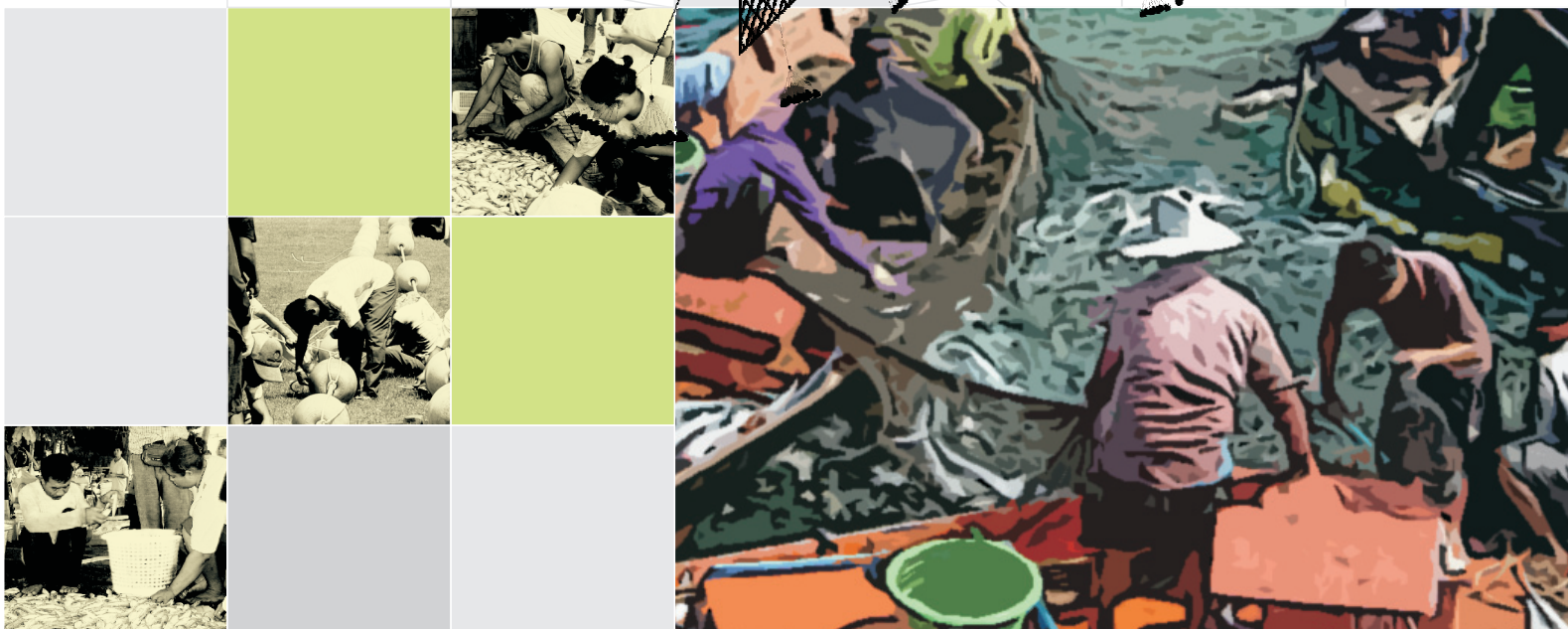
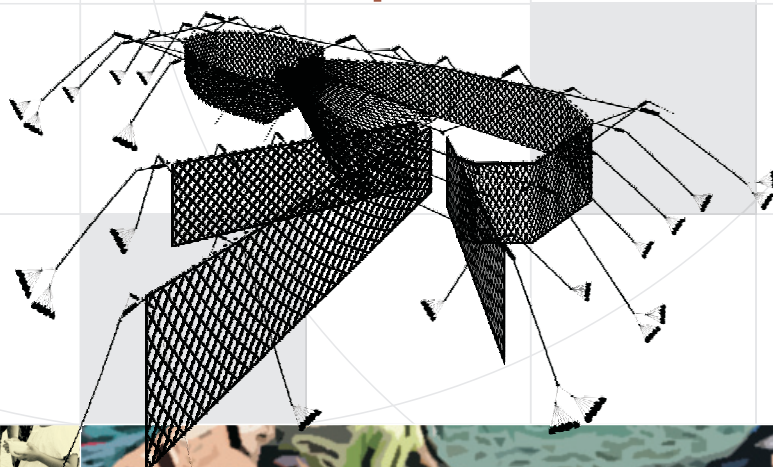


# THE ATTITUDE OF LOCAL GOVERNMENT ORGANIZATIONS AND EXTERNAL AGENCIES

on Set-Net Fisheries  
and its Technology Transfer  
for Coastal Fisheries  
Management

Narumol Thapthim  
Phattareeya Suanrattanachai  
Pattaratjit Kaewnuratchadasorn



**The Attitude of Local Government Organizations and External Agencies on Set-Net Fisheries and Its Technology Transfer for Coastal Fisheries Management**

by

Narumol Thapthim  
Phattareeya Suanrattanachai  
Pattarajit Kaewnuratchasorn

**Introduction of Set-Net Fishing to Develop Sustainable Coastal Fisheries Management in Southeast Asia: Case Study in Thailand 2003-2005**

**A Collaborative Project between SEAFDEC/TD  
and  
Department of Fisheries, Thailand**



**TD/RES/123**



**July 2008**

## **The Attitude of Local Government Organizations and External Agencies on Set-Net Fisheries and Its Technology Transfer for Coastal Fisheries Management**

All rights reserved. No part of this publication may be reproduced, stored in retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying or otherwise, without the prior permission of the copyright owner. Application for such permission, with a statement of the purpose and extent of the reproduction, should be addressed to the Chief of Training Department, Southeast Asian Fisheries Development Center. The Training Department, P.O. Box 97, Phrasamutchedi, Samutprakan, 10290, Thailand


## FOREWORD

Following the adoption of the Resolution and Plan of Action on Sustainable Fisheries for Food Security for the ASEAN Region during the ASEAN-SEAFDEC Millennium Conference in November 2001, the SEAFDEC Training Department took the responsibility of implementing a project on Coastal Fisheries Management under the ASEAN-SEAFDEC Fisheries Consultative Group (FCG) collaborative mechanism.

Consequently, a pilot project on the “Introduction of Set-Net Fishing to Develop Sustainable Coastal Fisheries Management” was initially implemented in Thailand in 2003 and the coastal area of Rayong Province was selected as the project site. The project, which was supported by the Trust Fund Program of the Fishery Agency of the Government of Japan, was conducted with the cooperation among the local fishermen, the Eastern Marine Fisheries Research and Development Center (EMDEC) and SEAFDEC/TD with technical assistance from the Tokyo University of Marine Science and Technology (TUMSAT) and Himi City, Japan. Through the pilot project, it was envisaged that fishing pressure on coastal fishery resources through the introduction of set net as a passive fishing gear would be reduced, fishing competition in congested fishing ground alleviated by organizing collective fishing operation on set-net, and common policy concept of fishery management could be developed for fishing gear occupying wide fishing ground such as the set-net.

After the project activities ended in 2005, SEAFDEC/TD continued to conduct follow-up activities through the project on Improvement of Set-Net Fishing Technology Transfer for Sustainable Coastal Fisheries Management in collaboration with the Rayong Set-Net project. This follow up project aimed to come up with recommendations and comments based on the lessons learnt, and plans for further promotion of an appropriate fishing gear to the fishers in the region.

Although this publication is based on results of the survey of local government in the area and nearby and also with other institution who supported of the set net project, it is expected to highlight on the possibility and responsibility of local government for the continuation of the project in the future for sustainable coastal fisheries resources by using the set-net.



Mr. Siri Ekmakaraj, Ph.D.  
Secretary-General of SEAFDEC

## PREFACE

The project on the “Introduction of Set Net Fishing to Develop Sustainable Coastal Fisheries Management in Southeast Asia: Case Study in Thailand”, which received funding support from the Japanese Trust Fund, was implemented since 2003. The set net activities were carried out mainly by the local small-scale fishermen who voluntarily participated in the group, with the cooperation of the Eastern Marine Fisheries Research and Development (EMDEC) of Rayong Province and with technical advice from Himi set-net fisheries cooperative, Tokyo University of Marine Science and Technology (TUMSAT) as well as the SEAFDEC Training Department. From the implementation of the set net activities, the members have indicated that their experience with this new fishing technology could help improve their knowledge and skills in fisheries. Moreover, the successful set net have s successfully by strongly supported by many agencies but in term of the continuation in the future, fisher’ group still need the support until they could develop the fisheries cooperatives to manage the project by themselves.

Since the coastal area of Mae Rumphueng, Rayong Province was selected as the project site where the set net fishing gear was installed, and got mainly support from many agencies particularity Himi set-net fisheries cooperative, Tokyo University of Marine Science and Technology (TUMSAT) as well as the SEAFDEC Training Department then after the project activities ended we expect that the set-net project will be continued by fishers’ group and getting support from the local government agencies. Hence, the opinion of local government officers that was sought and the result of the study is intended to serve as information on the attitude of the local government toward on the set net project and activities. The result could also serve as important opinion from different view which also is important for the fishers’ group to improve themselves and also to find supporting from the appropriate agencies.

