

Demographic Survey

of Fishing Communities in Thailand: Chumphon Province

by Phattareeya Suanrattanachai and Rattana Tiaye



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



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TD/RES/130



July 2010

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Foreword

SEAFDEC-TD collaborates with the Department of Fisheries, Thailand in developing and improving capacity building of local users for better and sustainability of coastal resources. This implementation is to secure local user's livelihood and food security. Major principle of the implementation has adopted the philosophy of sufficiency economy theorized by H.M. King Bhumipol of Thailand. The philosophy emphasizes three main practices are reasonably, moderately and self-immunity using resources especially natural resources. Genuine practice of the philosophy and user's recognition would lead to a sustainability of natural resources, food security and livelihood ending with both a well-being of local users and a better community as well. Either experience or lesson learnt gained from the implementation is useful to further promote a sustainability of coastal resources in the Southeast Asian Region.



Dr. Chumnarn Pongsri
Secretary-General and
Chief of the Training Department

Preface

With the objective of enhancing the capacity of local people in sustainable utilization and management of coastal resources, SEAFDEC Training Department and the Department of Fisheries of Thailand initiated and implemented the project on “Co-management in Coastal Fisheries Management at Ban Thongkrog Village, Bangnamjued Sub-district, Lang Suan District, Chumphon Province” in 2008. The project was aimed at improving the sustainability of coastal resources as well as the local people’s livelihood and food security by enhancing the people’s capacity and awareness on co-management, taking into consideration the Philosophy of Sufficiency Economy, as theorized by H.M. King Bhumibol Adulyadej of Thailand.

This demographic survey of the fishing communities in the project site was therefore conducted in order to obtain the relevant baseline information of the communities. The outcomes from this survey could be used as basis for the capacity building activities that will be implemented under the same project. It is also expected that the outcomes from this survey, as well as the lessons learned and the achievements from the project implementation, would also be useful for the other development projects that may be initiated and implemented in the area. It is our hope that through this project, the other Southeast Asian countries could adapt in the future the initiative and approach, in specific locations of the respective countries that have similar nature and feature as that of the project site.

Phattareeya Suanrattanachai and co-authors
July, 2010

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Acknowledgement

I should like to present my deepest gratitude to small-scale fishers of Ban Thongkrog Village, Bang Namjued Sub-district, Langsuan District, Chumphon Province for their helps and hospitably participated in the conduct of this study. All villagers have given their unstinting encouragement to finish the study. Finally, I should like to present my deepest gratitude to all colleagues who directly and indirectly have helped me to complete this study. All of you have my profound respect.

Phattareeya Suanrattanachai and co-authors
July 31st, 2010

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Abstract

The objective of the survey is to have obtained targeted village data and information for understanding demography of the village and making a full use of the data and information for the project implementation. The sites of the survey are Ban Thongkrog Village and Ban Ko Pitak Village. The result of the survey illustrated that the fishing communities will become elder society in accordance with respondents have age between 40-50 years old and higher than 50 years old. Major and supplementary sources of income are fisheries and agricultural sectors. Local respondents can earn daily income from fishing operation. Fishing capacities are fishing boat length related to engine and fishing gears indicated local respondents as small-scale fishers. At Ban Ko Pitak Village, value chain of fisheries sector can create additional income by means of home-stay execution. This creative activity helps reducing a pressure to aquatic resource, but entertaining tourists by experiencing in diving, fishing and observing fishing operation. To sustain fisheries sectors as major and supplementary source of income, the philosophy of sufficiency economy should be introduced and applied into the sectors. Particular a means of reasonable and moderate of resource use should be placed top priority guiding to the fishing communities in order to massively and optimistically enhance aquatic resources for longer utilization and security of livelihood.

Keywords: demography of village, fishing capacities, small-scale fishers, the philosophy of sufficiency economy

Demographic Survey of Fishing Communities in Thailand: Chumphon Province

Introduction

The Royal Government of Thailand is now on its Tenth National Development Plan (2007-2011) [1], which continues to adopt the sufficiency economy philosophy. This philosophy was introduced and practiced initially in the Ninth Plan (2002-2006) as a means to progressively recover the deteriorating livelihoods of peoples affected by the economic crisis since 1997. The philosophy of this sufficiency economy stresses on the practice along the middle path of the three basic means of moderation, reasonableness and self-immunity [2]. Along this vein, the Tenth Plan consists of five strategies, namely: 1) human and social development; 2) building strong communities; 3) highlighting on national economy; 4) focus on environmental issues; and 5) emphasis on good governance.

The sufficiency philosophy is applied in every areas of Thailand's development, including the fisheries sector [3], with the Department of Fisheries (DOF) placing emphasis on sustainable development of the fisheries resources. Strategies 3 and 4 are focal strategies, serving as practical guidelines to bring together resource utilization, economic activity and environmental impact to achieve sustainability of the fisheries resources. Similarly, the United Nations Economic and Social Commission (UNECAP) for Asia and the Pacific promoted Green Growth in Asia and the Pacific. The Southeast Asian Fisheries Development Center (SEAFDEC) takes the role as major counterpart of the DOF of Thailand in the promotion of the focal strategies by strengthening the local people groups' management bodies. The application of co-management concepts and practices will be put in place to encourage the establishment of good institutions. Such concepts and practices, which will be implemented considering the Thai Constitution and legal framework, specifically aim to strengthen the capacity and the institution of fishing communities in particular with fisheries co-management concept taking the center role in the sustainable management of the fisheries resources.

The SEAFDEC Training Department (SEAFDEC/TD) has also taken the leading role of promoting the Code of Conduct of Responsible Fisheries with the adoption of specific regional guidelines that include the Regional Guidelines on Responsible Fisheries Management and the Supplementary Guidelines on Co-management using Group User Rights in Southeast Asian region [4,5]. Thus, fisheries co-management concepts and principles, as defined in the two guidelines, are put into practice in the relevant projects implemented by SEAFDEC/TD.

SEAFDEC/TD had also collaborated with the DOF of Thailand to implement the project on Co-management in Coastal Fisheries Management at Ban Thongkrog Village, Bangnamjued Sub-district, Lang Suan District, Chumphon Province starting in 2008. The site was selected based on the information that the village had never received any development activity from the DOF, and that the transfer of experiences on coastal resource management from adjacent villages to the village site could be made possible in order to share information and horizontally make connection among the villages.

The major objective of the Co-management in Coastal Resource Management Project is to promote capacity building and improve awareness of local people to comprehend and practice co-management in coastal resource management. At the same time, the local people would also be able to organize and institutionalize the application of the sufficiency economy philosophy in securing their means of livelihood.

Objectives and Methodology of the Study

Objectives

1. To obtain data and information that could be used for understanding the demography of the village and for the implementation of the project; and
2. To relay the village data and information to the villagers to enable them to understand the status and situation of the economic development of the village as well as on the aspect of resource base management.

Methods

1. Design a questionnaire which would emphasize in obtaining demographic data in general, as well as the status of the fisheries sector and the perception of villagers in terms of their participation in resource management;
2. Define the sample size that could provide the necessary statistical data of the village;
3. Interview the head of the village and the sampled villagers; and
4. Analyze the data collected by descriptive analysis and illustrate the results using charts and tables with corresponding explanations.

Envisaged Outputs

1. Demographic data and information of the village are compiled and made available.
2. The village status, situation, and needs are understood, and the problems are addressed considering the priority needs of the villagers.

National Policy Broadly Adopted the Philosophy of Sufficiency Economy

The Royal Thai Government has developed a series of five-year national social and economic development plans starting with the first plan in 1961. With assistance from the World Bank after the end of the Second World War in 1957 [6], the Thai government adopted the liberal market-oriented policies to chiefly develop the country's economy.

In order to put this policy into practice, a World Bank team suggested to the government to develop a blueprint of the country's economic development strategic plan. This plan consisted of five components, namely: 1) provision of infrastructures to facilitate development; 2) education and health services improvement coupled with external financial and technical assistance; 3) promotion of foreign and local investments to either encourage increased export of agricultural commodities or foster industrial products as import; 4) strengthen the existing and new institutions to manage the economic policies; and 5) encourage private entrepreneurs to handle marketing with liberalization ([6], Ibid).

The Royal Thai Government formulated the First National Economic and Social Development Plan for six years from 1961 to 1966, which was followed by the Second National Plan initially designed for five years (1967-1971). The latter pattern has been used since then up to the Tenth National Development Plan. The first to fifth national development plans placed great emphasis on technology transfer to the agricultural sector to increase production and encourage liberalized market development.

The adoption of the first five plans led to the rapid development of the Thai economy but without prudent utilization of the resources, which resulted in over-exploitation of the resources and degradation of the environment [7]. In terms of social aspects, such rapid development on the contrary led to the severity of the country's poverty issues. The gap of incomes earned between the rich and the poor became very wide. Thus, the Sixth (1987-1991) and Seventh (1992-1996) National Plans were broadly adopted with the concept of sustainable development for the whole nation. This concept was meant to alleviate the problems of resource deterioration, and mainly focused on the agricultural sector's development but certainly included the industrial sector. The emphasis of the concept highlighted on the users' awareness as well as on the responsible and reasonable practice in the utilization of the resources that is friendly to the environment.

During the first half of year 1997, the Thai economy faced severe financial crisis, which caused huge impact and economic downturn and instability of the country's economic development. Recognizing such impact, the National Social and Economic Development Board during the second half of the same year, reformed the national development paradigm and approach. The paradigm was changed from economic-led-growth to human-centered development ([7], Ibid).

The Eighth National Plan was developed considering the Royal philosophy of sufficiency economy as key guideline in the practice of human-centered development. This Royal philosophy was broadly and continually adopted in the Ninth (2002-2006) and the Tenth (2007-2011) Plans. These two plans stressed on the application of the philosophy of sufficiency economy to all development sectors particularly in the agricultural sector.

The Ninth National Development Plan was a framework for medium-term national development consistent with the long-term vision [8]. Consistent with the Eighth Plan, the Ninth also placed great emphasis on balanced development of the human, social, economic, and environmental resources. The preference goal was the practice of good governance at all levels of the Thai society in order to attain genuine sustainable people-centered development.

As envisaged, the achievement of the Ninth Plan would be in the areas of economic potential, where people in the communities would establish strong foundations for social and community development incorporating good management systems at all levels. The performance of the economic potential was envisioned to make Thailand as regional economic center, particularly in primary agriculture, food processing, tourism, education and technology.

The Tenth National Plan, which has practically and continually demonstrated the sufficiency economy philosophy, consists of five strategies, namely: 1) call for human and social development; 2) build strong communities; 3) highlight on the national economy; 4) focus on environmental issues; and 5) emphasize on good governance [9]. These strategies are anticipated to accommodate the proper implementation of the application of the sufficiency economy philosophy in different areas and sectors.

In the genuine practice of the philosophy of sufficiency economy, the United Nations Development Programme (UNDP) Report in 2007 delivered six key messages concerning the philosophy [10]. The key messages are as follows:

- 1) The sufficiency economy is central to alleviating poverty and reducing the economic vulnerability of the poor.
- 2) The sufficiency economy is a means towards community empowerment and the strengthening of communities as foundations of the local economy.
- 3) The sufficiency economy takes corporate responsibility to a new level by raising and strengthening the commitment to practice, conducive to long-term profitability in a competitive environment.
- 4) Sufficiency principles are vital for improving the standards of governance in public administration.
- 5) The sufficiency economy can guide macro-economic policy making to immunize the country against shocks and to plan strategies for more equitable and sustainable growth.
- 6) Sufficiency thinking demands a transformation of human values, a “revolution in the mindset” necessary for the advancement of human development.

The UNDP has targeted to send these messages to communities, corporations, civil society and government in Thailand.

Recognizing the result of the rapid growth which appeared unstable with severe problems of poverty, the Royal Thai Government has fully adopted a sustainable long-term growth with the implementation of the sufficiency economy philosophy. The philosophy of the sufficiency economy according to His Majesty’s remark specified that:

“sufficiency means moderation, reasonableness, and the need for self-immunity for sufficient protection from impact arising from internal and external changes. To achieve this, the application of knowledge with due consideration and prudence is essential. In particular, great care is needed in the utilization of theories and methodology for planning and implementation in every step. At the same time, it is essential to strengthen the moral fibre of the nation, so that everyone, particularly public officials, academics, businessmen at all levels, adheres first and foremost to the principles of honesty and integrity. In addition, a way of life based on patience, perseverance, diligence, wisdom and prudence is indispensable to create balance and be able to cope appropriately with critical challenges arising from extensive and rapid socioeconomic, environmental, and cultural changes in the world [11].”

The philosophy of sufficiency economy based on the His Majesty the King’s speech can be analytically summarized into three elementary steps [12]. The first step involves inputs which are of major relevance to knowledge and morality (Chart 1). The second step is the process of moderation, rationality and self-immunity system.

The last step points to the output performed in the harmonization of life, economy, society and environment including equality, security and sustainability.

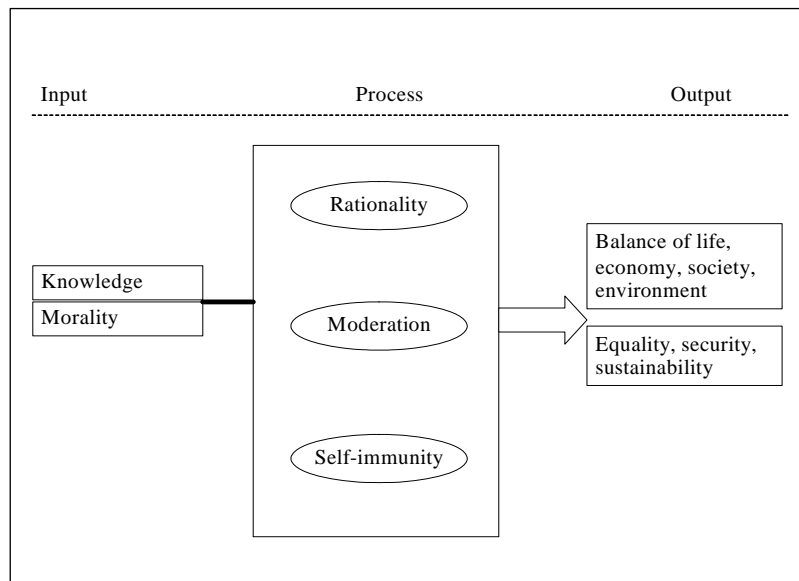


Chart 1. Three elementary steps of the sufficiency economy philosophy
Source: [7]

Application of the Sufficiency Economy Philosophy

In the agricultural sector

His Majesty the King delivered the introduction of the philosophy as a new theory that emphasized on the local level such as the agricultural sector in particular [6]. Three simple steps of applying the new theory to agricultural sector development were also clarified.

The first step involves the process of problem analysis of the households' needs and capacity assessment. For example, the problem of inadequate water supply was commonly identified. The farmers should together solve the problem with partial land donation for the construction of a reservoir or irrigation system. Since construction of a water supply would incur a huge amount of money, this would eligitly call for support from the responsible government agencies and other sources.

The second step is aimed to building up the attitude of self-help among the farmers. They should gather neighbors who had the same common interest to work in groups. The groups should be managed based on the concept and principle of cooperation. This cooperative principle would make the groups credible in bringing down and lowering the costs of raw materials as well as the consumer and social products. Meanwhile, the group could be empowered in order to attain a bargaining power for the marketing of their farmed products to the markets.

The last step was aimed at strengthening the business of cooperative stores to become more credible. Credible business and financial management would make the cooperatives eligible enough to approach much more funds or investments from credit institutions and multinational corporations.

A concrete practice of the new theory in the country had been reported based on the results of the intensive surveys conducted by Dr. Thunwa Jitsanguan of Kasetsart University ([6], *ibid*). The practice of the new theory has been adopted in four basic agricultural areas such as in integrated farming, agro-forestry, organic farming, and natural farming management. These four types of practices were exercised based on the principle of rationality, moderation and self-immunity.

In the non-agricultural sector

The introductory principle of the sufficiency economy philosophy was meant to be applied to the agricultural sector. Many specialists who have much more comprehensive knowledge on the philosophy suggested that the philosophy could also be applied to the non-agricultural sectors, *i.e.* in manufacturing, services and other non-agricultural economic activities.

The services sector could include tourism which covers the green and marine eco-tourism activities that have been recognized as high potential sectors considering that either green or marine eco-tourism is likely eligible enough to address poverty issues and at the same time create job opportunities for the local stakeholders in particular. Green eco-tourism is often and commonly found in the area of organic farming management. This type of management returns the incentives to the owners to enable them to continue the practice of their services without causing any harm to the environment. Meanwhile, guests who join this tour will be educated on the cost of organic farming products and management, and could therefore be encouraged to consume organic farmed products.

Marine eco-tourism on the other hand, could also provide livelihoods and prosperity to the fishing communities and give the chance to practice sustainable use of the marine resources. Prosperity here means that the local stakeholders living along the coastal areas are able to earn incomes by conducting a variety of eco-tourism services in different scales of management. Such activities could include home-stay, fishing for leisure, boat transportation, diving and snorkeling, restaurant and fish product processing. These activities can be managed personally and/or cooperatively as local business ventures to create job opportunities and provide incomes to local stakeholders.

Recently, a number of small-scale fishers have been engaged in eco-marine tourism services. Starting little by little, the fishers occasionally rent their boats to tourists. The big amount of income earned from boat rentals had motivated them to fully engage in this type of activity. As a result, many fishers have modified their fishing boats into passenger boats equipped with life jackets. Basically, their boats have the facilities required and specified by tourists based on their needs. Some fishers also set up fish cage culture facilities attached with small huts constructed to serve as home-stay for tourists.

The small-scale fishers' entry into the eco-marine tourism services and the growth of this sector could lead to the implicit alleviation of the conflicts and competition among capture fishers. Generally, the fisheries resources are known to be already over-exploited. One quarter of all fish stocks are exploited excessively over their sustainable levels [8].

Alleviation of the fishers' conflicts and competition would therefore imply the reduction of fishing capacity and efforts, and eventually towards the reduction of fishing pressure and addressing over-exploitation of fish stocks. Seemingly, the fishers' entry into eco-marine tourism or engagement in capture fisheries would deliberately ensure them of certain sources of income.

