

An Analysis of "Participation" in Participatory Irrigation Management:
A Case Study of Kraseaw Reservoir, Suphan Buri Province, Thailand

Miss Somruedee Karnphakdee



A Thesis Submitted in Partial Fulfillment of the Requirements
for the Degree of Master of Arts Program in International Development Studies
Faculty of Political Science
Chulalongkorn University
Academic Year 2017

บทคัดย่อและแฟ้มข้อมูลฉบับเต็มของวิทยานิพนธ์ตั้งแต่ปีการศึกษา 2554 ที่ให้บริการในคลังปัญญาจุฬาฯ (CUIR)

เป็นแฟ้มข้อมูลของนิสิตเจ้าของวิทยานิพนธ์ที่ส่งผ่านทางบัณฑิตวิทยาลัย

The abstract and full text of theses from the academic year 2011 in Chulalongkorn University Intellectual Repository (CUIR)

are the thesis authors' files submitted through the Graduate School.



6081231624

การวิเคราะห์ "การมีส่วนร่วม" ในการบริหารจัดการชลประทานอย่างมีส่วนร่วม
กรณีศึกษาอ่างเก็บน้ำกระเสียว จังหวัดสุพรรณบุรี ประเทศไทย

นางสาวสมฤดี การภักดี



วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาศิลปศาสตรมหาบัณฑิต
สาขาวิชาการพัฒนาระหว่างประเทศ
คณะรัฐศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย
ปีการศึกษา 2560
ลิขสิทธิ์ของจุฬาลงกรณ์มหาวิทยาลัย

Thesis Title An Analysis of "Participation" in Participatory
Irrigation Management: A Case Study of Kraseaw
Reservoir, Suphan Buri Province, Thailand

By Miss Somruedee Karnphakdee

Field of Study International Development Studies

Thesis Advisor Assistant Professor Jakkrit Sangkhamanee, Ph.D.

Accepted by the Faculty of Political Science, Chulalongkorn University in
Partial Fulfillment of the Requirements for the Master's Degree

.....Dean of the Faculty of Political Science
(Associate Professor Ake Tangsupvattana, Ph.D.)

THESIS COMMITTEE

.....Chairman
(Assistant Professor Naruemon Thabchumpon, Ph.D.)

.....Thesis Advisor
(Assistant Professor Jakkrit Sangkhamanee, Ph.D.)

.....External Examiner
(Andrew Noble, Ph.D.)



สมฤดี การภักดี : การวิเคราะห์ "การมีส่วนร่วม" ในการบริหารจัดการชลประทานอย่างมีส่วนร่วม กรณีศึกษาอ่างเก็บน้ำกระเสียว จังหวัดสุพรรณบุรี ประเทศไทย (An Analysis of "Participation" in Participatory Irrigation Management: A Case Study of Kraseaw Reservoir, Suphan Buri Province, Thailand) อ.ที่ปรึกษาวิทยานิพนธ์
 หลัก: ผศ. ดร. จักรกริช สังขมณี, หน้า.

การเพิ่มประสิทธิภาพการชลประทานเป็นเป้าหมายสำคัญของการบริหารจัดการชลประทานทั่วโลก ประเทศไทยได้ดำเนินโครงการตามแนวคิดการบริหารจัดการชลประทานอย่างมีส่วนร่วมเพื่อที่จะเพิ่มประสิทธิภาพของการชลประทาน ผ่านการปฏิรูปโครงสร้างองค์กรและการจัดตั้งองค์กรผู้ใช้น้ำ วัตถุประสงค์ของวิทยานิพนธ์ฉบับนี้คือวิเคราะห์การมีส่วนร่วมของหน่วยงานที่เกี่ยวข้องในการบริหารจัดการชลประทานอย่างมีส่วนร่วมของอ่างเก็บน้ำกระเสียว จังหวัดสุพรรณบุรี วิทยานิพนธ์ฉบับนี้ใช้แนวคิดการมีส่วนร่วม (participation) และแนวคิดเรื่องระดับของการมีส่วนร่วม (Ladders of Participation) มาวิเคราะห์การมีส่วนร่วมของหน่วยงานที่เกี่ยวข้อง โดยรวบรวมข้อมูลผ่านการสัมภาษณ์เชิงลึก การสัมภาษณ์แบบกลุ่ม การสังเกต และการรวบรวมข้อมูลจากเอกสาร ซึ่งกลุ่มผู้ให้ข้อมูลแบ่งออกเป็น 4 กลุ่ม ได้แก่ หน่วยงานภาครัฐ องค์กรบริหารส่วนตำบล หน่วยงานภาคธุรกิจ และเกษตรกรผู้ใช้น้ำ