The Authors  
July 2008

## **ACKNOWLEDGEMENT**

We would like to express our deepest gratitude to all respondents who are local officer in fisheries, Tambon Taphong Administrative and Phae Municipality officer for kindly providing and sharing the necessary information. Our sincerest gratitude also goes to Mr. Aussanee Munprasit for give us information of the project and an opportunity to this study and for his valuable time in reviewing the manuscript. We would like to extend our sincere thanks also to Mr. Manoch Roongratri, the Director of Eastern Marine Fisheries Research and Development (EMDEC), Rayong Province for welcoming us and for his guidance during the survey, and to Miss Kamonrat Boonraksa for giving her time to share valuable information. Special thanks also to Mrs. Virgilia T. Sulit for critically editing the manuscript.

The Authors  
July 2008

## TABLE OF CONTENTS

<b>Abstract</b>	<b>1</b>
<b>Introduction</b>	<b>2</b>
<b>The objectives methodology of the study</b>	<b>2</b>
<b>Questionnaire and interview results</b>	<b>3</b>
<i>Part I: Sample for the study and their attitude towards the coastal fishery resources</i>	<i>3</i>
<i>Part II: Attitude and perception of local organizations (TAO and Municipality), the local government agencies and external institutions on Set-net fisheries and its technology transfer</i>	<i>6</i>
<i>Part III: The possibility of the TAO, Municipality and local government agencies supporting the future activities and how the agencies could provide such support</i>	<i>11</i>
<i>Part IV: Identification of problems, potentials and needs and analysis of the present strengths and weaknesses of Set-net fisheries for coastal fisheries management based on institutional/organizations views.</i>	<i>15</i>
<b>Conclusions and recommendations for future consideration</b>	<b>22</b>
<b>References</b>	<b>23</b>
<b>Appendix</b>	<b>23</b>

## LIST OF TABLES AND FIGURES

### LIST OF TABLE

Table 1	Assessment of the organizations capability in the planning process	4
Table 2	Assessment of the organizations capability in the implementation process	5
Table 3	Assessment of the organizations capability in monitoring and evaluation process	6
Table 4	Attitude if respondents towards the set-net fisheries	6
Table 5	Extent of understanding and acceptance of local organizations and external institutions of set-net fisheries and its technology transfer project	7
Table 6	Perception on the usefulness of set-net fishing gear to the community	7
Table 7	Perception that the fishers livelihood had improve after project was implemented	8
Table 8	Perception that only the fisher received the benefits from the project	8
Table 9	Perception that only the members of set-net project have benefited from the project	8
Table 10	Perception that the set-net project reduced some conflicts among the fishers groups	9
Table 11	Set-net can protect the fishing ground from commercial fishing boats	9
Table 12	Set-net can enhance coastal resources by providing more substrate and shelter for marring living organisms	9
Table 13	The introduction of set-net as a passive fishing gear can reduce fishing pressure on coastal fisheries	10
Table 14	Organization of collective fishing operation by local fishermen can alleviate fishing competition in the congested fishing ground	10
Table 15	The set-net and its technology could be a tool for coastal fishery management in the future	11
Table 16	The project should be transferred in the future under the responsibility of the community with assistance form DOF of Thailand	11
Table 17	The fishermen who have started, learned and practiced group cooperation and management could be develop as a cooperative	11
Table 18	Budget support	12
Table 19	Information acceptance and distribution	12
Table 20	Exchange of information and opinion	12
Table 21	Technical support	13
Table 22	Possibility to present and provide details of the project under the district plan	13
Table 23	Coordination of people, agencies and/or other organizations	13
Table 24	Participation in decision making process	14
Table 25	Participation in the implementation process	14
Table 26	Participation in monitoring and evaluation process	14
Table 27	To be leader for fishers in order to implement and promote the project	15
Table 28	Support and encourage the fishers to manage the resources by themselves	15
Table 29	Advantages and disadvantages of the set-net project and the technology transfer based on respondents' opinion, by priority	15
Table 30	Problem identified on the set-net project and suggested resolutions from local organizations and external institutions' views	18



## **LIST OF FIGURES**

Figure 1	Number and percentage distribution of the respondents	3
Figure 2	Planning process assessment for coastal resource management in the past by TAO members and municipal committee, local government staff and agencies concerned	4
Figure 3	Implementation assessment for coastal resource management in the past by TAO members and municipal committee, local government staff and agencies concerned	5
Figure 4	Monitoring and evaluation assessment for coastal resource management in the past by TAO members and municipal committee, local government staff and agencies concerned	6

# **The Attitude of Local Government Organizations and External Agencies on Set-Net Fisheries and Its Technology Transfer for Coastal Fisheries Management**

Narumol Thapthim, Phattareeya Suanrattanachai and Pattarajit Kaewnuratchasorn

## **Abstract**

This paper mainly aimed to study and assess the attitude of local government institutions/organizations and agencies on the set-net project and fisheries after the project had been implemented for five years in Mae Lamphueng beach, Rayong Province, Thailand. Moreover, the possibility of supporting the fishers group to continue this project in the future was also investigated through a questionnaire survey involving 43 respondents that included 4 (9.3%) SEAFDEC officers (external organization), 16 (37.21%) EMDEC/DOF staff, and from the local government institutions: 16 (37.21%) from Taphong TAO and 7 (16.28%) from the Banpae Municipal committee.

The results of the questionnaire survey suggested that the advantages and disadvantages of the set-net project could be categorized into four major groups, namely: 1) Gear characteristics; 2) Environmental impact; 3) Socio-economic impact; and 4) Cooperative management. The respondents identified and prioritized the problems related to the fisheries resources in the area that included highly dwindling fishery resources and declining coastal fishery resource biodiversity while some species could already be extinct.

The results also showed the attitude and perception of the respondents on the set-net fisheries and project, which were mostly positive and the respondents seemed to agree that the project has been useful to the community, and that the fishermen had also improved their livelihood after the project was implemented. Moreover, the local organizations such as the Banpae Municipality and TAO Taphong have indicated the possibility of higher budget support in the future for the set-net fisheries or any related fisheries projects for the community than the other organizations or institutions involved in the project. The local organizations also expressed their willingness to do and support such activities as information exchange, coordination among other sectors, implementation, monitoring and evaluation, and participation in the decision making process, etc.

However, some risks or difficulties were also identified by the respondents specifically from the concerned organizations' points of view. They suggested that the fishers group should be more serious and more concerned with the group and cooperative management, and also in benefit sharing and financial system of the set-net fishers group for the sustainable implementation of the project in the future.

**Key words:** Attitude, perception, local government organizations/institutions, set-net fisheries, Banpae Municipality, Taphong Sub-district Administrative Organization (TAO), Rayong

# **The Attitude of Local Government Organizations and External Agencies on Set-Net Fisheries and Its Technology Transfer for Coastal Fisheries Management**

## **Introduction**

Since 2003, the set-net project in Rayong was established as a case study in Thailand with the collaboration of the Southeast Asian Fisheries Development Center (SEAFDEC) and the Department of Fisheries (DOF) of Thailand, the Eastern Marine Fisheries Research and Development Center (EMDEC) and Rayong Provincial Fisheries Office, and the Small-scale Fishers Groups of the Mae Lamphueng beach, in order to promote sustainable coastal fisheries management. After the first year of implementation, the local fishermen both project members and non-members have gained a lot of knowledge and experiences. After the three-year implementation, the fishermen group leaders and set-net fishing administrative and management committee indicated that they were satisfied with the progress of the project (Munprasit et.al, 2005). When the 4-year project was completed, the results of the latest study indicated that the fishermen were highly satisfied with the set-net fisheries and its technology transfer. Since the project started as a case study, it was focused on the geographical aspects of the set-net and the fishermen's group. Nowadays, Thailand promotes the decentralization and co-management of the resources including the fisheries resources. In order to encourage and inspire the fishermen to continue and maintain the project, the support of local organizations, institutions and other related agencies were considered very important. This paper therefore intends to study and assess the attitude of the local organizations and institutions involved in the project and have supported the activities of the fishers group, to enable them to continue their activities for more effective management of the coastal resource in the future.

## **The objectives and methodology of the study**

### *Objectives*

1. To study the attitude of the local organizations (TAO and Municipality) and local government agencies on the Set-net Fisheries project and its technology transfer;
2. To assess the possibility of the TAO and local government agencies supporting the future activities and on how they will continue their support to the project; and
3. To identify problems, potentials and needs, and analyze the present strengths and weaknesses of the local organizations and local government agencies as regards the Set-net Fisheries for coastal fisheries management.