Geography

Ban Thongkrog Village is within the territorial area of Bang Namjued Sub-District, Langsuan District, Chumphon Province as shown in Fig. 1 [13]. The total population of the village is 760 in 255 households [14]. The head of village clarified that fisheries combined with agricultural households, comprised about 70% of the total households of the village.



Fig. 1 Map of Chumphon Province

Remarks: 1. Mueang Chumphon; 2. Tha Sae; 3. Pathio; 4. Lang Suan;
5. Lamae; 6. Phato; 7. Sawi; 8. Thung Tako

Governance

The Bang Namjued Sub-district Administrative Organization (Ao.Bo.To.) was established on 23 February 1997 and has a jurisdiction over a governing area of 52.36 km². In addition, this local organization is responsible for developing, managing and governing the well-being of Ban Thongkrog Village and other thirteen villages in the same territories of the Sub-district. Recently, the organization has formulated its three-year plan (2008-2010) which has been actively implemented.

The Site and Adjacent Village Survey

The survey was conducted by interviewing members from two villages, namely: Ban Thongkrog Village and Ban Ko Pitak Village, where the former was the main target village of the sampling survey, while Ban Ko Pitak Village was used to obtain additional information. The reason for collecting data from Ban Ko Pitak Village was because the Village Head has led his villagers to participate in the project. Therefore, the project has proposed to establish a connection between the two villages working together to promote coastal resource management activities. In addition, the head and villagers of Ban Ko Pitak Village had collective experiences from their participation and involvement in coastal resource management longer than the villagers from Ban Thongkrog Village. Thus, the collective experience could be transferred from high to low areas. Therefore, the survey could get an advantage by getting data from the two villages for the project implementation and facilitating capacity building on fisheries co-management for coastal resource management for all villagers.

The number of households sampled in each village was 19 (7.45%) and 15 (37.50%) households, respectively, comprising mainly fisheries combined with agricultural households (Table 1).

Table 1 Number of households and sampling number

Village name	Total households	Sampled households	% of total households
Ban Thongkrog Village	255	19	7.45
Ban Ko Pitak Village	40	15	37.50

Source: [7]

The geographic condition of Ban Thongkrog Village made it not easy to find the respondents, because of the many cluster areas in the village. Thus, the survey sampled only the households located along beach side and road side. Other major households were located in the coconut and para rubber plantation areas. On the other hand, Ban Ko Pitak Village is in a small island and all households are located along the island's beach. It was therefore easy to find the respondents as the number of households was only 40.

Part I. Demography of Ban Thongkrog Village

1. Socio-economic Profile

The data collected on the socio-economic profile of the village consisted of gender, age, education, size of the families, occupation of heads of families, manpower in a family, etc. The results of the survey have shown the following information:

Gender

The male to female ratio of the respondents was 63%:37%, respectively (Table 2). The heads of the sampled households were conventionally led by male. However, since in some cases, housewives also accompany their husbands in carrying out activities such as those related to agriculture, fisheries, etc., so they were also able to give the necessary information during the interview.

In addition, the number of females among the respondents implicitly showed that housewives also assist in undertaking the households' economic management.

Age

The ages of the respondents could be categorized into three groups, namely: lower than 40 years old, between 40-50 years old and higher than 50 years old. Table 2 shows that majority of the respondents were already in their senior years, *i.e.* about 37% were more than 50 years old, 32% were between 40-50 years old, and 31% were less than 40 years old. Such age trend implies that the manpower engaged in the fisheries sector has the high feasibility of being composed of the older people. This could mean that those younger than 40 years old could face a big burden in carrying out the community's economic development in the near future. This trend would need the development of future plans to include precautionary activities that would secure the source of protein from fish for the community.

Table 2 Gender and age of the respondents at Ban Thongkrog Village

Gender (%)		Age (%)		
Male	Female	Lower than 40	Between 40 - 50	Higher than 50
63	37	31	32	37

Educational Level

The educational attainment of the respondents was found to be of only two categories: primary school and junior school, which comprised 84% and 16%, respectively (Fig. 2). This trend is commonly found in rural areas because of the country's educational policy in the last four decades. In order to easily communicate with the local respondents, it was necessary to simplify information that need to be delivered.

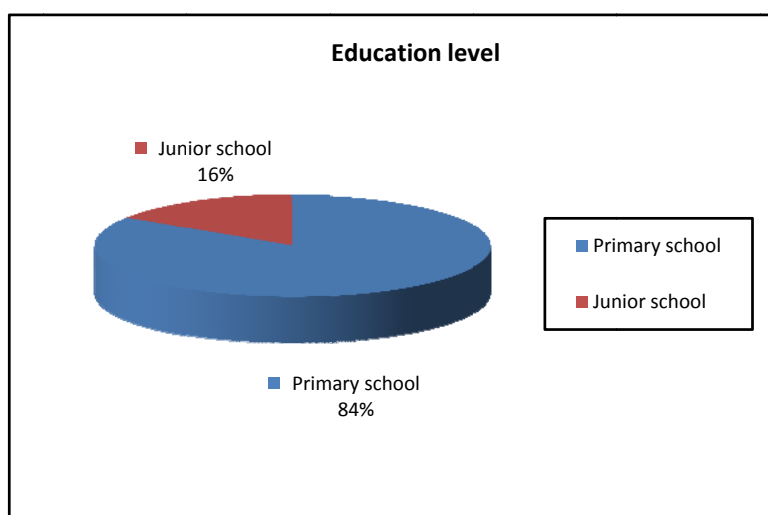


Fig. 2 Educational attainment of the respondents

Family Members

The size of a family could mainly be considered from the number of family members. Table 3 illustrates the number of family members which could be categorized into: two, three, four, five and six persons per family. Similarly, Table 3 also shows that the size of majority of the families was four persons in a family (42%), while the family size of five and three persons per family was 26% and 21%, respectively. The number of family members with more than three persons per family is a good sign for the rural society as the community would be able to get the new generations to take care of their parents and still sustain the society. However, the current high educational policy of the country may cause the new generations to move from the rural areas to urban areas as what is already happening in developed countries.

In addition, the survey also investigated the number of family members earning and not earning incomes (Table 3) to understand the capacity of a family in taking care of its family members.

Table 3 Family members of Ban Thongkrog Village

Family member (%)	One person	Two persons	Three persons	Four persons	Five persons	Six persons
Number of family member	-	5	21	42	27	5
Family member has earned an income	11	63	21	5	-	-
Family member has not earned an income	59	23	12	6	-	-

Table 3 illustrates the number of family members earning incomes who could take good care of their family members. The result of the survey showed that 63% of the income earners belong to a family with two members followed by 21%, 11% and 5% income earners belonging to three, one and five persons per family, respectively. This result is related to Table 3, which also indicated that a family could be composed of husband and wife and one child to three children. The two members of a family in Fig. 6 could refer to both spouses who carry out their fishing operations or as laborers. In case of five family members earning incomes, this family could have children who are already working.

On the other hand, Table 3 shows the number of family members who are not earning income. The largest number (59%) belongs to the family of one person, 23% for two persons, 12% for three persons, and 6% for four persons. The latter family could have members who are babies or children still studying in schools or in vocational schools. This information also seemed to indicate the need to have supplemental incomes to support their child or children in school.

Major Occupations

The major occupations of the respondents are in the fisheries and agriculture sectors. Fig. 3 shows that the major occupation (79%) was in the fisheries sector and 21% in the agricultural sector (Fig. 3). This means that the community's economy had been driven by fisheries and agricultural products and their corresponding value chains.

Thus, the respondents earned their incomes from fisheries by the utilizing aquatic resources and agriculture by using their land for various kinds of plantations.

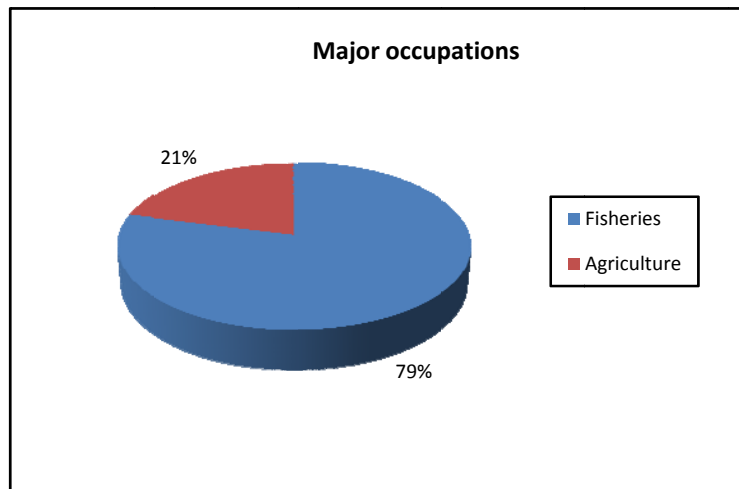


Fig. 3 Major occupation of the respondents

Supplementary Occupations

Furthermore, the survey also found that the respondents had supplementary occupations as additional sources of income. Fig. 4 shows the categories of the supplementary occupations practiced by the respondents. The chart displays that 31% were related to agriculture, 16% fisheries and labor with 37% comprising the missing data. From further interviews with the respondents, fisheries had been considered the major source of income because they can have daily incomes, and the additional source of income could from agriculture-related activities especially in the case of land owners. In case of non land owners, they are engaged in labor in fisheries or agriculture to earn additional income. Both major and supplementary occupations affirmed that the respondents usually depend on fisheries and agriculture to earn incomes and drive the community's economies.

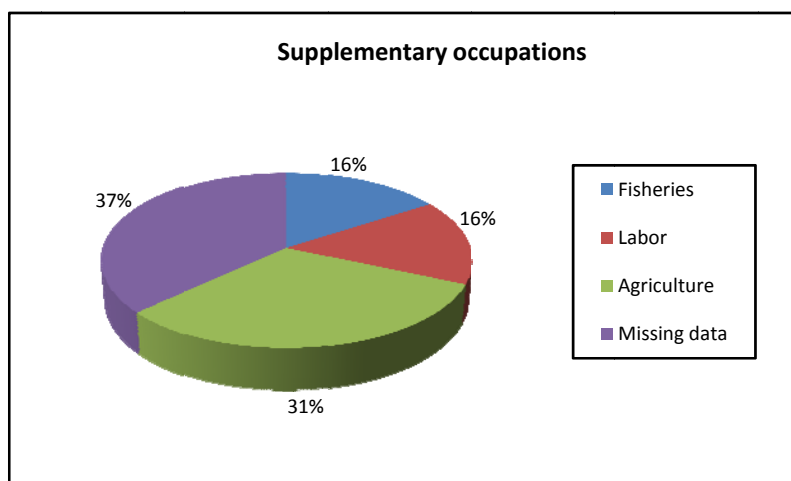


Fig. 4 Supplementary occupations of the respondents

As fisheries is an important economic sector for the development of the community, the survey placed emphasis on the number of family members working in the fisheries sector. The result shown in Fig. 5 reveals that two persons per family occupy certain jobs in the fisheries sector (58%), while 26% and 16% had one and three persons per family engaged in the fisheries sector, respectively. Some respondents added that when two persons per family are involved in the fisheries sector, this could mean both husband and wife or father and son, or brothers. In case of both spouses, the husband handles the fishing operation while the wife supports the activity by collecting the fishes from the fishing boats. After returning to shore, the wife is responsible for selling the fresh fish products to the fish middleman in the village. Some wives are also responsible in fish processing such as crab meat processing, *i.e.* from boiling, taking out the crab meat and selling the product to the middleman. In case of one person engaged in fisheries, this could mean that the husband alone does fishing operation. The wife takes the responsibility of harvesting and selling the fish products. In this case, the wife has lesser burden than when she accompanies her husband to go fishing.

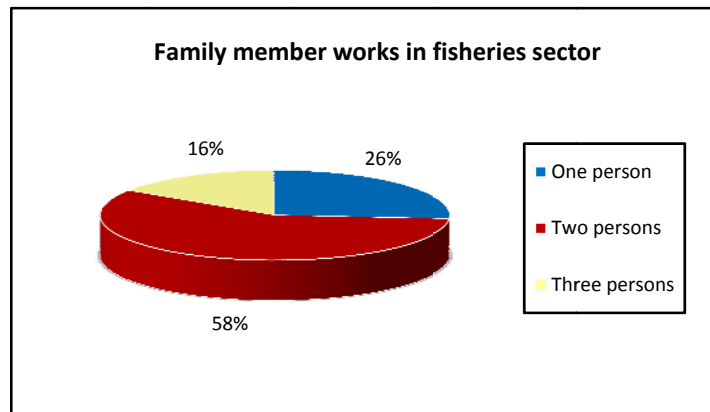


Fig. 5 Family members working in the fisheries sector

Source of Funds

Source of funds was also investigated during the survey as it was deemed important to determine how the respondents access to funds for developing and improving their occupation and livelihoods. The identified categories of sources of funds available in the community (Fig. 6) are self savings money identified by 21% of the respondents, followed by fish traders and informal financial systems (equally at 16%) while the one million funds combined with self savings money and the bank each contributed 11%. The fish trader plays an important role in the development of fisheries economies in the fishing communities, which is a moneylender, investor, fish distributor and fish processor in some communities. The result of the survey affirmed the role of fish traders and informal financial systems as providers of loans to local fishers rather than the Bank of Agriculture and Agricultural Cooperatives (BAAC) and the one million funds provided by the Thai government. This same trend can be observed in every fishing community in the whole country.

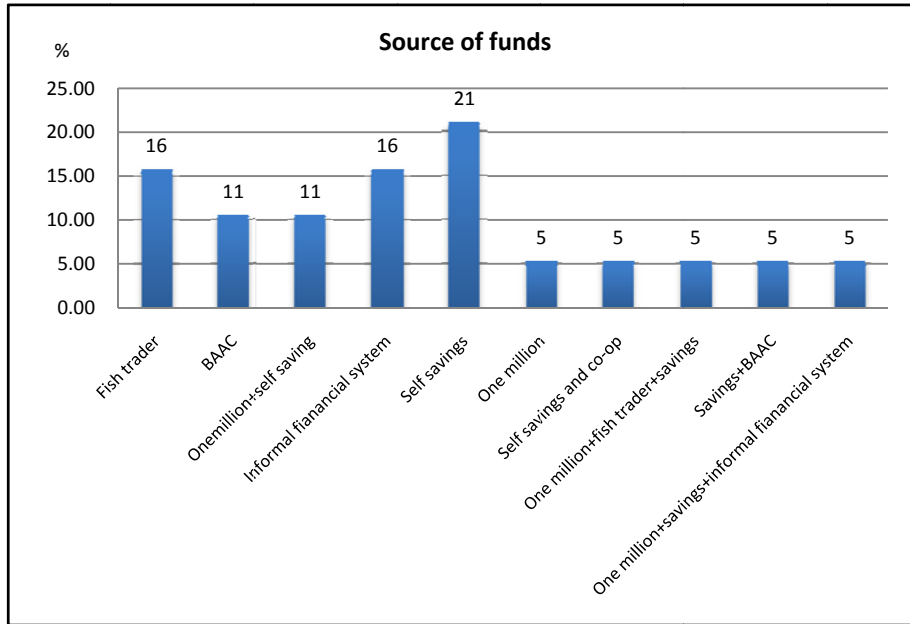


Fig. 6 Sources of funds accessed by fishers

Basically, a respondent is a member of some form of finance-related groups that also serve as their source of funds like the Village Fund (One Million) group, fishery group, savings group, conservation group, BAAC, and Cooperatives (CO-OP). Fig.7 illustrates the memberships of the respondents in each finance-related groups serving as their source of funds.

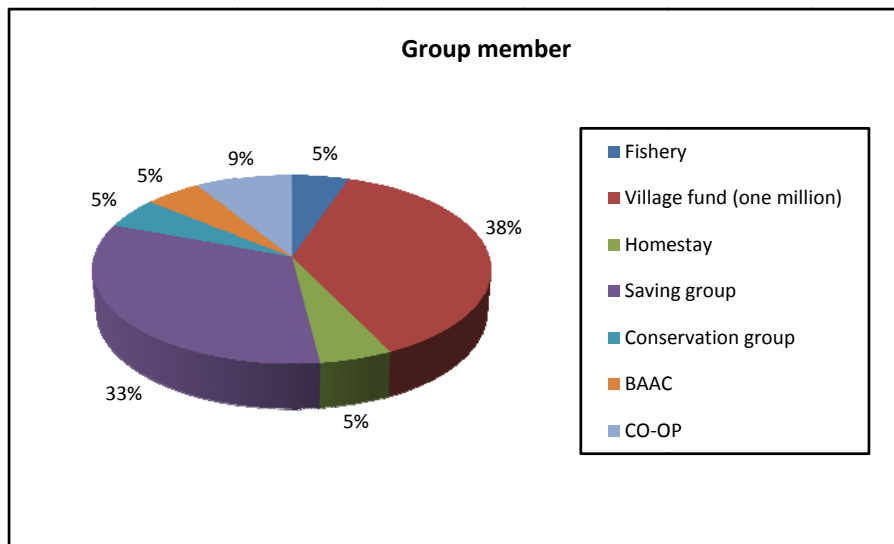


Fig. 7 Memberships in finance-related groups as the fishers' source of funds

As shown in Fig. 7, the two big groups are the Village Fund (One Million) group (38%) and savings group (33%). The Village Fund group is funded by the Thai government to provide accessible loans with low interest rates to all local residents. Under the Village Fund group policy, each village would be lent one million Baht by the Thai government to be allocated as soft loans to local residents to improve their capacity in their livelihood or employment.

On the other hand, the savings group was initiated by local residents, where a resident can be a member of the group with the commitment that certain amount of money should be monthly deposited in the group. The committed amount of money is based on the capacity of the residents. Thus, if one resident commits with the group to deposit 100 Baht every month, then he or she has to deposit 100 Baht monthly. The group manages the funds including the savings money that is provided as loans to its members. The amount of loan granted to a particular member is based on the amount of money deposited by such member. The interest from this loan is also low and it has a long-term repayment period.

Membership Status

The results of the survey showed that some respondents are not members of any local groups existing in the village (Fig. 8). The result showed that 68% are members of existing local groups while 32% are not members of any local group. Some respondents who are not members of any group cited that they are reluctant to join any group because they do not want to be involved in the complicated problems of group management.

Some of them said that they do not get any information concerning the groups’ establishment and activities. Some respondents who used to be members of certain groups quitted after learning of the groups’ poor performance especially in allocating the right to access the groups’ activities or funds.

