups (SFG), review on the current zoning arrangement and a review of the establishment of a local enforcement unit. In this session, grouping the fishers by fishing methods was conducted and the group discussion was followed on the analysis of encountering problems and conceivable solutions. The results of each group's analysis were presented at the plenary session by the group leaders for further contemplation. Further, aimed at increasing awareness on the CBRM concept among fishers, a lecture on the benefits derived from the community based coastal resources management and its practicability was given to the participants.

#### CBRM concept training

Taking advantage of visit by Professor Fushimi who is a well-known marine biologist in the field of crab and shrimp, a workshop for the fishers was organized on 5<sup>th</sup> May at the project operational site to educate crab fishermen. In this workshop, the crab bank fishers consulted with him on the technical issues on crab resources after hearing the lecture.

Also, a special lecture on the effect of resources enhancement by stock release which had been practiced in Chumphon since 1997 was given by Professor Fushimi to the researchers from CMDEC, Ranong Aquaculture Center, Surattani Aquaculture Center and MCR on 6<sup>th</sup> May in CMDEC, Chumphon. In this lecture, 18 scientists and extension officers participated. The detailed description on above workshop and the lecture is seen in Annex 5.

The training in the basic CBRM concept was conducted on 8 – 10 June in the project site. In this training course, 30 leading PFG members participated.

### **2.5. Rehabilitate and enhance coastal resources**

#### Improvement of fish habitat

The installation of three types of fish shelter model was conducted during 23 – 26 March. Three types of fish shelter are a vertical concrete tube ( $\varnothing \times L = 20\text{cm} \times 60\text{cm}$ ), a horizontal concrete

tube ( $\varnothing \times L = 20\text{cm} \times 60\text{cm}$ ) and a oval ball shape earthenware ( $\varnothing \times H = 60\text{cm} \times 80\text{cm}$ ). This experiment was made in a bid to monitor species and numbers of fish living inside the fish shelters, which was conducive to design the artificial reef suitable for target species of fish.

About 1,750 ARs were installed off the shore of the project site at the depth of 13m in March 2004. It was observed, however, after one year's installation that only barnacle and green mussel adhered to the surface of the concrete structure but no sea grass were growing on them. Aiming at improving the environmental condition around artificial reefs, an experiment of transplanting sea weed on artificial reefs was conducted. Sagassum (*Sargassum polycystum*) were collected from Banphe, Rayong Province and planting on artificial reefs which were supported by concrete bars. The transplantation experiment conducted on 24-26 March 2005. Growth up sagassum could be created a marine forest habitat to support a feeding and nursing ground for some fish species. The experiment need to further monitoring on effects of growth up sea weeds and the fish behavior in the experiment site.

The environmental survey studies at the artificial reefs installation site at Pratew district, Chumporn province, Thailand was carried out by M.V.Plalung 1 during 21-31 March 2005 in the following methods. The results are under analysis.

- Fishing operation survey: Several fisheries environmental parameters were studies through fish trap fishing operation, squid trap fishing operation, bottom gill net fishing operation and collapsible crab trap fishing operation.
- The benthos survey: This was conducted at the 22 stations. At each station, samples of bottom sediment were collected and filtered by the sieves for identification.
- The fish larvae survey: This was conducted around the ARs installed in use of a bongo net.
- The Phyto-plankton survey: The sample of phytoplankton was collected from water sample at 1m below the sea surface around the ARs.
- The zooplankton survey: The sampling of zooplankton was carried out in use of the bongo-net at 1m depth by towing with 2 knots for 30 minutes.

The detailed description is seen in Annex 8 Resource enhancement activity by SDI-4.

#### Fish seeds releasing

As the regular program, the CMDEC release the following fish fingerings on 3rd May in the project operational area.

- |                               |             |
|-------------------------------|-------------|
| - Banana prawn (size P40)     | 600,000 ps. |
| - Giant seapearch (2.5cm)     | 24,000 ps.  |
| - Blue swimming crab (4 -5cm) | 3,700 ps.   |

In response to the request raised by the PFG, SEAFDEC/TD decided to provide training to fabricate and install the FEDs just like the one conducted in the sister project in Langkawi in December 2004. To realize the attempt, a preliminary discussion was held with the leading members of the PFG on 21<sup>st</sup> June. As a result, the detail training program is drawn up as seen in the attached report in Annex 6. The training course is to be conducted in July or August with 50 fishermen by the SDI-4 project of SEAFDEC/TD.

#### **2.6. SC and IC meetings**

The first IC meeting was held on 22<sup>nd</sup> March at the Ao.Bo.To. Office in Pakklong. The feature of this meeting was an introduction of newly elected executive members of the PFG. In this

meeting, the monitoring of project progress compatible with the work-plan, which was endorsed at the last SC meeting on 14<sup>th</sup> December 2004 was made. It was noted that implementation of the activities under the responsibilities of Chumphon Marine and Coastal Resources Research Center (MCR) and Fisheries Technical Development Division of DOF (FTDD) were relatively behind the schedule although all other parties are pursuing those more or less in line with the plan. It was explained that MCR had been fully occupied in the urgent work in Pangnga Province in the wake of the tsunami disaster. The detailed description of the ICC meeting is seen in Annex 7.

## **2.7. Others**

As aforementioned, the study tour mission from the sister project in Langkawi, Malaysia visited for 5 days from 26<sup>th</sup> June. They were quite impressed by the project activities especially with the crab bank and zoning arrangements and convinced that they would apply such ideas in their project. Similarly, it was beneficial to the fishermen of the project operational area in mutually exchanging various views in coastal fisheries management and community development, which are common goals for both the communities.

Also, the senior members of DOF Malaysia who visited Thailand for participation in the Steering Committee meeting of the sister project in Malaysia inspected the project activities in Chumphon on 26<sup>th</sup> April.

## **3. OUTCOMES**

The major outcomes produced from the above activities during this reporting period are:

### Baseline survey

- More accurate regular marine biological data was obtained and analyzed.
- Three scientific reports; Marine Shrimp from Shrimp Trammel Net in Pathew District, Squid Fisheries in Pakklong Sub-district and Changing Mesh Size at the Bottom Side of Crab Traps in Pakklong, are published in Thai.

### Encourage and extend the CBRM concept

- Pakklong Fishers' Group (PFG) was organized and began functioning.
- Sub-fishers' Groups (SFG) were organized and began functioning.
- Through the above movement, the fishers realized the concept of CBRM more correctly.
- The effectiveness of zoning arrangements was reviewed and it was found that most of the fishers were satisfied with the current arrangement although some were of the opinion to expand the demarcated zone.

### Encourage local business

- Group working spirit has been advanced through activation of the women's activity.
- Local business among women's groups is promoted especially in group No.6.
- Experiment on Babylonia shell culturing began to test its practicability and economic viability with PFG.
- Experiments on crab culturing began by CMDEC and PFG.

#### Enhancing human resources capacity building and participation

- The first fishermen's assembly was organized and many issues were discussed among fishers.
- The project staff of CMDEC and SEAFDEC/TD participated in various seminars and workshops.
- The special lectures on coastal resources management by the Japanese Professor was organized by the project, in which many researchers from CMDEC, SEAFDEC/TD and others participated.

#### Rehabilitating and enhancement of coastal resources

- The effectiveness and impact give by installation of ARs were studied.
- The coastal resources density was improved by releasing fish fingerings.

#### Committee meeting

- First IC meeting was held and various pending issues were discussed.

#### Others

- Various groups like study tour teams and missions visited the project site to inspect or study the project activities. Through these visits, public relations for the project were promoted.

### **4. MAJOR CONSTRAINTS**

For realization of the co-management system, the most important factor lies in functioning local institutions that are responsible for the execution of community based fishery resources management with beneficiary participation. Since the inception of the project, it was expected that the newly organized local administrative body, Sub-district Administrative organization (Ao.Bo.To.) would be the one who could assume the expected responsibilities. However, it has been proved as the project progressed that the organization is just the body who deal with the administrative matters only but not undertaking any challenging areas like community based fishery resources management. It would say, it is to be regretted that such a setting was improper from the outset. It was an over-expectation for them. To rectify the course in building up of the proper body, which constitutes the most critical part of the project, the organization of the Pakklong fishermen's group commenced in January 2005 after passing almost 3 years of project operation and the remaining 2 years project tenure. In this reporting period, most energy was spent to organize the PFG and upholding Sub-Fishers Groups. The structures of PFG and SFGs have been successfully formed by now. However, the major task in building up their capacity so as to enable them to manage coastal fishery resources for themselves in a sustainable manner has just started. The time remaining is only 18 months.

### **5. WORKPLAN FOR THE NEXT REPORTING PERIOD**

The envisaged work plan for each activity in the next 6 months is as follows.

