

ATTITUDE OF SMALL-SCALE FISHERMEN TOWARD THE FISHING RIGHT SYSTEM IN CHANTABURI PROVINCE

by

SEAFDEC *

and

Kasetsart University**

ABSTRACT

The main theme of the study was to understand the attitude of small-scale fishermen to the fishing right system and the factors influencing their attitude to it in Chantaburi Province. The perception of information of the small-scale fishermen was also determined together with their relationship and attitude toward the fishing right system. The study area was Chantaburi Province in the Eastern Part of Thailand. Data were collected randomly from 300 selected fishermen of 4 Sub-Districts in Chantaburi Province during May, 1995, using personal interview schedules in one on one situations. Product Moment Correlation Coefficient (r) has been used to define the correlation among the variables. Findings showed that 79 % of fishermen agreed that the system will ease the conflict problems between them and the commercial fishermen. Data also showed that the fishermen believed that the system will lead to fishing cost reduction and an increase in their catch. 82 % agreed to take responsibilities on conserving and managing the fisheries resources while 79 % agreed that the government should continue law enforcement. The majority of them also agreed that the government should urgently issue laws and regulations that are required for the system and most of them accepted the need to establish a fishermen group. 74 % of them had an intention to participate in the activities of the group. The 'r' values indicate that the perception of information was highly significantly related to the attitude toward the system.

* Pouchamarn Wongsanga and Phattareeya Suanrattanachai, Research Division, Southeast Asian Fisheries Development Center, Training Department, Thailand

**Kungwan Juntarashote, Sangtian Aujimangkul and Methee Kaewnern, Department of Fishery Management, Faculty of Fisheries, Kasetsart University, Thailand

1. Introduction

The marine fishery industry of Thailand has been playing a significant role in supplying high grade animal protein, creating employment, encouraging related industries, creating a high gross domestic product and additional foreign exchange earnings for the Thai people. While this type of the industry has been rapidly developed during recent years, the Thai marine fishery has also encountered difficulty as its fishery resources have been heavily exploited and this has resulted in a state of depletion. In seeking new fishing resources, some large-scale commercial fishing fleets have set themselves to fish legally and illegally in the waters off the neighbouring countries, although the practices became operational both under a series of fishing agreements and joint venture fishery programmes.

However, there is still a large proportion of the Thai commercial fishing boats remaining to fish within Thai waters and who compete with each other in exploiting these very limited fishery resources. They sometimes encroach upon the prohibited 3-km area from shore. In this respect, the small-scale fishermen who engage in fishing along the coastal areas have suffered strong adverse affects from this practice. The present small-scale fishermen have thus inadequate resources to exploit for their living and livelihood. The conflict among groups of fishermen over the available resources is therefore a critical and growing problem. From an analysis point of view, the small-scale fishery can collapse, if the problems are left unattended.

The Department of Fisheries of Thailand (DOF) has realized this critical situation and has tried to impose several management measures, such as area and seasonal closures, gear restriction, mesh size limit and limited entry, aiming to solve these problems. However, since these measures have not made any progress in overcoming the problems, the DOF has therefore broadened its policy by welcoming new initiatives from fishermen's participation in the decision making process. The new open policy for the management of small-scale fishery has therefore been established under the fishing rights and community-based fishery management scheme aiming to alleviate the problems of severe depletion of coastal fisheries resources and the growing conflict among different groups of Thai fishermen. Through this scheme, the small-scale fishermen will be granted exclusive rights to utilize the fishery resources in their fishing grounds. They will also have responsibilities in managing the coastal fisheries resources which are not common properties by themselves. The sustainable development for the small-scale fishery sector is believed to be possible through the management of these owner groups.

In order to encourage and support this new concept of coastal fishery management, a series of important data on socio-economics and attitudes of fishermen are required to assist policy-makers of the DOF in the planning and implementation processes. The project on the attitude of small-scale fishermen towards the fishing rights system originated by SEAFDEC researchers in cooperation with Kasetsart University is therefore necessary for the new management policy aiming to benefit the Thai small-scale fishery sector.

2. Objectives

The objectives of the study were as follows:

- i) To study the attitude of small-scale fishermen towards the fishing rights system; and
- ii) To study the factors influencing the attitude of small-scale fishermen toward the Fishing Rights System; and
- iii) To study the socio-economic conditions of small-scale fishery households in Chantaburi Province.

3. Methodology

Study Area and Data Collection

The study area was Lamsingha District of Chantaburi Province which is located in the Eastern Part of Thailand (shown on map).