Training

In the aspect of capacity building, 74% of the respondents have not attended any training program provided in the village (Fig. 8), while the other 26% had attended various training sessions organized in and outside the village. A large part of the respondents do not attend any training organized in their community because of the short notice that is usually given by governmental agencies to the community about the training. Some respondents are also reluctant to join any training, because they are occupied in earning their daily incomes. For example, fishers or laborers have their daily tasks that limit them from joining any training. However, there were other respondents who had been participating in training programs, and these are the members of village committees, group committees or even ordinary residents seeking new information that could improve their occupation and livelihoods.

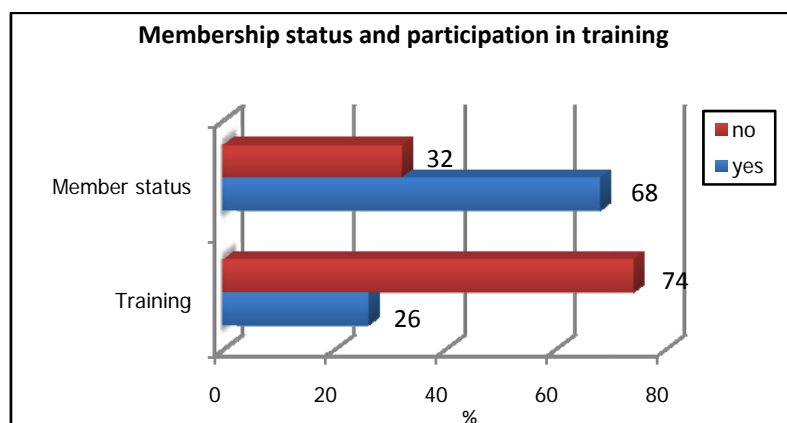


Fig. 8 Member status and participation of respondents in training

The respondents were also asked whether government agencies had provided any assistance to the village. The result of the survey found that only two government agencies such as the Department of Fisheries (DOF) and BAAC (Fig. 9) had provided them assistance at 67% and 33%, respectively. The DOF focused on the development of small-scale fisheries which is considered as important as the commercial-scale fisheries and aquaculture development as specified in the Sixth National Social and Economic Development Plan (1987-1992). Under the national plans, the DOF exert much effort in stimulating the small-scale fishers to participate in coastal fisheries resources management towards community-based fisheries management for the sustainability of the resources. The management package introduced to the small-scale fishers usually includes infrastructure construction, practice of responsible fisheries, responsible fish processing development, and fisheries resource enhancement.

Assistance from Government Agencies

The local fishers have recognized that before fisheries officials just come to their village to provide technical assistance and conduct fish landing data collection. Now, together with fisheries officials, the fishers have been involved in crab bank activities in order to enhance the crab resources while the fisheries officials build up the awareness of the local fishers on fisheries resource enhancement. Established in year 2008, the crab bank activity in the village has been ongoing until at present (year 2010).

The BAAC has been an accessible source of loans for local villagers who are land owners. The bank has special policy to support local farmers to get soft loans to invest and improve their capacity and production. However, most fulltime local fishers could not access such loans from the bank because they do not own land to be used as collateral for their loans with the bank. Fishing boats and gears are not valuable enough to get loans from the bank. Thus, the local fishers borrow money from moneylenders and fish middlemen with high interest rates. The limitation of access to soft loans had pushed the fishers to heavily exploit the fisheries resources in order to earn incomes and be able to pay their debts with the moneylenders. In order to alleviate such situation, the Thai government and DOF established the One Million Fund for each village, with the savings and fishers' group taking the responsibility in allocating soft loans as micro credits to local residents and fishers as shown in Fig. 6.

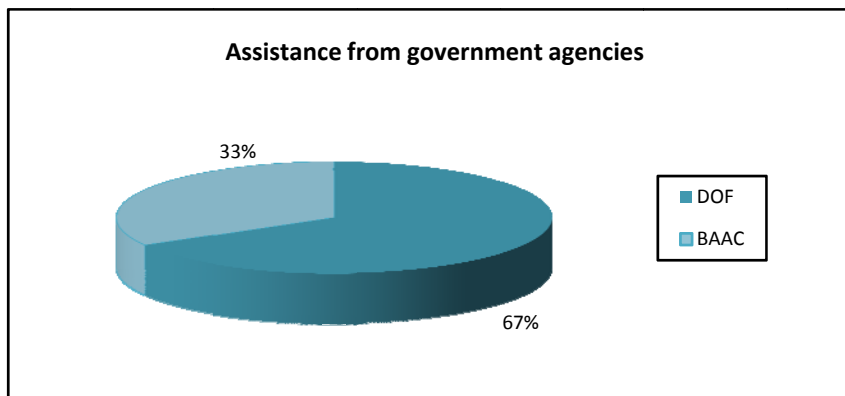


Fig. 9 Assistance received by respondents from government agencies

The abovementioned results of the survey on the socio-economic profile of the community gave a scenario of the community's potentials, capacity and interests in general for the community's further development and management. The compiled information would also be useful in selecting the proper extension methodology that could be implemented in the community.

2. Fisheries Sector

The fisheries sector is the key and credible factor in securing food subsistence for the local residents. The result of the survey confirmed that fisheries provide both the major and supplementary incomes to the villagers. In addition, this sector is highly dynamic in terms of the geographic, physical and economic factors such as season, area and market demand. For the development of this sector, it is necessary to comprehend the capacity and practices as fundamental information that should be put in the right place in order that proper strategies and methods could be developed to improve the condition and situation of the sector.

The result of the survey showed that a similar 94% of the respondents used only one fishing boat and owned long-tailed (outboard powered) boat (Fig. 10). Meanwhile, the same 6 % used two fishing boats and possessed both long-tailed and inboard powered boats.

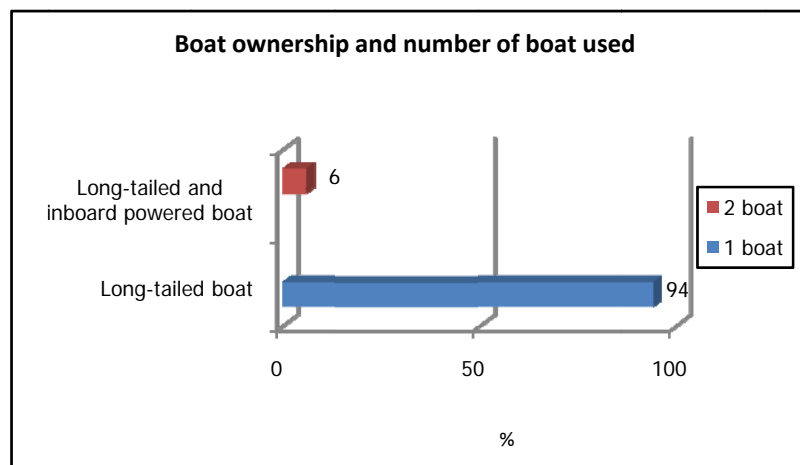


Fig. 10 Boat ownership and number of boats used by fishers

Fig. 10 show that a fisher individually possesses and uses the long-tailed fishing boat in fishing operations, while a few others have owned long-tailed and inboard powered boats. According to the fishers, they mainly use the inboard powered boats to go fishing and sometimes use long-tailed boat for minor fishing activity. Some of them lend their boats to their sons or cousins who are also engaged in fishing.

The capacity of the fishing boats could be determined by the length of the boats and engine power as shown in Fig. 11 and Fig. 12. As for the length of the boats, majority are 10 meters (40%), followed by 6 meters (24%) and 12 meters long (18%) as shown in Fig. 18. For the boat engine, the smallest capacity of engine used is 5 HP, while the biggest capacity is 115 HP. The most common capacity of the boat engine used in the village is 8 HP. The information on boat capacity is related to the distance of the

fishing operations which is mostly near the shoreline and the estimation of the fuel cost for cruising the sea while doing fishing operations.

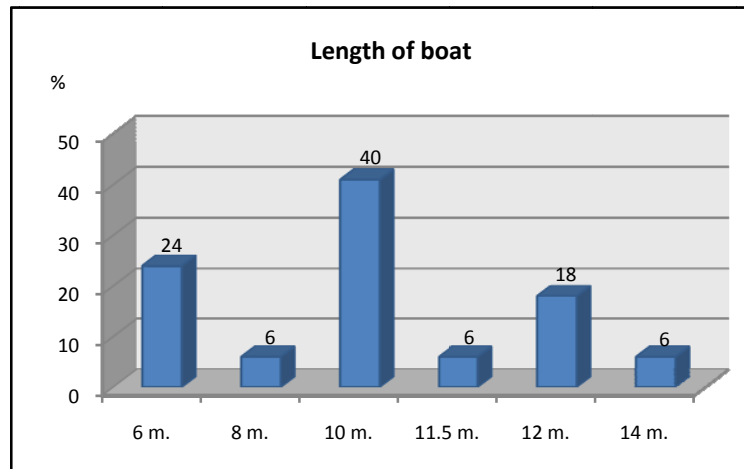


Fig. 11 Length of boats popularly used by fishers

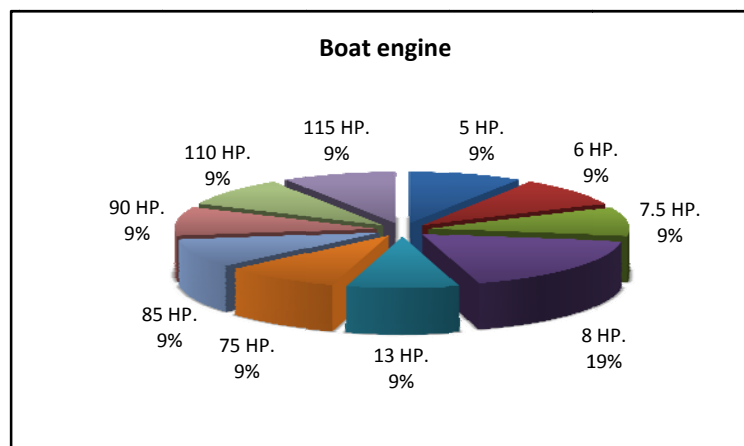


Fig. 12 Most common capacity of boat engine used in the village

The length of the boat and the boat engine used are statistically correlated. A respondent usually considers the investment cost when purchasing a boat. Thus, the fishers are mostly using the same length of their fishing boats and boat engines. This means that they usually go fishing in the same area of the fishing grounds. Each of them occupies a place in the same fishing ground with the customary practice of first come-first served.

The fishing gear used could also determine the trend of aquatic resource utilization and exploitation including fish production. Fig. 13 shows the three main types of fishing gear used in the village, namely: squid cast net used by 55% of the respondents, Indo-Pacific mackerel purse seine (15%), and collapsible crab trap (11%). The use of squid cast net and Indo-Pacific mackerel purse seine is not allowed during the closed seasons in the Gulf of Thailand from 15 February to 15 May annually. Collapsible crab trap can do fishing operation the whole year round and the peak season is during the rainy season from May to August annually. The major production using the squid cast net comprises the Indian squid (*Photololigo duvaucelii*), while the Indo-Pacific mackerel purse seine targets the short-bodied mackerel (*Rastrelliger brachysoma*) and the collapsible crab trap targets the blue swimming crab (*Portunus pelagicus*). These products are the major economic species landed at the village.

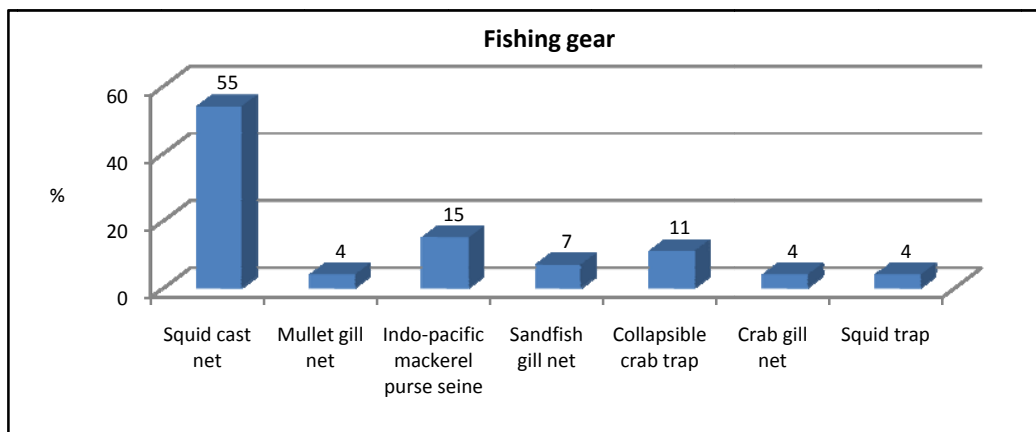


Fig. 13 Fishing gears used in the village

The major type of fishing boats is long-tailed boat ten meters long, and the fishing grounds of these boats are illustrated in Fig. 14. The report also showed the frequency of fishing operations by the fishers in the fishing grounds, *i.e.* in Ko Pitak (Pitak Island) area (56%), in front of Ko Pitak (22%) and Thongkrog Bay (11%). The distance of the fishing grounds from the shoreline is about 3,000 meters.

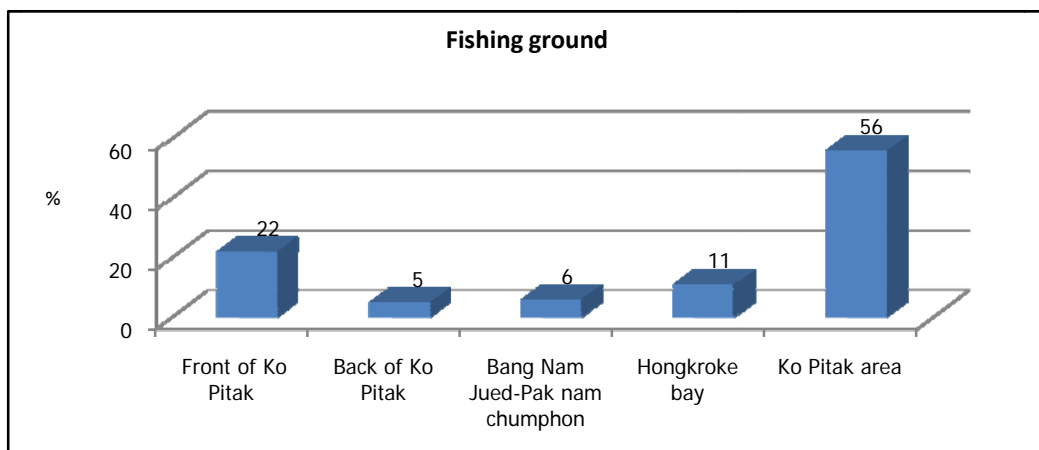


Fig. 14 Fishing grounds frequented by fishers

The fish caught are primarily sold to fish traders in and outside the village, as well as in restaurants and to fish retailers. The trend of the fish distribution (Fig. 15) shows that

majority is sold to fish traders in the village (39%), fish retailers (39%), Paktako village fish traders (11%), restaurants (6%) and outside the village fish traders (5%).

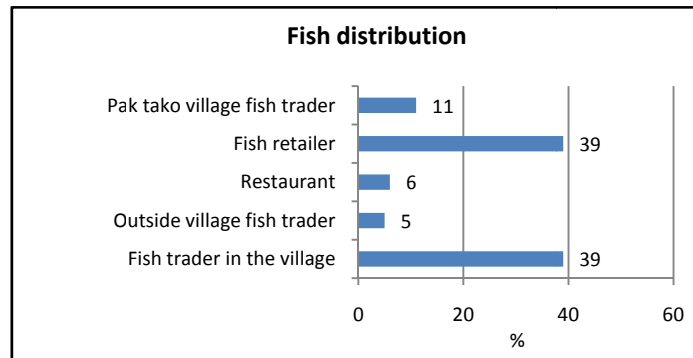


Fig. 15 Distribution channels of fish products

The fish traders in the village are not only playing the role of distributors of fish products from the village to urban markets, but also as key local capitalists and patrons of local fishers. As capitalist, a fish trader lends money to fisher-clients to build boats, and for the purchase of the boat engine and fishing gear. As patron, a fish trader also lends money to his fisher-clients for such expenses as hospitalization and medicines, and also for the children's education, etc. Thus, the fisher-clients are obliged to sell their fish products to the fish traders to pay for their debts. Although the fish trader does not charge interest from loans, he buys the fish products from the fisher-clients at prices much lower than the price in urban markets. This is where the fish traders usually gain profit by selling fish products in urban markets at prices higher than the buying price. Recently however, the fish trader is no longer a key capitalist like before because the fishers can now access loans from other sources such as the One Million Fund group as shown in Fig. 6. Now, fish trading with local fishers involves only the fish retailers although the fish retailers do not provide any loans to the local fishers. However, the fishers can now sell their fish products to any fish retailer who can give the best price.

The fishers usually sell their fish products fresh as reported by 89% of the respondents, while about 11% said that they sent their produce for processing such as crab meat (Fig. 16). The fish products landed at the village comprise some species of fish or squid that are sold fresh. Crabs which are caught by collapsible crab traps are widely processed into crab meat, which is brought about by two reasons: the size of crabs is small and could be sold fresh at low price of 70-80 Baht/kg, while the price of crab meat could be higher at more 200 Baht/kg. Such strategy could provide increased income for fishers and develop the fisheries economy in the village. Nevertheless, such strategy had been promoted without due regard to the sustainable utilization of the crab resources.

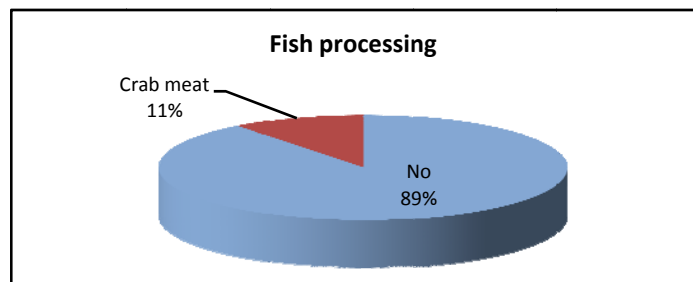


Fig. 16 Processing of fish products

The problems in fisheries were also investigated during the survey by asking the respondents to identify the issues and to rank the severity of each identified issue based on their pessimistic perceptions about the fisheries sectors. The problems in fisheries sectors identified by the respondents are shown in Fig. 17. The top-three serious problems identified by the respondents were degraded aquatic resources (27%), low price of fish (23%) and high price of fuel oil (20%). The problem of high fuel oil price which has been higher than US\$ 1.00/liter (1.00 US\$ = 34 Baht average in 2008), has been continuously a serious issue since 2008.

