

# Participatory Patterns of Community in Water and Waste Management: a Case Study of Municipality in Amphawa District, Samut Songkram Province

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**Abstract**—This is a survey research using quantitative and qualitative methodology. There were three objectives: 1) To study participatory level of community in water and waste environment management. 2) To study the affecting factors for community participation in water and waste environment management in Ampawa District, Samut Songkram Province. 3) To search for the participatory patterns in water and waste management. The population sample for the quantitative research was 1,364 people living in Ampawa District. The methodology was simple random sampling. Research instrument was a questionnaire and the qualitative research used purposive sampling in 6 Sub Districts which are Ta Ka, Suanluang, Bangkae, Muangmai, Kwae-om, and Bangnanglee Sub District Administration Organization. Total population is 63. For data analysis, the study used content analysis from quantitative research to synthesize and build question frame from the content for interview and conducting focus group interview.

The study found that the community participatory in the issue of level in water and waste management are moderate of planning, operation, and evaluation. The issue of being beneficial is at low level. Therefore, the overall participatory level of community in water and waste environment management is at a medium level. The factors affecting the participatory of community in water and waste management are age, the period dwelling in the community and membership in which the mean difference is statistic significant at 0.05 in area of operation, being beneficial, and evaluation.

For patterns of community participation, there is the correlation with water and waste management in 4 concerns which are 1) Participation in planning 2) Participation in operation 3) Participation in being beneficial both directly and indirectly benefited 4) Participation in evaluation and monitoring.

The recommendation from this study is the need to create conscious awareness in order to increase participation level of people by organizing activities that promote participation with volunteer spirit. Government should open opportunities for people to participate in sharing ideas and create the culture of living together with equality which would build more concrete participation.

**Keywords**— Participation, Participatory Patterns, Water and Waste Management, Environmental Management.

## I. INTRODUCTION

**P**OPULATION increase in Population increase in big city community with a large number of people living in or the community having several tourism places have brought the utilization of technology for development in agriculture sector, tourism sector, and industry sector in order to be sufficient for the consumption and to increase people income. This has affected the environmental quality in several aspects. There are many problems of the environments such as waste, water

pollution, social, and quality of life from the consumption of contaminated foods. To solve and lessen the problems, there is the need to obtain people participation. This will cause the positive effect for the community. At present, government sector views the importance of promoting the community participation in several areas. From the 10<sup>th</sup> and 11<sup>th</sup> National Economic and Social Development Plans have set a significant policy and strategic plan which are the promotion and development in strengthening the community, society, the development of Thai wisdom to international level, the health care of people, and the promotion of tourism. In addition, there is the crucial factor of building participation related to such factors as social status, economic status, career status, and habitat. The persons with superior social and economic status attend community activities more than the persons with lower social and economic status [1].

The strategy of Samut Songkram Province has set to develop the province to be the center of relaxation and eco-tourism. Because the present emerging phenomena the 3 districts Samut Songkram Province, most of the people in the areas which have the core career as fishery have changed their way of life to be the tourists receptionists. And they have utilized their own places to be the natural tourism destinations especially the community areas nearby the Maklong riverside and the branch canals such as Ampawa floating market, Tarkar floating market, Bangnokokwak floating market and Bangnoi floating market etc [2]. Ampawa is divided for administration into 11 Sub Districts and 2 Municipalities which are different in the area condition and population. The Ampawa floating market and Ta Ka floating market are the tourism places generating income for large number of local people. Many people visit this area and environmental problems have emerged. The most obvious problems have been wastewater and tons of waste and also lead others environmental problems.

The large Sub Districts such as Suan Luang Sub District is also having water and waste problems because of the large amount of tourists and accommodations. So the researcher has been interested in studying the participatory patterns of the people in 7 selected Sub Districts which are Ampawa Municipality, Ta Ka Sub District Administration Organization, Suan Luang Sub District Administration Organization, Bangkae Sub District Administration Organization, Muangmai Sub District Administration Organization, Kwae-om Sub District Administration Organization, and Bangnanglee Sub District Administration Organization. This research studies the levels of participation of the community in water and waste management and the factors affecting the participation in managing the water and

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waste management. The research also investigates for the participatory patterns of community in environmental management. The results will be the basic information in promoting and developing the environment management in community hereafter.

## II. METHODOLOGY

This research is the study of community participatory patterns in water and waste management in Ampawa District, Samut Songkram Province. The survey research was divided into 2 approaches; a quantitative survey and a qualitative survey. The research procedure was as follows. 1) The studied population lived in Suan Luang Sub District, Bangnanglee Sub District, Bangkae Sub District, Kwae-om Sub District, Muangmai Sub District, Ta Ka Sub District, and Ampawa Municipality. The research purposively selected the social structure areas of the Sub District Municipality Ampawa, Ta ka Sub District Administration Organization, Suan Luang Sub District Administration Organization, Bangkae Sub District Administration Organization, Muangmai Sub District Administration Organization, Kwae-om Sub District Administration Organization, and Bangnanglee Sub District Administration Organization. The research used simple random sampling for the quantitative data collection. And for the qualitative data collection, the research used structural interviews and focus group interviews which were purposively selected. The researcher interviewed knowledgeable people and conducted the focus group interview concerning four issues of community participation in environment. These four issues were planning/decision making, operation, being beneficial, and evaluation. People from 7 Sub Districts were selected and 63 people from 5 Sub Districts were interviewed. And people from 5 Sub Districts were selected for focus group interviews. There were 10 people per group.