The targeted population for the study are small-scale fishermen. The sample fishery households were from the fishery households in Lamsingha District by the cluster random sampling method using Sub-districts as cluster. In each cluster, the small-scale fishery households were selected by a simple random sampling method. In total, 300 fishery households were selected as the representatives of the fishery households in study area.

The data were collected by interviewing through a structured personal interview schedule. The questionnaire was tested with some fishery households as a pretest before use with the target group. The data were collected during 7 to 15 May, 1995.

Variables of the Study

The structure of the questionnaire can be divided into three parts i.e., Socio-economic conditions, Perception of information and Attitude of small-scale fishermen toward the Fishing Right System. In this study, the work on attitude is a problematic variable which was defined as the dependent variable. On the other hand, Socio-economic conditions and Perception of Information were defined as independent variables of the study.

Definition of Some Key Terms

Attitude: It is a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related. (GORDON W. ALLPORT, 1935)

Attitudes have three components: a) cognitive component, b) affective component, and c) behavioral component.

Small-scale fishermen : The fishermen who utilize the coastal areas as their fishing grounds for capture/coastal aquaculture by using boats less than 10 gross tons (or length of boat less than 12 meters) and use fishing gear as follows: Gill nets and encircling gill nets groups, Stationary nets groups, Small push nets and other moving gear groups, Small trawl groups and Hook groups.

Fishing Right : Thailand Department of Fisheries defined the Fishing Right System as a kind of a property right, by which fishermen will have exclusive rights to use the sea areas and resources, which have been specified in each fishing right. In this system, a Territorial Use Right in Fishery will be granted to a fishermen's group based on a legal framework (law) established by the government. With the Fishing Right System, fishermen themselves may create their own fisheries management systems, which should result in the conservation of fishery resources as well as an improvement to their income and living conditions.

Data Analysis

The collected data were analyzed by the SPSS PC+ (Statistical Package for the Social Sciences). The analysis is composed of two parts using Descriptive Statistics and Inferential Statistics. Mean, standard deviation and minimum/maximum scores were obtained for Descriptive Statistics. The Inferential Statistics which were used for the study on relationships of the attitude of respondents toward the Fishing Right System with the perception of information were computed using Pearson's Product Moment Correlation Coefficient (r). One percent level of probability has been used for accepting or rejecting the observed ' r ' value.

4. Results

4.1 Socio-economic Conditions of Fishery Households

Data and information were collected from a sample of 300 fishery households in Laemsingha District, of which 124, 26, 66 and 84 samples were collected from Paknam Laemsingha, Bang Srakao, Bang Krachai and Koh Prued Sub-districts, respectively. The outcome of the study is as follows.

1) *Sex and age*

The head of the households was the target for interview and in the case that the household head is not available, the housewife was interviewed on behalf of her husband. In some cases, the head is female because she is single, widowed, divorced or separated. From the total interview samples it was found that 85.7 per cent were male and the remaining 14.3 per cent were female.

Regarding the age of small-scale fishermen in the study area, it was determined that the majority (76.7%) were in the age range 26-55 years, of which 30.3 per cent of the total were in the range of 36-45 years. And 25.7 and 20.7 per cent of the total were in the age range of 26-35 and 46-55 years, respectively. The eldest fisherman in the study area was 81 years old, whereas the youngest was 16. It is a fact that the small-scale fishery is a livelihood mainstay for the people who live along the coastal areas. The small-scale fishermen have very low job opportunities owing to their lack of education and experience. Thus, they have to rely on the fishery sector for their survival.

2) *Education*

Thai fishermen are similar to other farmers of the country in that they have less opportunity for formal education due to the low income of their families. Although, they have much experience in fishing since they have been trained by their relatives and ancestors. But they lack sufficient knowledge for breaking the vicious circle. Therefore, the government has to provide informal education for the small-scale fishermen and formal education for their children.

The study showed that 73.7 per cent of the total had finished primary school (4 years) and 20.7 per cent had passed to the second level of primary school (6 years). The remainder never attended school or graduated higher than primary school.

3) *Marital status*

In general, Thai people after they marry, they hardly ever divorce because by their belief that it will bring social shame. Thus, it was found that 85.7 per cent of the total number of fishermen are married and live together with their families. Only 9.7 and 4.7 per cent of them were single, divorced or their spouses had passed away.

4) *Social activity participation*

Owing to the long history of Thailand as a monarchy, Thai people are good followers but hesitate to participate as a leader of any social activities. Therefore, it is very hard to find a good leader in any fishing community, the fishermen prefer to be followers.