It should be noted that the diminishing aquatic resources has been observed by the villagers for more than ten years already. The respondents affirmed that they had to invest more money to acquire new or additional set of fishing gear in order to sustain their fishing operations. In spite of such improvements, the fishers reported that they still continue to catch few fishes and the volume of fish catch remains small, and the profit they could make is less than the operating cost.

On the other hand, the problems of low price of fish and high price of fuel oil are uncontrolled problems which are caused by external factors. However, the low price of fish might be caused by the monopoly system in the village and depend on the demand and supply in urban markets. The high price of fuel oil has been conventionally recognized by the demand in the world market.

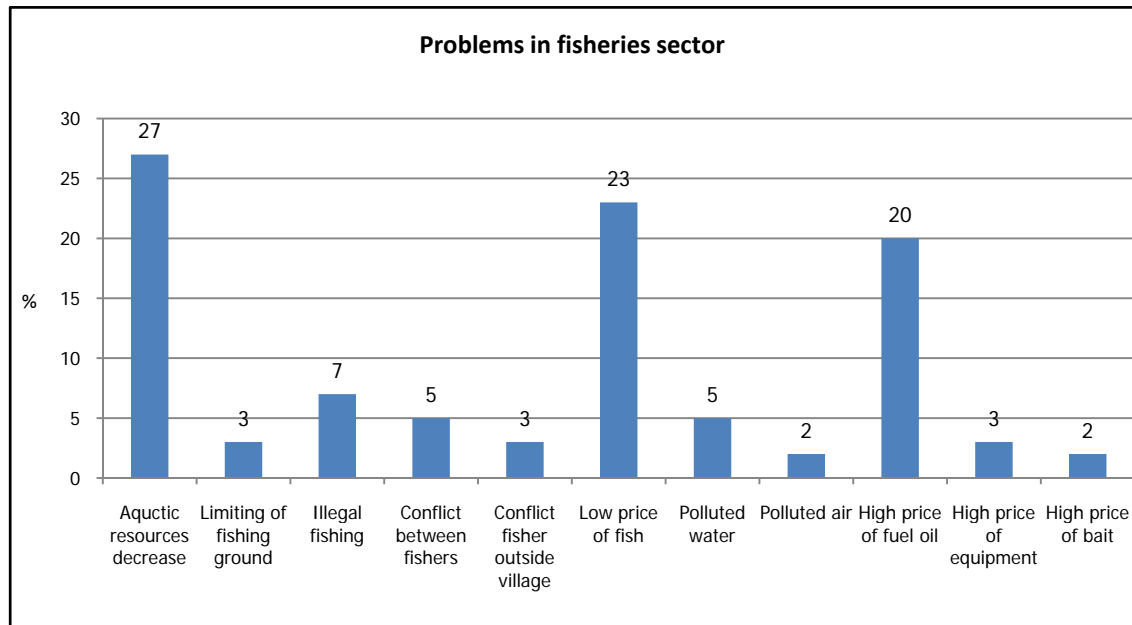


Fig. 17 Most common problems in the fisheries sector

The identified issues were ranked by the respondents in terms of the severity of each identified issue. Fig. 18 illustrates the ranking of the issues into five levels, with the most severe problem ranked as level 5; severe problem as level 4; moderately severe problem as level 3; less severe problem as level 2, and the least severe problem as level 1. The result showed that the top three issues considered by the respondents as most severe are degraded aquatic resources, use of illegal fishing gears and high price of fuel oil, at 76%, 75%, and 63%, respectively.

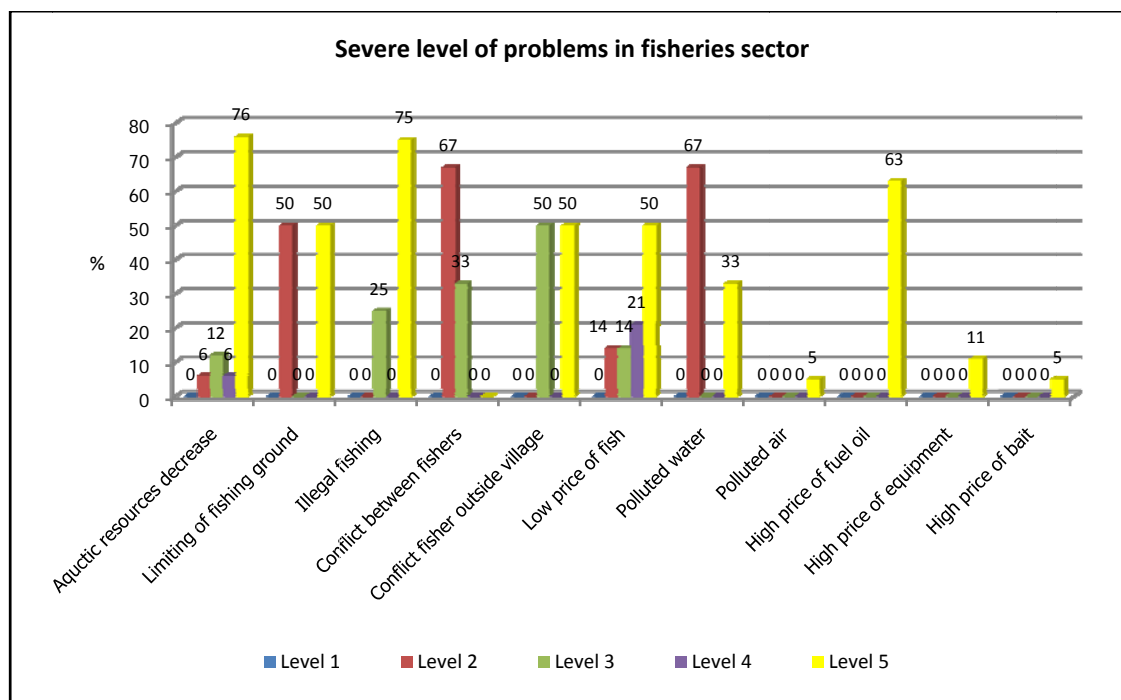


Fig.18 Severity of the problems in the fisheries sector

On the degradation of the aquatic resources, the respondents (76%) rated this issue as the most severe or at level 5. Although the issue on illegal fishing was rated by only 7% of the total respondents as shown in Fig. 17, its severity was considered at about 75%. This issue has been considered serious as the encroachment of commercial fishing in the fishing grounds of small-scale fishers had destroyed the small-scale fishing gears and heavily exploited the aquatic resources in the areas 3 km away from the coastal line. This has led to social conflicts between the commercial-scale and small-scale fishers. On the other hand, high price of fuel oil was also ranked as most severe by 63% of the respondents. The results shown in Fig. 17 and Fig. 18 provide a scenario of the common problems and the severity of such problems in the village that impede the development of the fisheries sector. Thus, mitigation measures are required to reduce the pessimistic outlook of the fishers and the village towards the fisheries sector, and improve the situation for the sustainability of the fisheries sector.

In order to alleviate the problems in the fisheries sector, all stakeholders particularly the fishers should assume the key roles in taking actions and participate in the planning, handling and managing the activities. The survey also sought for possible solutions that the respondents should undertake to mitigate the severe problems. The identified means of solving the problems (Fig. 19) include discussion among fishery groups identified by 23% of the respondents, set up fishery groups (20%), and inform village head and inform government on the problems (given the same score at 18%) and organize cooperatives also at 18%.

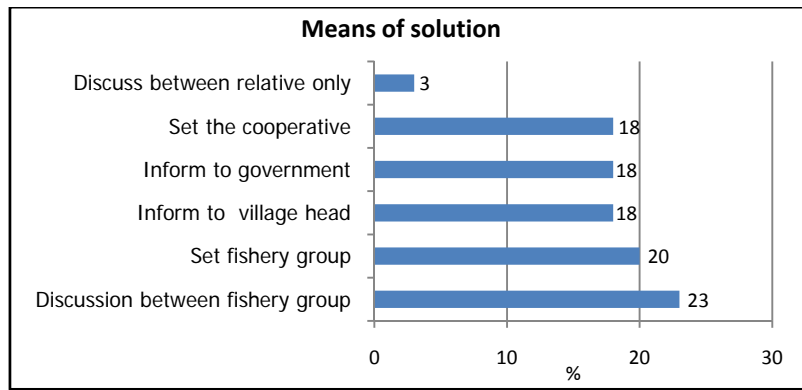


Fig. 19 Possible solutions for the problems

As indicated by the respondents, discussing the problems among the fishery groups is highly possible as the fishery groups could put high priority in taking actions to solve the problems. Therefore, the respondents agreed that organizing the fishery groups would be necessary as the groups could serve as reliable body that could unite the fishers and other stakeholders and encourage them to participate in solving the problems. Moreover, organizing cooperatives would also facilitate the gathering of the fishers and stakeholders together and share their interests towards any economic driven strategies. The other identified means that include informing the village head, informing the government and discussing with relative only, imply that the respondents personally thought of the authority and government officials to help solve the problems rather than through their own participation in the problem-solving and decision making.

The results of the survey confirmed that the fisheries sector is a crucial source of major and minor incomes for the local residents particularly the fishers. Considering the capacity of the fishing efforts based on boat length, boat engine and type of fishing gear, it could be construed that fisheries in the village is small-scale. The main fishing ground is less than 3 km away from the shoreline and reported to be abundant with aquatic resources especially the areas around the Ko Pitak Island. The fish products are sold fresh to fish traders living in the same village. However, several problems that include degraded aquatic resources, illegal fishing operations and high price of fuel oil have been considered as most serious and ranked by the respondents at level 5. Some means of solving the problems have also been identified, and the most important and proper solution suggested is by discussing the problems among the fishery groups.

3. Fishers' Participation in Coastal Resource Management

This part is intended to present a picture of the fishers' participation in fisheries resource management through their actions and the type of coastal resource management (CRM) activities that the fishers usually participated in. The survey investigated the number of fishers in Ban Thongkrog Village participating in the relevant activities and the frequency of their participation as shown in Fig. 20. The result shows that 36% of respondents received information, 32% participated in CRM activities, fairly 21% participated in project planning, and least 11% supported the budget for coastal resource management.

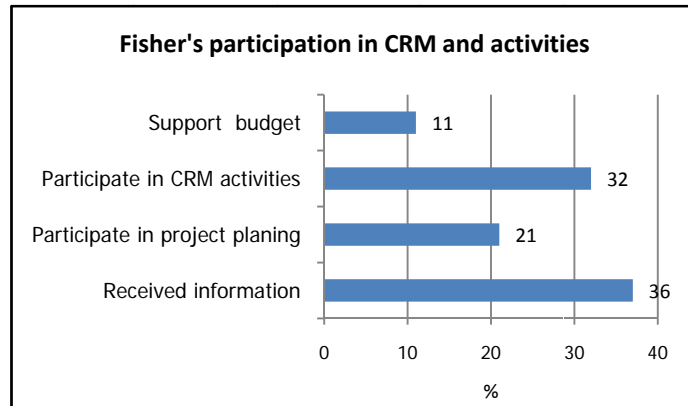


Fig. 20 Fishers' participation in CRM related activities

The frequency of fishers' participation was also surveyed in relation to their mode of participation in the CRM activities as shown in Fig. 21. The result shows a direct relationship between mode of the fishers' participation in CRM and the frequency of their participation. The most frequent (always) was apparent in receiving information and supporting the budget, as reported by 25% and 9% of the total respondents, respectively. On the aspect of actual participation in the CRM activities, the frequency was merely always, often and sometimes as rated by 8%, 15% and 23% of the total respondents, respectively. Among the four modes or features, the fishers were less involved in supporting the budget as 82% rated this feature as never and could have also been less interested on participation in the project planning as 66% rated this feature also as never.

The results shown in Fig. 20 and Fig. 21 affirm that the local fishers in the village have passive action towards the CRM activities. This could be because they are only handed down with the information concerning the CRM activities and seldom participate in the CRM activities. Therefore, to strengthen the local fishers' participation, government agencies should consider the conduct of training and extension activities to enable the fishers to learn and experience in the actual project planning and in the implementation of the CRM activities. Government agencies should also have a far-sighted vision by encouraging the children in the village to attend the training and participate in the activities.

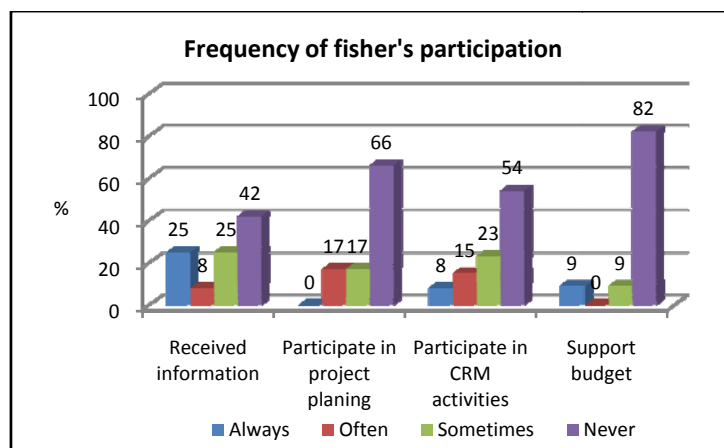


Fig. 21 Frequency of fishers' participation in fisheries-related activities

The types of CRM activities that the respondents participated in were also investigated as shown in Fig. 22. The fishers mainly participated in such CRM activities as fish releasing as reported by 34% of the respondents, mangrove reforestation (28%), beach cleaning (23%), and artificial reef deployment (15%).

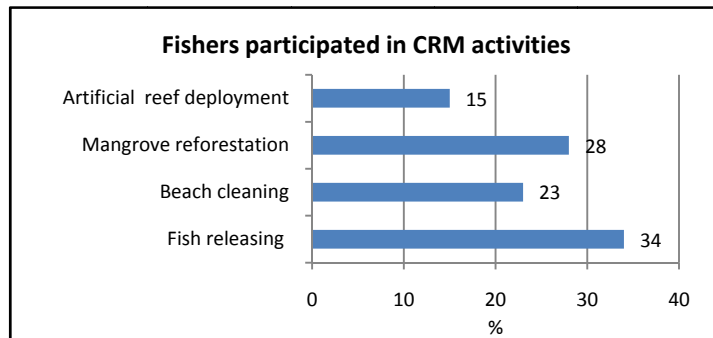


Fig. 22 Fishers' participation in CRM and related activities

In addition, the frequency of fishers' participation in each CRM activity was also analyzed as shown in Fig. 23. Fish releasing was an activity given the highest rate of sometimes, often and always by 37%, 19% and 13% of the total respondents, respectively. Although mangrove reforestation was well-known and a very popular activity, the fishers participated in this activity only sometimes (31%) with equally 15% of the respondents indicated always and often, and 39% said they never took part in the activity.

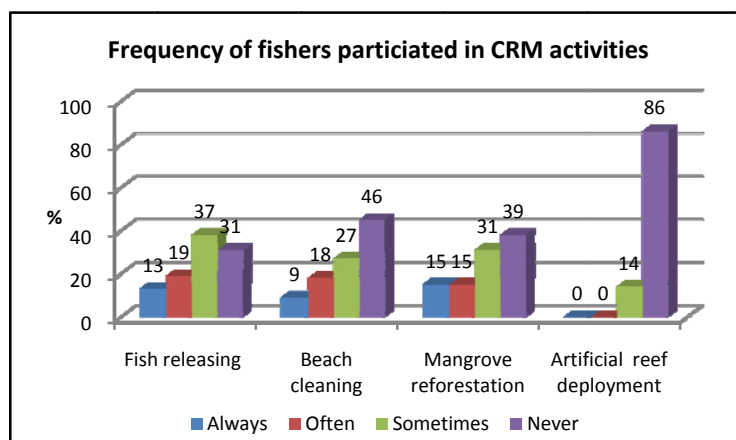


Fig. 23 Frequency of fishers' participation in CRM activities

Continually, beach cleaning was an activity where only small percentage of fishers participated in, with 27% indicated they sometimes join, 18% said often and only 9% always participated in the activity. Artificial reef deployment was another activity where the fishers said they never or only sometimes participated in as reported by 86% and 14%, of the respondents respectively.

Fish releasing activity is normally led and supported by the DOF which also provides the fish fingerlings, with the role of local fishers is just releasing the fish fingerlings into the waters. In order to make the local fishers strongly aware of the importance of fish seed resources, the DOF also fostered the crab bank management system to the fishing community. The basic principle involves local fishers donating the gravid

crabs to the crab cage bank to enhance the crab resources. This activity has provided good experience and visible lessons to local fishers after they have recognized the difference in the abundance of the crab seed resource between the pre- and post-crab bank implementation. Explicitly, the local fishers have realized the importance of utilizing the gravid crabs to optimally sustain the crab resources. However, the implementation of this activity has its limitations during the monsoon season.

Beach cleaning is the simplest activity for the local fishers to participate in because most of them have their houses along the beach, and can undertake such activity of keeping the beach clean every day. The fishers understand that a clean beach could give them better coastal environment in return. Certainly, the return is in terms of enriched food chain and ends with abundance of the aquatic resources that could secure the fishers' means of livelihood and food security.

Mangrove reforestation is well-practiced in other fishing villages, and the local fishers of this village had organized a mangrove reforestation activity. Unfortunately, geographic condition of the village is not conducive for such activity especially during the monsoon season when the re-planted mangrove seedlings have been destroyed by the strong winds resulting in very low (about 1%) survival rate of the mangrove seedlings. This had been a big obstacle in promoting the participation of the local fishers in mangrove reforestation activity in this village.