งานวิจัยพบว่าหน่วยงานที่เกี่ยวข้องมีส่วนร่วมในการบริหารจัดการชลประทานต่างระดับกัน อันเป็นผลมาจากเกียรติศักดิ์ทางอาชีพและความรู้ทางเทคนิค กรมชลประทานจึงมีอำนาจในการตัดสินใจเรื่องการบริหารจัดการชลประทานมากกว่าหน่วยงานอื่น และระดับการมีส่วนร่วมในภาพรวมขององค์กรผู้ใช้น้ำอยู่บนขั้นบันไดการมีส่วนร่วมที่เรียกว่า ผู้รับข้อมูล (informing) องค์กรผู้ใช้น้ำได้รับข้อมูลเรื่องการบริหารจัดการน้ำมากขึ้นเมื่อเปรียบเทียบกับช่วงก่อนดำเนินโครงการ งานวิจัยสรุปว่า หน่วยงานที่เกี่ยวข้องมีอำนาจในการบริหารจัดการชลประทานไม่เท่ากัน แต่การจัดตั้งองค์กรผู้ใช้น้ำส่งผลให้ความขัดแย้งในพื้นที่ลดลง

สาขาวิชา การพัฒนาระหว่างประเทศ

ปีการศึกษา 2560

ลายมือชื่อนิติกร

ลายมือชื่อ อ.ที่ปรึกษาหลัก



6081231624 : MAJOR INTERNATIONAL DEVELOPMENT STUDIES

KEYWORDS: PARTICIPATION / PARTICIPATORY APPROACH / LADDERS OF PARTICIPATION / IRRIGATION MANAGEMENT / KRASEAW RESERVOIR

SOMRUEDEE KARNPHAKDEE: An Analysis of "Participation" in Participatory Irrigation Management: A Case Study of Kraseaw Reservoir, Suphan Buri Province, Thailand. ADVISOR: ASST. PROF. JAKKRIT SANGKHAMANEE, Ph.D., pp.

Improving irrigation efficiency has been identified as the ultimate goal in irrigation management across the globe. In this respect, Participatory Irrigation Management (PIM) has been implemented in Thailand to increase irrigation efficiency through reforming institutional structures and the establishment of the Water Users' Organization. The main purpose of this study is to analyze the participation of each stakeholder in the participatory irrigation management of the Kraseaw irrigation project, Suphan Buri Province. The concept of participation and the ladders of participation have been adopted in the study to identify the participation of all stakeholders. Data collection methods included in-depth interviews, focus group discussions, observations and documentary reviews. There are 4 groups of key informants which are: government departments; Sub-district Administrative Organizations; private companies; and farmers.

The study found that each stakeholder has different levels of participation in the irrigation management as a result of occupational prestige and technical knowledge. The decision making has been dominated by the irrigation officers. The participation of Water Users' Organization in irrigation management is at the informing level, where stakeholders have more access to information about irrigation management. The study concludes that although there was not equal participation in the irrigation management, the establishment of the Water Users' Organization resulted in reduction of conflict.

Field of Study: International Student's Signature

Development Studies Advisor's Signature

Academic Year: 2017



ACKNOWLEDGEMENTS

I would like to express my sincere gratitude to my thesis advisor, Assistant Professor Jakkrit Sangkhamanee, Ph.D., for his precise guidance, clear direction, constructive advice, critical comments, and overwhelming support. I feel compelled to convey my admiration of his intellect and professionalism. My appreciation goes to my thesis committee, Assistant Professor Naruemon Thabchumpon, Ph.D. and Andrew Noble, Ph.D. I have been very grateful for their generous support, comprehensive knowledge and tough feedback which has impacted positively on my study.

My special thanks are also reserved for Assistant Professor Tawan Wannarat and Instructor Supaporn Asavachaichan for their encouragement and inspiration for studying in Master of Arts in International Development Studies, Chulalongkorn University.

I would like to extend my appreciation to my key informants: The Royal Irrigation Department; water users; and relevant private sector organisations. I am very thankful for their enthusiastic response to my endless questions and their sincerity in sharing information and experiences.

My sincere thanks go to Stockholm Environment Institute (Asia Pacific center) for their enthusiastic support, helpful suggestions and sharing of practical experiences.

My study at Chulalongkorn University was made possible by full financial support scholarship from the Consortium on Adapting to Climate Change in Peri-Urban Southeast Asia (CACCPSA).

Above all, I would like to acknowledge the endless, overwhelming support of my family, in providing education, love, understanding, and everything one deserves as they grow up.



