

Problems and Community Participation in Water Management: A Case Study of Paknamchawang Sub-District Municipality, Thailand

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Abstract

The objective of this research is to study the problems and community participation in water management. This is the qualitative research using the in-depth interviews and group discussions from the key informants twice. The key informants are purposively selected. The tools used in the study are structured in-depth interview forms and group discussions. The data is analyzed by content analysis revealing that: 1. Regarding the problems of water management, the flood is found to occur every year and last long time causing a lot of problematic consequences. As some parts of the area are the river basins, most areas encounter the flood problem and the water management is not systemized., 2. Regarding the community participation in water management, it is found that the community participation is not organized as the community people always help one another. Therefore, for the approaches of community participation in water management, as the community participation is not organized, the form of participation in water management should be changed to be clearer by developing from the original form of participation of the community and the public relations for assistance request. There should be the establishment of networks of voluntary personnel in the community to aid in the community flood problems covering all areas. Moreover, the development plan on water management should also be made among the villager leaders, community, and locality to become more systematically with the plan to support the aid, alert, and evacuation from the flooded areas.

Keywords: Participation, Water Management, Paknamchawang Sub-District Municipality

Introduction

Water management is a national priority. At present, more and more problems are still found. The water management system of the country is ineffective because the current water

management policy of the government is characterized by separate water resource management focusing on the management considering the sustainability of holistic watershed ecosystem. There are also several practical issues such as free water management. Even though everyone is entitled to equal water use, the government is monopolized focusing on the large investment. There is the lack of participation from various parts of society, especially the community with the rules of water allocation from the original wisdom. This generates more and more conflicts (Khaosaard, 1995).

Meanwhile, the water management should be "sustainable water management" meaning the management approach that emphasizes all aspects of society to know the value of water, to use water moderately, to have reasons to use water resources thoroughly and effectively, to have the balance both in quantity and quality along with conservation and restoration to be sustainable. It must not be wasteful or destructive as it is today. The utilization of water resources for economic development should be based on the philosophy of "Sufficiency Economy" with the main focus on the prosperity, happiness and self-reliance together with the protection and restoration of water resources and involving other resources to be abundant. This can ensure sustainable development and dependence on water management and other resources closely related with the integration and sustainability. Many different fields of knowledge must be integrated into one unified system. The water management requires the consistent and coordinated process of managing both quantity and quality to maintain natural balance in all watersheds. The mechanism of participation of all parties is required especially people in the watershed areas, stakeholders, and the mechanism of public participation in water management. All areas should be developed to be consistent. The study and investigation of causes of water resource problems such as water shortage, flood, and degraded water quality, etc.

The demand on solving community problems should be cooperated together with joining in thinking about creating patterns and ways to develop the approaches to solve and mitigate community water issues or to create new things that benefit the community or meet the needs of the community. The policies or plan of activities or projects should be stipulated to alleviate or eliminate water issues that meet the needs of the community. The use of limited water resources for the benefits of general public should be decided fairly along with jointly managing, monitoring, evaluating, and maintaining the projects (Maiklad, 2014).

In particular, the good disaster management requires a multi-sectoral link especially the government that needs community involvement. This is important and necessary in the management of the flood for the world and Thailand in the present time and in the future (Sakulnu, 2013). According to the study of Nannapat Paladsrichuay (2015), it is found that people's participation in public water reservoir management is related to various fields including the participation in the decision making, participation in practice, participation in benefits and participation in evaluation.

Paknamchawang Sub-District Municipality, Chawang District, Nakhon Si Thammarat Province has the terrain of mostly plain near the river and some are plains. The agricultural area is about 33,726 rai with the main river, Tapee River, and two other canals; Khud Duan Canal and Min Canal. However, most of the branch rivers are short and the water area is small. At present, as the expansion of the communities and the increase of the population in the area and some areas of the community are high plateau, the flood problem occurs in the area of Chawang District including neighboring districts which are Khanom, Sichon, Nopphitam, Thasala, Lansaka, Phromkhiri, Muang Nakhon Si Thammarat, Ronpiboon, Chang Klang, Phipoon, Tham Phannara, and Thungsong. The recent flood situation was that there was the heavy rain on Luang mountain range causing flood in the area of Nakhon Si Thammarat Province. There was the flood about 15 centimeters high. From Thungsong Station, the route could be normally used. From Chang Klang District, on Highway No. 4015 Ban Tan - Khao

Thong - Chawang between kilometers 14 + 000-15 + 050, the flood level is 50 cm between Km 23 + 500-23 + 700. There was the sliding soil on the route surface between Km 33 + 400-33 + 800. The flood level was 100 centimeters high. The traffic cannot be used. In Chawang District, there is continual heavy rain. The water level in all rivers increases. For power outage in Chawang Municipality, the Department of Local Administration, the Sub-district headman, and the headman perform the close surveillance on the situations (National News Bureau of Thailand, 2017).