#### Base line survey

- Continued regular marine biological surveys
- Continued regular marine environmental surveys
- Continued regular coral and sea-grass surveys

#### Encouragement and extending the CBRM concept

- Technical as well as financial support to the Crab Bank scheme
- Strengthening the capacity of the PFG
- Formulation of by-laws of the PFG
- Commencement of the activities by the Local Enforcement Unit (LEU)

#### Encourage local business

- Proceeding the experiment of Babylonia shell culturing
- Proceeding the experimental crab culturing
- Improvement of the quality of the products; e.g. Group No.1.
- Improvement of group management
- Expansion of marketing channels
- Introduction of new local business; echo tourism, home stay etc

#### Enhance human resources capacity building and participation

- Awareness building for fishers on coastal resources management
- Participation in environmental conservation & development work

#### Rehabilitate and enhance coastal resources

- Releasing fish seed and monitoring surveys
- Improvement of the coastal environment
- Training in fabrication and the installation of Fish Enhancing Devices

#### Committee meetings

- IC meeting (August and December)
- SC meeting (December)

### **7. REPORTS PREPARED**

Reports and documents prepared by the project during to this reporting period are listed below.

<u>No.</u>	<u>Title of the report</u>	<u>Name of author(s)</u>	<u>Date of issue</u>
01.	Report on the First Fishers' General Assembly	Siriporn P. & Sumitra R.	January 2005
02.	Report on Consultancy Work on Coastal Aquaculture at Phakklong Sub-district	Sumitra R.	May 2005
03.	Changing Mesh Size at Bottom Side of Crab Trap in Pakklong Sub-district (Thai)	Jinda P. et al	March 2005
04.	Squid Fisheries in Pakklong Sub-district (Thai)	Sunsanee S., Pattarajit K. & Sukchai A.	March 2005
05.	Marine Shrimp from Shrimp Trammel Net in Pathew District (Thai)	Rochanarut R. et al	March 2005
06.	Report On the Coordination of Fisher's Sub-group Meeting	Sumitra S.	March 2005
07.	Report on the 1 <sup>st</sup> Pakklong Fishers Group (PFG) Meeting	Siriporn P.	March 2005
08.	Travel report – Chumphon (21 June 2005)	Sumitra S. & Taweekiet A.	June 2005
09.	2005 Half Year Report of Resources Enhancement Program Conducted in Chumphon Province	Yuttana T.	Sept. 2005

Annex 1 Annual activity monitoring sheet in 2005

Planned : ←-----→  
 Executed : ←-----→

Rev. 1. on 14.12.05  
 As of 30.06.05

Activity	2005												Responsible organization							Remarks						
	1	2	3	4	5	6	7	8	9	10	11	12	SEA	DEC	CMDEC	MCR	POOF	CFUE	FTDD		DAGO	SAO	RP	PCA	SCH	COM
1. Monitoring survey																										
1.1. Fisheries data collection																										
1.1.1 Regular marine biological survey (monthly)																										I
1.1.2 Regular marine environmental survey (every 3 months)																										I
1.2. Survey on particular topics and subjects																										I
1.2.1 Monitoring survey on collapsible crab trap fisheries management																										I
1.2.2 Survey on coral and seagrass (every 2 months)																										P
2. Encourage and extend LBCFM concept																										
2.1. Reorganize & promote Crab Bank																										
2.1.1. Reorganization of Crab Fishers' Group (CFG)																										I
2.1.2. Monitoring management of CFG																										I
2.1.3. Internal evaluation of CFG																										P
2.2. Reorganize fisherman's group																										
2.2.1. Preparatory work on forming fisherman's groups (FG)																										P
2.2.2. Organizing fisherman's groups																										P
2.2.3. Monitoring management of FGs																										P
2.3. Review and modify zoning arrangement																										
2.3.1. Review on validity of present zoning arrangement																										P
2.3.2. Formulation of new zoning arrangement, if necessary																										P
2.3.3. Promulgation process of new zoning arrangement																										P





Activity	2005												Responsible organization							Remarks					
	1	2	3	4	5	6	7	8	9	10	11	12	SEA/DEC	CM/DEC	MCR	PDOF	CFUE	FTDD	DAGO		SAO	RP	PCA	SCH	COM
4. Enhance human resources capacity building & participation																									
4.1. Restoration of survey results																									
4.1.1. Stakeholders' workshop on research results																									
4.2. Awareness building on coastal resources conservation																									
4.2.1. Fishermen's workshop on CBRM																									
4.2.2. Study tour for eco-tourism																									
4.2.3. Training for school students in CBRM																									
4.3. Participation in environmental conservation & development work																									
4.3.1. Identification of action plan for environmental development work																									
4.3.2. Workshop on the impact given by environmental development																									
4.3.3. Implementation of environmental development work																									
5. Rehabilitate and enhance coastal resources																									
5.1. Improvement of marine habitat																									
5.1.1. Monitoring marine biological survey on ARs																									
5.2. Fish restocking program																									
5.2.1. Releasing fish seeds																									
5.2.2. Monitoring marine biological survey on released fish																									
5.2.3. Installation of FEDs																									



**Report of the First Fishermen's General Assembly**

**Integrated Coastal Resources Management Project in Pathew District (ICRM-PD)**

**Pakklong Sub-District Administrative Organization, Chumphon Province**

**18<sup>th</sup> -19<sup>th</sup> January 2005**

Prepared by:  
Siriporn Pradit and Sumitra Ruangsivakul

**1. List of Participants**

Squid cast net/Anchovy scoop net

- |                           |                           |
|---------------------------|---------------------------|
| 01.Ms.Suthin Moumghongkom | 16.Ms.Thippawan Narathot  |
| 02.Ms.Musda Petdee        | 17.Mr.Pravit Panmoung     |
| 03.Mr.Mana Naratod        | 18.Mr.Rheed Sangploy      |
| 04.Mr.Vara Katumpi        | 19.Mr.Chaiwat RangTeerada |
| 05.Ms.Kallaya Titada      | 20.Mr.Umphon Srithongkul  |
| 06. Ms.Lumpi Promkat      | 21.Mr.Songkran Janpet     |
| 07.Mr.Umnat Sunthorn      | 22.Mr.Narong Jinpen       |
| 08.Mr.Somkit Promkat      | 23.Mr.Virat Chalim        |
| 09.Mr.Polrat Petdee       | 24.Ms.Jittra Inkong       |
| 10.Mr.Vichai Vichamano    | 25.Mr.Bunsong Piansanhong |
| 11.Mr.Somjai Promkat      | 26.Mr.Teera Kongkarian    |
| 12.Mr.Jatsada Saaad       | 27.Mr.Montree Bunmeang    |
| 13.Ms.Onanong Titada      | 28.Mr.Chaiyut Deesamut    |
| 14.Mr.Somsak Sunthorn     | 29.Mr.Supasak             |
| 15.Mr.Vichain Titada      | 30.Mr.Niyom Deangtha      |

Mackerel gill net

- |                        |                          |
|------------------------|--------------------------|
| 31.Mr.Chen Suvanbut    | 37.Ms.Jumpa              |
| 32.Mr.Sakon Phongphaew | 38.Mr.Thaing Phumchat    |
| 33.Mr.Sukit Phongphaew | 39.Mr.Supasak            |
| 34.Mr.Vinai Sakulnum   | 40.Ms.Kannika Phongphaew |
| 35.Mr.Vichai Katkaew   | 41.Mr.Chan Sangploy      |
| 36.Mr.Samat Naratod    | 42.Mr.Chuchai Deesamut   |

Crap trap

- |                       |                         |
|-----------------------|-------------------------|
| 43.Mr.Jang Fungfeang  | 46.Mr.Pisan JeenThanhom |
| 44.Mr.Pirot Thongchum | 47.Mr.Eakkasit Aannacha |
| 45.Mr.Dum Chaivisit   | 48.Mr.Deang Chatung     |

Crap Gill Net

49.Mr.Narongsak Sawangjang  
50.Mr.Komsing Numma

51.Mr.Sanit Siphong  
52. Mr.Surin Ruangthong

Squid trap

53.Mr.Payao Srijan  
54.Mr.Noun Panthong

55.Mr.Jeerarak Cookchoo

SAO.(Ao.Bo.To.)

56.Mr.Srirot Kongtala

57.Mr.Manus Houdkhum

Agriculture's group

58.Mr.Sawhang Crairarai

Employee (crew – unidentified)

59.Umphon Playkaew

**2. Content of the meeting**

The meeting was conducted consonant with the schedule in the prospectus of the First Fishermen's Assembly as attached in Annex 2-2.