### *Methodology*

1. A questionnaire was designed based on the objectives of the study
2. Conduct of interview with the TAO members, municipal committee and local government agencies' staff in the project site and nearby areas, as the target respondents of the survey
3. Inputting and analysis of the data using descriptive method and obtaining the weighted average index (WAI)

For the calculation of the Weighted Average Index (WAI):

The frequencies of respondents reply were given 2 (the highest score) for "strongly agree", one (1) for "agree", zero (0) for "neutral", and minus one (-1) for "disagree".

Then, the Weighted Average Index (WAI) was calculated using the following formula:

$$WAI = (f1*2 + f2 *1 + f3*0 + f4* (-1)) / F \text{ total}$$

Where, WAI = Weighted Average Index,  
 f1 to f4 = Frequencies of the factor  
 F total = Total Frequency

4. Illustrating the results of the survey using charts and tables with accompanying explanations.

### Questionnaire and Interview Results

#### Part I: Samples for the study and their attitude towards the coastal fishery resources

1. There were 43 respondents from the district fisheries office and Department of Fisheries (EMDEC), Taphong TAO committee, Banpae municipal committee and SEAFDEC comprising 16 (37.21%), 16 (37.21%), 7 (16.28%) and 4 (9.30%) respondents from each group, respectively (Fig. 1).

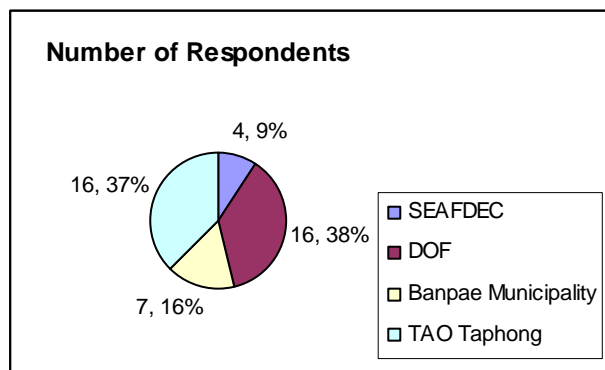


Fig.1. Number and percentage distribution of the respondents

2. The respondents who are members of the local organizations and local government agencies, identified the the current major coastal resources problems in the community as: 1) highly dwindling fishery resources, and 2) declining coastal fishery resource biodiversity and some species. Moreover, other problems were also identified such as mangrove destruction, drainage and wastewater from communities, conflict among groups of fishers, limited fishing area or fishing ground, illegal fishing and overfishing which still exist in the community.

3. For the assessment of the capacity of the organizations or institutions in the process of coastal resource management in the past, specifically the capacity of the TAO members, the municipal committee and local government staff, three processes were identified, namely: 1) Planning process, 2) Implementation process, and 3) Monitoring and evaluation process.

### 3.1 Planning process

As shown in Table 1 and Fig. 2, the planning process for the coastal resource management project undertaken by each organization in the past included: i) identifying the coastal fishery resource problems; ii) prioritizing the project activities to solve the problems; iii) formulating the objectives, areas and resources; and iv) formulating the organization plan. The respondents assessed that their organizations have mostly done all these processes which they rated in terms of percent averages as 85.5, 71.4, 85.5 and 79.2, respectively.

Table 1. Assessment of the organizations capability in the planning process

Planning process	i) Identifying coastal fishery resource problems		ii) Prioritizing project activities to solve the problems		iii) Formulating the objectives, and areas and resources		iv) Formulating the organization plan		* No answer
	Number (%)								
	yes	no	yes	no	yes	no	yes	no	Number (%)
SEAFDEC (n=4)	4 (100.0)	0 (0.0)	2 (50.0)	2 (50.0)	4 (100.0)	0 (0.0)	3 (75.0)	1 (25.0)	-
DOF, EMDEC (n=16)	14 (87.5)	2 (12.5)	13 (81.2)	3 (18.8)	12 (75.0)	4 (25.0)	12 (75.0)	4 (25.0)	-
Banpae Municipality (n=7)	6 (85.7)	1 (14.3)	6 (85.7)	1 (14.3)	6 (85.7)	1 (14.3)	6 (85.7)	1 (14.3)	-
TAO Taphong (n=16)*	11 (68.8)	3 (18.8)	11 (68.8)	3 (18.8)	13 (81.3)	1 (6.3)	13 (81.3)	1 (6.3)	2 (12.5)
% Average	85.5	11.4	71.4	25.5	85.5	11.4	79.2	17.6	3.1

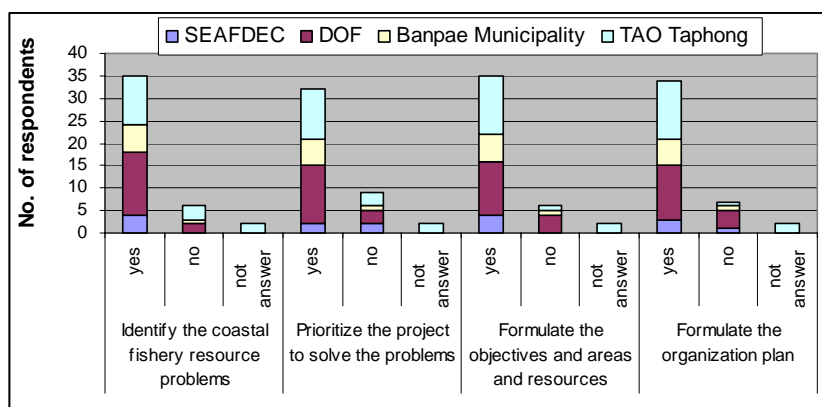


Fig.2. Planning process assessment for coastal resource management in the past by TAO members and municipal committee, local government staff, and agencies concerned

### 3.2 Implementation process

Table 2 and Fig. 3 show the result of the assessment of the capacity of each organization in the implementation processes for the coastal resource management project which included: i) assigning the responsibilities and mobilizing people or staff ; ii) coordinating with the community; iii) communicating with other agencies or organizations; and iv) problem

solving. The respondents assessed that their organizations have also mostly done all these processes showing higher efforts for the implementation processes than in the planning processes, which have been rated in terms of percent averages at 87.5, 76.6, 90.6 and 89.1, respectively.

Table 2. Assessment of the organizations capacity in the implementation process

Implementation process	i) Assign responsibilities and mobilizing people		ii) Coordinate with community		iii) Coordinate with other agencies or organizations		iv) Problem solving		* No answer
	Number (%)								
	yes	no	yes	no	yes	no	yes	no	Number (%)
SEAFDEC	4 (100.0)	0 (0.0)	4 (100)	0 (0.0)	4 (100)	0 (0.0)	4 (100.0)	0 (0.0)	-
DOF,EMDEC	12 (75.0)	4 (25.0)	13 (81.2)	3 (18.8)	13 (81.2)	3 (18.8)	13 (81.2)	3 (18.8)	-
Banpae Municipality	7 (100.0)	0 (0.0)	7 (100.0)	0 (0.0)	7 (100.0)	0 (0.0)	7 (100.0)	0 (0.0)	-
TAO Taphong *	12 (75.0)	2 (12.5)	12 (75.0)	2 (12.5)	13 (81.2)	1 (6.3)	12 (75.0)	2 (12.5)	2 (12.5)
% Average	87.5	9.4	76.6	20.3	90.6	6.3	89.1	7.8	3.1

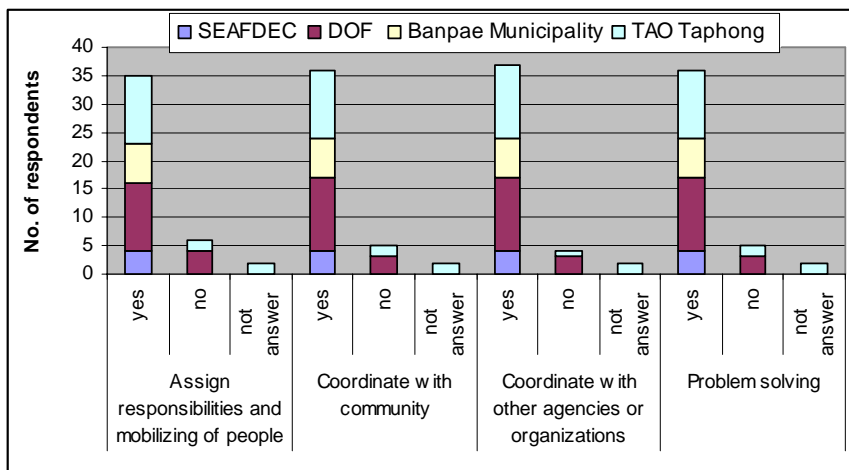


Fig. 3 Implementation assessment for coastal resource management in the past by TAO members and municipal committee, local government staff, and agencies concerned

### 3.3 Monitoring and evaluation process

Table 3 and Fig. 4 show that in the monitoring and evaluation process for the coastal resource management project by each organization, the results as assessed by the respondents indicated that their organizations have also undertaken this process (76.1%).