The study has confirmed the above beliefs, only 0.7 per cent of the total fishermen were head of the village, 1.7 per cent were members of a volunteer group and 5.7 per cent were members of a village, or sub-district committee. 92 per cent of small-scale fishermen did not participate in any activity groups, they are only willing to be followers.

4.2 Fishery Activities

Fishery is comprised of capture and aquaculture. The small-scale fishermen may engage in capture fishery, or aquaculture or capture cum aquaculture. In practice,

the fishermen prefer capture to aquaculture because they could earn money on every fishing trip, whereas, they have to wait for a period of time to earn money from aquaculture. 67.0 per cent of the fishermen in the study area engaged solely in capture fishery and 21.3 per cent engaged in capture fishery and aquaculture. Only 11.7 per cent of them engaged in aquaculture alone.

In future, the percentage engaged in aquaculture may increase owing to the development of coastal aquaculture, i.e., fish cage culture, shellfish culture, etc. This may also be influenced by the depletion of coastal fisheries resources.

1) *Fishing boats*

The small-scale fishermen in Thailand engage in fishing, some without boats or with non-powered boats, some with out-board powered boats or small in-board powered boats (less than 10 GT). At an early stage of marine fishery development in Thailand, most of the small-scale fisheries used non-powered boats and changed to out-board powered boats later on.

70 per cent of the small-scale fishermen in Laemsingha District used out-board powered boats, whereas, 21.3 and 5.3 per cent used in-board powered boats and non-powered boats, respectively. There were only 3.3 of them engaged in fishing without boats.

2) *Fishing gear*

The small-scale fishermen mainly use small scale and low catch efficiency gear. The fishing gear mainly employed can be divided into two categories, i.e., stationary gear and mobile gear. In practice, the fishermen may use one type of gear or more than one type of gear. However, there is a fishing gear that fishermen use as the major gear and use others as minor gear. The major gear contributes the main portion of fishermen's income.

The study revealed that 86 per cent of capture fishermen in study area used single gear group and the remaining 14 per cent used combined gear groups.

3) *Fishing ground*

Owing to the types of boat and fishing gear employed by the small-scale fishermen, the main fishing grounds are limited to the shallow waters, i.e., in the river, river mouth or coastal areas.

The fishermen in Laemsingha fish mainly in the river (47%) and inshore areas (35%). Only 8 and 7 per cent fished in the river mouth and offshore. Thus, it may be concluded that the small-scale fishermen live close to their communities.

4) *Experiences in fishery*

On the study of experiences, the results showed that the majority of fishermen in Laemsingha District had experience in fishery. Only 4 per cent of them did not have experience in capture fishery, but 2 per cent who are engaged in aquaculture did not have experience in aquaculture. Because aquaculture is only newly accepted by the fishermen in this area, there were very few fishermen who had engaged in aquaculture in the past.

Most of the fishermen had 1-10 years experiences in capture fisheries and aquaculture. Some fishermen had experience of less than 1 year because they were newcomers. 55 years was the longest experience for capture fishery, whereas, 50 years was the longest for aquaculture.

5) *Income from fishery*

The income of small-scale fishermen varies from season to season. The monsoon season provides low income to fishermen because their fishing days are limited.

The sources of income of fishermen in Laemsingha District were mainly from fishery. The majority of small-scale fishermen in the study area (65.2 %) had income solely from fishery. The remaining 22.4 and 12.4 per cent had income from fishery as a major and minor source of income, respectively. It may be concluded that 65.2 per cent of the fishermen were full-time fishermen; 22.4 per cent were major part-time fishermen and 12.4 per cent were minor part-time fishermen.

4.3 Perception of fisheries information

For the development of small-scale fishery as well as for the fishing rights system, the planners have to know how, and from whom, the fishermen obtain fishery information. This will be a guideline for planners to establish an appropriate fisheries information transfer plan.

The study showed a significant figure, 76.0 per cent of the fishermen, never received any fisheries information from fishery officers. It was also found that 97.3, 92.0, 88.0 and 76.0 per cent of total fishermen never received any fisheries information from the teacher in the village, government officers (excluding fishery officers), village committee members and village heads, respectively. The main sources of information for fishermen were television (76.7%), neighbors (73.3%) and family members (48.3%).

Regarding the frequency of fisheries information reception, the fishermen who received fisheries information from the mentioned sources received it only once or twice a year. Very few fishermen received information weekly or monthly. They also received information from television only once in 2-3 months. However, the fishermen

received information from their neighbors weekly and from family members almost daily.