**18<sup>th</sup> January 2005**

**Item 1: Opening address by Mr. Pairoh, Director of CMDEC.**

Mr. Pairoh informed the Assembly of the objective of this meeting as it intended to form the Pakklong Fishers' Group consisting of the Fishers' Sub-groups separated by different types of fishing gear. Firstly, the participants will be grouped into 5 sub-groups and they select their leaders, their asst. leaders and the secretary. Thereafter, they carried out the group discussion on the encountered problems and envisaged solutions. Their findings and conclusions on these issues to be presented at the plenary session are to follow.

**Item 2: Presentation on cooperative organizations and the roles of cooperatives for CBRM by Mr. Etoh**

The lecture was given on the theory of coastal fisheries management in Europe and Asia, especially in Japan that may be applied in Southeast Asian, because the fishermen's socio-economics and the situation of the fishing grounds are similar. The essence of his presentation is that existence of the well organized and functioning fishermen's groups is a prerequisite for fulfillment of CBRM.

**Item 3: Presentation on the status of fisheries cooperatives in Thailand by Mrs. Sumitra R.**

This presentation showed the meanings, objectives and the structure of Fisheries Cooperatives in Thailand the historical background as to why fishermen organized fisheries cooperatives.

Fisheries Cooperatives in Thailand have mainly focused on business but not the fisheries resources management aspect.

**Item 4: Group discussions on the selection of leading posts of each subgroup and each group identifying encountered problems and countermeasures.**

1. The name list of the leading posts of each sub group is attached in Annex 2-3. (Totally five groups)
2. The problems and solutions in each group are described in Annex 2-4.
3. The main problems in the six groups are a) oil price too high, b) the trawler encroaching for fishing within 3 km, c) high cost of the fishing equipment and materials and d) subsequent debt problems.

The meeting tried to seek solutions and the CMDEC's director said he may try to find cheaper oil.

**Item 5: The presentation of the Agriculture group**

The special presentation was added by Mr. Sawang Kai-rarai, leader of the agriculture group (Moo 6). He explained that, his group has 200 members and he has managed the group by dividing into 14 sub-groups by area. The Sub-group arranges a meeting every month, and the committee of the sub-group comes to the meeting to present the problems and finances to the group committee, also every month. The main objective of this group is to provide loans from the savings scheme, materials like fertilizer and central marketing for the members. Now the fund has accumulated about 300,000 baht for loans. The source of funding relies upon contributions from the members as savings.

**Date 19 January, 2005**

**Item 6: Opening session of the second day by Mrs. Sumitra**

A summary of the five sub-groups' discussions that took place was presented and an explanation was given on the agenda of 19<sup>th</sup> January.

**Item 7: Discussion on the current zoning arrangements**

1. Mrs. Nopparat and Mrs. Sumitra presented a comparison of zoning arrangements between Bang Saphan and Pathew District. Questions and comments were raised by the fishers as follows;
  - a) Some fishers were satisfied with the current zoning arrangements at Pakklong and they don't want to have conflict with other fishing gear groups in harvesting resources in the same area.
  - b) Some fishers would like to extend the boundary from 3 km to 5 km from the shore line.
  - c) Some fishers would agree to extend the boundary similar to the one in Bangsaphan.

The meeting could not determine the best solution in this issue. So, more discussions among the fishers and responsible persons are necessary, especially at the fishermen's sub-group level. It is expected to hold a village level meeting with sub-fishermen's groups in February 2005.



#### **Item 8: Discussion on the establishment of a local enforcement unit**

1. Mr. Somphot, the staff member of the Provincial Enforcement Unit, presented the function of this unit and tried to explain the capacity of the unit like the limited number of enforcement boats and lack of staff. He opened the floor for discussion on problems, necessity etc and questions were raised as follows;
  - a) Some fishers asked the enforcement staff to come and stay in the area and put more effort into searching for illegal boats.
  - b) Some fishers complain about corruption in the system in the area e.g. the staff from the enforcement unit or the leader of the village might have a relative that uses illegal boats.

#### **Item 9: Presentation of the Seafood bank**

Mr. Tanadon, from the Provincial(DOF) gave a presentation on two projects 1) The government project in setting up a Seafood Bank project on aquaculture on 5 species of marine capture e.g. Cockel, Green mussel, Oyster, Sea bass and Grouper to those who are interested. The government will provide around 13 rai for this project. 2) the zoning by fishing gear and areas for fishing but at present it is not finalized. These questions were raised after his presentations. The fishers were asking for a suitable mesh size for the small-anchovy (sai-mai) purse seiner. As to these small anchovies, the fishers believe that it is a different species to the anchovy but the DOF staff thinks it is juvenile anchovy. Therefore, research on the DNA of those two kinds of fish is being carried out by the CMDEC to find the right answer.

The meeting was closed with thanks to the organizers, SEAFDEC/TD and CMDEC, they expect to meet again in March after one month.

**Prospectus**  
**for**  
**The Fishermen's General Assembly**

**Integrated Coastal Resources Management in Pathew District (ICRM-PD)**

**Date:** 18<sup>th</sup> – 19<sup>th</sup> January 2005,

**Venue:** Pakklong Sub-district Administrative Organization office, Pathew District, Chumphon

**1. Background**

The project of Integrated Coastal Resources Management in Pathew District (ICRM-PD) has been in operation for the last 3 years with the objective of realizing community based resources management (CBRM). To do that, a well functioning core group in the fishing community should be built up right from the beginning. This group will take charge of CBRM under the decentralized fisheries management regime. In the original project framework, it was envisaged that the newly established Ao.Bo.To. was anticipated to take this responsibility. However, it was realized that such an arrangement is not realistic in spite of the substantial amount of effort made.

Hence, it is proposed that all the stakeholders who are responsible for coastal resources management should be called to an assembly once and for all to discuss an alternative solution to achieve the project goals.

**2. Objectives**

The objectives of the assembly are:

- to provide orientation to the fisher on needs of forming fishermen's groups
- to guide the fishers to form the fishermen's groups and sub-groups
- to train the fishers in the roles of the fishermen's groups in CBRM
- to increase the awareness of the fishers on the benefits of a cooperative type of organization
- to review the current zoning arrangements
- to clarify the current status and progress of establishing a Local Enforcement Unit (LEU)

**3. Expected outcomes**

- The fishers understand the roles of the fishermen's groups in CBRM.
- The fishermen's groups and sub-groups are organized and the leading posts are filled.
- The group meeting is held and the problems identified.
- The fishers understand the function of a cooperative type of organization.
- The current zoning arrangement is reviewed.
- The current progress on the establishment of an LEU is clarified.

#### 4. Agenda and time table

##### 18.01.2005 (Tuesday)

- 09.30 – 09.40 : Opening of the Assembly  
09.40 – 10.40 : Presentation on a cooperative organization and the roles of cooperatives in CBRM given by by Sei Etoh  
10.40 – 11.00 : Coffee break  
11.00 – 11.30 : Presentation on the present status of fishermen's cooperatives in Thailand  
11.30 – 12.00 : Plenary discussion on modes of a cooperative organization and structure  
12.00 – 13.30 : Lunch break  
13.30 – 14.00 : Group discussions on the selection of leading posts of sub-groups  
14.00 – 15.00 : Identifying encountered problems by each sub-group and appropriate countermeasures  
15.00 – 15.20 : Coffee break  
15.20 – 16.30 : Plenary meeting for presentations by each sub-group

##### 19.01.2005 (Wednesday)

- 09.30 – 10.40 : Discussion on the current zoning arrangements  
- Presentation of comparative zoning arrangements in Pathew District and Bang Saphan  
- Solution and recommendations for newly proposed zoning arrangements  
10.40 – 11.00 : Coffee break  
11.00 – 12.00 : Discussion on the establishment of a local enforcement unit  
- The present status of progress  
- The future scope of work  
12.00 – 13.30 : Lunch break  
13.30 – 15.00 : Plans of action for CBRM with the fishermen's groups  
15.00 – 15.10 : Closing the assembly

#### 5. Annotated agenda

##### Presentation on a cooperative organization and the roles of cooperative in CBRM

The needs for a cooperative organization and its role in CBRM are explained by citing a successful case study in Japan. (Presenter - Sei Etoh)

##### Presentation on the present status of fishermen's cooperatives in Thailand

A successful case study with the fishermen's cooperative in Samut Sakhon will be presented as a guide to the stakeholders. (Presenter – Sumitra Ruangsvakul)

##### Plenary discussion on the mode of cooperative organization and structure

All the stakeholders discuss what type of fishermen's organization is ideal from the view point of function based upon the previous case studies. This session is to identify the ideal mode of a fishermen's cooperative organization. (Moderator – Sumitra Ruangsvakul)

### Group discussion

The stakeholders are divided into a respective fishing method group and its leading posts are selected after deliberation. Thereafter, the group discussion is carried out on encountering issues and applicable solutions. (Moderators; SEAFDEC/TD and CMDEC Officers for each group)

### Plenary meeting

The outcomes of group meeting are presented by the respective representative to the plenary session. (Moderator – Sumitra Ruangsivakul)

### Discussion on the current zoning arrangements

Consistent with the work plan 2.3. Review and embody zoning arrangements, discussion on the practicality of the current zoning arrangement will be followed after the presentation of comparative zoning arrangements between Bang Saphan and Pathew District by Sumitra Ruangsivakul (Moderator – Noparat)

### Discussion on the establishment of a local enforcement unit

Consistent with the work plan 2.4. The representative of Ao.Bo.To will hold discussion on the embodiment of a Local Enforcement Measures Unit, after the presentation on the present status of progress toward realizing the establishment of a local enforcement unit. In this discussion, a future plan will be suggested. (Moderator – Noparat)

### Plans of action for CBRM with the fishermen's group

The plenary discussion will be made to identify the future course and the action plan toward materializing CBRM with a framework of the newly established fishermen's groups.