Table 3. Assessment of the capacity of organizations in monitoring and evaluation process

Monitoring and evaluation	Number (%)		* No answer
	yes	no	
SEAFDEC	4 (100.0)	0 (0.0)	-
DOF,EMDEC	10 (62.5)	6 (37.5)	-
Banpae Municipality	6 (85.7)	1 (14.3)	-
TAO Taphong *	9(56.2)	5 (31.3)	2 (12.5)
% Average	76.1	20.8	3.1

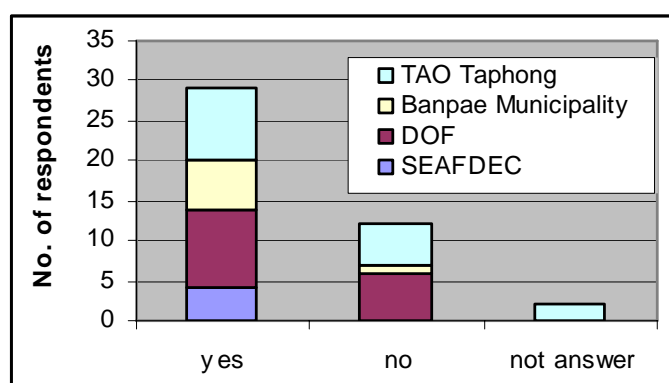


Fig. 4. Monitoring and evaluation assessment for coastal resource management in the past by TAO members and municipal committee, local government staff, and agencies concerned

Part II: Attitude and perception of local organizations (TAO and Municipality), the local government agencies and external institutions on Set-net Fisheries and its technology transfer

From the results of the survey (Table 4 and Table 5), the attitude of the respondents from the different organizations towards the set-net fisheries was good (G, Total WAI=1.002), but the TAO Taphong's (local organization) attitude was lower than the other organizations (F, WAI=0.759). Regarding the evaluation of the level of understanding and acceptance of the set-net fisheries and technology transfer project, TAO Taphong had still not fully understood, having the lowest level of acceptance of the project (WAI=0.666, F) as shown in Table 5.

Table 4. Attitude of respondents towards the Set-net fisheries

	Number (% of respondents)				WAI	Attitude level
	Very good	Good	Fair	No		
SEAFDEC	2 (50.0)	2 (50.0)	0 (0.0)	0 (0.0)	1.700	V
DOF	1 (6.3)	5 (31.3)	10 (62.5)	0 (0.0)	1.031	G
Banpae Municipality	1 (14.3)	2 (28.6)	4 (57.1)	0 (0.0)	1.114	G
TAO Taphong*	1 (6.2)	5 (31.2)	4 (25.0)	6 (37.5)	0.750	F
Total					1.002	G

Note: 0-0.5 = Low level, L      0.5-1.0= Fair, F  
 1.0-1.5= Good, G            1.5-2.0 = Very good, V

Table 5. Extent of understanding and acceptance of local organizations and external institutions of the Set-net Fisheries and technology transfer project

	Number (% of respondents)				WAI	Level
	Very good	Good	Fair	No		
SEAFDEC	2 (50.0)	1 (25.0)	1 (25.0)	0 (0.0)	1.538	V
DOF	1 (6.3)	7 (43.8)	8 (50.0)	0 (0.0)	1.113	G
Banpae Municipality	0 (0.0)	4 (57.1)	3 (42.9)	0 (0.0)	1.121	G
TAO Taphong	0 (0.0)	6 (37.5)	3 (18.8)	7 (43.8)	0.666	F
Total					0.987	F

Note: 0-0.5 = Low level, L      0.5-1.0= Fair, F  
1.0-1.5= Good, G              1.5-2.0 = Very good, V

On the attitude of local organizations and external institutions towards the project in terms of support to the local community, Table 6 and Table 7 show that the respondents agreed with the usefulness of the project to the community (Total WAI =0.977, A-agree) and that the livelihood of the fishermen had also been improved after the project was implemented (Total WAI=0.814, A-agree).

Table 8 and Table 9 show the opinion of the respondents which indicated that the project is beneficial only to the fishermen (Table 8, Total WAI = 0.721, A-agree). The respondents were however neutral on their views that the benefit of the project was not only to the members of the project (Table 9, Total WAI= 0.302, N-neutral). Specifically, the respondents from Banpae Municipality indicated different views, for although they strongly agreed that only the fishermen have benefited from the project (Table 8, WAI= 1.286, H- strongly agree), they also agreed that only the members of the set net project have benefited from the project (Table 9, WAI= 1.143, A-agree). Their contrasting views could be due to the fact that the project was not implemented in Banpae Municipality and that all group members were from Taphong sub district (Tambon Taphong).

Table 6. Perception on the usefulness of set-net fishing gear to the community

	Number (% of respondents)				WAI	Attitude level
	Highly agree	Agree	Neutral	Disagree		
SEAFDEC	2 (50.0)	2 (50.0)	0 (0.0)	0 (0.0)	1.500	H
DOF	3 (18.8)	9 (56.3)	3 (18.8)	1 (6.3)	0.875	A
Banpae Municipality	2 (28.8)	4 (57.1)	1 (14.3)	0 (0.0)	1.143	A
TAO Taphong	1 (6.3)	13 (81.3)	1 (6.3)	1 (6.3)	0.875	A
Total					0.977	A

Note: (-1.00)-(-0.25) = Disagree, D      (-0.24)-0.50= Neutral, N  
0.51-1.25= Agree, A                      1.26-2.00 = Strongly agree, H



Table 7. Perception that the fishers livelihood had improved after project was implemented

	Number, (%) of respondents				WAI	Attitude level
	Highly agree	Agree	Neutral	Disagree		
SEAFDEC	0 (0.0)	2 (50.0)	2 (50.0)	0 (0.0)	0.500	N
DOF Banpae	0 (0.0)	7 (43.8)	8 (50.0)	1 (6.3)	0.375	N
Municipality	1 (14.3)	5 (71.4)	1 (14.3)	0 (0.0)	1.000	A
TAO Taphong	5 (31.3)	10 (62.5)	1 (6.3)	0 (0.0)	1.250	A
Total					0.814	A

Note: (-1.00) - (-0.25) = Disagree, D      (-0.24)-0.50= Neutral, N  
 0.51-1.25= Agree, A                      1.26-2.00 = Strongly agree, H

Table 8. Perception that only the fishermen received the benefits from the project

	Number (% of respondents)				WAI	Attitude level
	Strongly agree	Agree	Neutral	Disagree		
SEAFDEC	0 (0.0)	2 (50.0)	0 (0.0)	2 (50.0)	0.000	N
DOF Banpae	3 (18.8)	9 (56.3)	2 (12.5)	2 (12.5)	0.813	A
Municipality	2 (28.6)	5 (71.4)	0 (0.0)	0 (0.0)	1.286	H
TAO Taphong	1 (5.9)	11 (64.7)	1 (5.9)	4 (23.5)	0.563	A
Total					0.721	A

Note: (-1.00) - (-0.25) = Disagree, D      (-0.24)-0.50= Neutral, N  
 0.51-1.25= Agree, A                      1.26-2.00 = Strongly agree, H

Table 9. Perception that only the members of set-net project have benefited from the project

	Number (% of respondents)				WAI	Attitude level
	Strongly agree	Agree	Neutral	Disagree		
SEAFDEC	0 (0.0)	1 (25.0)	0 (0.0)	3 (75.0)	-0.500	D
DOF Banpae	2 (12.5)	5 (31.3)	1 (6.3)	8 (50.0)	0.063	D
Municipality	3 (42.9)	3 (42.9)	0 (0.0)	1 (14.3)	1.143	A
TAO Taphong	2 (12.5)	7 (43.8)	2 (12.5)	5 (31.3)	0.375	N
Total					0.302	N

Note: (-1.00) - (-0.25) = Disagree, D      (-0.24)-0.50= Neutral, N  
 0.51-1.25= Agree, A                      1.26-2.00 = Strongly agree, H

Table 10 presents the attitude of the respondents towards conflict reduction among fisher groups, which indicated the respondents' agreement that the conflicts have been reduced (Total WAI=0.814,A)

Table 10. Perception that the set-net project reduced some conflicts among the fishers groups

	Number (% of respondents)				WAI	Attitude level
	Strongly agree	Agree	Neutral	Disagree		
SEAFDEC	1 (25.0)	3 (75.0)	0 (0.0)	0 (0.0)	1.250	A
DOF Banpae	1 (6.3)	9 (56.3)	5 (31.3)	1 (6.3)	0.625	A
Municipality	1 (14.3)	3 (42.9)	3 (42.9)	0 (0.0)	0.714	A
TAO Taphong	1 (12.5)	11 (68.8)	3 (18.8)	0 (0.0)	0.938	A
Total					0.814	A

Note: (-1.00) - (-0.25) = Disagree, D      (-0.24)-0.50= Neutral, N  
0.51-1.25= Agree, A                      1.26-2.00 = Strongly agree, H

Table 11 and Table 12 show the perception of the respondents that the set-net protects the fishing ground and environment. The respondents agreed that the set-net can protect the fishing ground from commercial fishing boats (Total WAI=0.907, A) and that the set-net also provide more substrate and shelter for marine living organisms (Total WAI= 1.163, A). Moreover, since SEAFDEC as an external institution has provided the technical support for this project, the respondents from SEAFDEC strongly agreed on the issues with the Total WAI=2.000 (H) and WAI=1.500 (H), respectively.