Deployment of artificial reefs is generally carried out by the DOF, because construction of artificial reefs would need a big amount of budget, and the local fishers or local organizations do not have sufficient budget to construct the artificial reefs. Thus, the local fishers' participation is in the sharing of their knowledge and experience especially on the appropriate location where the artificial reefs should be deployed near the coastline. In a similar development, SEAFDEC collaborated with the DOF and organized an on-site training for the local fishers in February 2009, on fish enhancing devices (FEDs) construction and installation. The main objective of the FEDs is to aggregate the fishes which is also one objective of the artificial reefs. The FEDs had been developed from the traditional fish aggregating devices (FADs). FADs and FEDs are of the same shape and have the same objective but the difference is only in the materials used where coconut leaves are replaced with ropes, bamboo poles and sticks with polyethylene pipes, and sand sacks with concrete blocks used to sink the FEDs. Thus, FEDs is a low cost device that local fishers can construct using recycled materials and deploy in the sea to gather the fishes for convenient fishing operations. In some cases, FEDs could also serve as a substitute for artificial reefs.

4. Perceptions of Fishers on the Future of Fisheries

The last part of the survey was an investigation of the respondents' perceptions of how they forecast and assess the fisheries sector in the next five years. The result shown in Fig. 24 specifically indicated that the fishers perceived the aquatic resources and fisheries economies would be seriously getting worse as reported by 83% and 78% of the respondents, respectively. The other issues on establishing fisheries group or networking, marine environment, and fisheries community would be unchanged as rated by the respondents at 86%, 60% and 57%, respectively.

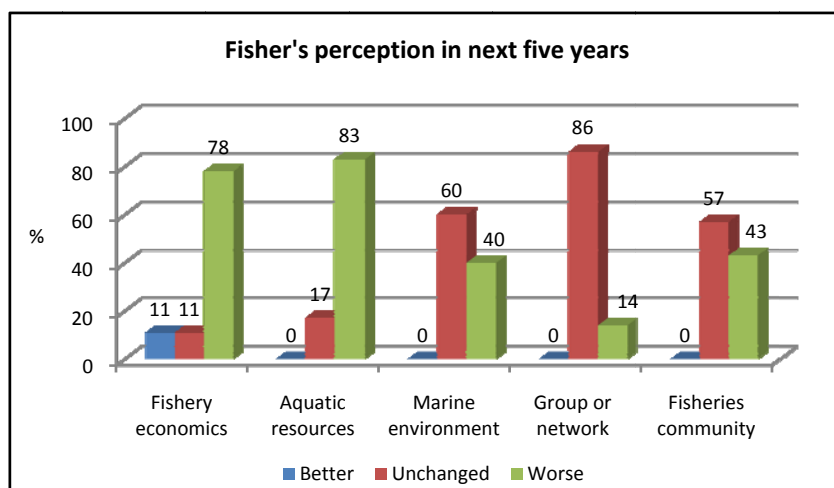


Fig. 24 Fishers' perceptions of the fisheries sector in the next five years

However, such trend as pictured by the fishers could still be avoided more particularly the continuous degradation of the aquatic resources. If unaddressed, this issue will be disastrous and will have a domino-effect on the fisheries economy and means of livelihood of the fishing households. The problem could then lead to poor food security in the fishing communities as the fisheries economy would certainly be distressed by the degraded aquatic resources. Therefore, in order to avoid the impact of resource degradation to the declining fisheries economy, local fishers should try to reduce their dependence on capture fisheries and create or seek additional and supplemental sources income to secure their households' economies.

The fishers' forecast of the marine environment suggested two trends: the marine environment could be either unchanged or perhaps something worse could even happen. To prevent the worse trend from occurring, local fishers should consider assessing the possible causes of the worsening of the marine environment, which could include poor garbage management, irresponsible disposal of waste water from households, burning of garbage, etc. Whether such actions are mitigated or not, the government agencies, local fishers and other residents should interact and set up preventive measures in order to save the marine environment from further degradation. One of the suggestions made that could ensure the health of the marine environment is the production of organic fertilizers from organic household garbage and reduction of household waste water being drained to the sea. In addition, by avoiding the burning of garbage the community could contribute to the reduction of green house gas as this would diminish the emission of carbon dioxide.

On the social aspect, organizing into groups or networking has been predicted to be unchanged but could even get worse, which could also be true for the fisheries community. As shown in Fig. 8, 32% of total respondents are not members of any existing local groups. This implies that the local people's group is not empowered enough to lead in community development and management. In a worse scenario, the village would not be able to avail of any assistance or might get little or might be considered low priority because of its poor performance in gathering the local people and organizing themselves as a group.

Summary (1)

The socio-economic profile of Ban Thongkrog Village provides the information on the basic structure of the community that includes gender, age, education, and occupation. The particular occupation indicates how the villagers utilize the local resources and create job opportunities. Major and supplementary occupations are concentrated in the fisheries sector where the fishery resources constitute the state property. Under the constitution, fishery resources have open access that everyone can utilize. The local fishers of the village mostly possess a long-tailed fishing boat and small-scale fishing gear such as squid cast net, Indo-Pacific mackerel purse seine, collapsible crab trap, sandfish gill net, crab gill net, mullet gill net and squid trap. Each type of fishing gear has its corresponding main target aquatic species such as squid, crab, sandfish, cuttlefish, and mullet caught during the different seasons of the whole year.

Long-tailed fishing boat is dominant along the coastline of the Gulf of Thailand where fishing is done up to 3 km from the shoreline. The length of long-tailed fishing boat is lower than 14 m and defined as small-scale fishing boat, thus, the local fishers could also be considered small-scale fishers.

With regards to the problems in fisheries, aquatic resource degradation, low fish price and high price of fuel oil are the top-three obstacles that impede the economic development of fisheries. To alleviate these problems, responsible fishing practices and the philosophy of sufficiency economy should be introduced and demonstrated to the local fishers. Responsible fishing practices should focus on reasonably exploiting the aquatic resources such as harvesting only the marketable size and non-gravid fishes, use of legal mesh sizes, avoid the use of non-selective fishing gears, etc. Such practices are harmonious with the philosophy of sufficiency economy especially on the principle of reasonableness. The output of being reasonable and responsible would positively point towards massive and abundant aquatic resources, so fishers would spend less time in fishing and use less amount of fuel oil. A marketable size fish product can provide good income to fishers even if the price of fish is low, thus can secure the fishers' individual incomes and means of livelihood, and eventually lead the village towards achieving self-reliance particularly in the fisheries sector. The application of the philosophy of sufficiency economy could also prevent and alleviate untoward violence that could emanate from the aforementioned problems as this could lead to the sustainability of the aquatic resources. Concerned government agencies should therefore take actions to make the local fishers and other stakeholders understand as well as exercise the principles of the philosophy of sufficiency economy.

Local people should gather people with the same interest and/or career. The people's groups in the village were concerned with loans and savings systems or community-based credit system like the village (One Million) fund group, savings group, BAAC and CO-OP. Although there is a fishery group, it has no involvement in allocating loans to its members, where a loan could be used to improve one's capacity of engaging in an occupation or to improve one's living condition. On the other hand, the credit and savings groups have no activity that could encourage their members to participate in coastal resource management. Nevertheless, the participation of all group members and other stakeholders in coastal resource management had been

promoted with particular support from the DOF. In this case, the coastal resource management activities include fish releasing, beach cleaning and mangrove reforestation, which are conducted in accordance with the DOF policies and plans.

One of the means of strengthening the local fishers' participation in coastal resource management could be gleaned from the development of a crab bank by the local fishers in collaboration with the DOF starting in 2007, which was meant to enhance the crab resources, and the local fishers in the village established a group to follow-up the crab bank activities with assistance of fishers from Ban Ko Pitak Island Village. The fishers had since then recognized the result from the crab bank operation from the new recruitment of crab resources that can be observed along the shoreline. This means that the local fishers and stakeholders are willing to participate in coastal resource management, although there was also recognized lack of consultation and no leading entity or person to encourage the fishers to take part in the management.

Thus, in order to get more support from other stakeholders, the crab bank group should attain good results and should make other stakeholders aware of such particular concern especially on how the activity can contribute to the value chain in the village economies and to secure the food chain of the aquatic resources. This rationale could promote the development of a strong linkage between the fisheries sector with the other sectors of the village through the harmonization of the philosophy of sufficiency economy specifically in the principle of building up the network for integrated management of the resources in the village.

Ban Thongkrog Village has the capacity and is abundant in local resources that could develop the village economy through the fisheries sector. In addition, the village has powerful workforce comprising the local fishers and other stakeholders, who had been recently and actively involved in conducting some coastal resource management activities. Thus, the adoption of responsible fishing practices and the philosophy of sufficiency economy could be actively promoted to alleviate the severity of the problems that impede the development of the fisheries sector and put an end to the degradation of the fishery resources, the weakening of the environment and the deterioration of the society.

Part II. Demography of Ban Ko Pitak Village

5. Socio-economic Profile

Gender

The respondents, comprising 15 households (37.5 %) of the total 40 households in the village, provided the information on their contribution to the community development and resource management activities. The gender of the respondents as shown in Fig. 25 consisted of male (60%) and female (40%), which implies the increasing role of women in household economics. The women respondents also gave information as required in the questionnaire.

Age

The age of the respondents was categorized into three levels, *i.e.* below 40 years old, 40-50 years old and above 50 years old. The result (Fig. 25) shows that the respondents aged below 40 years old comprised 20%, 40-50 years old 60% and above 50 years old 20%.

The result also shows that the population of the community has a large number of workers or manpower that could contribute to the development of the community economics considering the number of people in the age levels below 40 and between 40-50 years old. However, the community may be dominated by the older society after ten years because of the considerable number of people now aged between 40-50 years old and above 50 years old.

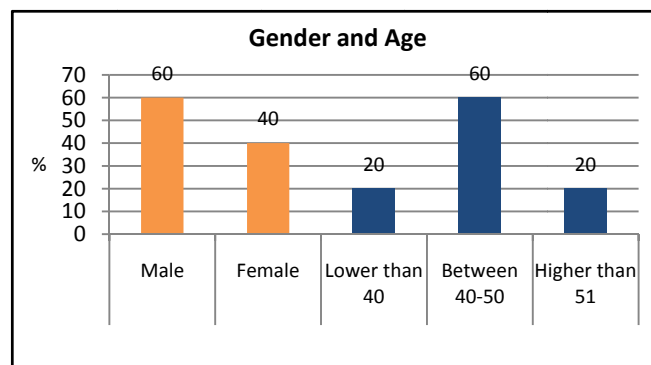


Fig. 25 Gender and age of the respondents from Ban Ko Pitak Village

Educational Level

The educational level of the respondents varied from primary school to under graduate levels (Fig. 26), where a large portion of the respondents (47%) completed the primary school while 20% finished high school level, junior school and diploma (13% equally), and under graduate level (7%).

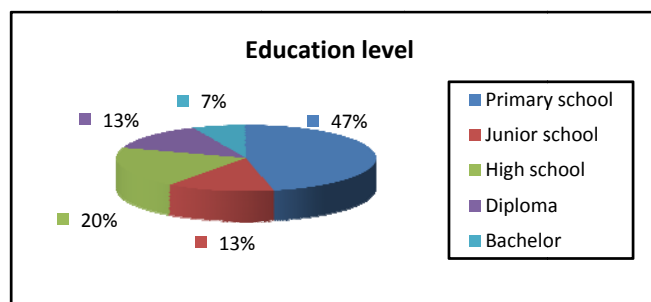


Fig. 26 Educational attainment of the respondents from Ban Ko Pitak Village

The various levels of educational attainment of the respondents could prepare them to understand simple skills and technology being transferred to the village. As a matter of fact, the respondents who have completed higher educational level can help in explaining or guiding the other villagers to understand any information coming from the government.

Family Members

The size of a family which was investigated through the number of family members could provide the implicit information on the community's basic needs and resource utilization to secure the well-being of the families. The result (Fig. 27) shows that the family size composed of three members was 40%, two and four members equally comprising 27%, and five members 6%. The present trend of a single family comprises the spouse and one child or two or three children, which varied from that of the last three decades where a family engaged in agriculture or fisheries, needed more children to serve the manpower needs of the family.

Therefore, the current living condition could be very high especially in terms of the educational expenses of the children, thus the parents now has to plan the number of children they expect to have with due consideration of their incomes.

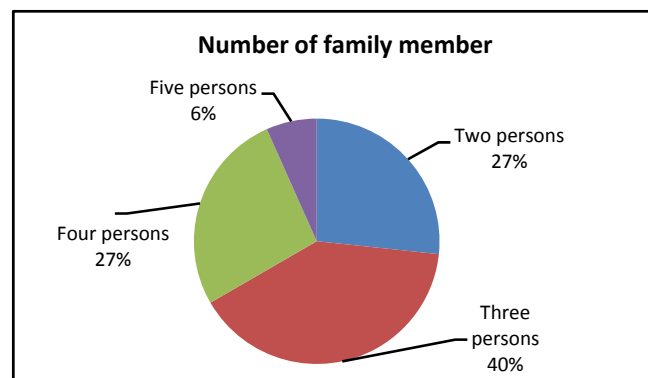


Fig. 27 Size of family in Ban Ko Pitak Village based on number of family members

The survey also investigated the number of family members who are and are not earning incomes (Fig. 28 and Fig. 29, respectively). The result (Fig. 28) shows that the number of family members earning income on the average was two persons (60%) followed up by one person (27%) and three persons (13%).

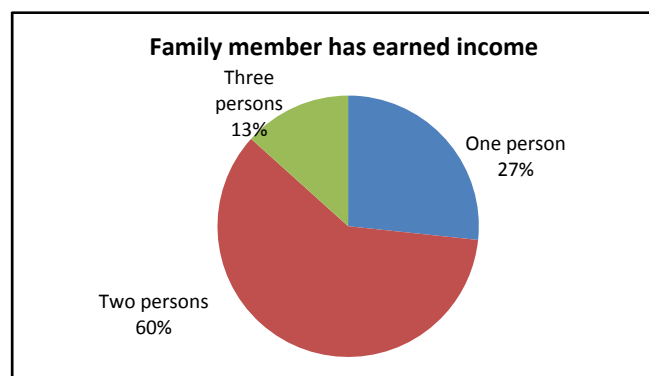


Fig. 28 Family members of Ban Ko Pitak Village who are earning income

The result is not surprising because two family members earning income could mean both husband and wife going together to fish, in order to reduce the operational cost since they do not need to pay for hired labor. For three members, perhaps the father and two sons or parents with one child, are earning income. However, in a family there could also be members who are not earning income. As indicated in Fig. 29, the information was grouped into three categories of family members, *i.e.* unspecified number of family members (28%), one member and two members equally comprising 36% each. For one or two family members not earning any income, probably these are children in school lower than the high school level. In this case, the family has to earn more income to take care of such family members.

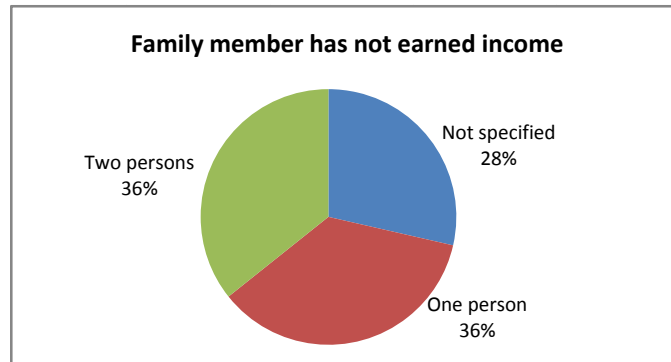


Fig. 29 Family members of Ban Ko Pitak Village who are not earning income

Major Occupations

Majority of the respondents from Ban Ko Pitak Village were engaged in fisheries, while some are engaged in labor and village head at 80%, 13% and 7%, respectively (Fig. 30).

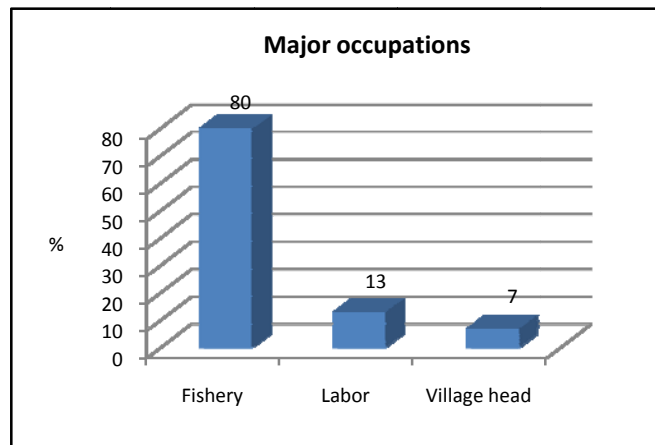


Fig. 30 Major occupation of the respondents from Ban Ko Pitak Village

As explained in the introduction, Ban Ko Pitak Island is surrounded by sea, thus the local villagers including the respondents are mostly engaged in fisheries. Others who have insufficient funds for investment in fishing operations are into hired labor doing any kind of job available in the village.

Supplementary Occupations

In addition, some respondents also earned additional income from doing some supplementary livelihoods. The result (Fig. 31) indicated six categories of supplementary occupation, *i.e.* fisheries, labor, agriculture, home-stay, grocery stores, and agriculture combined with home-stay. Agriculture appeared as a major supplementary occupation as identified by 39% of the respondents while labor, home-stay and grocery stores were also equally identified by 15% of the respondents. Although coconut plantation is the major agricultural activity in the village, some respondents also buy land to plant rubber trees. Home-stay is another activity that is rapidly progressing and developing at the village. One respondent, who is running a home-stay activity, cited that good income could be derived from home-stay services for tourists, and added that many interested tourists are queuing for a home-stay and booking a reservation could take more than one month to get confirmed.

Moreover, a home-stay activity could also provide related value chain activities to other villagers such as night fishing, diving, and fishing operation observation. Thus, home-stay could be a good source of supplementary income for villagers as it also supports the growth of relevant value chain activities.

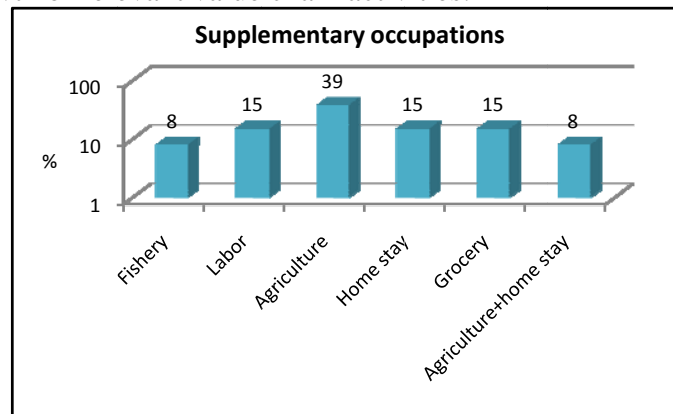


Fig. 31 Supplementary occupations of respondents from Ban Ko Pitak Village

Since fisheries had been the major occupation in the village, the composition of family members interested to work in the fisheries sector as source of manpower, was also investigated. As shown in Fig. 32, the family members working in the fisheries sector comprised two persons (73%), one person (20%), and three persons (7%). Two persons working onboard a fishing boat could be the spouse or boat owner and a laborer, while one person working on board could mean the fisher himself. On the other hand, three persons working onboard could include the father, son and one laborer who could be a cousin or distant relative.