Therefore, this research focuses on problem research and community participation in water management for all sectors of the community to strengthen the community as well as solving the problems of community water management for the maximum efficiency. This is for the sake of happiness and self-reliance in order to conduct water management together. The research results are used to stipulate public policy on water management of Paknamchawang Sub-District Municipality, Chawang District, Nakhon Si Thammarat Province, for mutual success and benefiting.

Research Objectives

1. To study the problems of water management of Paknamchawang, Chawang District, Nakhon Si Thammarat Province.
2. To study the community participation in water management.

Literature Reviews

Integrated Water Resources Management

Integrated Water Resources Management is the process in promoting the coordination, development and management of water, soil and other resources for the best economic benefits and well-being of the society equally without affecting the sustainability of significant ecological system (Anukulamphai, 2003). The Integrated Water Resources Management should be based on the principle of efficiency of water use with the worthiness of investment. Everyone should participate in planning and operating at all levels and has the right to use water equally in the quantity and quality properly for living. This includes maintaining natural balance considering the linkage with other relevant resources, such as soil, forests, environment and ecosystems. It also takes into account the management of the watershed system as the watershed is systematically linked from upstream, midstream, to downstream for sustainability in order to have water available for the next generations. The cooperation from all sectors is needed including public, private, people and local administrative organizations (Anukulamphai, 2003).

Concepts of participation

The process of participation of International Association for Public Participation divides the level of public participation into 5 levels as follows:

1. Information provision is the lowest level of public participation but it is the most important level because it is the first step of the government to allow people to enter the process of participation in various matters. The informational provision methods can use various channels such as disseminating the information through various media, arrangement of exhibition, newsletters, etc.
2. Public hearing is the process that is open to public for engaging in providing factual information and opinions for decision-making by government agencies in various ways such as hearing, polls, organizing public forum, etc.
3. Involvement is an opportunity for the public to participate in the work or to propose the recommendations leading to the decision to ensure the public that the information, opinions, and demand of people will be considered as the alternatives for public administration, such as

a workshop on public policy issues to consider public hearings, and the establishment of working groups to address policy issues.

4. Cooperation is to allow the representatives of the people sector to engage by being partner with the public sector at all stages of the decision-making process and there is ongoing cooperation such as the committees with people sector as members.

5. People empowerment is the stage that gives people at the highest level of role. People will make the decision such as referendums on public issues, the village fund that empowers the public to make all the decisions, etc. (Yangyeun, Somdee, Viboonuthai, and Thitisutthi, 2013: 12-13).

Key elements of participation:

1. There must be mutual learning among the involving parties whether the public sector, private organizations, and general people focusing on two-way communication both formal and informal.

2. The public participation process should involve the people in a broad and inclusive manner to make better decisions for the government.

3. The participation process must be clearly and precisely defined.

4. The processes of activities must indicate how people can participate in any process of activities.

5. The target group must be clearly identified (Nannapat Paladsichuay, 2558)

Participation in community water management

According to the study of Kitichai Rattana (2012) on the community participation in the watershed management, it is found that the participation is in the watershed management activities in the field of afforestation, collection of waste in the river. Apart from these, the activities are to raise the awareness in the environmental conservation, to perform the rituals about conservation such as making merit on fish breeding, forest ceremony, rituals of venerating the ghosts including the construction of check dam. For the participatory watershed management activities, it is found that the participation is in the activities of planning, implementation, monitoring, and assessment of results. The participatory form which is most needed is the participation in community forum.

Research Methodology

1. Research form is the qualitative research using the in-depth interviews and group discussions with the key informants.

2. Key informants and the selection of key informants

2.1 In-depth interview: The key informants and the selection are the officers of Paknamchawang Sub-District Municipality consisting of 3 Municipality Officers and 2 experts in water law totaling 5 persons. The key informants are purposively selected according to the criteria or objectives of the researcher so that it can lead to the answers to the research questions. All of the informants have the direct experienced in such issues and know the problem conditions and approaches for the participation well.