## **6. Proposed participants**

### Organizers

- SEAFDEC/TD
- CMDEC
- Chumphon Fisheries Enforcement Unit/DOF
- Provincial Fisheries Office

### Participants

- Representatives of squid cast net fishing – 6
- Representatives of anchovy cast net fishing – 6
- Representatives of crab gill net fishing – 6
- Representatives of crab trap fishing – 6
- Representatives of fish gill net fishing – 6
- Leader of Pakklong Sub-District
- Chairman of Fisheries Network in Pakklong Sub-District
- Chairman of Agriculture Village No. 6
- Representatives of Ao.Bo.To. Pakklong Sub-District

Annex 2 -3

Names of Sub-group and leader (Provisional )

No.	Sub-group	No. of member in group	Leader	Assistant leader
1	Squid Trap	15	Mr. Payao Srijan	Mr. Nuon Panthong
2	Crab Gill Net	10	Mr. Jedsada Sa-ard)	
3	Crab Trap	15	Mr. Chang Phungpeong)	Mr. Pisan Chentanom
4	Mackerel Gill Net	45	Mr. Winai Kejkaew	Mr. Lead Sangploy
5	Squid Cast Net and Anchovy Scoop net	150-200	Mr. Wara Kadampai	Mr. Wichen Titada

**Summary of problems and solutions from fisher's sub- group**

Prepared by Siriporn Pradit & Sumitra Ruangsivakul

**1. Squid cast net fishing/Anchovy scoop net fishing**

**Problems:**

- High price of oil/fuel
- Low market prices of production(squid and anchovy)
- Trawlers come for fishing within 3 km

**Solutions:**

- Setting up of the loan system by the government or the agency concerned
- Governor should provide the low cost of fuel/oil to the fishers
- Try to arrange the central market for stabilizing the fish prices
- Arrangement of local Enforcement unit should puts more efforts on searching the trawlers or illegal boats that come to fishing within 3 km

**2. Squid trap**

**Problems:**

- Pair trawler/ trawler/mackerel gill net and squid trap from the others area come for fishing in the project site
- High price of oil/fuel
- Low price of production(squid)
- Materials for making trap are getting high

**Solutions:**

- Set up of the regulation for the fishing boat (from other areas) that come for fishing in the project site
- Limit the number of squid trap which should not exceed 300 traps in the area per boat (both local fishers and fishers from the other area)

**3. Crap gill net**

**Problems:**

- Crab trap's boat from the other area come to operate in the area
- Trawlers come to the area and destroy crap gill net
- Push-netters come to operate in the area

**Solutions:**

- Enforcement unit may be sent the patrol boat to project site and always to take care the area
- Patrol boat and some staffs from enforcement unit should be stay in the project site



#### **4. Mackerel gill net**

##### **Problems:**

- Low price of productions(squid and anchovy)
- Trawler come to fishing within 3 km
- High price of oil/fuel

##### **Solutions:**

- Floating the buoy to indicate boundaries/area for project site area
- Patrol boats and enforcement staff should stay in the project site
- Set up of the regulation for the fishing boat from the other area that come for fishing in the project site
- Government(DOF) should look for the mackerel's market for fishermen

#### **5. Crab trap**

##### **Problems:**

- Crabs with maturity eggs in crab bank and crab traps were loss always.
- Crab trap's boat with a lot of trap from the other area come to operate in the area with mesh size of trap of less than 2.5 inch

##### **Solution:**

- Exert more efforts on watching mother crab and crab trap closely
- Group's member should follow the same standard regulation such as using trap mesh size of 2.5 inch

## Annex 3

### Report on the Coordination of Fisher's Sub-group Meeting

Pakklong Sub-district, Pathew District, Chumphon Province, Thailand  
20-25 February 2005

Sumitra Ruangsivakul  
28 March 2005

The first Coordination of Fisher's Sub-group meeting was held at the project site, Pakklong Sub-district, Pathew District, Chumphon Province, between 20 to 25 February, 2005.

#### 1. Objectives of this meeting is follows as:

1. Explain the outcome of the 1<sup>st</sup> Pakklong Fishermen's Group Assembly was held on 18-19 January 2005.
2. Explain the structure of Fishers' Sub-group and Pakklong Fishermen's Group
3. The structure of Farmer's group of Pakklong Sub-District will be presented.
4. The election of executive members; i.e. Leader (1), Sub-leader (1), Secretary (1) and Committee member (5),
5. Reviewing the current zoning arrangement and transmit the outcome to the next general fishermen assembly
6. The problem in their group will be presented

To follow up activities of sub-group work, SEAFDEC's team will be following the sub-group meeting at least once in three months. In case of the urgent problem the leader of sub-group can be proposed to SEAFDEC's staff. The following is a report dealing with the content of discussions at this meeting.

#### 2. Crab Trap Sub-group

The meeting was held on 21 February 2005, 10.00-11.30 hrs. at Moo. 7. 27 of fishers were attended the meeting.

#### List of Committee

01. Mr.Jang Phungpheang	Leader
02. Mr.Pisan Jeentanhom	Vice leader
03. Ms.Jinda Thongchum	Secretary
04. Mr.Somjit Phungpheang	Committee member
05. Ms.Anong Arnnacha	Committee member
06. Ms.Jatuporn Committ	Committee member
07. Mr.Visut Numma	Committee member
08. Mr.Dum Chaivisit	Committee member

### **Agreement on Zoning arrangement**

They agreed on using the same zoning arrangement (3 km) from shoreline. They are satisfied and they only operate fishing near shore.

### **Problems from the group**

- 1) The non-local boat come to fishing in the area

### **Others**

General talk on the anchovy fishing boat were sailing full speed, the high wave is dangerous to crab trap fishing boat.

### **3. Crab Gill Net Sub-group**

The meeting was held on 21 February 2005, 13.00- 15.00 hrs. at Moo. 7. 13 of fishers were attended the meeting.

### **List of Committee**

01. Mr.Supot Ubonkan	Leader
02. Mr.Suthan Srisong	Vice leader
03. Mr.Jadsada sa-ard	Secretary
04. Mr.Narongsak Sawangjang	Committee member
05. Mr.Vinai Kongmun	Committee member
06. Mr.Chaiyapuek Sibthong	Committee member
07. Mr.Prasong Khaw sa-ard	Committee member

### **Agreement on Zoning arrangement**

They agreed on extend the zone to 5 km from shoreline as a straight line.

### **Problems from the group**

- 1) Non-local crab gill net boat come to operate in the local area
- 2) Gill net was destroy by trawler
- 3) Oil price too expensive

### **Others**

The fishers said the season for crab gill net fishing is between March to October and from April to September they do squid cast net

### **4. Anchovy purse seine Sub-group (operate day time): Tamthong Sub-group**

The meeting was held on 22 February 2005, 10.00- 12.00 hrs. at Moo. 3. 32 of fishers were attended the meeting. This sub-group would like to be independent group, so this group will be sub-group of Pakklong Fisher's group. This group was consist of four gears as follows a) *Squid Cast Net* : 21 boats b) *Squid trap*: 5 boats c) *Anchovy Cast Net* (operate night time): 21 boats and the season for doing fishing is in between June to July d) *Anchovy Cast Net* (operate day time): 5 boats.