CONTENTS

	Page
THAI ABSTRACT	iv
ENGLISH ABSTRACT.....	v
ACKNOWLEDGEMENTS.....	vi
CONTENTS.....	vii
LIST OF FIGURES	10
LIST OF TABLES	11
LIST OF ABBRIVIATION	12
Chapter 1 Introduction	13
1.1) Introduction.....	13
1.2) Problem Statement.....	14
1.3) Research Questions.....	16
1.4) Research Objectives.....	16
1.5) Hypothesis.....	17
1.6) Research Method	18
1.7) Scope of the Research	22
1.8) Limitation of Research	23
1.9) Significance of Research	24
1.10) Ethical Issue	25
Chapter 2 Theoretical Reviews and Conceptual Framework	26
2.1) Understanding Governance	26
2.1.1) Origins of Governance	26
2.1.2) Definition of governance	27
2.1.3) Good Governance.....	29
2.1.4) Challenges of Governance.....	31
2.2) Participation.....	32
2.2.1) Definition of Participation.....	32
2.2.2) Ladders of Participation	33
2.2.3) Participation in Development.....	35



3640904086

	Page
2.3) Irrigation Management.....	36
2.4) Learning Process in PIM.....	39
2.5) Conceptual Framework.....	43
Chapter 3 Conceptual Construction of PIM.....	47
3.1) Irrigation Management Transfer (IMT)	47
3.2) Participatory Irrigation Management (PIM)	48
3.3) Historical Background of Thailand.....	49
3.3.1) Economic Recession in 1997.....	50
3.3.2) 1997 Constitution	51
3.4) Agriculture Development Plan	52
3.5) Concept of PIM in Thailand	53
3.5.1) Expected Outcomes	55
3.5.2) Water Users' Organizations	55
3.5.3) Guideline of WUG Establishment.....	56
3.6) Conclusion	58
Chapter 4 RID Implementation of PIM Structure.....	59
4.1) Overview of the Case Study: Kraseaw Reservoir	59
4.2.1) Seasonal Timeline	63
4.2.2) Diversity of Water Consumption.....	63
4.2) Implementation Process of PIM Structure.....	71
4.2.1) Establishment of WUG	71
4.2.2) Establishment of IWUG.....	74
4.2.3) Establishment of JMC	75
Chapter 5 Stakeholders' Operationalization of PIM.....	77
5.1) The Kraseaw Irrigation Management: Before 2001	78
5.2) Participation in Operationalization of PIM	80
5.2.1) Government Agencies.....	80
5.2.2) Sub-District Administrative Organizations (SAO).....	81
5.2.3) Private Companies	82



	Page
5.2.4) Water Users' Organization.....	83
5.3) Power Flow and Absorbance of Participation.....	84
5.3.1) Pre-existing Power Relation.....	85
5.3.2) Knowledge.....	86
5.4) Operationalization PIM and Conflict Reduction.....	88
Chapter 6 Discourse of Participation.....	91
6.1) Claims for Participation.....	91
6.2) Discourse of Participation in Implementation Process.....	92
6.3) Knowledge Production in Participatory Approach.....	95
6.3.1) Technical Knowledge and Technical Procedures.....	95
6.3.2) Local Knowledge.....	96
6.4) Results in Discourse of PIM.....	97
Chapter 7 Conclusion and Recommendations.....	99
7.1) Conclusion.....	99
7.1.1) Conceptual Construction of PIM.....	99
7.1.2) Composition of PIM.....	100
7.1.3) Implementation of PIM Project.....	101
7.1.4) Operationalization of PIM.....	102
7.2) Recommendations to Development of Irrigation Management.....	103
7.3) Recommendations for Further Research.....	103
.....	105
REFERENCES.....	105
APPENDIX.....	109
Appendix 1: Methodology Matrix and Interview Strategy.....	110
VITA.....	116



LIST OF FIGURES

	page
Figure 1: Map of Research Site	23
Figure 2: Concetual Framework.....	46
Figure 3: Kraseaw Reservoir	60
Figure 4: Map of Kraseaw Irrigation Project	62
Figure 5: Rice Farm	65
Figure 6: Sugar Cane Farm.....	66
Figure 7: Mango Farm	66
Figure 8: Beans Farm.....	67
Figure 9: Fish Farm.....	68
Figure 10: Map of Kraseaw Irrigation Project	70
Figure 11: Example of Content in Booklet.....	73
Figure 12: Structure of JMC	76



LIST OF TABLES

	page
Table 1: List of Key Informants	21
Table 2: Arnstein's Ladders of Participation (1969)	35
Table 3: Diversity of Water Consumption.....	64



LIST OF ABBRIVIATION

DoA	Department of Agriculture
IMT	Irrigation Management Transfer
IWUG	Integrated Water Users' Group
JMC	Joint Management Committee
PIM	Participatory Irrigation Management
RID	Royal Irrigation Department
SAO	Sub-district Administrative Organization
WUA	Water Users' Associations
WUG	Water Users' Group
WUO	Water Users' Organization



Chapter 1

Introduction

1.1) Introduction

Water scarcity has emerged as an increasingly concerning issue to water managers and is one of the most important problems emerging across the world. Apart from the availability of water resources, the capacity of the population to sustain access to adequate quantities and acceptable quality of water has become a contested issue. There is growing competition between users for access to water and hence related government departments, especially the irrigation department, take significant responsibilities in tackling the problems and issues of conflict among the water users.