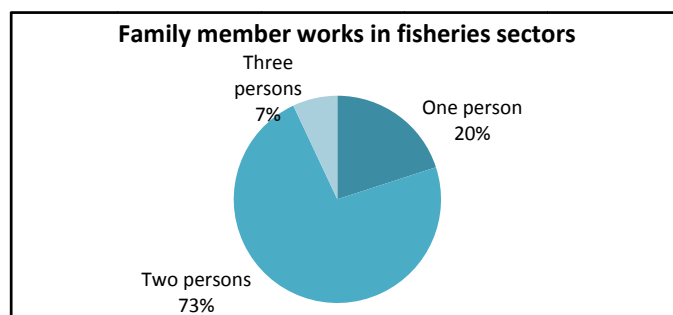


Fig. 32 Family members of Ban Ko Pitak Village working in the fisheries sector

Sources of Funds

The respondents also availed of the accessible sources of funds in Ban Ko Pitak Village in order to carry out and/or further develop their capacity and efforts in engaging in various relevant occupations. Fig. 33 shows the various sources of funds in the village, *i.e.* the fish trader, BAAC, self savings, One Million fund, and informal financial systems. The result of the survey also indicated the three most important sources of funds identified by the respondents, *i.e.* the One Million Fund combined with Self Savings (37%) followed by the fish traders (21%), and informal financial systems (14%).

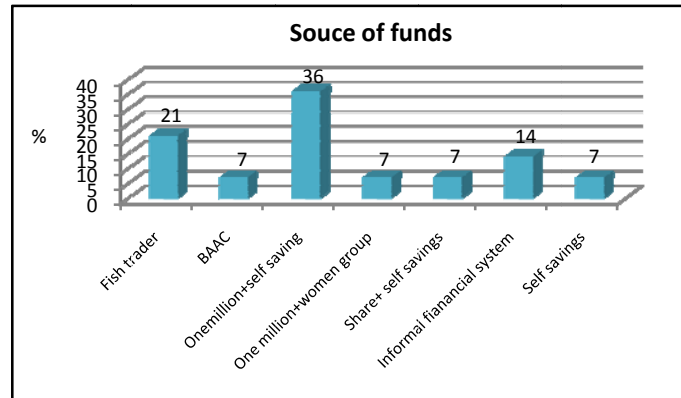


Fig. 33 Sources of funds for fishers in Ban Ko Pitak Village

The One Million Fund was the villagers' most important source of loans with low interest rate, similar to the One Million Fund also organized at Ban Thongkrog Village. The fish trader is also an important fund provider especially when the respondents are short of cash to pay for their children's tuition fees, fishing operations, etc. However, such system of dependence makes the fish market monopoly stronger where the fish trader has higher bargaining power than the fisher-clients. In order to mitigate the strong fish market monopoly by the fish traders, the DOF facilitated the organization of a central fish market in the village by the local fishers, where the local fishers can bring all their fish products to the central market and the staff of the central market take the fish products to sell to fish traders outside the village who can give better prices for such fish products. In the establishment of this market, the local fishers should share the transportation costs for bringing the fish products from the village to the fish traders outside the village. From such practice, the local fishers are able to gain certain profit based on the total amount of fish sold multiplied by the fish price, although the local fishers had to pay also for the service charge to the central market for the operating cost of the market. Unfortunately, the operation of the central market and its services declined after three years because of the diminishing interest of the local fishers in participating in the activity and in selling their fish products at the central market.

The local people group is a grassroots society where the members assembling together have similar interests, problems and needs. Local people's groups in Ko Pitak Island were established by the government to support both the funds and management system. Fig. 34 shows the types of local people's groups identified by the respondents and the most popular of which is the One Million Fund group followed by the women's group (44% and 22%, respectively). In addition, the local villagers also initiated the home-stay (9%) and tourism (4%) groups.

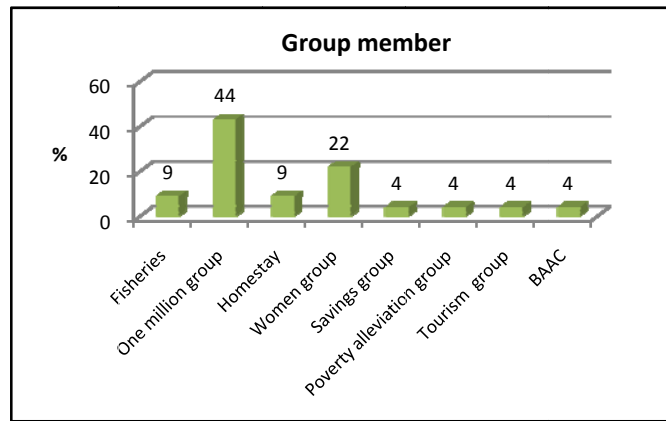


Fig. 34 Membership of fishers from Ban Ko Pitak Village in local people's groups

Local People's Groups

The existing local people's groups in the village were the same as the groups in Ban Thongkrog Village. More particularly, the One Million Fund group was supported by government based on a national policy implemented in the whole country. The establishment of the women's group was strongly supported by the head of the village to develop the capacity of the women in participating in the village economic development. The women's group had been trained in processing of fish products, sewing clothes, and production of other value added products. Although the women have the skills to work in groups and produce local products, their activities had been constrained by the limited number of members participating in the production of group products. The home-stay and tourism groups were the newest groups assembled in the village by the local people. The members of the home-stay group provide room service to tourists who could stay in the village. One night stay would cost about 450 Baht including three meals. Some members also provide fishing observation trips, boat rental for fishing, and diving trips for tourists. Some members coordinate with other local fishers for boat rentals in order that tourists could go fishing and diving. Such services offered the opportunity of distributing the value chain of home-stay and income to many villagers. Some local fishers cited that the recognized income gained from home-stay and tourism could be high and even much more profitable than undertaking fishing operations.

Membership Status

The membership status of the respondents in local people's groups also confirms that 86% of total respondents are members of certain groups existing in Ko Pitak Island while 14% indicated that they are not members of any group. It should be considered that participating in a group means that a member should share either interest or need and participate in group work and management.

In addition to determining the status of memberships of fishers in people's groups, the survey also investigated the function of a member participating in a group. Fig. 35 illustrates that the three basic functions are collective and societal to group management. The functions identified by the respondents are as head of a group rated at 6%, and group committee and group member rated equally at 47% each. Considering that there are various local people's groups in the village, it is therefore

possible that a villager could be a member of more than one group but with different functions.

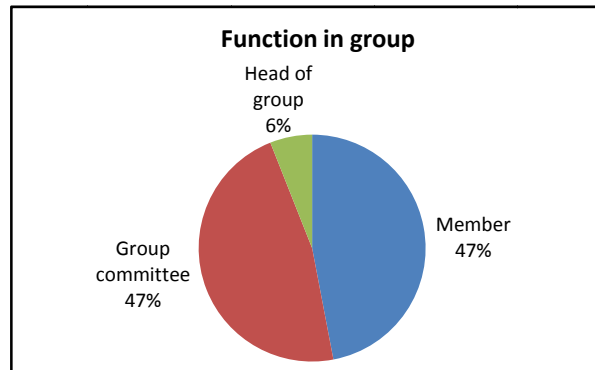


Fig. 35 Functions of members in the people's groups

Training

Capacity building is a vital activity to develop the local people's skills and knowledge in order to practice and understand well an innovative technology and information. The result (Fig. 36) which indicates that 80% of the respondents had undergone training although the other 20% had never been trained, also suggests that a big number of villagers could help in developing further the various occupations and relevant activities in the village. The training activities organized for the local people were on coastal resource management such as central market management, crab bank management, and environment-related activities such as beach cleaning, garbage management, etc. In addition, training on voluntary community security from crime and terrorism, was also conducted in the village.

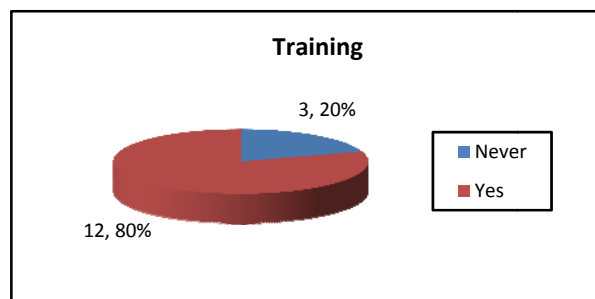


Fig. 36 Participation of fishers in training activities conducted at Ban Ko Pitak Village

Assistance from Government Agencies

Several forms of assistance have been provided by the government and other related agencies to the villagers of Ko Pitak Island. The types of assistance (Fig. 37) identified by the respondents come from government agencies, the private sector and peoples' foundation. A gigantic part of assistance comes from the DOF (31%) as well as from BAAC (31%). These two agencies mainly support the local villagers to improve their capacity in their occupation in fisheries and agriculture. Public health agencies also provide assistance in terms of educating the villagers and facilitating the care of their health and hygienic conditions.

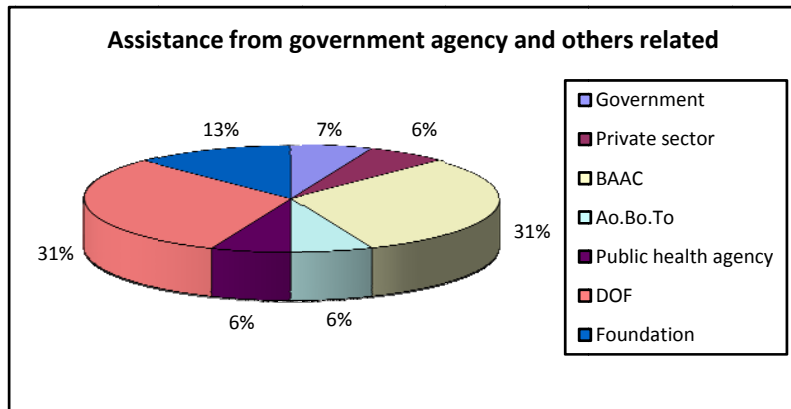


Fig. 37 Assistance provided for Ban Ko Pitak Village by government and other related agencies

6. Fisheries Sector

Since the major occupation of the respondents is in the fisheries sector, the fishing capacity and effort were also investigated during the survey in order to comprehend how the fisheries sector contributes to the development of the community's economy. For fishing capacity, the survey assessed the number of fishing boats used. The result indicates that 80% of the total respondents used only one fishing boat while another 7% had two fishing boats used in fishing activities. The remaining 13% of the respondents had no fishing boats in which case they might be working as laborers for the other fishing boats.

Moreover, the fishers' boat ownership was observed to be related to number of fishing boats used. Fig. 38 shows the boat ownership by type of fishing boats, which also illustrates that 80% of the respondents owned long-tailed boat (outboard powered boat), while the other 7% used two boats, i.e. one long-tailed boat and one inboard powered boat, while the remaining 13% do not use any of boat.

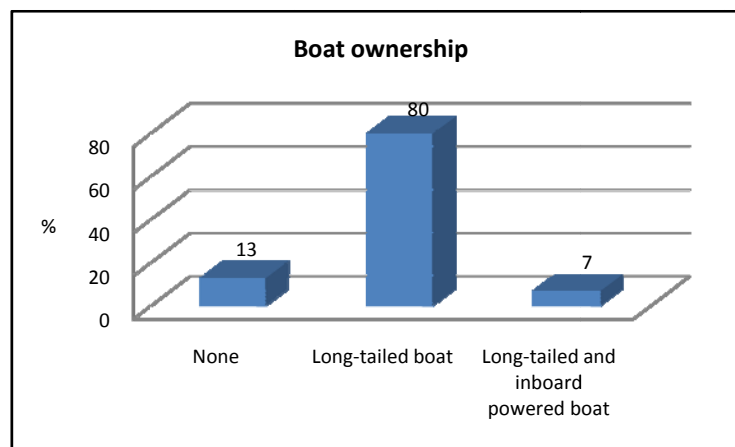


Fig. 38 Types of boats owned by fishers in Ban Ko Pitak Village

The length of a boat is an additional parameter for determining the fishing effort. As shown in Fig. 39, in Ko Pitak Island the most popular size of boat is 12 m long used by 40% of the total respondents. The lengths of the other commonly used boats were 10 m and 8 m, used by 20% and 13% of total fishers, respectively.

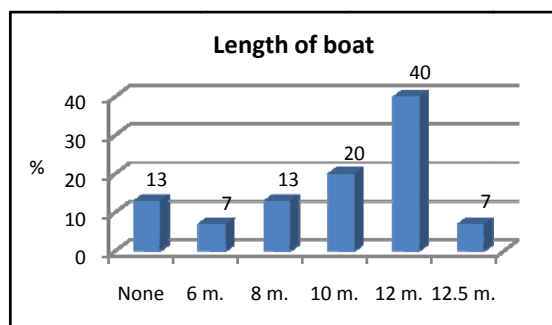


Fig. 39 Lengths of boats used by fishers in Ban Ko Pitak Village

The capacity of the boat engines used had been observed to be of various sizes as shown in Fig. 40. The most popular size of boat engine was 100 HP used by 34% of the respondents while the smallest was 7 HP used by 9% of the respondents.

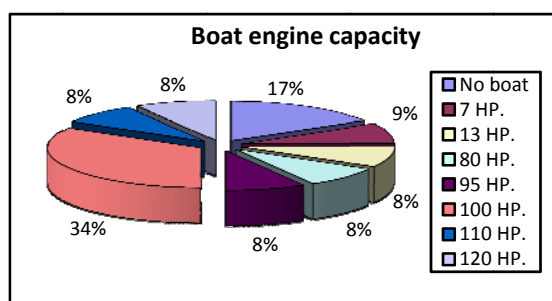


Fig. 40 Capacity of boat engine used by fishers from Ban Ko Pitak Village

The findings on the capacity of the fishing boats such as length and engine as well as ownership could indicate that the fishers in the island are small-scale especially considering that the most common boats used are less than 14 m long. Moreover, the distance of the fishing ground is certainly less than 3 km as the fishers live in the village. Thus, their fishing grounds are located in areas which are 3 km from the coastal line which could also mean massive competition among the local fishers from Ban Thongkrog Village and Ban Ko Pitak Village.

The dominant types of fishing gear used in fishing activities usually reflect the target species in the aquatic resource utilization. The result obtained from the survey (Fig. 41) showed that in Ban Ko Pitak Village, the fishing gears used by 32% of the respondents are the crab gill net, fish gill net by 28%, squid trap also by 28%, squid cast net (6%), and shrimp trammel net (6%).

Crab gill net is chiefly used because this fishing gear can be used in fishing operations during the whole year. The target species is the blue swimming crab (*Portunus pelagicus*). It has been noted during the survey that the fishers from this village have stopped using the collapsible crab trap after they recognized that the trap was not proper to promote responsible fishing in the village. In the past, the fishers used collapsible crab trap to target the blue swimming crab without sorting and selecting the marketable size. As this had rapidly and severely led to decline of the crab resources along the coast of the village, the fishers agreed to organize a crab bank management to enhance the crab resources by donating gravid crabs into the bank cage.

With the fishers' participation in this activity, the fishers observed that the number of crab seeds in the locality had been abundant. Moreover, in order to sustain the crab resources and secure their livelihoods, the fishers in the village agreed to stop using collapsible crab trap for at least more than five years already, an agreement which has become a social rule of the village and thus, the collapsible crab trap had completely disappeared from fisheries in the village.

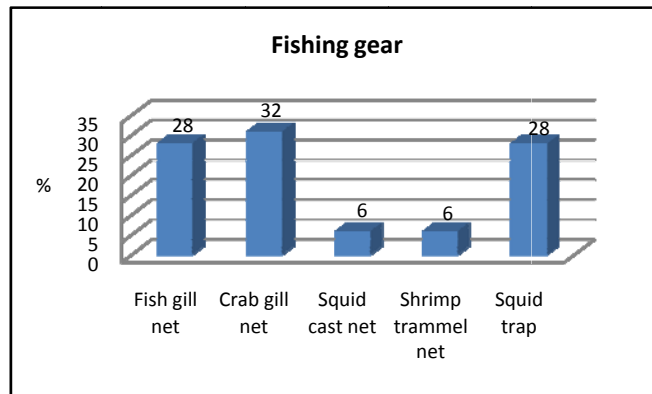


Fig. 41 Fishing gears used in Ban Ko Pitak Village

Squid trap is the second most popular fishing gear employed in the village, targeting the rainbow cuttlefish (*Sepia pharaonis*), which is the main product of the village and sold at the central fish market of the village. The other fishing gear is fish gill net which targets any species of fish depending on the season. The most common fish species caught are sardines, mackerel, mullet, etc.

Squid cast net is operated at night time during the new moon, targeting the splendid squid (*Photololigo duvaucelii*). Shrimp trammel net is used in late November to beginning of February annually, to harvest shrimps and prawns which command higher prices than the other fish products. During the Northeast monsoon season from November to February, the fishers do not usually go fishing every day, especially when wind is very strong because they are using small fishing boats.

Ko Pitak Island could be defined as a small island based on its land area, but the waters surrounding the island is very appropriate for fishing as mentioned by the respondents and shown in Fig. 42. In terms of major fishing ground, the Ko Pitak area is the most abundant area exploited by 43% of the respondents, the front area (east direction) of Ko Pitak Island by 36% and the back (south direction) of Ko Pitak Island by 14%.