Results from the study on the perception of the fishing rights system showed that 85 per cent of the fishermen had no knowledge on this issue. The remaining 15 per cent had never heard of the fishing rights system through fishery officers who are the first hand information source for them and other sources of information except other government officers, neighbors or relatives. This confirmed that the fishermen still lack understanding on the fishing rights system.

4.4 Attitudes of Small-Scale Fishermen Towards the Fishing Rights System

As the main objective of the study, the attitudes of small-scale fishermen in Laemsingha District on the fishing rights system were obtained. The outcome of the study is as follows:

1) *Solving conflict problem*

As mentioned earlier, owing to the coastal fisheries resources depletion problem the fishermen have to compete with each other in fishing and this leads to conflict between them. By assumption, the fishing rights system will solve the conflict problem. The study found that 79 per cent of the fishermen agreed that the system will ease the conflict problems between themselves and commercial fisheries, 50 per cent were agreed strongly. Only 11 and 10 per cent of them were undecided or disagreed.

2) *Fishing cost reduction*

Theoretically, the fishing rights system is a mechanism to enrich the coastal fisheries resources. The fishermen need not spend more time in fishing leading to a reduction of fuel cost. In addition, the fishermen can catch more fish with the same type of fishing gear, thus the fishing cost per unit of fish will be decreased.

The study showed that the fishermen believe that the fishing right system will lead to fishing cost reduction and their catches will be increased. However, there were 21 per cent of the total fishermen were not assured that the fishing rights system can reduce their fishing costs. 24 per cent of them were not assured that the fishing rights system can increase their catches. Around 30 and 20 per cent of them did not believe that the system can reduce fishing costs and increase their catches.

3) *Responsibilities of fishermen*

In the fishing rights system, the small-scale fishermen have not only the fishing rights but also they have responsibilities in managing the fisheries resources in their territory. Thus, the fishermen have to accept these responsibilities otherwise the system can not develop.

82 per cent of the fishermen in the study agreed to take responsibilities for conserving and managing the coastal fisheries resources. However, 79.7 per cent of them agreed that the government should continue law enforcement because at present there is no law that authorizes the enforcement power to fishermen.

In practice, the small-scale fishermen have an awareness on conserving the fisheries resources more than commercial fisheries. The income of small-scale fishermen is strictly dependent upon the coastal fisheries resources in the fishing grounds that they have fished for many decades. They can not fish in the fishing grounds far away from home owing to the limitation of their fishing boats and fishing grounds that they employ. In contrast, the commercial fishermen can go to any fishing ground where fisheries resources are available. Thus, they pay very little attention to conserving the resources.

4) *Laws and regulations for the fishing rights system*

The opinions of fishermen on the relevant laws and regulations for the fishing rights system were obtained in the study. The majority of them agreed (39%) and strongly agreed (37%) that the government should urgently issue laws and regulations that are required for fishing rights system implementation. Almost all of the fishermen were not certain that the present fishery law is applicable for the system.

For capture fishery, 65.8, 54.9 and 53.1 per cent of the total fishermen required regulations for fishery management measures on areas and seasonal closures, gear restrictions and limit of the number of fishing gear and size of boat, respectively.

For coastal aquaculture, the majority of the fishermen need not have any regulations. However, there were 47.7, 34.6 and 29.7 per cent of the total who wanted to have regulations for culture areas, culture methods and species cultured, respectively.

5) *Fishermen group formation and participation*

As the government has to grant the fishing rights to a group of fishermen not to individual fisherman, the fishermen must join together to form group, cooperatives or any other society and register as a juridical body.

From the study, it was found that most of the fishermen accepted establishing a fishermen's group. However, there were different opinions on selecting the fishermen to be members of the group that would be the juridical body to obtain the fishing rights from the government. Only 27 and 20 per cent of fishermen strongly disagreed and only disagreed on members who will be selected by government officers. Whereas 26.3 and 17 of them agreed or strongly agreed on members who will be selected by government officers.

For the participation in the activities of the group for the development of the fishing rights system, 74 per cent of fishermen had an intention to participate, whereas, 20 and 6 per cent of them were not decided or would not participate, respectively. However, only 3.1 per cent of them had intention to participate as a member of the managing committee. The remainder preferred to be members of the group only, they don't want to be concerned with management of the group.

The study also found that the activities that the member had an intention to participate in were group formation (34.5%), comments on fishery management programme (34.2%), financial support (50.0%), labor force (34.3%) and follow-up of the fishery management programme (35.3%). For attendance of the meetings, only 30.4 per cent of them had the intention of attending every meeting.