Similarly, the Kraseaw irrigation project had faced the challenges in water allocation associated with both the availability of water resources and the capability of water users in access to adequate amounts of quality water. The diversity of water consumption in the Kraseaw irrigation project covering rice farming; sugar cane farming; fruit farming; vegetable farming; aquaculture; and industrial manufacturers, all require different quality and quantities of water in different timeframes. All of these groups are very important to Suphan Buri Province. While Suphan Buri is one of the largest rice producers in Thailand, the sugar factory is placed second, globally, as a sugar exporter. Consequently, the decision about the allocation of water is difficult to make when contemplating the proposal of shared desired outcomes to all stakeholders in water allocation.

The participatory approach has been proposed to solve the problems of scarcity of water; intense competition to get access to water resources; and dysfunctional operation and maintenance. The “participation” between all related stakeholders has been addressed in planning, making decision, monitoring, evaluating, operating and maintaining. The “participation” of stakeholders has been anticipated to contribute to decentralization of power in public issues, community empowerment, accountability, transparency, fairness, efficiency in irrigation management, and increase in agricultural productivities.



3640904066

1.2) Problem Statement

Participatory Irrigation Management (PIM) has been considered as a component in irrigation management reform. Since Thailand irrigation management has encountered problems of inefficiency in water allocation, diversity of water consumption, and dysfunctional operation and maintenance, a decision in adopting participatory approach is anticipated to address these challenges. Kraseaw irrigation project had been selected as one of four pilot sites of large-scale irrigation management project, adopting a participatory approach in irrigation management. It is well established that the Kraseaw irrigation project has been successful in promoting the “participation” of related stakeholders in water allocation through participative decision making, while the other three pilot projects have been identified as failures.

Many different agencies of development have adopted the concept of “participation” in their development projects, but with different perceptions, motivations and objectives. “Participation” has been interpreted with multiple different meanings. The different interpretations of “participation” contribute to the differences in their implementation which results in the varied responses, adjustment, outcomes and impacts. Similarly, in the PIM project, a participatory approach has been proposed as the main component that will enhance the success of irrigation management, both in terms of the efficiency of irrigation management, and mitigation of conflict around the water allocation scheme.

However, when the discussion about “participation” and the success of projects encouraging participation exists, it lacks profound understandings of “participation” and ladders of participation. As illustrated by Pretty (1995) and Arnstein (1969), “participation” covers a wide range of typology. It ranges from the passive participation, where people are the information receivers, to the highest level, called active participation, where citizens manage all responsibilities of public affairs by themselves. The ladders of participation for each stakeholder will help to analyze the power of stakeholders in decision making process as well determine the outcomes of the public issues which affect their lives.



The main purposes of this study are to analyze the “participation” of each stakeholder in PIM, to identify the implementation of PIM in the Kraseaw irrigation project and to analyze the operationalization of this irrigation management scheme. The analysis of “participation” in the Kraseaw irrigation project will enrich our understanding of participation processes and important factors that have contributed to its success.

Correspondingly, the historical background that influences the adoption of this particular project has been explained in order to understand the objectives of it. The conceptual construction of the participatory approach, especially in irrigation management transformation (IMT) has been identified to understand the initial ideas of the project. Secondly, the “participation” of stakeholders in irrigation management has been explored, both in the implementation of PIM structure, and in the operationalization of PIM. The implementation of PIM structure lasted from 2001 to 2003, whereas the advent of the operationalization of PIM marks the time when the Water Users’ Organization (WUO) started to manage the irrigation scheme.

This study contributes to the enhancement of the understanding of the “participation” of each stakeholder in irrigation management and on the impacts of PIM on the transformation of irrigation management. It helps to advocate for the development of irrigation management to increase agricultural productivity in the era in which there the impact of climate change is increasing in severity, water has been scarce, and the world has increasingly experienced food insecurity.



3640904066

1.3) Research Questions

The study is framed by the following questions.

How does the “participation” manipulate to reproduce their legitimated authority in conceptual construction, implementation and operational processes?

1. How has the participatory approach in irrigation management been initiated?
 - 1.1. What is the knowledge package behind participatory approach in irrigation management?
 - 1.2. What does it consist of?
2. How has the participatory approach project been implemented on the ground?
 - 2.1. How has the community members got involved in the WUO?
 - 2.2. What has been the main influence on stakeholders’ “participation” in the project?
3. How has the participatory approach been operated in irrigation development?
 - 3.1. How have stakeholders participated in water management?
 - 3.2. How do stakeholders (irrigation officers, chief executive of local administrative organization, farmers and business sectors) understand “participation”?
 - 3.3. What is the power relationship between stakeholders?

1.4) Research Objectives

The objectives of this thesis are as follows:

1. To unpack the influences on the consideration to transform the irrigation management regime leading to the adoption of PIM in the Kraseaw irrigation project.
2. To investigate the conceptual construction of the participatory approach in the Kraseaw irrigation project. The ideas, compositions, expected outcomes, and assessment will be identified and analyzed.