### List of Committee

01. Mr.Tanhomsak Mhaimak	Leader
02. Mr.Suthum Srichongsom	Vice leader
03. Ms.Thippaya Yadum	Secretary
04. Mr.Pathew Chabang	Committee member
05. Mr.Pirom Srisuvan	Committee member
06. Mr.Sumak Sunghapan	Committee member
07. Mr.Virot Srisuvan	Committee member
08. Mr.Mana Dangdat	Committee member
09. Mr.Somchai Buasawai	Committee member
10. Ms.Lawan Mhaimak	Committee member
11. Ms.Ubonrat Buaphan	Treasurer

### Agreement on Zoning arrangement

They agreed on using the same zoning arrangement (3 km) from the shoreline.

### Problems from the group

- 1) The fisher need a water break for protect the strong wave come to shore
- 2) The fishing boat from non-local come to operate or anchoring or alongside at their harbor such as trawler then those foreign boat was throw the garbage or spoil fish to the sea and cause the environmental problems.
- 3) Increasing price of oil and fishing material but decreasing of the product price
- 4) Decline of the marine resources

### Others

This group was exist last two year likes the cooperative group. The fishers was contribute money one hundred baht per month. The member at those day was 30 people. But this group was cancelled last two year

In this moment their need to establish the same group again by contribute the money two hundred baht per month per fisher in the next month. The group will provide loan to the member and the group plan to establish the cooperative shop for member, to sale the cheap goods. The loan can provide to the member after first three months and the amount of loan is between 3,000-6,000 baht and no guarantors. The money should return within six months after received money. The interest of loan is depend on whom give a highest but it should be above 50-300 baht

### **5. Squid Trap Sub-group**

The meeting was held on 22 February 2005, 13.00- 15.00 hrs. at Moo. 3 (Mr. Payao's house). 19 of fishers were attended the meeting.

### List of Committee

01. Mr.Payao Srijan	Leader
02. Mr.Jumnong Srijan	Vice leader
03. Mr.Jerasak Chokchoo	Secretary
04. Ms.Vanikorn Panlada	Committee member

05. M. Yupaporn Srisongkram	Committee member
06. Mr.Sucheeep Panladda	Committee member
07. Mr.Kavee Mahasubsakorn	Committee member
08. Mr.Veerapan Patmak	Committee member

**Agreement on Zoning arrangement**

They agreed on extend the zone to 5 km from shoreline as a straight line.

**Problems from the group**

- 1) Squid Trap lost
- 2) Trawler come to do fishing with in 3 km

**Others**

No problem of the squid price. In the Area close season which was start from 15 February to 15 May of every year the fishers were operate the squid trap beyond 3 km. Because a plenty of squid, without trawler, good wind and clear waters.

Fishermen have an idea of drop the damage trap to the sea as a artificial reef. The net will be remove before drop those trap to the sea. Fishermen said that, those trap will act like a habitat of the mother squid. Mr. Etoh was comment on this matter that please beware some part of trap structure will be come to the shore and it can cause the problem of the environment.

**6. Squid Cast Net/Anchovey Cast Net Sub-group**

The meeting was held on 23 February 2005, 9.30- 11.00 hrs. at Ao. Bo. To. Pakklong. 50 of fishers were attended the meeting.

**List of Committee**

01. Mr.Vara Katumpai	Leader
02. Mr.Vichain Thitada	Vice leader
03. Ms.Gullaya Tithada	Secretary
04. Mr.Pitool Charhee	Committee member
05. Mr.Umphol Srithongkul	Committee member
06. Mr.Somchart Somsorn	Committee member
07. Mr.Umnad Petdee	Committee member
08. Ms.Onanong Tithada	Committee member

**Agreement on Zoning arrangement**

They agreed on using the same zoning arrangement (3 km) from the shoreline.

**Problems from the group**

- 1) Fishermen need the enforcement unit to inspect in the project area more frequency
- 2) Fishermen need the security guard to be regular at the project site

## **Others**

CMDEC staff explains more on the “Fresh-Squid Central Market” at Pitak Island, Tambon Lang-Suan, Chumphon province. The system of this central market is the people in the island are setting the group and have a committee. The member is contributed the money every month and the amount of the payment is depend up to their share (1 share is 80 baht). The cooperative provide loan to the member (fishermen and middleman). The committee will be decided, which middleman give the good price of squid, will be sale to him.

CMDEC staff was requested fishermen to establish the “Dried-Squid Central Market” in the project. This activity will be started in the next year.

### **7. Mackerel Gill Net Sub-group**

The meeting was held on 24 February 2005, 10.00- 11:30 hrs. at Ao. Bo. To. Pakklong. 18 of fishers were attended the meeting. The names of the member are shown in **Annex 6**.

#### **List of Committee**

01. Mr.Vichai Kadkaew	Leader
02. Mr.Chaiwat Lhaujinda	Vice leader
03. Mr.Manit Homsanit	Secretary
04. Mr.Pongsakorn Thongleang	Committee member
05. Mr.Samart Pornthot	Committee member
06. Mr.Chern Suwannabut	Committee member
07. Mr.Vinai Sakulnum	Committee member

#### **Agreement on zoning arrangement**

They agreed on using the same zoning arrangement (3 km) from the shoreline.

#### **Problems from the group**

- 1) Oil is expensive
- 2) Low price of fish product

#### **Recommendation**

1. There are 7 sub-group in Pakklong Fishermen’s group (the last of sub-group is aquaculture sub-group will be meeting on 1 March 2005, Ms. Rattikarn will be sent the result of this group meeting to TD later), the total of fishermen is .....
2. The result of zoning arrangement, 4 sub-group are agree to using the same area (3 km from shoreline) and 2 sub-group would like to extend to 5 km from shoreline.



## Annex 4

### Report on the 1<sup>st</sup> Paklong Fishers Group (PFG) Meeting

on 22<sup>nd</sup> March 2005 at Ao. Bo. To. Pakklong, Chumphon Province

Siriporn Pradit  
22<sup>nd</sup> March 2005

#### 1. Introduction by Ms Sumitra R.

Firstly, Ms. Sumitra explained the objectives of the 2<sup>nd</sup> Pakklong Fishers Assembly then this was followed by a summary of the outcome of the 1<sup>st</sup> Pakklong Fishers Assembly on 18<sup>th</sup> –19<sup>th</sup> January 2005. Then she informed the meeting about the summary of the Sub-group meeting on 21<sup>st</sup> –23<sup>rd</sup> February 2005, which was attended by 147 fishermen in total.

#### 2. Comments and Recommendations

**Dr. Mala** added information of the research to prove the Sai-Mai fish (larvae-anchovy) is a baby of the anchovy. The research was carried out twice the 1<sup>st</sup> time by EMDEC, Rayong Province. The methodology of the research was to raise to an adult of the anchovy and observe the recruitment. The outcome was that it was the same fish as the Sai-Mai fish and the anchovy. The 2<sup>nd</sup> experiment was carried out by Chulalongkorn University using a DNA method, which confirmed the result of the 1<sup>st</sup> experiment. Apart from that Dr. Mala also mentioned on putting the names of staff from CMDEC in the final report.

Mr. Peera, Director of CMDEC gave advice on 2 topics as follows: 1) to increase the position in the PFG as assistant-secretary in case the secretary is absent from the meeting. The advisor position should be added it and this is reserved for the leader of sub-district( call Kam-Nan) 2) The committee members should be an odd number just to avoid a problem in voting.

#### 3. Election of the Paklong Fisheries Group

The PFG Committee was elected by vote and the name list of the committee is as follows:

1) Mr. Wara Kadampai	Leader	08) Mr. Jamnong Srijan	CM
2) Mr. Winai Kadkaew	VL	09) Mr. Tanomsak Mhaimak	CM
3) Mr. Wichean Titada	Secretary	10) Mr. Chaiwat Laujinda	CM
4) Mr. Payao Srijan	AS	11) Ms. Jinda Thongchom	CM
5) Mr. Suchart Yadam	Advisor	12) Mr. Sutan Srichongsom	CM
6) Mr. Chang Phoungpheang	CM	13) Mr. Natee Yusuk	CM
7) Mr. Jadsada Saard	CM	14) Mr. Pirin Suwannabud	CM

Remark: VL= Vice Leader, AS=Assistant Secretary, CM= Committee member

#### **4. Presentation on the Function of the Pakklong Fisheries Group (PFG) by Mr. Etoh**

Before giving a presentation to the meeting, Mr. Etoh expressed his sincere thanks to all persons who are selected as committee members of the Pakklong Fisheries Group. The detail of his presentation on the function of PFG is follows;

1. Resources conservation
  - 1.1. Resources enhancement
    - Artificial reef (AR)
    - Fish aggregating device (FAD)/Fish enhancement device (FED)
    - Releasing fingerings
    - Crab bank
    - Planting mangrove trees
  - 1.2. Resources management
    - Mesh size control
    - Fishing season control
    - Zoning arrangement
2. Community development
  - 2.1. Business activity
    - Women's group business activity
    - New business application
  - 2.2. Village development
    - Cleaning villages
    - Scenery improvement

#### **5. Discussions on fish culture**

- 1) Fishermen raised the problems of Sea bass culture like the mortality rate is high about at about 70%.
- 2) Mr. Etoh introduced to the fishers grouper culture, as it is a lucrative business. But some comment from the DOF side said that the cage culture is expensive.