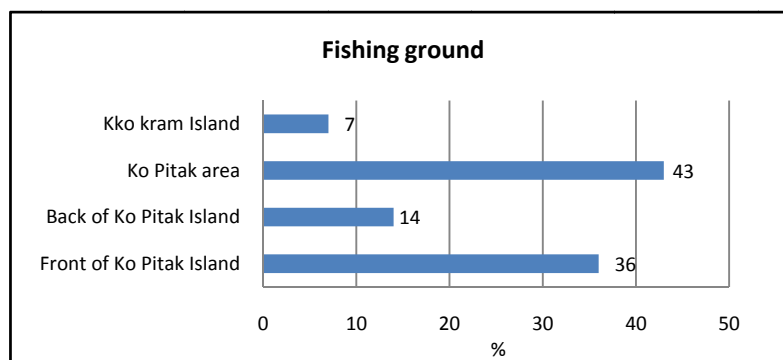


Fig. 42 Fishing grounds most frequented by fishers from Ban Ko Pitak Village

Distribution of fish in Ban Ko Pitak has six channels as shown in Fig. 43, which also indicates that the intermediate channels of fish distribution are the fish trader of Village No. 13, another fish trader in the village, fish trader in Lang Suan District, fish retailer, fish trader of Paktako Sub-district, and the fresh market. Fish trader of Village No. 13 is the biggest fish trader among all the fish traders in the village. This was observed because 51% of the respondents had traded with such fish trader. The second most popular fish distribution channel is the fish retailer identified by 21% of total respondents.

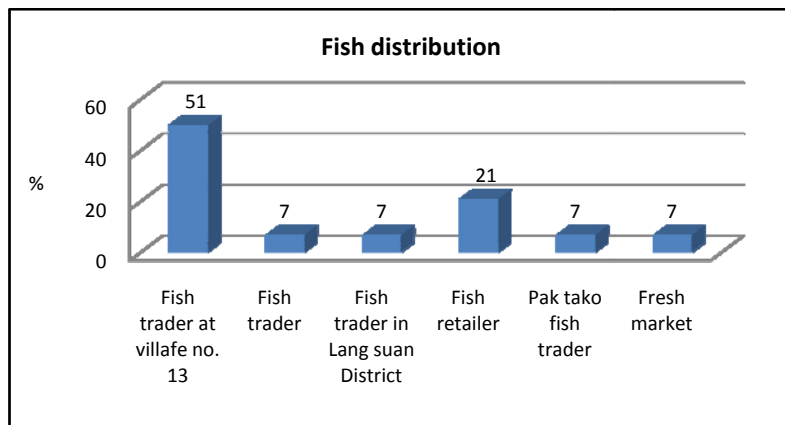


Fig. 43 Distribution channels of fish products in Ban Ko Pitak Village

The fish products caught by local fishers are usually sold fresh to fish traders (Fig. 43), which has been practiced by 86% of the respondents while the other 7% sell their fish products after processing these as boiled fish combined with dried squid, and dried squid (Fig. 44). However, boiled fish combined with dried squid, and dried squid only, are meant for different fish traders, because such products are directly sold to visitors or tourists. Considering that these products are value added products, these can provide more income to fishers.

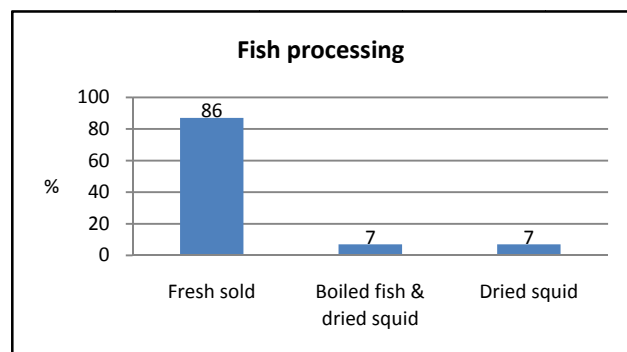


Fig. 44 Post-harvest handling of fish products in Ban Ko Pitak Village

Moreover, the respondents also expressed some problems in the fisheries sector as shown in Fig. 45, which include conflict between fishers identified by 20% of the respondents, low price of fish (17%), and aquatic resources degradation (16%). Other problems such as limited fishing ground, illegal fishing, conflict between outside fishers, and high price of fuel oil were equally rated at 7% by the respondents. Additionally, mangrove deforestation and polluted water were identified by 6%, while marketing and polluted air (3%), and a small portion of the respondents (1%) thought that high price of bait was a problem.

The conflict between small-scale and commercial-scale fishers usually occur when the small-scale fishers lost their fishing gear during the fishing operations due to the presence of commercial fishing boats in waters which are 3 km away from the coastline. On the other hand, the conflict among the small-scale fishers is not a serious problem because most of them are friends or relatives and the compensation for lost or destroyed fishing gear could be easily discussed and compromised. Each small-scale fisher is also aware of the informal policy of exploiting the same fishing ground on a first-come-first served basis.

Low price fish is often found in many fishing communities where there is strong fish market monopoly and the fishers become dependent on the fish trader. In the Ban Ko Pitak Village however, the fish trader dealing with the local fishers cited that he has no bargaining power to negotiate the fish price with the fish trader in the urban areas, but he sets the price of the fish sold in fish market in the urban areas which includes transportation costs.

Aquatic resource degradation in the waters of Ban Ko Pitak Village could be caused by the increasing number of fishers and fishing efforts with the fishers not practicing responsible fishing operations. This condition has also contributed to the increasing and serious conflict among fishers who compete for the exploitation of the aquatic resources in fishing grounds which are 3 km away from the coastal areas.

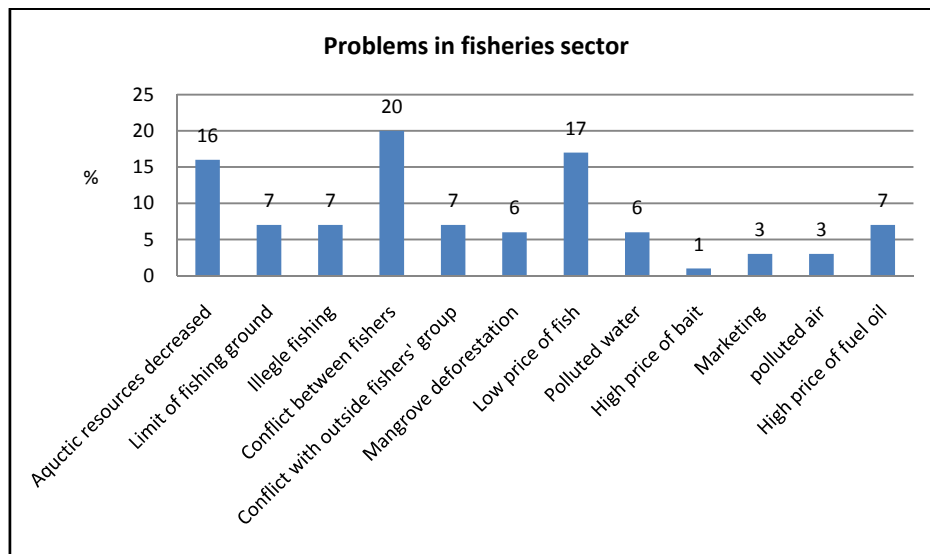


Fig. 45 Problems in the fisheries sector of Ban Ko Pitak Village

The problems in the fisheries sector were also assessed during the survey considering their severity (Fig. 46) using five levels, *i.e.* level 1 to level 5 from less severe to most seriously severe, respectively. Among the problems mentioned in Fig. 45, aquatic resources degradation and low price of fish were ranked as the most seriously severe problems (level 5) by 40% of total respondents. Meanwhile, the conflict between fishers and high price of fuel oil were also considered most seriously severe problems by almost 30% and about 38% of the respondents, respectively. The other serious problems identified by more than 10% of the respondents were illegal fishing and air pollution.

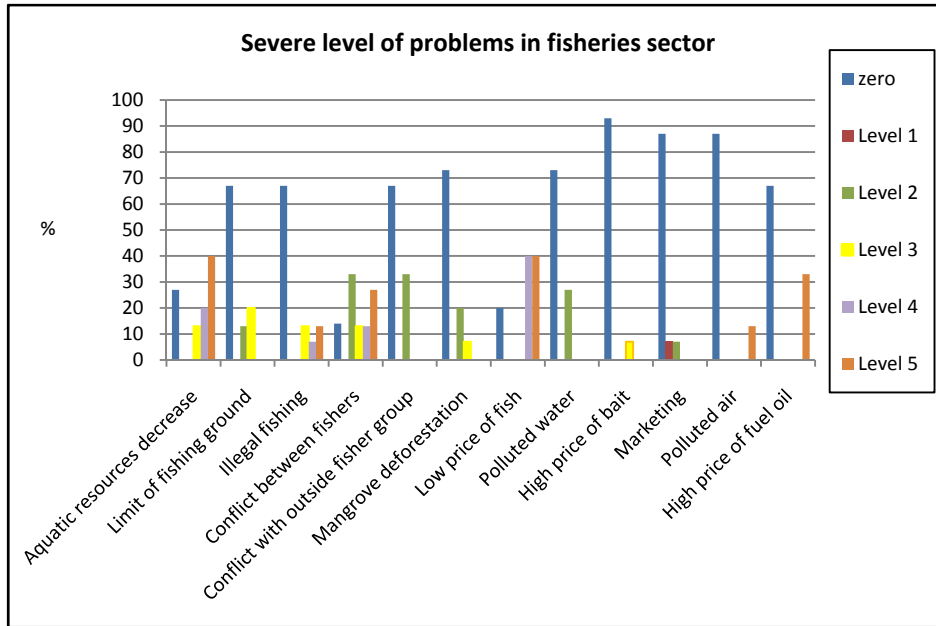


Fig. 46 Severity of the problems in fisheries in Ban Ko Pitak Village

The respondents were also asked to identify some means of dealing with the problems specifically considering the respective severity of such problems. In Fig.47, the identified solutions to the problems were ranked in ascending order of the severity. The result showed that 25% of respondents identified the conduct of discussions between the fishery groups equally important with informing the government of the problems.

The respondents also suggested that the problems could also be solved by establishing the fishery groups, informing the village head and organizing cooperatives (18%, 18% and 14%, respectively).

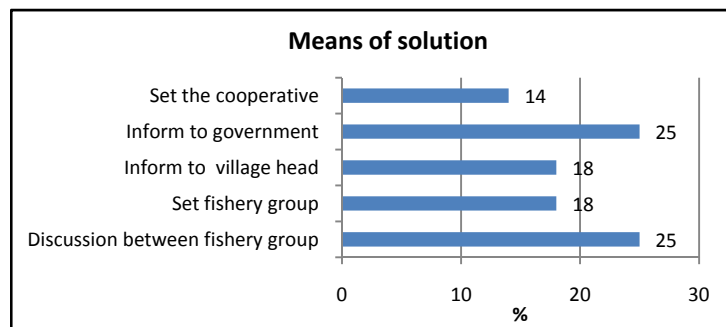


Fig. 47 Means to solving the problems suggested by fishers from Ban Ko Pitak

In addition to the identification of the means that could solve the problem, the survey also investigated the frequency of the fishers' participation in discussing the problems and finding solutions to the problems. The result as shown in Fig.48 indicated that the frequency of the fishers' participation in the discussion between the fishery groups was often as reported by 43% of the respondents. The respondents (29%) also often informed the government while 40% and 20% indicated that they informed the village head always and often, respectively. The means of setting the fishery groups was also considered as often and always by 20% (equally) of the respondents. However, the least participated means was the setting of cooperatives affirming that the respondents

(75%) had never participated in discussing this option as means of solving the problems.

The result shown in Fig. 48 clarifies that the local fishers often shared their ideas during the discussion among the members of the fishery groups. Since this is a basic participation, the groups could be strengthened by providing them with training on how to summarize their ideas and prioritize the important issues during the discussions. As for setting up of the fishery groups, this would need the support from government agencies in terms of encouraging the local fishers to assemble and establish the fishery groups. However, most local fishers have little experience in setting up cooperatives or organizing grocery shops at the least. Through the cooperatives, the income from shop management could be used as investment cost of the shop with the profit returned to the members or used to set up revolving loans to members, etc. On the other hand, although some local fishers inform the village head or government on the problems, they still continue to ask for help from village or government officials in making decisions or actions.

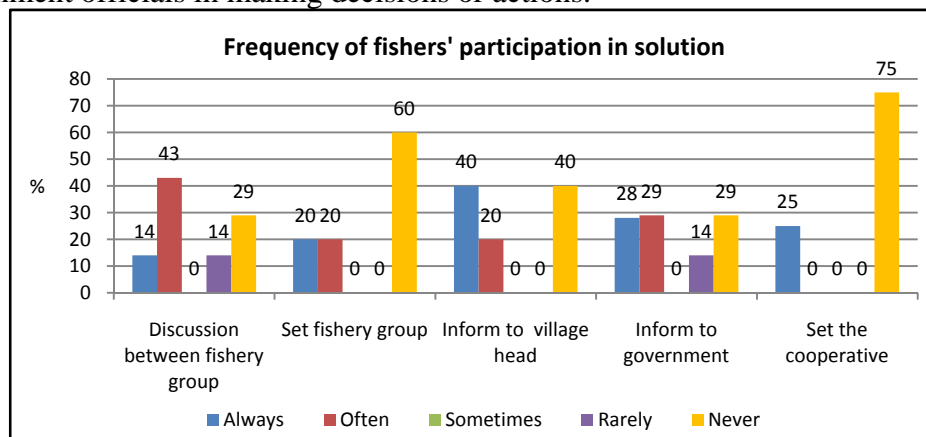
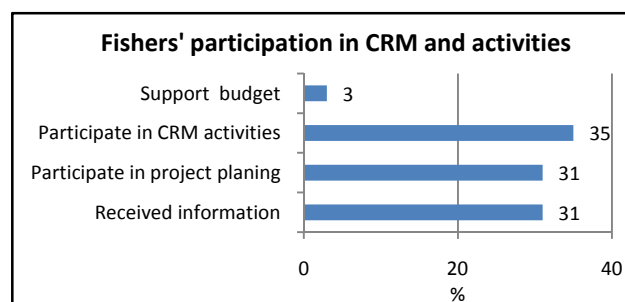


Fig. 48 Frequency of fishers' participation in finding solutions to the problems

7. People's Participation in Coastal Resource Management

People's participation in coastal resource management is important key and approach for the sustainable use of the coastal resources, and the fishers would be the key persons who should be involved in coastal resource management activities. Thus, the survey also investigated the fishers' participation in the activities and the frequency of their participation, the results of which are shown in Fig. 49 and Fig. 50, respectively.

Specifically, Fig. 49 indicates the four major activities that the respondents from Ban Ko Pitak Village had been involved in, *i.e.* participating in CRM activities by 35% of the respondents, participating in the project planning by 31%, received information also by 31%, and supporting the budget only by 3%.



In Fig.50, the frequency of the fishers' participation in CRM and related activities are assessed using five levels, *i.e.* always, often, sometimes, rarely and never. The results showed that most of the respondents (73%, 64% and 50%, respectively) always participated in receiving information, participating in project planning and participating in CRM activities, respectively. Nevertheless, 80% of the respondents indicated that they had never participated in supporting budget.

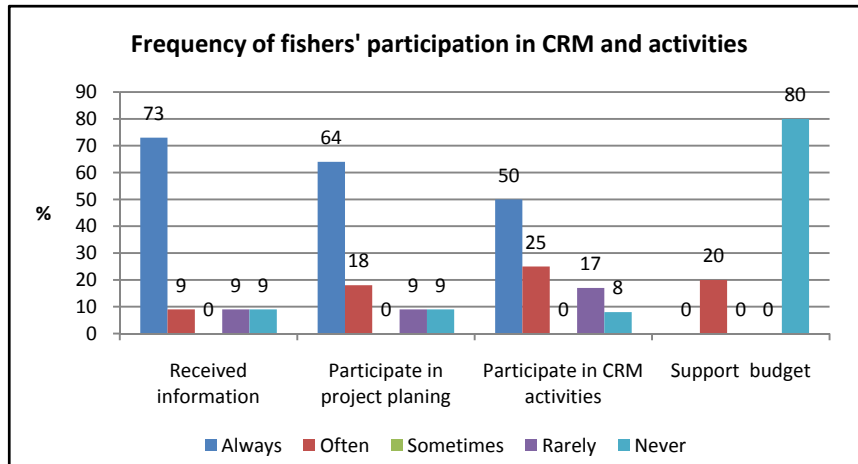


Fig. 50 Frequency of fishers' participation in CRM and related activities

Based on the results shown in Fig. 49 and Fig. 50, the fishers' participation has been largely on receiving information continually. This means that the local fishers open their minds to receive and look for more information to keep them updated.

Although the fishers' participation in project planning may not have been more frequent, a number of fishers always participate in the activity. Through such participation, the local fishers can apply their local knowledge and skills in practice in order to develop and improve their respective communities. The fishers' participation in the CRM activities had also been moderate but they indicated that they always participate in the CRM activities. In fact, the local fishers already have long experience in terms of their involvement in CRM through self-initiation and with support from the government. Lastly, the fishers' non-participation in supporting the budget is not surprising. In fact, the large portion of the fishers had never participated in the activity, because the fishers could not derive supplemental income from other sources while the income they receive from the fisheries sector could only support their household needs.

Specifically, the types of CRM activities that the fishers participated in are clarified in Fig. 51. Such activities include fish releasing, beach cleaning, mangrove reforestation, artificial reefs deployment, and crab bank. In ascending order, the respondents' participation in each activity was reported to be 27% equally for fish releasing and beach cleaning, 22% equally for mangrove reforestation and artificial reef deployment, and 2% for the crab bank.

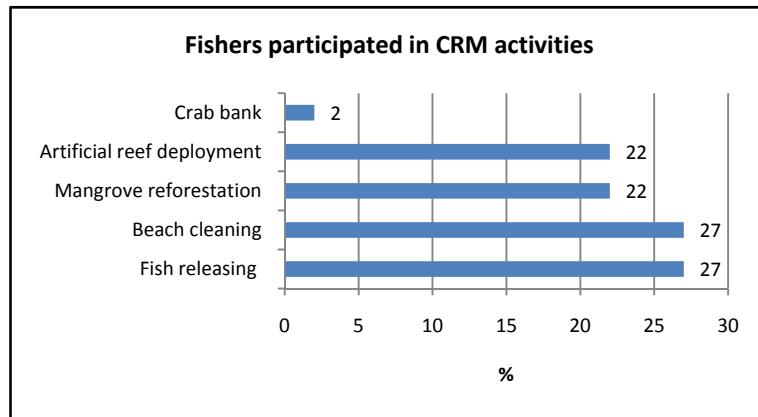


Fig. 51 CRM activities participated by the fishers of Ban Ko Pitak Village

The frequency of the fishers' participation in CRM activities was also evaluated as shown in Fig. 52, which indicates that 76% of the respondents always joined the beach cleaning activity. However, the respondents rarely participate in crab bank and mangrove reforestation activities (100% and 46%, respectively).