3640904066

3. To understand the implementation processes of the project, where the WUO has been established. The involvement of diverse stakeholders will be explained and analyzed.
4. To explore the operationalization of PIM, the stakeholders' "participation" in irrigation management and its results.

1.5) Hypothesis

PIM is composed of the important knowledge package which impacts on the legitimized authority and justification of the adoption of irrigation management reform. The important package of knowledge comprises of the concept of governance and the contextual background of Thailand. This knowledge package has been also influencing the decision of related stakeholders to participate in the participative project of irrigation management.

In the implementation process, irrigation officers who oversee the adoption of the project could exercise their power to dominate the decision through technical knowledge. Their acts of expertise will reproduce authority and legitimacy to command the project implementation and organize such activities. The project has been planned with the requirement to complete technical procedures through technical techniques, so the evolution of the project will be considered through the lens of technical matters.

In addition, since the evaluation of the project is more likely to be the checklists of establishment of WUO, it can lead to misperception of success where the existence of organizations has been interchanged with the success of "participation" of related stakeholders. The project evaluation might consider the completed milestones activities in a checklist as the success.

In accordance with the operation of irrigation management, there will be the domination of powerful agencies in irrigation management. The power to dominate could come from social status and production of knowledge. The existing power that



occurs before the adoption of the participatory approach will result in irrigation management. Knowledge could be the instrument to reproduce power and to dominate other stakeholders. Local knowledge could influence on the consideration to participate in irrigation management and on perceptions to the new regime of irrigation management since it specifies (or ‘highlights’?) the importance of farmers’ livelihoods. As a result, the legitimacy of new water allocation pattern will be strengthened.

All the domination results in the “participation” of stakeholders and perception to their participation and irrigation management system. Rather than increasing the power of farmers as water users, “participation” has become the instruments to bring stakeholders together in irrigation management and to grant legitimacy to the project: in the water allocation pattern, as well as to the more powerful agencies.

1.6) Research Method

A qualitative methodology was applied in the study. The analysis of “participation” and the participatory approach in irrigation management have been derived from my fieldwork during May and June 2018. The fieldwork was undertaken in Suphan Buri Province where the Kraseaw reservoir and the Kraseaw irrigation project are located. Data collection methods included in-depth interviews, focused group discussions, observations and documentary research in the PIM project. Four groups of key stakeholders have been interviewed as the observation has been simultaneously undertaken. Relevant documents have been reviewed. The documentary method has been the main source for the investigation at a conceptual level while the in-depth interview, focus group discussion and observation method have been the main source of project implementation and operation.



1.6.1) Criteria of the Case Study Selection and Sampling Techniques

1) Justification of the Case Study

The Kraseaw irrigation project has adopted PIM hoping to resolve the consequent problems of top-down irrigation management which contributes to inefficiencies in water allocation, emergence of conflict between diversified water uses, and an incoherent operation and maintenance program. The Kraseaw Reservoir was selected as one of four pilot sites of large-scale irrigation projects adopting the PIM. It is recognized within official circles that the Kraseaw irrigation project is a successful case where PIM project has been effectively adopted. An analysis of the concept and implementation approaches implemented at the Kraseaw irrigation project would enrich our understandings of the mechanism of “participation” in irrigation management.

2) Sampling Techniques

Sampling technique was employed in the interview. Four groups of key stakeholders covering government departments, local administrative organizations, private companies and farmers were interviewed. While conducting the interview and focus group discussion, the observation was simultaneously undertaken. Personal information has been protected for their security reasons.

1.6.2) Data collection

The data has been collected through qualitative methods, including in-depth interview and documentary reviews upon the research questions. Different methods have been applied to answer different research questions (see Annex 1).

1) Primary Data

In-depth Interview and Focused Group Discussion

The in-depth interview has been organized in two different forms which are focus group interview and individual interviews in accordance to the flexibility of the interviewees. In-depth interview and focus group discussion have been undertaken



3640904066

with a sample of informants. Open-ended questions have been used to facilitate the discussion and interview. Some verbal interviews have been recorded accorded to the permission from the interviewees. The main group of key informants can be classified into 4 different groups which are government departments (Royal Irrigation Department and Department of Agriculture); local administration (Sub-district Administrative Organizations); private companies; and farmers (water users).

(1) Government Agencies

Four irrigation officers from Kraseaw irrigation operation project have been interviewed since they are directly responsible for project implementation and irrigation operation. Four of them have distinctive roles in the implementation and operation of irrigation management. One of them is the project manager who oversees the overall process of the adoption of “participation” in irrigation management since the project started. One of them is the coordinator who oversaw the establishment of the WUOs. Two of them are currently responsible for allocating water to a primary distribution canal.

An agricultural officer has been interviewed since agriculture officers have been invited to join the Joint Management Committee (JMC). The department contributes to the farming development which has a very strong linkage to water resources.