## Annex 5

**Report**  
**on**  
**The consultancy work on Coastal Aquaculture at Pakklong Sub-district**  
**4<sup>th</sup> – 7<sup>th</sup> May 2005**

Sumitra Ruangsivakul  
12<sup>th</sup> May 2005

### 1. Objectives

- To provide technical advice to fishermen on crab cage, fish cage and crab banks
- To give a lecture on aquaculture in general to fisheries researchers working with DOF and MCR
- All findings and recommendations based upon his observation to be retained as a report on the project.

### 2. Itinerary of the trip

#### 4th May 2005 (Wed)

08.30 – 09.30	Visit to SEAFDEC/TD and discussion with the staff
09.30 – 15.30	Move from BKK to Pathew (incl. lunch break)
15.30 – 17.30	Inspect shrimp culture ponds (Stay overnight in Bunchoo Resort Hotel)

#### 5th May 2005 (Thu)

08.00 – 11.00	Inspection of the activity of crab bank, cage culturing and other fishing activities (village No.7)
11.00 – 12.00	Lunch break at the fish cage culture house
12.00 – 13.00	Move to the Ao.Bo.To. meeting room
13.30 – 15.30	Fishermen's workshop on crab resources and fish aquaculture
15.30 – 16.00	Move to Bunchoo Resort Hotel

#### 6th May 2005 (Fri)

08.30 – 09.30	Move to the Aquaculture Station
09.30 – 11.30	Inspect the Aquaculture Station
11.30 – 13.00	Lunch
13.30 – 16.30	Lecturing on coastal aquaculture and coastal resources management in CMDEC

#### 7th May 2005 (Sat)

08.00 – 15.00	Move from Chumphon to BKK (incl. lunch break)
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### 3. Activity by the consultant

#### 3.1. Inspection of a shrimp culture farm

The private shrimp farm is located in village No. 2. The owner is Mr. Pein Srichanathan, He started shrimp culturing sixteen years ago. The farm land is more than 100 rai (40 acres), divided

into 9 ponds, each pond is 6-7 rai. This farm started with white leg shrimp (*vannamei*) two years ago. Before that, he was dealing with tiger prawn, but the tiger prawn had difficulty in maturing and is prone to suffer from diseases. Also the growth rate of *vannamei* is much better than that of tiger prawn.

The number of larvae is 150,000 per rai at release, the fries are bought from the Phuket Hatchery. The price of larvae is 0.13 baht each. The duration of one crop is 4 months. The price of market sized shrimp is 180 baht per kg (60 pieces per kg). The operational cost is 1,000,000 – 1,200,000 Baht per pond while the gross income is 1,800,000 – 2,000,000 Baht per pond.

The ponds use sea water directly from the sea. But in case that the sea water becomes contaminated by disease, they pump under-ground water and mix them in the pond.

The marketing is good for this farm. 9-10 buyers gather for an auction mostly from Chumphon.

### **3.2. Crab bank**

The Crab Bank is an activity initiated in July 2002 by the Mangrove Conservation Project of the NGO group, The Thai Environment Institute in Thungmaha bay. The original concept was derived from Banpred village of Trad Province. In 2005, the LBCFM-PD project re-organized the fishers' group at Pakklong Sub-district there are 7 sub-groups of the Pakklong Fishers' group. The Crab trap group is one of sub-groups and the crab bank is one of activities of this group. The changing of the mesh size of the crab trap is the second activity and the third activity is crab culture by the members; this activity is to release small crabs caught by the traps to the culturing cage. The members contribute all activities. The crab bank is supported by the DOF by contributing cage construction materials while SEAFDEC is providing technical support.

#### Objective of the crab bank

- To encourage community awareness in resources conservation for sustainable yield through increased size and quantity of crabs.
- To increase the good relationship between the government organization and the community.

#### Location:

Village No. 7 (Kho Tiab) Pakklong Sub-District, Pathew District, Chumphon Province

Member: 15 fishermen

The system: everyday the members bring their gravid female crabs catch to deposit at the crab bank cage and the numbers are recorded. The average of numbers for release is 300 crabs per month.

The duration of crab release is one month. The group sells all crabs if the numbers of crab reaches more than 300 before one month. Trash fish are fed every other day. 50% of income is kept for the group's fund (providing loans to the members), 40% for cage repair and 10% for feed.

### 3.3. Crab culture

There are two groups who are carrying out crab culturing. One is the crab bank fishermen's group while the other is owned by the village leader of No.7. This is under an experiment supported by DOF with the provision of material for cages. The culture plan is that, the size of the cage will be composed of three sizes of 8 cages, 6 cages are 4x4 meters, 5x10 meters is one cage and 10x10 meters is one cage, 4 cages of 4x4 meters and the 10x10 cage belong to the DOF, 2 cages of 4x4 meters and 5x10 meters belong to the fisher's group. Mr. Jang has a plan that, he will collect small crabs from members (15 members), the size of crab is about 7-8 cm., or 37 crabs per kg., the number of crabs are limited to 1,000 crab per one cage (4x4 meters), and will be separated into male and female in each cage. For the big cage the crabs will be released mixed together. He said that, the duration of the experiment is 3-4 months, and the size will be 7-8 crab per kg., the fisher's group will pay feed cost and are free of wages for this experiment. In the DOF's culture plan, there are 5 cages, 4 cages of 4x4 meters, and a 10x10 meter cage. Two of 4x4 meters will release male and female separately, after one month of culture they will be moved or provide crab for two new cages. The big size will be released as male and female together. Cage construction is nearly completed, the chairman of the crab trap said that, this culture will be started in early June.

Project visit to Mr. Supoch Ubonkarn, leader of village no. 7 and the owner of crab culture cages. He gave information on his farm that; the size of this farm is of 36 meters circumference of cage. This area is equal to 8 fish cages. He started last week, now he has 4,000 crabs in his farm, these crab are collected from crab traps. The size of crab is 7.5 cm on average, he planned to release 30 crabs per 2 square meters. In the next two months, he plans to collect some crab to sell, at that time the project staff will be observed on the collecting method used and the growth ratio including the survival ratio.

### 4. Babylonia shell culturing

This culture is an experiment by CMDEC, started in April 2004, the total of fry was 18,000 shell and on 10<sup>th</sup> November 2004, CMDEC sold babylonia shell to a middleman from Chonburi Province, 55 kg of babylonia shell was sold, and the remaining 44 kg small (195 shell per kg). The length of shell, which is more than 3.00 cm (120 shell per kg) can be sold. However, all remaining shell was lost as the cage was broken by a monsoon tide.

### 5. Fishermen's workshop on crab resources and fish aquaculture

This workshop was held to explain the relevant benefits and the conclusion and comments on the site observation and to understand the direction of resource conservation.

#### List of Participants

- |                           |                         |
|---------------------------|-------------------------|
| 1. Ms. Ooy U-suk          | Fish culture (sea bass) |
| 2. Ms. Kuanchai Kaewmanee | Fish culture (sea bass) |
| 3. Mr. Pairin Suwanabut   | Fish culture            |
| 4. Mr. Nathee U-suk       | Fish culture (grouper)  |
| 5. Mr. Ekasith Aun-acha   | Crab trap and crab bank |

6. Mr. Chaiya Chong-kun	Crab trap and crab bank
7. Mr. Amnert Piu-kaw	Crab trap and crab bank
8. Mr. Dum Chaivisith	Crab trap and crab bank
9. Ms. Jatuporn Kunthongsuk	Crab trap and crab bank
10. Mr. Somjit Phungphuang	Crab trap and crab bank
11. Ms. Aree Phomsutti	Crab trap and crab bank
12. Ms. Jinda Thongchum	Crab trap and crab bank
13. Mr. Jang Phungphuang	Crab trap and crab bank
14. Mr. Paisarn Chintanom	Crab trap and crab bank

The content of the presentation was mainly the experience of shrimp culture in Japan. Some shrimp culture methodology could be applicable to crab culturing as well, he said. This presentation also covered the conservation management of coastal areas. After the presentation, some questions from Mr. Jang were asked as follows.