Table 11. Set-net can protect the fishing ground from commercial fishing boats

	Number (% of respondents)				WAI	Attitude level
	Strongly agree	Agree	Neutral	Disagree		
SEAFDEC	4 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	2.000	H
DOF Banpae	2 (12.5)	10 (62.5)	3 (18.8)	1 (6.3)	0.813	A
Municipality	2 (28.6)	2 (28.6)	2 (28.6)	1 (14.3)	0.714	A
TAO Taphong	1 (6.3)	11 (68.8)	4 (25.0)	0 (0.0)	0.813	A
Total					0.907	A

Note: (-1.00) - (-0.25) = Disagree, D      (-0.24)-0.50= Neutral, N  
0.51-1.25= Agree, A                      1.26-2.00 = Strongly agree, H

Table 12. Set-net can enhance coastal resources by providing more substrate and shelter for marine living organisms

	Number (% of respondents)				WAI	Attitude level
	Strongly agree	Agree	Neutral	Disagree		
SEAFDEC	3 (75.0)	0 (0.0)	1 (25.0)	0 (0.0)	1.500	H
DOF Banpae	4 (25.0)	11 (68.8)	1 (6.3)	0 (0.0)	1.188	A
Municipality	2 (28.6)	4 (57.1)	1 (14.3)	0 (0.0)	1.143	A
TAO Taphong	3 (18.8)	11(68.8)	2 (12.5)	0 (0.0)	1.063	A
Total					1.163	A

Note: (-1.00) - (-0.25) = Disagree, D      (-0.24)-0.50= Neutral, N  
0.51-1.25= Agree, A                      1.26-2.00 = Strongly agree, H

Table 13 shows the respondents' views that the fishing effort and pressure on coastal fisheries have been reduced through the set-net project which is a passive fishing gear while their perception that the project contributed to the alleviation of fishing competition in a congested fishing ground is shown in Table 14. The respondents mostly agreed that the set-net project can reduce fishing effort and pressure as shown in the Total WAI = 1.070 (A), and can also alleviate fishing competition in the congested fishing ground with the Total WAI=1.023 (A).

Table 13. The introduction of set-net as a passive fishing gear can reduce fishing pressure on coastal fisheries

	Number (% of respondents)				WAI	Attitude level
	Strongly agree	Agree	Neutral	Disagree		
SEAFDEC	3 (75.0)	1 (25.0)	0 (0.0)	0 (0.0)	1.750	H
DOF	4 (25.0)	8 (50.0)	3 (18.8)	1 (6.3)	1.125	A
Banpae Municipality	3 (42.9)	3 (42.9)	1 (14.3)	0 (0.0)	1.286	H
TAO Taphong	3 (18.8)	9 (56.3)	4 (25.0)	0 (0.0)	0.938	A
Total					1.070	A

Note: (-1.00) – (-0.25) = Disagree, D      (-0.24)-0.50= Neutral, N  
0.51-1.25= Agree, A                              1.26-2.00 = Strongly agree, H

Table 14. Organization of collective fishing operation by local fishermen can alleviate fishing competition in the congested fishing ground

	Number (% of respondents)				WAI	Attitude level
	Strongly agree	Agree	Neutral	Disagree		
SEAFDEC	2 (50.0)	2 (50.0)	0 (0.0)	0 (0.0)	1.500	H
DOF	3 (18.8)	8 (50.0)	5 (31.3)	0 (0.0)	0.875	A
Banpae Municipality	4 (57.1)	1 (14.3)	1 (14.3)	1 (14.3)	1.143	A
TAO Taphong	3 (18.8)	10 (62.5)	3 (18.8)	0 (0.0)	1.000	A
Total					1.023	A

Note: (-1.00) – (-0.25) = Disagree, D      (-0.24)-0.50= Neutral, N  
0.51-1.25= Agree, A                              1.26-2.00 = Strongly agree, H

In addition, most of the respondents agreed that the set-net and its technology could be a tool for coastal management in the future as shown in Table 15 (Total WAI=1.140, A). In this regard, the respondents agreed that the technology should be transferred and to be placed under the responsibility of the community with assistance from the Department of Fisheries (Total WAI=1.209, A) as shown in Table 16. Moreover, since this project started with the fisher groups cooperation, it should be developed into a fishery cooperative which the respondents strongly agreed with the Total WAI=1.279 (H) as shown in Table 17.

Table 15. The set-net and its technology could be a tool for coastal fishery management in the future

	Number (% of respondents)				WAI	Attitude level
	Strongly agree	Agree	Neutral	Disagree		
SEAFDEC	3 (75.0)	1 (25.0)	0 (0.0)	0 (0.0)	1.750	H
DOF	5 (31.3)	8 (50.0)	3 (18.8)	0 (0.0)	1.125	A
Banpae Municipality	3 (42.9)	3 (42.9)	1 (14.3)	0 (0.0)	1.286	H
TAO Taphong	3 (18.8)	9 (56.3)	4 (25.0)	0 (0.0)	0.938	A
Total					1.140	A

Note: (-1.00) - (-0.25) = Disagree, D      (-0.24)-0.50= Neutral, N  
0.51-1.25= Agree, A                              1.26-2.00 = Strongly agree, H

Table 16. The project should be transferred in the future under the responsibility of the community with assistance from DOF of Thailand

	Number (% of respondents)				WAI	Attitude level
	Strongly agree	Agree	Neutral	Disagree		
SEAFDEC	3 (75.0)	1 (25.0)	0 (0.0)	0 (0.0)	1.750	H
DOF	4 (25.0)	8 (50.0)	4 (25.0)	0 (0.0)	1.000	A
Banpae Municipality	3 (42.9)	4 (57.1)	0 (0.0)	0 (0.0)	1.429	H
TAO Taphong	3 (18.8)	13 (81.3)	0 (0.0)	0 (0.0)	1.188	A
Total					1.209	A

Note: (-1.00) - (-0.25) = Disagree, D      (-0.24)-0.50= Neutral, N  
0.51-1.25= Agree, A                              1.26-2.00 = Strongly agree, H

Table 17. The fishermen who have started, learned and practiced group cooperation and management could be developed to a fishery cooperative

	Number (% of respondents)				WAI	Attitude level
	Strongly agree	Agree	Neutral	Disagree		
SEAFDEC	3 (75.0)	1 (25.0)	0 (0.0)	0 (0.0)	1.750	H
DOF	5 (31.3)	7 (43.8)	3 (18.8)	1 (6.3)	1.000	A
Banpae Municipality	4 (57.1)	3 (42.9)	0 (0.0)	0 (0.0)	1.571	H
TAO Taphong	6 (37.5)	9 (56.3)	1 (6.3)	0 (0.0)	1.313	H
Total					1.279	H

Note: (-1.00) - (-0.25) = Disagree, D      (-0.24)-0.50= Neutral, N  
0.51-1.25= Agree, A                              1.26-2.00 = Strongly agree, H

**Part III:** The possibility of the TAO, Municipality and local government agencies supporting the future activities and on how the agencies could provide such support

For the continuation of the set-net project or to start similar projects in another sites along the coastal areas of Thailand, the following data will be useful for the community and organizations, especially to compromise and mobilize the results to support the necessary information for coastal fisheries co-management.

Table 18. Budget support

	Number (% of respondents)				WAI	Possibility Level
	High possibility	Possible	Not sure	Impossible		
SEAFDEC	0 (0.0)	2 (50.0)	1 (25.0)	1 (25.0)	0.250	N
DOF	0 (0.0)	3 (18.8)	6 (37.5)	7 (43.8)	-0.250	I
Banpae Municipality	5 (71.4)	2 (28.6)	0 (0.0)	0 (0.0)	1.714	H
TAO Taphong	9 (56.3)	7 (43.8)	0 (0.0)	0 (0.0)	1.563	H

Note: (-1.00) - (-0.25) = Impossible, I      (-0.24)-0.50= Not sure, N  
0.51-1.25= Possible, P                      1.26-2.00 = High possibility, H

With reference to Table 18 which shows the views of the organizations on the possibility of providing funds or budget support, the Banpae Municipality and TAO Taphong expressed high possibility of providing budget or funds for the project (Banpae municipality WAI=1.714, H and TAO Taphong WAI=1.563, H), higher than SEAFDEC (WAI=0.250, N) and the Department of Fisheries (WAI= -0.250, I)

Table 19 and Table 20 show the respondents opinion towards information acceptance, and distribution and exchange of information, and opinion on the set-net and other issues related to the fisheries projects, respectively. Respondents from SEAFDEC and Banpae Municipality expressed high possibility for their organizations support for both information acceptance, and exchange of information and opinion (SEAFDEC WAI=1.750 and 1.750, Banpae WAI=1.286 and 1.571). DOF respondents expressed high possibility for exchanging of information and opinion (WAI= 1.500) and the possibility of information acceptance (WAI=1.250). Taphong TAO also responded that it was also possible for their organization to support information acceptance, and exchange of information and opinion.