(2) Local Administrative Organization

Sub-district Administrative Organization (SAO) has played an important role as a facilitator of the implementation of the project. The local administrative organizations have helped to provide the understandings of “participation” and a participatory approach in irrigation management as well as helped the irrigation officers to establish the WUOs in all levels.

(3) Private Sectors

Three private sectors, namely Mitr Phol Sugar Mill, Thai Agro Energy Company and Waterworks Authority of Danchang District have been the water users



3640904066

of the Kraseaw irrigation project. They have to pay the fee for access to water. These three companies have not been located in Kraseaw irrigation area but can get access to water because the companies are located at the upstream of irrigation area along the primary canal. They have been invited to be on the committee in the joint irrigation management.

(4) Water Users' Organizations

A sample of 41 farmers has been interviewed. The farmers are the members of 9 different integrated groups of water users. They are performing 5 different types of farming activity which include rice farming, sugar cane farming, fruit farming, vegetable farming and aquaculture. Some of them are cultivating diverse types of farming. Each type of farming requires different amount of water on a different timeline. Therefore, they experience distinctive difficulties in agriculture activities. Moreover, water users have different positions in the WUOs, so they have different experiences in irrigation management

Parties	Names of Agencies	Numbers
Government Agency	Irrigation Officers	4
	Department of Agriculture	1
SAO	Chief Executive of SAO	3
Private Sectors	Mitr Phol Sugar Mill	1
	Thai Agro Energy Company	1
	Waterworks Authority of Danchang District	1
Water Users' Organizations	Leaders of IWUG	9
	Water Users (Farmers)	32
Total		52

Table 1: List of Key Informants

Observation

Observation was employed in this study to gain insights into mechanisms and processes in play of the involvement of all stakeholders in irrigation management. The relationship between stakeholders and the power relations among stakeholders were observed while in-depth interviews and focus group discussions conducted.

2) Secondary Data

Documentary Research

The documentary research undertaken included an analysis of the conceptual construction of the PIM in Thailand which is considered as a framework for irrigation management reform. Documentation reviewed included project reports, annual reports, meeting reports and other relevant documents. The knowledge package and the selective knowledge have been analyzed. The criteria that has been used to measure the success of the PIM has been identified on its effectiveness on reflection in the water management regime.

1.7) Scope of the Research

1.7.1) Place

The scope of this research is in the Kraseaw irrigation project. The physical research area of the research site is in four districts of Suphan Buri Province which are: Danchang; Nongyasai; Dermbang Nangbuad; and Samchuk. Kraseaw reservoir and Kraseaw irrigation department are located in Danchang District while the irrigation project covers 3 other districts including Nongyasai, Dermbang Nangbuad and Samchuk. Since each IWUG has been located in different locations such as upstream and downstream groups, distinctive experiences and difficulties in water consumption have occurred. There is a must to visit all nine IWUGs in these three districts.



3640904066



Figure 1: Map of Research Site

1.7.2) Time

This research has focused on the PIM project since it has been initiated in 2001.

1.8) Limitation of Research

The available time to undertake this research is quite restrictive. This means a specific research design, which relates to the insightful information and observation, during the fieldwork, must be used. Moreover, this year, the rain has come sooner than usual so there is no conflict to observe and it does not show any serious issues around the irrigation management. Some participants hesitated to share information about problems and conflicts around the irrigation management. Among the focus group discussions, which included one irrigation officer one leader of IWUG and two

water users, the water users hesitated to answer the questions and they followed the hints given by the irrigation officers.

1.9) Significance of Research

First, as “participation” has been internationally deployed in development projects, the study of the participatory approach in management of the Kraseaw irrigation project will enrich the understanding of the constraints of the “participation” of stakeholders. It leads to the reconsideration of development projects to increase the awareness of local contexts including culture, tradition and existing power. Simultaneously, it also leads to the requirement of well-planned projects to avoid the absorbance of “participation” and the domination of some stakeholders in development project.

The study, additionally, contributes to the development of irrigation management. Using the case study of the Kraseaw irrigation project and its adoption of the participatory approach, the irrigation management could be improved. Further study on influential factors should be undertaken to improve the irrigation management or to increase the participation of farmers in irrigation management. Since PIM has been adopted worldwide, the lessons learnt could raise awareness of evaluation of “participation” and recognition of factors that could lead the project to failure.

The development of irrigation management will result in the mitigation of the impacts of water scarcity, and of climate change. Moreover, it will result in increased agricultural productivities and food security, as it is well acknowledged that climate change results in more severe flood and drought. A functional irrigation system will help to prevent and mitigate damage. It also leads to the prevention of water scarcity which has been an increasing concerned globally. The development of irrigation management also contributes to an increase in agricultural productivities which, in one way, could provide better livelihood for farmers and, in another way, could help maintain food security which is affected by climate change.