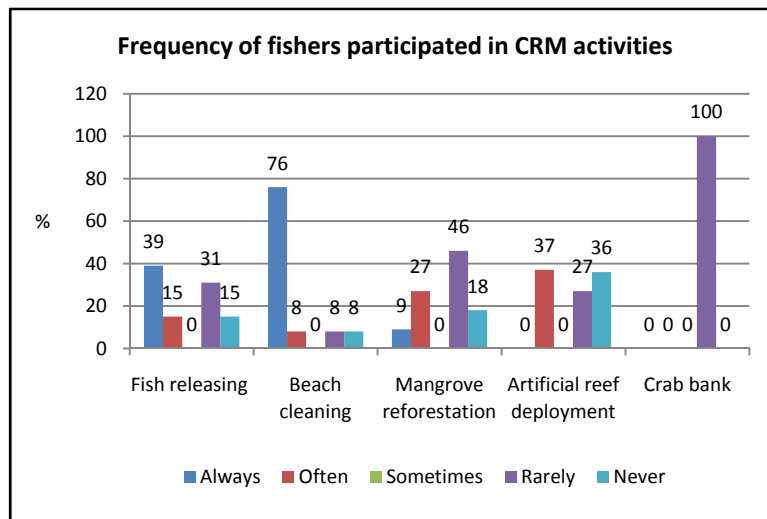


Fig. 52 Frequency of Ban Ko Pitak Village fishers' participation in CRM activities

Although the results shown in Fig. 51 and Fig. 52 indicated the same number of fishers who participated in fish releasing and beach cleaning, but the frequency had been different. The frequency of the local fishers' participation in beach cleaning was quite high, while the number of fishers joining the fish releasing activity has been slightly lower but they always join the activity. The fishers' participation has been quite rare in mangrove reforestation because mangrove trees are not local resources in the area. However, they also joined this activity when the adjacent village invited or informed them of the organized mangrove reforestation activity, where sometimes they had been asked to contribute mangrove seedlings. In the case of artificial reefs deployment, local fishers indicated that they often participated in the past when the DOF implemented the policy of small-scale fisheries development from 1996 to 2001. Recently, since the DOF has no plan to deploy artificial reefs near the village, the crab bank activity has become more popular since 2001 up to now. It was noted however that the crab bank as a collaborative activity is no longer active after the local fishers

changed the implementation of the crab bank scheme. The head of the village explained that the local fishers have recognized and are aware of the importance of gravid crabs. So when they catch a gravid crab, they will keep the gravid crab in the small cage floating near the ladder of their houses. After the crabs had laid eggs into the sea, the concerned fishers harvest the spent crab. In view of such practice, the crab cage bank used as village's cage has no more gravid crabs. Nonetheless, the increasing awareness of the local fishers on the role of gravid crabs as well as the non-use of the collapsible crab traps are positive signs towards enhancing the crab resources in the waters surrounding the Ko Pitak Island.

8. Skills and Capacity to Work in Groups

The fishers' skills and capacity are the basic factors that contribute to the success in working for the local people's organization and groups. The survey was able to identify the fundamental skills and capacity to recognize the ability of local fishers to support in the group's tasks (Fig. 53). The respondents identified three major skills and capacities, *i.e.* dedication (by 15% of total respondents), acceptance of information and technique (14% of the respondents) and exchange of information and opinion (14% of the respondents). Minor skills and capacity were reported to be unnecessary in exchanging information with officials (11% of total respondents), coordination between agencies, giving advice and suggestions, and creative thinking (equally by 10% of total respondents). Few of the respondents had skills and capacity in leadership and monitoring (8% of total respondents).

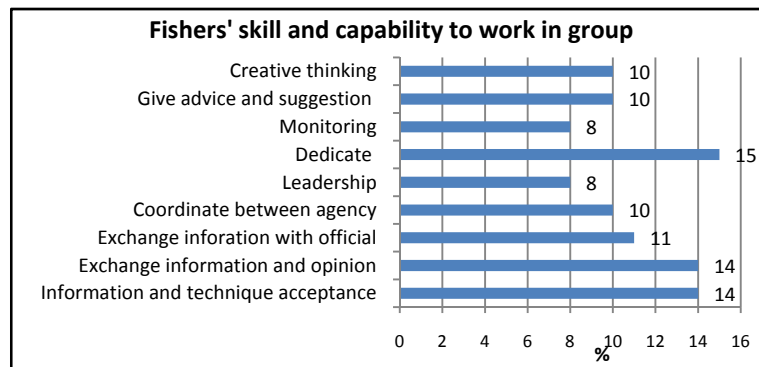


Fig. 53 Fishers' skills and capability to work with local groups

In addition, the survey also investigated the level of the skills of the fishers' participation which were categorized into four levels, *i.e.* very good, good, fair, and poor, the result of which is shown in Fig. 54. Of the three main skills practiced, acceptance of information and techniques was rated highest as a very good skill to be applied in group activities by 68% of the respondents, while dedication as well as exchange of information and opinion was considered very good skills by 58% of total respondents.

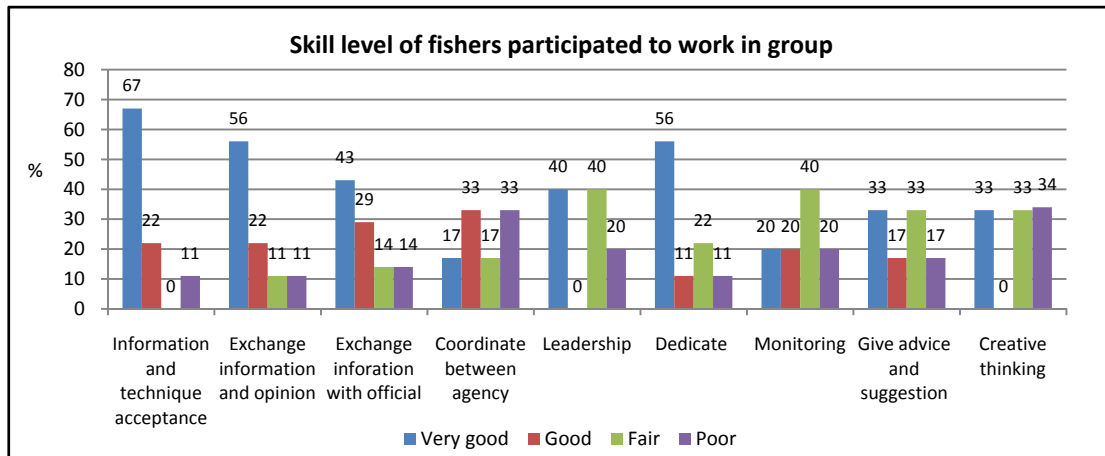


Fig. 54 Levels of fishers' skills in participating with group works

Although most fishers have skills and capacity to work with the groups, such skills could be limited in handling some specific tasks. Thus, they need some support from government agencies for the implementation of some activities. Fig. 55 clarifies the needs of the fishers from government agencies, where 31% of the respondents require that the government should provide them with the information. Additional needs necessary include exchange information and opinion, coordination and consultation which were equally identified by 23% of the total respondents.

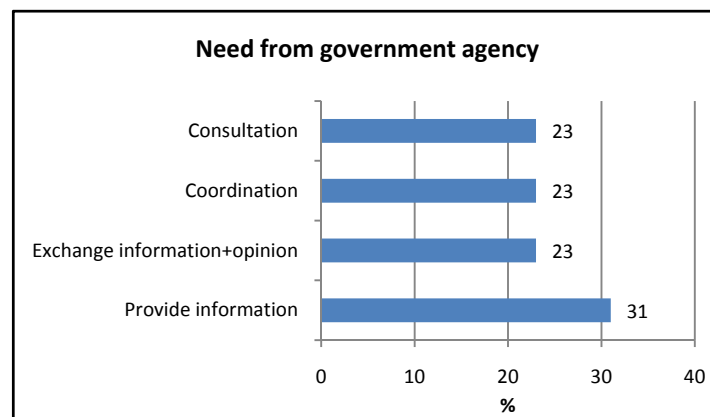


Fig. 55 Support needed by fishers from government agencies in implementing some activities

In order to analyze the seriousness of the needs, the level of the support needed by the fishers from government agencies was categorized into two levels, *i.e.* very essential and essential, and were further investigated, the result of which is shown in Fig. 56. Majority of the respondents (82%) cited that there is a need for the government to provide information which is very essential for them. Likewise, consultation was also very essential according to 88% of the respondents.

On the other hand, exchange information and opinion and coordination, although considered also as very essential, where identified by only 63% (equally) of the respondents.

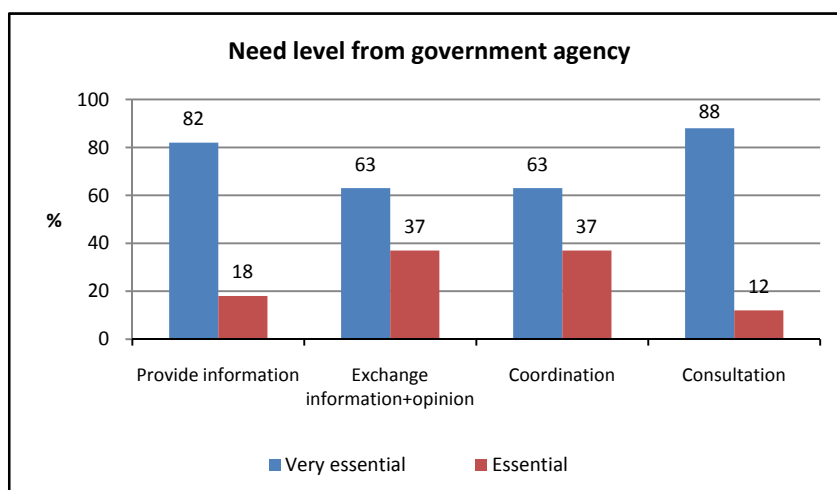


Fig. 56 Level of the needs of fishers for support from government agencies

Thus, the needs of the fisheries for support from government agencies were mainly in the areas of consultation, providing information exchange of information and opinion, and coordination. These needs were considered essential to help the villagers develop high self-confidence in handling the activities relevant to the development and management of the coastal resources aiming for the better and sustainable use of the resources that could secure their livelihoods and well-being.

9. Fishers' Perception of Fisheries in the Next Five Years

Similar questions were asked to the fishers of Ban Ko Pitak Village as those asked also from the fishers of Ban Thonkrog Village, on their perception of the fisheries sector specifically in terms of fishery economies, aquatic resources, marine environment, group or network, and fisheries community. The respondents were asked to assess each criterion in the next five years, which were categorized into three levels, *i.e.* better, unchanged and worse than now.

The result of the survey shown in Fig. 57 indicates that 75% of the respondents expected that group or network would be better than now. Such perception could imply the need to provide training and extension programs to the village in order to educate the villagers in properly undertaking group works and in establishing a link with other groups. However, the respondents seemed to suggest that fishery economies and fisheries community could be worse than now as identified by 50% and 58% of the respondents, respectively. This was a good sign that the fishers recognized such scenario as it would facilitate the development of precautionary plans and activities to reduce the severity of the worsening fishery economies and fisheries community. Such precautionary plans and activities should focus on enhancing the coastal resources and environment, to secure the source of employment of the fishers and ensure food security to the village. On the social and economic aspects, the plans and activities should focus on how to maximize the participation of the fishers in the concept and principle of cooperativism in order to allow the villagers to share their interests, incentives and risks based on mutual help.

On the other hand, 43% of the respondents moderately anticipated that the health of the aquatic resources would get better. This perception should encourage the

government to promote responsible fishing practices and conservation. Regarding the marine environment, 41% and 42% of respondents assessed that the present situation would be better and could remain unchanged, respectively. Thus, responsible practices concerning the environment should be introduced and transferred to the village to enable the fishers to understand well and change their present ways of living from improper to proper exercises such as reduce if not eliminate the burning garbage, stop throwing organic wastes into the sea, sort and recycle debris, etc.

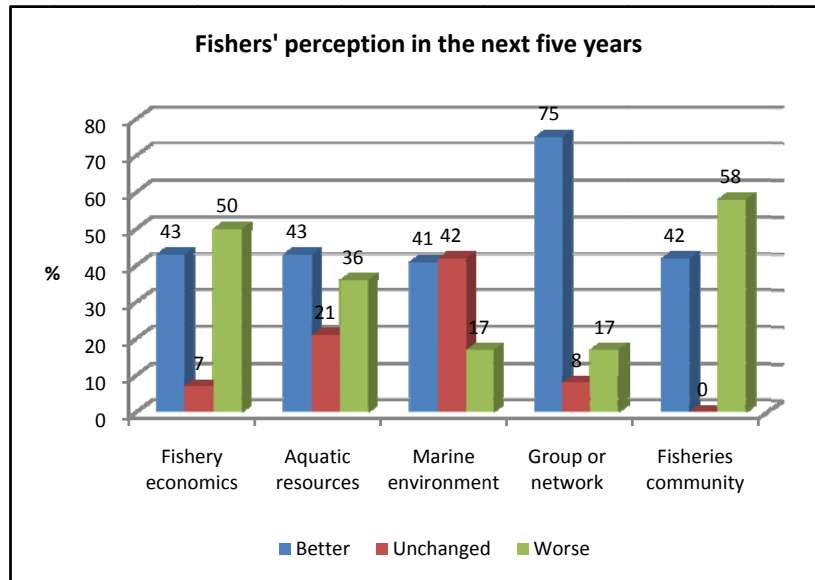


Fig. 57 Perception of the fishers from Ban Ko Pitak Village on the fisheries sector

Summary (2)

Ban Ko Pitak Island Village is small fishing community, but it has similar socio-economic profile with that of Ban Thongkrok Village, more particularly in the major and supplementary occupations of the villagers which are in fisheries, agriculture, labor, grocery, and home-stay. Home-stay is a new activity which has just been carried out by the local villagers of Ban Ko Pitak Island during the last ten years. The incentive from home-stay activities had been very good for the operators as the income from home-stay had been higher than the income from fisheries and other related occupations. However, since there are only eight to nine households in the village offering home-stay services, the queue for home-stay booking has been quite long while the tourists and other guests had to be rotated among these operators.

In the village, the local fishers are also defined as small-scale fishers using boats lower than 14 m, and the fishing gear used are crab gill net, fish gill net, squid trap, squid cast net, and shrimp trammel net. The fish products are blue swimming crab, mackerel, mullet, sardines, squid, cuttlefish, and shrimps or prawns. Most of fish products are sold fresh to fish traders outside the village, fish retailers, except squid which is usually processed as dried squid as a means of value adding and sold to tourists and other guests.

Local people's groups existed at the village where the largest number of members is in the One Million Fund group, which could mean that the local villagers can access soft loan provided by the government through the said fund allocated to the villages.

The villagers however can have more than one alternative source of credits, and do not necessarily depend on local moneylenders. The second large group is the women's group, which gathered the women in the village and kept them united to work together especially in developing their skills and knowledge, and become more innovative and better. This would result in increased manpower that could contribute to the development of the village economy and value chain of fisheries and eco-tourism. Furthermore, a number of villagers are members of the other existing groups in the village with different functions such as head of the group and group committees, and as members, indicating that the local villagers are willing to participate in many activities for the sake of village development and management.

The local villagers' participation has been exercised in receiving information, while they also participated in project planning and coastal resource management, but supporting the budget was very minimal. Their participation particularly in project planning and coastal resource management has been aimed at bringing a better village development and resource management. The village's tangible and indicative performance has been demonstrated in their agreement to stop the use of collapsible crab traps in their fishing operations in order to enhance the blue swimming crab resource. Therefore, the local fishers are highly aware of the importance of gravid crabs for the new recruitment of the crab resources. Even though they have stopped cooperating with the village's crab bank management, they still continue to release their caught gravid crabs into their own floating cage near the ladder of their house. The villagers also recognized the importance of marine environment, so they keep on conducting beach cleaning to safeguard the aquatic resources and the sea as well as to implicitly secure eco-tourism and home-stay activities.

The villagers' participation had been consistent with their skills and capacity particularly in terms of dedication, exchange of information and opinion, and technology acceptance. Thus, their basic competence would help in developing, managing and preventing any problems that could impact on the village's resources and environment. This exercise will be good and positive to alleviate the problems that have already occurred now and probably in the future.

Conclusion and Recommendations

The demographic data of the two villages are fundamental information that could provide the right and proper direction towards implementing plans and activities to these villages. The data that concerned the fisheries sector primarily provide the basic characteristics, capacity, effort, needs and problems that could impact on the fisheries economic development and coastal resource management.

The information on the fishers' skills and capacity could help in understanding the area where the local fishers can participate in community development and coastal resource management. On the result of investigation of the fishers' skills and capacity, many local fishers had been less involved in coastal resource management especially in the decision making process, but they are involved in receiving information from the government agencies.

Thus, capacity building on an importance, role, function and responsibility of local people's groups or organizations should be given a top priority and combined with

any training roadmap. This training roadmap could be based on the concept of co-management in fisheries and on the philosophy of sufficiency economy. Such concept and the philosophy would enable the fisheries communities to sustain their local resource base and secure their livelihoods and improve the well-being of the local fishers and stakeholders.

The concept of co-management involves the sharing of responsibilities and functions among the local fishers, stakeholders and government officials in a management body. This is envisaged to help in developing and shifting the roles of local fishers and stakeholders from being users to resource managers of the common fisheries resource, which according to the Thai constitution such fisheries resource is a state property. Along with the practice of co-management, the philosophy of sufficiency economy is the best and proper guide to reasonably and moderately utilize the natural resources for sustainability taking into consideration the social and economic limitations. Reasonable and moderate utilization of the resources could be demonstrated by avoiding the use of destructive fishing operations, and heavy exploitation that exceed the potentials of the resource recruitment. In practice, these recommendations may be difficult to undertake in reality, however all users and stakeholders should be encouraged to agree and adopt these suggestions especially in performing their tasks for better and sustainable coastal resources to secure their means of livelihoods and attain food security for this and the next generations.

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