4.5 Relationship of the Perception of Information with the Attitude of Small-scale Fishermen toward Fishing Right System and its Components

Pearson's Product Moment Correlation Coefficient (r) values among the independent variable- Perception of Information and the dependent variable - the attitude and its components are presented in the Table below. The ' r ' values from the Table clearly indicate that the independent variable was significantly related to the attitude of the respondents.

Table - Relationship of the Perception of Information with the Attitude of Small-scale Fishermen toward the Fishing Right System and its Components

Attitude and its components	Independent variables: Perception of Information Correlation coefficient ' r '
Attitude	0.3225**
- Cognitive	0.3343**
- Affective	0.2012**
- Behavioral	0.1458*

* Significant level = 0.01

** Significant level = 0.001

The Perception of Information were positively correlated with the attitude towards the Fishing Right System at a highly significant level. The Perception of Information was positively correlated with the Attitude components - Cognitive and Affective at a highly significant level while Behavior was positively correlated at a significant level only. This indicates that a positive attitude towards the Fishing Right System increases with an increase of the Perception of Information of small-scale fishermen.

5. Conclusions

The fishermen in Laemsingha District are faced with the same problems as other small-scale fishermen in the country. The most severe problems are coastal fisheries resources depletion and the conflicts between small-scale fishermen and commercial fishermen. Thus, the Department of Fisheries has a plan to introduce the fishing rights for the coastal fishery management programme in order to solve those problems. From the study, it was revealed that in the general view the fishermen agreed to develop this system in their coastal areas. However, for development of this system in the study area the DOF should consider the followings.

5.1 The present laws and regulations are not applicable for the development of the fishing rights system. The fishermen ask the DOF and agencies concerned to issue relevant laws and regulations. However, the fishermen should have an opportunity to participate in the law and regulation issuing process.

5.2 At present, the fishermen have a limited knowledge on the system. Therefore, DOF must use all of the available methods to educate the fishermen on the concepts of the fishing rights system. In addition, the government officers who are concerned with the system should have a common understanding of the concepts of this system in order to give the right direction of development the system.

5.3 The fishermen need some assistance from the government in terms of education and financial support of fishermen group activities. The fishermen still lack knowledge and experience in group activities, particularly activities under juridical body conditions.

5.4 Under the fishing rights system, the fishermen take full responsibility for the management of their fisheries resources and the DOF will act as their advisors. But the fishermen in the study area still need law enforcement practiced by the DOF because at the initial stage the fishermen have no capability of enforcement. Therefore, the DOF should continue to provide more patrol boats for law enforcement practice in the coastal areas when the fishing rights system is introduced in order to assure the fishermen that the commercial bodies can not enter into their coastal areas.

6. References

- Ajzen, I., & Fishbein, M. Attitude-behavior relations : A theoretical analysis and review of empirical research. *Psychological Bulletin*, 1977, 84, 888-918.
- Allport, G.W. *Handbook of Social Psychology*, Wercestor: Mass Charle, University Press, 1935.
- Allport, G.W. Attitude. In M. Fishbein (Ed.), *Attitude theory and measurement*. New York: John Wiley & Sons, 1967, pp. 3-13.

- Hongskul, V. 1985. Marine fishery of Thailand. Fish Marketing Organization. Bangkok. 17 pp.
- Juntarashote, K. 1994. Possible Development of Community-Based Fishery management in Thailand With the Advent of the Fishing Rights Systems, p. 293-297. Proceeding of the 7th Biennial Conference of the International Institute of Fisheries Economics and Trade.
- Juntarashote, K. 1995. Thailand's Fisheries Rights Program. Paper presented at the Fisheries Co-Management Workshop on Research Strategy, Methodologies, Field Experience of Partners and Exchange of Information, the North Sea Centre, Hirtshals, Denmark, May 29-31, 1995.
- Piumsombun, S. 1994. The socio-economic feasibility of introducing fishing right system in coastal waters of Thailand. p.380-394. Proceedings of the IPFC Symposium held in conjunction with the Twenty-fourth Session of IPFC, Bangkok, Thailand, 23-26 November 1993. RAPA PUBLICATION: 1994/8.
- Boonchuwong, P. 1994. The Pilot Project of Thailand Fisheries Rights Program : Concepts and Methods. (mimeographed, in Thai).
- Wongsawasdiwat, J. 1995. Attitude, Believe and Behavior : Measurement, Prediction and Change. Assumption University. 350 pp. (in Thai).