3640904066

1.10) Ethical Issue

All interviewees will be protected on their personal information. Pseudo names will be used in replacement of real names for all interviewees. For voice recordings, the interviewees were asked for permission in advance and it has been protected.



Chapter 2

Theoretical Reviews and Conceptual Framework

This chapter elaborates on various relevant concepts to the study which include governance, participation, and irrigation management. This overview is important to clarify the understandings of theory and terminology that are used in this study as well as to provide a theoretical gap from previous research. In the second section of the chapter, the theoretical framework adopted in the study will be illustrated.

2.1) Understanding Governance

2.1.1) Origins of Governance

Governance was first known in the French language in the fourteen centuries as “gouvernance” meaning “royal officers (Pierre & Peter, 2000).” However, the definition and meaning of the term, “governance,” has been changed. It has become increasingly popular after being mentioned in the World Bank Report (Sub-Saharan Africa: From Crisis to Sustainable Growth, 1989).

The concept of governance was mentioned by the World Bank during its investigation of the failure of economic performance in Africa. The Bank presented an argument addressing that the weak economic performance in Africa had been caused by the failure of the bad governance of public institution in the countries. The bad governance in this case is referring to how the elite in African countries implemented the public policy with an attempt to give benefit to them. The lack of “participation” from other related actors leads to shortages of accountability and transparency. The report suggested that the relocation of political power is a potential instrument to increase economic performance, accountability and transparency. Moreover, the governance approach will enhance the link between local and high level of national institution. Therefore, at the local level, people can raise their voices and opinions to the policy maker as well as obtain better performance and accountability from public institutions. This will result in a decrease in corruption. Especially in case of Africa countries, the requirement for political reformation under



a governance approach - which enhances the collaboration of all form of stakeholders is the most important component that will result in the success of the development.

There are many critiques on the use of this term by the World Bank with its hidden implications. The use of this term implies a new approach to development with the important concept of democracy. Similarly, Williams and Young asserted that the World Bank has broadened their concerns from a narrowly economic dimension and old-fashioned good government into governance covering the participation of non-government actors (Williams & Young, 1994). Moreover, Loeffler (2009) argues that World Bank use this term to prevent the critique of its interference in the political decision of the debtor countries.

2.1.2) Definition of governance

It is acknowledged that the concept of governance has been widely spread across the world. It has been mentioned, since 1989, as the exercise of political power to manage a nation's affair with the components of accountability, transparency and participation (Sub-Saharan Africa: From Crisis to Sustainable Growth, 1989). The concept of governance has become increasingly popular in development fields. Although there is a lot of academic literature on governance, the confusion and ambiguity still remains as new angles on these ideas have been invented. Similarly, It is mentioned that the term "governance" requires more clarification in terms of its scope and implementation (Bagia, 2016).

The World Bank report titled "Governance and Development," defined "governance" as 'the manner in which power is exercised in the management of a county's economic and social resources for development' (World Bank, 1992). It also identified 3 distinct features of governance which are as follows:

- The form of political regime
- The process applied to any country's economic and social resources
- The capacity of government to implement policy



World Bank has put their effort mostly into the second and third figures since the first is beyond its authority (World Bank Annual Report, 1994).

Although the governance has been addressed for so long, it remains difficult to define the governance. More importantly, when governance is part of the discussion, what are obtained are more focus and not its definition: the attention is put on the interaction of multiple different stakeholders to achieve the desired outcomes.

It is argued that governance is considered as a new emergence of conceptualized public administration which will lead to the decrease in the hegemonic state in all policies and activities. Since the traditional rule-bound top-down hierarchical bureaucracy could not function alone in order to address and solve the issues that emerge both in developed and developing countries, under this new model of governance, a state is considered as one of the actors in the process along with the participation from the civil society, non-government organization and private sector. This process should allow the citizens to articulate their interests, exercise their legal rights, meet their obligations and mediate their differences (Singh, 2016).

On the other hand, the term governance is recognized as “engaged governance” where the bargaining of power of several related actors takes place in order to ensure justice and equality of the development. Additionally, since the state is required to transform their position from a doer into an enabler and the citizens are considered as customers rather than receivers, the relationship between the state and its citizens will be transformed. As a result, the collaboration will become stronger. The public goods and services will depend on the public choices.

The analysis of the participation of people at a grass root level is very important in governance since their participation leads to the empowerment. The governance should be people-centric. It is recognized as a self-governance institution. The local knowledge and local support is valuable to the governance. The growth-oriented, top down strategy of development is likely to fail in delivering the desired result.



3640904066

Bagai (2016) addressed that in the past, there has been an interchange of the terms “governance” and “government” to mean the exercise of authority over a state. However, in the last decades of the twentieth century, the debate about the involvement of the state, market and civil society has become popular whenever the term has been discussed. Additionally, during this time the focus of the governance has be changed from the public administration into a decision-making, public discourse where the involvement of the actors is highlighted. The meaning and the criteria of the good governance leads to the evaluation of the service delivery. In the end, the social interaction will rely on negotiation and communication of all stakeholders rather than on the supervision of the state.