Regarding the instruments for this research, the quantitative questionnaire measured the participation of the community in managing the water and waste environment in Ampawa District, Samut Songkram Province in 4 areas which were 1) Planning 2) Operation 3) Being beneficial 4) Evaluation. The qualitative instrument studied participatory patterns of the community in water and waste management. The process was divided into 1) Interviewing the knowledgeable people. 2) Focus group interview. For this qualitative data, the researched interviewed knowledgeable people and conducted focus groups interviews using the principle of group interaction. Statistics for data analysis were frequency, percentage, average, standard deviation and One-Way ANOVA test. The research defined statistic significant level at 0.05. The study uses t-test for 2 groups variables and F-test for more than 2 groups variables. The multiple comparison is tested when finding the difference by using LSD statistics (Least Significant Difference Method). And the qualitative research used purposive sampling in 6 Sub Districts which are Ta Ka, Suan Luang, Bangkae, Muangmai, Kwae-om, and Bangnanglee Sub District Administration Organization. Total population was 63. For data analysis, the study used content from quantitative research to analyze and build question

frames from the content to interview and focus groups. Qualitative information for analyzing the participatory patterns of the community in environment management consisted of descriptive research which was opened end questions.

## III. RESULTS

This research studied the community participation in water and waste management in Ampawa District, Samut Songkram Province. For data analysis, the research analyzed the data of the level of community participation in environmental management in the four issues which are planning, operation, being beneficial, and evaluation.

The research found that Ampawa Municipality had a low level of participation in water and waste management in all 4 issues because the area is an urban community. So they are lack of participation in water and waste management. In addition, there are people from other areas accessing and utilizing this tourism area. There are many accommodations near water resources. There is a large amount of waste produced during the transactions of the days. There is also a large number of tourism boats.

For the area of Suanluang Sub District, the area and prosperity is similar to Ampawa municipality but there is a medium level of participation in water and waste management.

The Ta Ka Sub District is the area close to Suan Luang Sub District and is as the tourism area similar to Ampawa Municipality. In the overall view, level of participation in water and waste management is at medium level. The issues of planning, operation, and evaluation, the levels are medium. The being beneficial issue is at a low level.

In the area of Bangnanglee, most of the people have career in gardening agriculture. In the overall view, the level of participation in water and waste management in the 4 issues are medium because people are conscious in environmental management. They have a harmony, vigorous leader, and volunteer spirit in jointly developing the area as clean and garbage bin free. Each house has own waste management procedure.

And for the Kwae-om Sub District area, the overall view for water and waste management is at medium level. The issues of planning, operation, and evaluation have a medium level while the being beneficial has a low level.

The area of Bangkae Sub District has level of participation in water and waste management at medium. The level in the issues of planning, operation, and evaluation is at medium level while the being beneficial has a low level.

The factors affecting the participation in water and waste management in the 4 Sub Districts have a mean difference in the issues of planning, operation, being beneficial, and evaluation. There is no mean difference in status. There is a mean difference at the statistic significant level at 0.05 in education and career for issues of operation and being beneficial. For the income, there is a mean difference in issue of operation. For the duration living in the area, there is mean difference in issue of being beneficial. For the

membership, there is a mean difference in issue of operation and evaluation.

A synthesis of the research results and set the question guidelines for interviewing the knowledgeable people and conducting the focus group interviews in Suan Luang, Ta Ka, Muangmai, Bangnanglee, Kwae-om, and Bangkae Sub District. This synthesis is summarized in participatory patterns Bangnanglee, Kwae-om, and Bangkae Sub District. This synthesis is summarized in participatory patterns of community in water and waste management are summarized in 4 concerns which are: 1) Participation in planning, setting the co-planning, defining target and strategies, decision making and building new generation leaders by being the good pattern of adults. 2) Participation in operation which are the procedure in activities operation and support for activities operation as planned. 3) Participation in being beneficial which are jointly being beneficial in both direct and indirect benefits. 4) Participation in evaluation and monitoring which are the monitoring of operations and asking for the opinion to know the emerging problems and to improve for better environmental management in community later on.

#### IV. CONCLUSION

The study found that the participatory level in water and waste management in several areas are moderate in the issues of planning, operation, and evaluation. The issue of being beneficial is at low level. Therefore, the overall participatory level of community in water and waste management is at medium level. The factors affecting the participatory of community in water and waste management are age, the period dwelling in the community and membership in which the mean difference is a statistical significant 0.05 in issue of operation, being beneficial, and evaluation. There is no mean difference in issue of planning. There is a mean difference for some factors which are status, education level, occupation, and income with statistic significant level at 0.05 in issue of operation and being beneficial. There is no mean difference in issue of evaluation and planning. The patterns of participatory of community in water and waste management has the correlation with the water and waste management in 4 concerns which are 1) Participation in planning, setting the co-planning, defining target and strategies, decision making and building new generation leaders by being the good pattern of adults. 2) Participation in operation which are the procedure in activities operation and support for activities operation as planned. 3) Participation in being beneficial which are jointly being beneficial in both direct and indirect benefits. 4) Participation in evaluation and monitoring which are the monitoring in operation and asking for the opinion to know the emerging problems and to improve for the better environmental management in community. The ideas of this research can be exploited as the prototype for other communities which have the similar kind of environment problems, especially the areas that have tourism destinations near water resources, types of occupations of people in community, and sizes of community areas. Besides, the

research also supports various patterns of community members' involvement.

#### ACKNOWLEDGMENT

This research was supported by Suan Sunandha Rajabhat University. Special thanks also extended to people in Amphawa who helped and supported this project.

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