2.2 Group discussions: The key informants and the selection are the Mayor, Deputy Chief of Municipality,

Deputy Municipal Chief, Municipality Officers, Community leaders, volunteers, villagers, village headman, Sub-district headman, Disaster Prevention and Mitigation Officers, and officers of Provincial Waterworks Authorities for 12-14 persons. The key informants are purposively selected. It is the sample group selection following the criteria or objectives of the researcher leading to the response of research questions. All informants are those who have direct experiences and have known the problem conditions and the participation approaches well.

3. Research tools used in the research are the structured in-depth interview forms and group discussions. The structured in-depth interview forms and group discussion forms have already been examined by the experts before using in the research. The in-depth interview forms consist of 4 main topics as follows:

- What are the problem conditions in water management of Paknamchawang Sub-district municipality, Chawang District, Nakhon Si Thammarat Province?
- What are the legal problems on water management?
- In which ways the community involve in water management?
- Other recommendations

The group discussion consist of 4 main topics as follows:

- What are the problem conditions in water management of Paknamchawang Sub-district municipality, Chawang District, Nakhon Si Thammarat Province?
- What are the laws on water management? How such laws are problematic in management? How are the community's rights in water management and how are the authorities and duties of municipality in water management?
- What is the community participation in water management? How and in which way can the community participate?
- Other recommendations

4. The data analysis is done by using content analysis with the synthesis and descriptive writing.

Research Results

1. The problem condition in water management of Paknamchawang Sub-district municipality, Chawang District, Nakhon Si Thammarat Province, is the flood problem which occurs every year and takes long time causing a lot of sufferance to people.

1.1 The area of Moo 6 is near Khud Duan Canal causing the flood problems such as eroded bank, destroyed houses of people, etc. causing people to suffer in daily living.

1.2 The area of Moo 7 also causes the flood problems such as eroded bank and destroyed houses of people as some houses of people are located near Tapee River and some parts are river basin.

1.3 Some parts of the area of Moo 8 is near Min Canal and most parts are river basin as well. Most of the problem conditions are the areas near the river and the river basin causing the flood problem and the water management problem. The flood covers around 60-80% of the area. However, the amount of flood more or less depends on the amount of rain. The problem of water management affects the villagers to suffer from non-systematic water management. When the villagers have problems, they will propose their complaints to the district or province. Generally, the community and the people do not deny any development but it must be appropriate for the villagers in the area or to suit the context of the area. The problem of flood, especially in Paknamchawang Sub-district municipality is a long-standing problem. The main cause, especially in Paknamchawang Sub-district municipality consisting of 6 villages is the geographical condition of pan basin which is the water storage area receiving water from Tapee River. One of the causes of flood in Paknamchawang Sub-district municipality is related to the water barriers which are the ruins of the previously decayed trees, sand and soil flowing over the canal. In addition, the problem of flood in Paknamchawang Sub-district municipality as a whole is to serve water from the area of Ronpiboon, Nakhon Si Thammarat Province. There are many rivers flowing to meet one another. There are also obstacles and unmanageable problems in water management. For example, in some processes of water management, there are the problems of rules and regulations which cannot be implemented in

a timely manner without concrete forms of water management to assist the people during the flood crisis.

2. Community participation in water management: The community is involved in various areas. However, most of the participation is not structured since the community involvement already exists, for example:

2.1 Public relations for help: When the flood occurs in the area, there will be public relations in the villages so that the villagers will be able to solve the problems that arise and to cooperate with one another and get the cooperation from people, government, private agencies, and civil society sector. However, it can be done as much as it can for helping one another.

2.2 Establishment of network to assist with community problems. The people network will help the flood victims in communities and municipality, such as distributing survival bags, observing the security, moving of some people who cannot help themselves, and moving of necessities from the areas affected by flood. The establishment of the network is well coordinated by local people in the area.

2.3 Volunteers in the community to help with various issues as same as establishing the network. The volunteers in the area will help one another, including the people who have problems. The volunteers consist of children and young adults who took part in becoming volunteers.

Participation of the community comes from the love in the homeland. People are ready to take care of the Community sustainably. They try to help one another to keep the community safe from flooding. There are municipal officials, including government officials, sub-district headmen, village headmen, members of municipal councils and village leaders covering all areas. There is also a model of development plan. The village leader, community leader, and local leader will raise the problems occurring in the area to discuss to find solutions and in accordance with the constitutional rights that give the community the right to participate in the management.