1. How many years do you have crab banks in Japan? (about 20 years)
2. Do you have any recorded data of crab on the releasing in each day? (Yes)  
Prof. Fushimi gave more information on the data recording. This data is statistical data and very important for the community.
3. Does the rain or fresh water from the land affect the crab bank or not? (no effect)

At the end of this workshop, Prof. Fushimi gave a summary on his observation as this project has comparatively rich fishing grounds and he asked that please take care of your abundant resources with fisheries management and environmental conservation system.

#### **6. Visiting Coastal Fisheries Aquaculture Station (Chumphon)**

Mr. Kritapol Yongvaniset, Director of the Aquaculture Station, was pleased and thanked our mission and gave a presentation on the location, structure and responsibilities of the center as follows.

This center is under Prachuap Kirikan, Coastal Fisheries Research and Development Center, DOF. This station started on the first of December 1990, donated by ADB and OPEC with a total budget of 42,000,000 Baht.

The objectives are as follows;

- Increasing and development of coastal fisheries products
- Environmental monitoring on coastal fisheries aquaculture
- Encourage coastal aquaculture

This center is composed of 5 permanent staff and 50 temporary staff. There are a lot of activities in this year (October 2004-April 2005) as follows;

1. Produce fry of sea bass and marine shrimp
2. Release and distribute to the departments concerned with sea bass fry and marine shrimp
3. Inspect and give certificates for fisheries products
4. Aquaculture development and genetics improvement

## 7. Lecturing on coastal aquaculture and coastal resources management in CMDEC

The presentation was given on the experiment on Kuruma Prawn culture. For Kuruma Prawn, there are a lot of issues on stock enhancement as follows.

- When, where and how to introduce the hatchery-raised juvenile to the nursery ground
- Detection of the effectiveness of stock enhancement
- Problems and prospects of Stock Enhancement

### List of Participants

1. Mr. Peera Aosomboon	Director, CMDEC
2. Ms. Sunsanee Srichanngam	CMDEC (Chumphon)
3. Ms. Thitiporn Supanan	CMDEC
4. Ms. Jinda Pechkamnerd	CMDEC
5. Ms. Patcharee Puntureang	CMDEC
6. Ms. Janthip Bunruadet	CMDEC
7. Ms. Siriwan Nu-ceng	Surattani, Aquaculture Center
8. Mr. Wittaya Hawanon	Ranong, Aquaculture Station
9. Mr. Yuttana Teratkan	Ranong, Aquaculture Station
10. Mr. Suthino Limsuwan	Chumphon, Aquaculture Station
11. Mr. Wanchai Sung-kam	MCR (Chumphon)
12. Mr. Wattana Pimsuwan	MCR (Chumphon)
13. Mr. Borwon Deechaiya	MCR (Chumphon)
14. Mr. Torpong Ngeng-lau	MCR (Chumphon)
15. Ms. Wilawan Mani	MCR (Chumphon)
16. Ms. Kanittha Yam-wong	MCR (Chumphon)
17. Ms. Bon-on Kampee	MCR (Chumphon)
18. Ms. Sunisa Chaijul	MCR (Chumphon)



## Annex 6

### Travel Report to Chumphon on 20 - 22 June 2005

Sumitra Ruangsivakul  
Taweekiet Amornpiyakrit  
30 June 2005

#### 1. Objectives

- To finalize a training course in construction and installation of fish enhancement devices (FED) for volunteer fishermen in project area by the Pakklong Fishermen's Group (FPG).
- To finalize a construction and implemental of Babylonia experiment by Coastal Aquaculture Group in project site.
- To make an arrangement for the expected study tour for the fishermen in Langkawi who visit to inspect the crab bank and other activities in Chumphon from 26-30 June 2005.

#### 2. Participants

- The venue is Ao.Bo.To.'s meeting room, time started 0930, there are 20 participants.
- Representative of CMDEC
  - PFG's Committee
  - Member of each sub-group fishing gear

#### 3. Meeting contents:

##### Pakklong Fishermen Group (PFG)

Ms. Sumitra presented on the FPG's responsibility in project site. In 2005, there are many activities to be done and needed FPG's participation.

##### Fish Enhancing Device(FED)

Dr. Taweekiet presented on the FED's construction in Malaysia and Bangsapan Project, member of PFG was interesting and needed to construct the FED in project area, the result of FED construction are as follows as:

- The number of FED is 10 units, the location is upper of ARs line, water depth is 15-17 meter.
- Each FED unit is 200 meter.
- The location for FED preparation is DOF's office (near Ao.Bo.To.)
- 50 fishermen will be participated in this activity
- The boat for carry FED will be response by fishermen
- The duration of construction is 25-28 July 2005
- The truck for carry FED will be response by CMDEC
- PFG will be prepared some materials, sand, cement and oil drum 200 liter at the site

##### Experimental Babylonia shell culturing in Pakklong

Ms. Sumitra presented the scheme of experimental Babylonia Shell Culturing in Pakklong and experimental in shrimp pond at Chantaburi Province by power point. The result of discussion are as follows;

- The cage will be change from PVC pipe to steel pipe, because PVC pipe will be broken in the sea.
- The cage will be change from two layer to one layer, available for sand cleaning
- The size of cage will be 1 x 1 x 0.50 m., the total of cage is 12.

##### Visiting Chumphon Coastal Aquaculture Station

Mr. Sutthino, Assistant Director was agreed on the collaborative scheme on experimental babylonia shell culturing in Pakklong, the station will be prepared the fingerling of babylonia and technique supporting to this experimental.



## Annex 7

### **Report on The 1st Implementing Committee Meeting** **on 22<sup>nd</sup> March 2005** **At Ao. Bo. To. Pakklong, Chumphon Province**

Siriporn Pradit  
22<sup>nd</sup> March 2005

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#### **1. List of Participants**

##### **DOF**

- 01) Dr. Mala Supongpan
- 02) Mr. Peera Aao-Somboon
- 03) Ms. Nopparat Nasuchon
- 04) Mr. Thitiporn
- 05) Mr. Thanadol Chankuen
- 06) Ms. Phachongjit Boonnoon
- 07) Mr. Monthi Bau-ban

##### **MRC**

- 08) Ms. Anchalee Chankong
- 09) Mr. Uthai Kaewneru
- 10) Mr. Praderm Wutghayanon

##### **Community**

- 11) Mr. Suchart Yadam
- 12) Mr. Nathee Yusuk
- 13) Mr. Vichien Thithada
- 14) Mr. Payao Srichan

- 15) Mr. Anan Dougmaijin
- 16) Mr. Leap Srikiang
- 17) Mr. Manich Ubonkarn

##### **Officer from Province**

- 18) Mr. Pisit Wirathinan
- 19) Mr. Thanet Wasuwat
- 20) Ms. Wallapa Hondakorn
- 21) Mr. Jud Thongchim

##### **SEAFDEC**

- 22) Mr. Sei Etoh
- 23) Ms. Sumitra Ruangsivakul
- 24) Ms. Siriporn Pradit
- 25) Ms. Jirapa Kamhongsa
- 26) Ms. Jariya Sornkiang

##### **Ao. Bo. To.**

- 27) Mr. Srirote Kongtale

#### **2. Introduction**

The 6<sup>th</sup> Implementing Committee Meeting which underlines the Integrated Coastal Resource Management in Pathew District (ICRM-PD) project was convened by SEAFDEC and CMDEC on 22<sup>nd</sup> March 2005 at Ao. Bo. To. Pakklong, Pathew District, Chumphon, Thailand. Twenty-seven participants attended the meeting.

The committee meeting was opened at 1300 hrs. The Chairperson of this session was Dr. Mala Supongpan. Firstly, she explained the meeting agenda. Following this with the introduction of the new Director of CMDEC, Mr. Peera Aao-Somboon to the assembly. This was followed by the adoption of the minutes of the latest IC meeting. The details of these meeting are below;

### **3. Summary of CMDEC activities in the 1<sup>st</sup> trimester of 2005 by Ms. Nopparat**

- 1) The experiment on cage grouper culture is led by CMDEC. Currently this project is at the stage of preparing fish cages with materials provided by CMDEC. Twelve cages are going to be installed at the project site. Half of these will be placed in the canal and the remainder will be placed in the sea. A breed of Grouper will be provided by CMDEC later on.
- 2) Excursion for the fishers from Tambon Pakklong of about 30 persons to the "Oyster farm-Home stay" for 3 days at Surajtanee Province.
- 3) Release 1,000,000 shrimp into the sea on 1<sup>st</sup> December 2004
- 4) Involving in "Eco-tourism" from T.T.T. (Thai Tourism ..)