Table 19. Information acceptance and distribution

	Number (% of respondents)				WAI	Possibility Level
	High possibility	Possible	Not sure	Impossible		
SEAFDEC	3 (75.0)	1 (25.0)	0 (0.0)	0 (0.0)	1.750	H
DOF	5 (31.3)	10 (62.5)	1 (6.3)	0 (0.0)	1.250	P
Banpae Municipality	2 (28.6)	5 (71.4)	0 (0.0)	0 (0.0)	1.286	H
TAO Taphong	3 (18.8)	13 (81.3)	0 (0.0)	0 (0.0)	1.188	P

Note: (-1.00) - (-0.25) = Impossible, I      (-0.24)-0.50= Not sure, N  
0.51-1.25= Possible, P                      1.26-2.00 = High possibility, H

Table 20. Exchange of information and opinion

	Number (% of respondents)				WAI	Possibility Level
	High possibility	Possible	Not sure	Impossible		
SEAFDEC	3 (75.0)	1 (25.0)	0 (0.0)	0 (0.0)	1.750	H
DOF	8 (50.0)	8 (50.0)	0 (0.0)	0 (0.0)	1.500	H
Banpae Municipality	4 (57.1)	3 (42.9)	0 (0.0)	0 (0.0)	1.571	H
TAO Taphong	3 (18.8)	12 (75.0)	1 (6.3)	0 (0.0)	1.125	P

Note: (-1.00) - (-0.25) = Impossible, I      (-0.24)-0.50= Not sure, N  
0.51-1.25= Possible, P                      1.26-2.00 = High possibility, H

Table 21. Technical support

	Number (% of respondents)				WAI	Possibility Level
	High possibility	Possible	Not sure	Impossible		
SEAFDEC	4 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	2.000	H
DOF	8 (53.3)	7 (46.7)	0 (0.0)	1 (6.3)	1.375	H
Banpae Municipality	3 (42.9)	3 (42.9)	1 (14.3)	0 (0.0)	1.286	H
TAO Taphong	4 (25.0)	10 (62.5)	1 (6.3)	1 (6.3)	1.063	P

Note: (-1.00) - (-0.25) = Impossible, I (-0.24)-0.50= Not sure, N  
0.51-1.25= Possible, P 1.26-2.00 = High possibility, H

Table 21 shows the possibility of each organizations providing technical support for the fisher groups, where the respondents from SEAFDEC, DOF and Banpae Municipality expressed high possibility of providing technical support for the fishers group in the future. However, although TAO Taphong did not indicate high possibility, some possibilities of providing technical support were expressed by the respondents.

Table 22. Possibility to present and provide details of the project under the district plan

	Number (% of respondents)				WAI	Possibility Level
	High possibility	Possible	Not sure	Impossible		
SEAFDEC	3 (75.0)	1 (25.0)	0 (0.0)	0 (0.0)	1.750	H
DOF	2 (12.5)	8 (50.0)	5 (31.3)	1 (6.3)	0.688	P
Banpae Municipality	3 (42.9)	4 (57.1)	0 (0.0)	0 (0.0)	1.429	H
TAO Taphong	4 (25.0)	10 (62.5)	2 (12.5)	0 (0.0)	1.125	P

Note: (-1.00) - (-0.25) = Impossible, I (-0.24)-0.50= Not sure, N  
0.51-1.25= Possible, P 1.26-2.00 = High possibility, H

Table 22 shows the possibility of each organization to present and provide the set-net or fisheries related projects with their plans such as organization plan or district plan. Respondents from SEAFDEC and Banpae Municipality indicated higher possibility than DOF and TAO Taphong.

Table 23. Coordination of people, agencies and/or other organizations

	Number (% of respondents)				WAI	Possibility Level
	High possibility	Possible	Not sure	Impossible		
SEAFDEC	3 (75.0)	0 (0.0)	1 (25.0)	0 (0.0)	1.500	H
DOF	2 (12.5)	9 (56.3)	5 (31.3)	0 (0.0)	0.813	P
Banpae Municipality	2 (28.6)	5 (71.4)	0 (0.0)	0 (0.0)	1.286	H
TAO Taphong	3 (18.8)	11 (68.8)	2 (12.5)	0 (0.0)	1.063	P

Note: (-1.00) - (-0.25) = Impossible, I (-0.24)-0.50= Not sure, N  
0.51-1.25= Possible, P 1.26-2.00 = High possibility, H

Table 24. Participation in decision making process

	Number (% of respondents)				WAI	Possibility Level
	High possibility	Possible	Not sure	Impossible		
SEAFDEC	2 (50.0)	2 (50.0)	0 (0.0)	0 (0.0)	1.500	H
DOF	3 (18.8)	7 (43.8)	6 (37.5)	0 (0.0)	0.813	P
Banpae Municipality	6 (85.7)	1 (14.3)	0 (0.0)	0 (0.0)	1.857	H
TAO Taphong	4 (25.0)	9 (56.3)	3 (18.8)	0 (0.0)	1.063	P
Note:	(-1.00) - (-0.25) = Impossible, I		(-0.24)-0.50= Not sure, N			
	0.51-1.25= Possible, P		1.26-2.00 = High possibility, H			

As regards to coordination and participation in the decision making process with the fishermen, respondents from SEAFDEC and Banpae Municipality indicated high possibility levels for both processes. Respondents from DOF and TAO Taphong also indicated the possibility for both processes as shown in Table 23 and Table 24.

Table 25. Participation in the implementation process

	Number (% of respondents)				WAI	Possibility Level
	High possibility	Possible	Not sure	Impossible		
SEAFDEC	3 (75.0)	1 (25.0)	0 (0.0)	0 (0.0)	1.750	H
DOF	2 (12.5)	13 (81.3)	2 (6.3)	0 (0.0)	1.063	P
Banpae Municipality	2 (28.6)	4 (57.1)	1 (14.3)	0 (0.0)	1.143	P
TAO Taphong	7 (43.8)	6 (37.5)	5 (18.8)	0 (0.0)	1.250	H
Note:	(-1.00) - (-0.25) = Impossible, I		(-0.24)-0.50= Not sure, N			
	0.51-1.25= Possible, P		1.26-2.00 = High possibility, H			

On the possibility of each organization and agency participating in the implementation process of the project, Table 25 shows that SEAFDEC and TAO Taphong have high possibility while DOF and Banpae Municipal also have the possibility to participate in implementation process.

When a project is completed, monitoring and evaluation are important normal processes conducted to assess the progress of implementation and in order to be able to conclude successful outcome. The results (Table 26) indicated that only SEAFDEC had a high possibility to participate in this process while respondents from the other organizations expressed that it could be possible to do so.

Table 26. Participation in monitoring and evaluation process

	Number (% of respondents)				WAI	Possibility Level
	High possibility	Possible	Not sure	Impossible		
SEAFDEC	3 (75.0)	1 (25.0)	0 (0.0)	0 (0.0)	1.750	H
DOF	3 (18.8)	11 (68.8)	2 (12.5)	0 (0.0)	1.063	P
Banpae Municipality	1 (14.3)	5 (71.4)	1 (14.3)	0(0.0)	1.000	P
TAO Taphong	4 (25.0)	7 (43.8)	5 (31.3)	0 (0.0)	0.938	P
Note:	(-1.00) - (-0.25) = Impossible, I		(-0.24)-0.50= Not sure, N			
	0.51-1.25= Possible, P		1.26-2.00 = High possibility, H			

Table 27. To be leader for fishers in order to implement and promote the project

	Number (% of respondents)				WAI	Possibility Level
	High possibility	Possible	Not sure	Impossible		
SEAFDEC	1 (25.0)	2 (50.0)	1 (25.0)	0 (0.0)	1.000	P
DOF	3 (18.8)	7 (43.8)	4 (25.0)	2 (12.5)	0.688	P
Banpae Municipality	3 (42.9)	3 (42.9)	1 (14.3)	0 (0.0)	1.286	H
TAO Taphong	7 (43.8)	5 (31.3)	4 (25.0)	0 (0.0)	1.188	P

Note: (-1.00) - (-0.25) = Impossible, I (-0.24)-0.50= Not sure, N  
0.51-1.25= Possible, P 1.26-2.00 = High possibility, H

Table 27 shows the possibility of serving as leaders for the fishers group to implement and promote the project as indicated by the organizations. Only Banpae Municipality had a high possibility (WAI=1.286) compared with the other organizations which indicated only a possibility.