Therefore, the community participation in water management is that the community participation is unconventional participation. The pattern of participation in water management should be changed to become clear and conventional with the clear processes and activities that people can participate in all stages of the activities. It must be developed from the traditional community participation by publicizing additional help and establishing a network as well as setting up a volunteer team in the community to help with the issues in the community to cover all areas. In addition, the development plans for water management should be developed with the village leader, community leaders, and local leader to become more systematic. When there is the development plan, the strategies of operation in supporting people for whichever problems can help people in a timely manner especially for the flood problem that occurs every year and is the problem that causes a lot of damage to people.

Discussion

The results of analysis lead to the discussion in the following key issues:

Regarding the problem condition in water management of Paknamchawang Sub-district municipality, Chawang District, Nakhon Si Thammarat Province, it is found that 60-80% of the area in Paknamchawang Sub-district municipality encounters the flood problem every year and takes a long duration. However, the water amount will be more or less depends on the rain amount. The area of Paknamchawang Sub-district municipality consists of 6 villages with the pan geographical condition receiving water from Tapee River. One of the causes of flood in Paknamchawang Sub-district municipality is related to the water barriers which are the ruins of the previously decayed trees, sand and soil flowing over the canal. When it rains heavily, the flood is frequent. The villagers and Paknamchawang Municipality will solve the problem

altogether. But when the water amount is heavy, the villagers will propose their complaints to the district or province. The aid will then be given to only some suffering villages following the complaints of the villagers. This is the problem solution from time to time. Such problem affects the water management of Paknamchawang Sub-district municipality. This is correspondent with the research of Waiyawut Wiyuti (2013) finding that the management for flood prevention and mitigation of Phun Pin Sub-district Administrative Organization, Surat Thani Province, establishes the disaster prevention and mitigation center of Phun Pin Sub-district Administrative Organization with the community disaster management system. The Civil Protection Volunteers are ready to conduct the contingency plan for flood prevention and solution, the plan for encountering, preventing, and solving the flood problem, the plan to be prepared for the flood, the evacuation plan, including the establishment of disaster prevention and mitigation center. This is correspondent with the research of Darakorn Plongkong (2013) finding that the alarm must start from the communicators to the receivers. When the instant flood occurs, the problem is that people are not able to receive timely information. Therefore, it is the duty of the Nam Hak Sub-district Administrative Organization to cooperate with the local leader in notifying people in advance of the incident. The risk of each area should be analyzed. Local communities lack knowledge, clear information and statistics identifying the severity of flood. Moreover, the agencies that can help villagers are district office, provincial office, disaster prevention and mitigation office, and Provincial Administrative Organization because they are readily and capable enough. This is correspondent with the research of Rattanaphorn Sakulnu (2013) finding that the flood in Tha Rong Chang Sub-district is caused by the fact that most areas are the plain areas next to the river and canals which are shallow. The houses and industrial factories are constructed to block the water flow. The water management consists of alarming, village aid, water drainage, and rehabilitation correspondent with the interview of a key informant (community leader) stating that:

"... Moo 7 is a lowland plain. Some of the villages are plateaus. When the flood occurs, around 60-80% of the area is flooded. When the flood occurs, the municipality takes care of people by distributing rice and dry food to people. In Moo 7, the problem is mostly from flood..."

This is correspondent with the interview of a key informant (municipality officer) stating that: "... The flood problem particularly in Paknamchawang Sub-district municipality cannot be solved. The villagers and the communities can handle only in some parts. Some households have to adapt themselves to the conditions of the terrain. Mainly, there are 6 villages in Paknamchawang Sub-district municipality. The terrain is pan basin water receiving water from Tapee River especially in Piboon District which is mountainous and Paknamchawang which is the source of water receiving. The cause of flood Paknamchawang Sub-district municipality is partly related to the water barriers which are the ruins of the previously decayed trees that have been damaged since the big flood in 1988. The canal was flooded with sand and clay. Especially the Tapee River, the depth of the river can be observed to be no more than 2 meters. River now is not a river. It may results in slow drainage..."

This is correspondent with the interview of a key informant (municipality officer) stating that: "... The problem of flood management as assessed is that the area in Paknamchawang Sub-district municipality encounters the flood every year and for a long time. But the amount of water will be more or less depends on rainfall. One of the causes of flood in Paknamchawang Sub-district municipality is related to the water barriers which are the ruins of the previously decayed trees, sand and soil flowing over the canal. Villagers and municipalities will jointly solve immediate problems. If there is a lot of rain, villagers who have suffered will propose the complaints to the district or the province to give the aid. But the aid is given only for some villages proposing the complaints. This is a temporary solution to the problem. Such problem affects the water management..."