### **4. Summary of SEAFDEC activities in the 1<sup>st</sup> trimester of year 2005 by Ms. Sumitra**

- 1) Inform the meeting on the name list of the Paklong Fishers Committee and the name list of the Sub-group Committee
- 2) Set up the experiments and monitoring on artificial reef research

### **5. Comments on FADs**

The fishers face the problems of declining Mackerel (Pra-Two) in Tambon Pakklong. To solve this matter the Fisheries Government Officers try to set up a project on the installation of Fish Aggregative Devices (FADs) in the project areas to encourage an increase in fish numbers by providing more shelter at sea and more habitats for marine organisms. However, they still have a problem on the FAD design and the position for setting FADs.

Mr. Etoh suggested on this matter as follows; 1) the design of the FADs can be provided by SEAFDEC 2) On the position for installing the FADs we need to have a discussion in the Pakklong Fishers Group.

Mr. Dam, Leader of Village No 6, commented on the FAD installation issue. He mentioned that the local people who stay in the coastal zone should have a conscience on preserving their resources for sustainable use. The government should provide a training course for the fishers on fish resource enhancement and resources management. On this matter CMDEC said they plan to provide training after May 2005.

### **6. Summary of the Ao. Bo. To. work in the 1<sup>st</sup> trimester of this year.**

The Ao. Bo. To. supported construction of a roof and platform for the fish cages in the Crab Bank areas for the proposed Eco-tourism.

### **7. Comments and Suggestions from Mr. Peera (CMDEC'S Director)**

- 1) The ones who go for enforcement training should be the ones who go back to work in the areas
- 2) The disadvantage of FADs installation is that all fishers will come to do fishing in the same area and can create problems.

## **8. Comments and Suggestions on FADs and FEDs**

The fishers made a suggestion on FADs installation, which is that it should be fixed above the sea bottom. Thus the trawlers and other fishing boats can see it easily so FADs may help the fishers to protect the resources from outsider vessels coming to fish in the project site (within 3 km).

Mr. Etoh added more information on FED (Fish enhancement Devices) design. These FEDs are the same design as of FAO. The FED itself consists of big flag floating above the sea level that makes them easy to see from afar. The difference between both devices is that FEDs are for ENHANCEMENT and FADs are to AGGRIGATE.

## **9. Remarks and Recommendations**

- 1) The meeting needs SEAFDEC to make an experimental installation of FEDs in the Project site.
- 2) Putting the FADs within 3 Km.
- 3) MCR (Marine and Coastal Resource Research Centre) could not implement the project because the staff of MCR was busy with the Tsunami devastation.

The Chairperson expressed her sincere thanks to all participants who attended the meeting and the meeting was closed at 15:00 hrs

## Annex 8

### 2005 Half Year Report of Resources Enhancement Program Conducted in Chumporn Province, Thailand.

Dr. Yuttana Theparoonrat  
8<sup>th</sup> September 2005

TD in collaboration with ASEAN and SEAFDEC member countries conducted Resources Enhancement project in Chumporn province, Thailand as a case study. This project is designed to integrated installation of artificial habitats in inshore waters with careful pre-assessment of environmental and socio-economic impact.

The project activities in the first half of the year 2005 are consisted of followings activities :

#### **A. Installation of fish shelter model for particular species on artificial reefs areas.**

The installation of three type of fish shelter model were conducted by M.V.Plalung 1 during 23-26 March 2005. Three type of fish shelter are Vertical concrete tube (diameter 20cm, 60 cm long), Horizontal concrete tube (diameter 20cm, 60 cm long) and Oval ball shape earthenware (diameter 60 cm, 80 cm high) .

The installation site are on two heap of artificial reefs at location of Latitude 10° 48'.88N, Longitude 99° 28'.94E and Latitude 10° 47'.56 N, Longitude 99° 27'.47 E. At each location, there are 18 units of each fish shelter type installed on artificial reefs. This experiment will conduct the observation diving to monitoring species and number of fish living inside the fish shelter. The collected information will using for design the shape of artificial reef with suitable for target fish species.

#### **B. Transplanting of sea weed (Sagassum) on artificial reefs areas.**

Since artificial reefs installation size at Pak-klong Chumporn Province are located on soft muddy bottom with water depth of 13 m. There are only barnacle and green mussel could be growth on the concrete structure of artificial reefs after one year of installation. The environmental condition around artificial reefs on soft muddy bottom are the major limitation factors for marine ranching selective species and monitoring activity .

In order to improve the environmental condition around artificial reefs, transplanting of sea weed experiment on artificial reefs were conducted. Sagassum (*Sargassum polycystum*) were collected from Banphe Rayong province and planting on artificial reefs with supported by concrete bars. The transplantation experiment conducted on 24-26 March 2005. Growth up sagassum could be create a marine forest habitat to support a feeding and nursing ground for some fish species. The experiment need to further monitoring of effect of growth up sea weeds the fish behavior in the experiment site.

#### **C. Environmental Survey**

The environmental survey studies at the artificial reefs installation site at Pratew district, Chumporn province, Thailand was carried out by M.V.Plalung 1 during 21-31 March 2005. Several fisheries environmental parameters were studied as followings,

## **1. Fishing Operation Survey**

### **1.1 Fish Trap Fishing Operation**

Fish traps with dimension of 90Wx190Lx60H cm, PE net webbing mesh size 6.5 cm, wooden frame diameter 3.5 cm, entrance wire mesh #3.5 cm, were individual setting around the artificial reefs project site where water depth is 12 m. The 8 pieces of fish trap were setting fixed at bottom near by artificial reefs Project No. 46-16-07 A, DA2, E and F1, and for Project No. 46-16-08 BC3, BC5, DA2 and E. The fish caught were collected for species identification after 6 days of fishing operation.

### **1.2 Squid Trap Fishing Operation**

Squid traps with dimension of 85Wx110Lx70H cm, PE net webbing mesh size 5.5 cm, wooden frame diameter 2.5 cm, were individual setting around the artificial reefs project site where water depth is 12 m. The 12 pieces of squid trap were hang on the buoy line at 3 meter below water surface. The squid caught were collected daily in the morning time for 4 days for species identification and size composition study.

### **1.3 Bottom Gill net (Trammel net) Fishing Operation**

Bottom trammel net with inner webbing mesh size 4.5 cm, and 26 cm for outer net, were setting around the artificial reefs project site where water depth is 12 m. The height of net is 2.4m and 35 m long. Total 15 pieces of joining continuous net (total length 525 m) were set fixing at bottom by anchor at both end. The fishing operation are conducted for 3 days with net soaking period of 15 hours from the evening to next day morning time. The fish caught were collected, species identification, size and weight measurement were performed.

### **1.4 Collapsible Crab Trap Fishing Operation**

Collapsible crab trap with dimension of 38Wx54Lx18H cm, PE net webbing mesh size 3 cm, iron frame diameter 4mm, were joining continuous setting around the artificial reefs project site where water depth is 12 m. The 80 pieces of crab trap were setting by long-line fishing operation pattern fixed at bottom for 3 days of operation. The traps soaking period is 15 hours cover on the night time operation. The crab caught were collected, species identification, size and weight measurement were performed.

## **2. Benthos Survey**

The survey stations for benthos were set at 0m, 250m, 500m, and 750m, in the direction of N,S,E, and W, away from the center position of each group of Artificial Reefs setting position. Total benthos sampling are 22 stations. At each station a random samplings of bottom sediment was collected using a Smith-McIntyre grab (area coverage 0.05 m<sup>2</sup>). The sediment was washed through a set of sieves, the smallest one with a mesh size of 0.5 mm. Benthic animal were collected and fixed in 10% formaldehyde solution in sea water on board. The preserved macrobenthic fauna were brought to laboratory for further identify.

### **3. Fish Larvae Survey**

Sampling for fish larvae was carried out using M.V.PLALUNG 1. The bongo net, 60 cm. in diameter with mesh size 500 micron at the mouth part and 330 micron at the cod end, was employed for the horizontal haul. The net was towing at 1 meter below the surface with speed of 2 knots for 30 min. A flow meter was attached to the mouth of the net. Specimens were preserved in 10% formalin/sea water mixture immediately after a haul completed. Sorting and identification was done at the laboratory.

### **4. Phyto-Plankton Survey**

The phyto-plankton samples was collected from water sampler at 1 m below the sea surface. Fifty liters of water samples were filtered through a phyto-plankton net (20  $\mu$ m mesh size) and preserved in a 10% formalin/sea water mixture. The samples were concentrated by sedimentation. Cell count and identification were conducted in laboratory.

### **5. Zoo Plankton survey**

Sampling for zoo-plankton was carried out using bongo net, 60 cm. in diameter with mesh size 300 micron with employed in the horizontal haul. The net was towing at 1 meter below the surface with speed of 2 knots for 30 min. A flow meter was attached to the mouth of the net. Specimens were preserved in 10% formalin/sea water mix immediately after a haul completed. Sorting and identification was done at the laboratory.