Table 28. Support and encourage the fishers to manage the resources by themselves

	Number (% of respondents)				WAI	Possibility Level
	High possibility	Possible	Not sure	Impossible		
SEAFDEC	3 (75.0)	0 (0.0)	1 (25.0)	0 (0.0)	1.500	H
DOF	4 (25.0)	8 (50.0)	4 (25.0)	0 (0.0)	1.000	P
Banpae Municipality	4 (57.1)	2 (28.6)	1 (14.3)	0 (0.0)	1.429	H
TAO Taphong	7 (43.8)	4 (25.0)	5 (31.3)	0 (0.0)	1.125	P

Note: (-1.00) - (-0.25) = Impossible, I (-0.24)-0.50= Not sure, N  
0.51-1.25= Possible, P 1.26-2.00 = High possibility, H

The respondents' views in supporting and encouraging the fishers to manage the resources by themselves are shown in Table 28. All organizations expressed the possibility and willingness to support and encourage the fishers to manage the resources by themselves.

**Part IV:** Identification of problems, potentials and needs, and analysis of the present strengths and weaknesses of Set-net Fisheries for coastal fisheries management based on institutional/organizations views.

Table 29. Advantages and disadvantages of the set-net project and the technology transfer based on respondents' opinion, by priority

Advantages	Disadvantages
<p><b>1. Set-net fishing gear</b></p> <ol style="list-style-type: none"> <li>1. Catches or products from set-net are of high quality, fresh and less contaminated</li> <li>2. Some conflicts among the fishers and other fishing gears in limited fishing area could be reduced, and also the fishing ground for small-scale fisheries increased.</li> <li>3. After installing, the fishing gear can used for long period</li> </ol>	<ol style="list-style-type: none"> <li>1. Due to the limitation in the fisheries law and regulations, operation or setting up of set-net which is a permanent fishing gear should be allowed or approved first by the government. Set-net cannot just be operated wherever fishers want to.</li> <li>2. Even if the project was successful, in reality or in the practical aspect of its application, set net operation is governed</li> </ol>



<ol style="list-style-type: none"> <li>4. As a selective fishing gear, Set-net can reduce the catch of juvenile and some trash fishes, and it can also be moved from one place to another.</li> <li>5. Not much time is spent for operation, so that the fishermen can engage part-time in other fishing activities.</li> <li>6. Some fishing gear can be operated together with set-net such as squid jigging</li> <li>7. Fishermen gained experiences in set-net fisheries</li> </ol>	<p>by some laws or regulations and should also take into consideration the public's opinion.</p> <ol style="list-style-type: none"> <li>3. In set-net fisheries, the first investment is costly requiring big budget</li> <li>4. Not encourage fisherman to do fishing alone or separately because set net operation needs more manpower</li> <li>5. Set-net needs to be maintained often</li> <li>6. Set-net may obstruct other fishing gears</li> <li>7. During monsoon for 3 months, the fishermen can not operate the set net, other activities should be provided for them during such time</li> <li>8. Set-net fishery is still in some limited area, and has not yet been expanded or promoted</li> <li>9. If a high position officer will disagree on this kind of fishing gear, then not enough study to cover all dimensions of this gear could be carried out, then it might be difficult to promote set net fisheries in the future</li> </ol>
<p><b>2. Environmental Impact</b></p> <ol style="list-style-type: none"> <li>8. Set-net has been found to address the issues of declining fishery resources, overexploited resources and also over-fishing</li> <li>9. The gear enhances and recovers the declining coastal fishery resource</li> <li>10. The gear serves as fishing ground protection and rehabilitation</li> <li>11. Necessary for fishery resource conservation</li> <li>12. The gear protects and preserves the natural resources</li> <li>13. The gear enhances the fishery resources</li> <li>14. The gear serves as a habitat for aquatic animals</li> <li>15. Promotes awareness building on resource conservation</li> <li>16. Makes the fishermen more concerned and aware of responsible fisheries</li> <li>17. Set-net as a selective fishing gear results in positive impact to the resources</li> <li>18. An environmental friendly fishing gear is introduced to the fishermen</li> </ol>	<ol style="list-style-type: none"> <li>10. This fishing gear also catches some small fishes</li> <li>11. Some fishermen still lack the knowledge and experience in set-net fisheries and its impact</li> </ol>

<p>19. Leads to reduced trawl fishing in the near shore</p> <p>20. Encourages fishermen to manage the resource using co-management practices</p> <p>21. Energy saving is promoted, such as reduced use of oil, etc.</p>	
<p><b>3. Socio-economic Impact</b></p> <p>22. Set-net is a supplementary fishing gear for fishermen as they can do another main job or operate other gears to obtain more income</p> <p>23. Set-net fisheries support and encourage supplementary job, particularly coastal fishery occupation and increase the fishermen's income</p> <p>24. Encourage the fishers to gain more income</p> <p>25. Reduce cost of operation compared with other fishing gears</p> <p>26. Reduction of cost and effort</p>	<p>12. Only members can get benefits from the set-net project</p>
<p><b>Group and cooperative management</b></p> <p>27. Set-net and the technology transfer received support from various organizations and institutions such as expertise and funds</p> <p>28. Set-net project encourages the fishers to cooperate among other fishers in their community</p> <p>29. Encourage and inspire people to work as a group and cooperative</p> <p>30. Collaboration among fishermen to do the fishing operation together supports the idea of working together as a group in the future for sustainable fisheries development</p> <p>31. Fishermen learn fisheries co-management and the ways to become a cooperative</p> <p>32. Set-net is a tool to encourage fishers to harmonize or unite among themselves in the community</p> <p>33. To encourage and inspire fishers to setup local fisheries organizations</p> <p>34. Good cooperation and strong support from other organizations</p>	<p>13. Group problems occur such as incorporation or not efficient cooperation among members</p> <p>14. Fishermen can not maintain the activity by themselves, still need support from other organizations or institutions</p> <p>15. Set-net fisheries need a number of members but when this project started, there were too many members, it should start with small group of members who are really interested and the membership could be expanded later</p> <p>16. After the successful implementation of the project, some members thought that if there are more members then the share of the profit for each member could be lower</p> <p>17. If group management is not completely transparent then it would be difficult to develop it into a cooperative</p> <p>18. Conflict between the leaders and members or among members occurs because leaders could not make clear answers or clear some doubts and their actions are not transparent</p>

<p>35. To encourage and promote co-management and cooperation among themselves</p>	<p>19. Some members who are not serious to do the set-net operation could bring some management problems</p> <p>20. Some fishermen living quite far from the site feel uncomfortable to join the project and its implementation</p> <p>21. No guidelines for setting up the cooperative fishers group yet</p> <p>22. Fishermen still do not clearly understand their roles, responsibilities and fishing rights</p>
--	---

Table 30. Problems identified on the set-net project and suggested resolutions from local organizations and external institutions' views

Problems and risks	Reasons	Resolutions
<b>1. Group management or cooperative management</b>		
Fishermen could not manage the resource by themselves	Less knowledge and no contact with any organizations/institutions supporting the project	Introduce and distribute related information to fishers.
Not successful cooperative management among the fishers group	<p>Less members</p> <p>Roles and responsibilities not clearly identified and defined</p> <p>Lack of cooperative management and organization system</p> <p>Fishers group management might have received less support or fishers have not clearly understood the management system of the group</p> <p>Not exactly following the role and responsibility and also financial system not transparent</p>	<p>Encourage and give information to fishermen to be members</p> <p>Introduce how much benefits they can get if they work as a group</p> <p>Responsibilities have to be clarified to all members</p> <p>Encourage other organizations to support and train the fishermen on the organization system</p> <p>To have a transparent system, particularly the financial and accounting system</p>

<p>Set-net fishers group not strong enough to manage in the future</p>	<p>Low satisfaction on the group's management</p> <p>Fishermen have less consultation among themselves or rare chances of talking to each other</p>	<p>Chairman should be a person who is more respected by the fishers</p> <p>The chairman should regularly consult and conduct meeting with the members to clarify any problems and listen to the members' problems and their suggestions and opinions</p> <p>Encourage the fishers group to have regular meetings among themselves and with other fishers group even if they are not members</p>
<p>Less diverse members and less members</p>	<p>Not equal distribution to other communities in terms of membership in the set-net fishers group</p> <p>The chairman not serious in considering the number of members</p> <p>Not much collaboration with other fishers groups and less clarification made about the group, the responsibilities of a member and the benefits, etc.</p> <p>After the successful implementation of the project, some members thought that having more members will reduce their profit share getting less profit than before</p>	<p>Encourage and give correct and clear information to fishermen to become members</p> <p>More efficient public relations for wider distribution of information to fishermen</p> <p>More public relations to the community and inform other fishers group</p> <p>Expand the information to individual fishers, one-by-one</p> <p>Chairman and members should completely follow the rules and regulations in order to reduce certain conflicts</p>
<p>Non-cooperation among members</p>	<p>No clear benefits that members can get nor responsible guidelines</p> <p>Considering work culture, Thais prefer to work alone or by themselves not working as a group</p> <p>No time</p>	<p>Clear identification of the advantages and disadvantages of the project and also make fishermen understand the advantages and disadvantages</p> <p>Should improve and develop the ways of working as a group</p>