For the community participation in water management, the community is involved in various areas. However, most of the participation is not structured since the community involvement already exists with the public relations to request for the aid, establishment of network in helping, community volunteers to help various problems as well as the municipality officers whether the officers, government officials, sub-district headman, village headman, members of municipal council, village leader. They mostly cover all areas to help people. Besides, the water management development plan is also prepared with the village leader, community leader, and local leader to discuss with one another. This is correspondent with the idea of integrated water management that the process of promoting coordination in the development and management of water, soil, and other related resources to bring about the greatest economic benefits and well-being of the society. It does not affect the sustainability of the ecosystem (Anukulamphai, 2003).

The Integrated Water Resources Management should be based on the principle of efficiency of water use with the worthiness of investment. Everyone should participate in planning and operating at all levels and has the right to use water equally in the quantity and quality properly for living. This includes maintaining natural balance considering the linkage with other relevant resources, such as soil, forests, environment and ecosystems. This is correspondent with the concept of participation. The levels of participation of people can be divided into 5 levels; 1. Information provision by public relations through various channels for people to acknowledge, 2. Hearing of comments by making the village community to raise the opinions, 3. Involvement is an opportunity for people to participate in the work or to make suggestions leading to a decision, 4. The cooperation of people to cooperate with various agencies in problem solving, and 5. To empower people such as in the decision making in solving the occurring problems (Yangyeun et al., 2013). This is correspondent with the research of Ornuma Pholphakdee (2013) finding that the warning of Nam Rob Sub-district Administration Organization is to alarm via the news tower of the village, line voice to prompt the public in a timely manner, and radio communication to remind people to evacuate things to safe places as well as the patrol to notify people at risk in the risky areas to be careful of the flood and prepare for the disaster. The warning plan is needed. Everyone should be involved in the implementation of the plan to protect their own assets and may cooperate with the community in what is possible. This is correspondent with the research of Nannapat Paladsrichuay (2015) finding that the people's participation in public water reservoir management is related to various fields including the participation in the decision making, participation in selecting the area proper for the construction, selecting the person responsible for supervising the construction, requesting for cooperation from related sectors, planning the construction using the community labor, requesting for the participation from the government sector. For the participation in practice, there is the coordination with the province to help the community leaders. The community leaders reflect the problem to the local administrative organization. The villagers have a meeting to ask for help from relevant agencies. The leaders do the public relations to be aware of the restrictions. This is correspondent with the interview of a key informant (sub-district headman and village headman) stating that:

"... The participation of people in the areas is mostly that the municipal officials whether the officials, the government officials, the sub-district headman, the village headman, the members of Municipal Council, village leaders have already covered the area to take care of people. There are also volunteers who are ready to help. This is done every year in the form of a development plan. Most of it is the community, village leader, and local leader. The discussion is mostly in the development plan to be taken from what the villagers propose. Most is from the villagers..."

This is correspondent with the interview of a key informant (municipality officer) stating that:

"... The participation of people has already existed such as the public relations to request for help, the establishment of network to help in the community. There are also the volunteers in the community to help solving the problems. Participation of the community comes from the love in the homeland. People are ready to take care of the Community sustainably and to be safe from harm..."

This is correspondent with the interview of a key informant (municipality officer) stating that: "The participation of people is to do the public relations for the villagers to know the problems and find the ways to help one another when the flood occurs in the community..." In summary, as the area of Paknamchawang Sub-district municipality is the plain area prone to have the flood problem easily, the community, people, and local administrative organization must help one another. Besides, relevant agencies to the water management must be integrated for the maximum benefits to the community.

Recommendations

1. Regarding the participation of people in the water management, the form of participation in various areas should be created concretely for the benefits in using in the community sustainably in the long term.
2. There should be the volunteer network both inside and outside the community to help one another in case of problems. It is a unified community to help solving problems such as the flood that occurs in the community every year.
3. The local wisdom of Paknamchawang Sub-district municipality should be used to solve flood problems as well as other problems. The local wisdom should be used as a form of community participation in water management.
4. There should be the integration in solving the problem of water management to resolve the flood problem in the areas along the river.
5. The participation patterns in water management should be adjusted to become clear and structured with the clear processes and activities that people can participate in all stages of the activity. It must be developed from the traditional community participation.
6. The water management plan should be developed with the village leaders, community leaders, and local leaders to be more systematic. As when the development plan, strategies and actions are available, people can be helped in a timely manner.

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