Cooperation among organizations/institutions /agencies	<p>No clear understanding about the project</p> <p>Project's public relation not so effective, some organizations have not received information yet</p>	<p>Clarify the roles and responsibilities of each organization and cooperation among the organizations supporting the project</p> <p>More efficient public relation in order to the cooperative organizations or others</p>
Fishers group seems not so interested to be registered as a legal local fishery organization	Lack of knowledge	Inspire the fishers and give information on how to register as a legal local fisheries organization for easier obtaining of support from government organizations/offices such as provincial cooperative, e.g. training in accounting/ financial system or funding
Less support from central organizations	Some conflicts with high level administration	Present clear information on the project or outcome to get approval and support
Local support not so efficient	Cooperation with the local not so much	Cooperate more with local organizations for effective implementation of thw project and for any direction
<b>2. Benefit sharing and financial system</b>		
Financial system is not very transparent	<p>Leader or chairman of set-net fishers group has very strong power.</p> <p>The cost of operations and income not clearly explained to the members.</p>	<p>Change or rotate the group administration committee among the members</p> <p>Provide clear rules, regulations and responsibilities for the administration committee and fishers group members</p> <p>Adapt, mobilize or reorganize the administration committee to make sure that it follows the rules or regulations of the group or organization</p>
Benefit sharing system may be not clear and fair enough	Not clearly identified and presented	<p>Financial and accounting system should be properly managed and organized</p> <p>Have documents and supporting papers ready to show to the members</p>

		Set a meeting to discuss among the administration committee and members in order to clarify the problems and find solutions
<b>4. Gear problems</b>		
Set-net development for the future is less priority and may be too fast to disseminate	Lack of information to support the project, high position officers tend not to agree with the project	Study all related information of the set-net or the impact of the fishing gear before disseminating nationwide along the coastal areas
The set-net structure or design not completely suitable for the fishing ground the whole year	Wind, current sometimes change as well as the monsoon season	Redesign the set-net structure to fit with the physical geographic conditions otherwise find a suitable site
Fishermen found it difficult to setup the set-net themselves	Lack of knowledge and experience	Conduct training for fishermen and government staff on set-net fisheries
The production is not much both in terms of number of species and quantity	The set-net is sometimes set-up not following correct directions because fishes have also different behavior	-
<b>4. Process and implementation Problems</b>		
Hauling system	Some fishers come late then waste the time annoying other fishermen who come on time	Timing is important, fishers should be made more concerned about the operating system/fishing operation and should therefore be punctual
Handling system	Project has no refrigerator for the catches	Develop the market system and have a refrigeration system for some fishes left local marketing
Product marketing or catch marketing	No system yet, managed by some people	Marketing system should be developed more efficiently
<b>5. Other problems</b>		
The project not completely understood even by the set-net fishers group	Transferring the preparation and arrangement to the fishers group	More practical than academic is needed, and from the practice make a successful case for the fishers to learn

Budget support	Budget always comes with the policy and has a certain period of coverage	Finding new host/sponsors
Most of the fishers houses or their living areas belong to the government	Fishers may not be local people, coming from other provinces	Should reorganize in order to avoid the development problems in the future

### **Conclusions and Recommendations for future consideration**

This study intends to assess the attitude and perception of local government organizations and external agencies on the set-net project and fisheries, and also to examine the possibility of extending their support to enable the fishers group to continue the project in the future or in any other projects related to fisheries management in the future.

The attitude and perception of the respondents towards the set-net fisheries and the project in general are mostly positive with the general agreement that the project has been useful to the community with the fishermen having improved their livelihood after the project has been implemented. Moreover, the local organizations involved such as the Banpae Municipality and TAO Taphong have indicated higher possibility of providing budget support to the set-net fisheries or any related fisheries projects to the community in the future than the other concerned organizations or institutions. For other relevant support such as in information exchange, coordination among other sectors, implementation, monitoring and evaluation, and participation in the decision making processes, the respondents expressed their willingness to give the necessary support.

For the continuation and promotion of the set-net fisheries for coastal fisheries management in the future, the survey gathered that it would be possible to get support from the local organizations, local government agencies, and even external agencies like SEAFDEC. The results also indicated that set-net fisheries could be handled by the small-scale fishermen group with the cooperation of local organizations and local government agencies and/or external institutions.

Similarly, the results of the survey on the attitude and perception of various organizations showed positive although it could also be noted that the continuation of the project may face some difficulties or risks which include: 1) group management and cooperative management, 2) Benefit sharing and financial system, 3) Gear characteristic, and 4) Fisheries process and implementation. Although the continuation of the set-net project in the future is possible, the fishers group should play a key important role in solving some problems, as observed from the respondents' different views which they expressed during the survey.

## **References**

SEAFDEC Training Department. 2005. Final Report of Set-net Project/Japanese Trust Fund I: Introduction of Set-net Fishing to Develop the Sustainable Coastal Fisheries Management in Southeast Asia: Case Study in Thailand 2003-2005. 402 p.

SEAFDEC Training Department. 2008. Technical Manual of Set-net Project/Japanese Trust Fund IV: Set-net Technology Transfer for Sustainable Coastal Fisheries Management in Southeast Asia. 214 p.



**Appendix**

**A Questionnaire for Studying  
The Attitude of Local Organizations and local government agencies on Set-Net  
Fisheries and its Technology Transfer for Coastal Fisheries Management**

**Objectives of the this questionnaire**

1. To know the attitude of local organizations and local government agencies on Set-net Fisheries and its technology transfer
2. To know the possibility that the local organizations and local government agencies will continue to support this future activities and on how they will support.
3. To identify the problems, potentials, needs and analyze present strengths and weaknesses of Set-net Fisheries for coastal fisheries management based on organizations' views

**Respondent's Personal Information**

Name .....

Address.....

Institution / Organization .....

Interviewer.....

Date of Interview.....

Remark.....

**PART I. ATTITUDE OF TAO MEMBERS AND LOCAL GOVERNMENT STAFF TO THE COASTAL FISHERY RESOURCES PROBLEMS**

**1. Please tick and order the problems by priority based on their occurrence in your coastal area**

In your community, identify most serious coastal fishery resources problems

- ..... Fishery resource was highly declining
- ..... Mangrove was destroyed
- ..... Declining of coastal fishery resource biodiversity and some species were extinct
- ..... Waste and waste water from community
- ..... Conflict among group of fisher
- ..... Limited fishing area or fishing ground
- ..... Illegal fishery
- ..... Over fishing
- ..... Others .....

**2. Please assess the capacity of your organization or institute in coastal resource management in the past**

Issue	Yes	No
Planning process - Identify the coastal fishery resource problems		

- Prioritize the project to solve the problems - Formulate the objectives and areas and resources - Formulate the organization plan		
Implementation - Assign responsibilities and mobilizing of people - Coordinate with community - Coordinate with other agencies or organization - Problem solving		
Monitoring and evaluation - Monitor and evaluation		

**PART II. ATTITUDE OF TAO MEMBERS TOWARDS SET-NET FISHERIES AND ITS TECHNOLOGY TRANSFER**

**1. To know the attitude of TAO/local government agencies on Set-net Fisheries and its technology transfer**

<b>Issues</b>	<b>Very good</b>	<b>Good</b>	<b>Fair</b>	<b>No</b>
1. Do you know about Set-net fisheries				
2. Did you know about the Set-net project and its technology transfer				
<b>Did you agree with the following sentences?</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>
3. The project is useful to your community				
4. After the project was implemented, did fishers have better livelihood				
5. The project gave benefit only to fishers group				
6. The project gave benefits only to members of set-net project				
7. The project can reduce some conflicts among fishers groups				
8. Set-net can protect the coastal fishing ground from commercial fishing boats				

9. Set-net can enhance coastal resources by providing more substrate and shelter for marine living organisms				
10. The Set-net and its technology transfer might be a tool for coastal fishery management in the future				
11. The fishermen in the project have started, learned and practiced group cooperation and management, and hence could be developed to a fishery cooperative				
12. In the future, this project should be transferred under the responsibility of the community with technical support from the Department of Fisheries Thailand .....				
13. if disagree, in which direction should the project be continued ..... ..... .....				

**2. To know the possibility that the TAO/local government agencies will support the future activities and on how they will support**

**The possibility that your organization will support in the future**

<b>Issue</b>	<b>Highly agree</b>	<b>Agree</b>	<b>Not sure</b>	<b>Impossible</b>
1. Budget support				
2. Information acceptance				
3. Technical support				
4. Exchange information and opinion				
5. Present and provide project information to district plan				
6. To serve as coordinator for fishers, agencies and/or other organizations				
7. Participation in decision making process				
8. Participation in implementation process				
9. Participation in monitoring and evaluation processes				

10. To be a leader for fishers in order to implement and promote the project				
11. Support and encourage the fishers to manage the resource by themselves				

**3. To identify problems, potentials, needs and analyze present strengths and weaknesses of Set-net Fisheries for coastal fisheries management by TAOs/ local government and external agencies**

Table 1. List of advantages and disadvantages of the set-net and its technology transfer in your opinion

Advantage	Disadvantage

Table 2. Identify problems and resolution advises

Problem	Reason	Resolution