2.1.3) Good Governance

Since the definition of governance is not clear enough, it results tremendously in the definition of “good governance”. There are a thousand dimensions of good governance recommended by an immense amount of academic literature. However, the process to achieve good governance is rarely specifically defined. In this chapter, the definition of the term “good governance” will be illustrated and some interesting suggestions will be made regarding the process to pursuing good governance and its definition. .

In 1992, Preston, the president of the World Bank explained that, “Good governance is an essential component to sound economic policies. Efficient and accountable management by the public sector and a predictable and transparent policy framework are critical to the efficiency of markets and governments, and hence to economic development. The World Bank’s increasing attention to issues of governance is an important part of our efforts to promote equitable and sustainable development (World Bank, 1992).”

The most common features of good governance that have been widely discussed are the stakeholder engagement, the distribution of power in negotiation, fair treatment, effectiveness, transparency, accountability and sustainability. However, each agency has their own definition and evaluation of these features.



Five broad principles of governance are addressed by UNDP as mentioned below (Amos, Graham, & Plumptre, 2013).

- **Legitimacy and Voice:** This principle focuses on two main aspects which are participation and consensus oriented. The participation is addressed in a way that anyone can raise their voice in the decision-making process. In the meantime, there should be encouragement of people's capability to participate in any kind of decision-making. Meanwhile the consensus orientation focuses on the balance of people interests being fulfilled.
- **Direction:** The long-term direction should be highlighted in order to succeed in good governance. Moreover, it is suggested that the profound understanding of social complexities will advocate successive long-term direction.
- **Performance:** The responsibility, efficiency and effectiveness are focused during the performance of activities. Therefore, the meanings of good governance and good performance will be measured by the best use of resources, the fulfilled needs, and by the inclusiveness of program to all stakeholders.
- **Accountability:** Accountability and transparency are considered one of the key principles of the governance approach. All stakeholders should be accountable and transparent. Accessible information from all stakeholders will encourage the achievement of this principle.
- **Fairness:** Focus on equity where people have equal opportunity to improve their standard of life.

Singh (2016) also recommended some similar aspects explaining that good governance is supposed to bring effectiveness and improvement in equality. Grindle (2004) also agrees that the governments need to do more to put their political, administrative, and financial houses in better order. It is suggested that if governments are unable or unwilling to make necessary changes, there may be alternative ways to ensure basic services provided and communities are able to protect themselves and survive (Grindle, 2004).



2.1.4) Challenges of Governance

Some critiques have optimistic attitudes to the concept of Governance, claiming that the emergence of globalization and the democratization will require change in public administration. As a result, the concept of governance increasingly obtains an immense amount of attention (Bagia, 2016). It is also pointed out the emergence of sustainable development as support for the existence and attention of the governance concept, with attention to inclusiveness, that sustainable development focuses on (Singh, 2016). However, the governance encounters some significant challenges.

Firstly, since the definition of governance is unclear and comprises a wide range of scope, there are no specific pathways that can be implemented in operational sites. Similarly, Bagia (2016) summarized the key challenges of the concept of governance that there is no specific platform of governance, both in the lens of neither science nor law. Therefore, the analytical and empirical practice should be provided, rather than just the intent to achieve.

Secondly, although there are overwhelming goals and definitions of good enough governance to encourage development, there is little guidance about the process to achieve. Additionally, the process of governance is required to be processed by an immense amount of human activities which are limited by the power distribution conflict since governance requires coordination from different stakeholders who have various interests, opinions and understandings. The coordination covers the negotiating, bargaining and compromising among the group of stakeholders. Coordination will lead to the outcomes of problems and challenges which affect all stakeholders.

In Thailand, the government is trying to introduce collaborative governance in lots of areas and policies. However, in some areas this has not been achieved. Orlandini emphasized that Thailand promotes the good governance by commoditize it. This will not help to achieve the certain level of governance and the power structure will not be changed (Orlandini, 2003).



2.2) Participation

2.2.1) Definition of Participation

Participation is a term that embraces a wide range of possible meanings. People consider their participation when taking part in something. Many different actors in development adopt the concept of participation in their development programs, but with different perceptions, motivations and objectives. The different interpretations of participation contribute to the differences in their implementation which results in the different outcomes and impacts.

It is explained that the participation concept is associated with rights of citizenship and democracy. A simplistic example of participation and the role of people is through the democratic process that are common individuals engaging in public affairs who exercise their right to vote thereby directly influencing an outcome (Verba, 1967). With regard to that, participation has been identified as an intention to influence the behavior of those have the power make decisions and the process which affects citizens by the policy have an on those who make the major decision. The dilemma of participation has been stated in his study illustrating that almost all the time the emphasis on participation refers to the involvement of the largest group of people. Throughout the decision-making and operation of the policy, inclusiveness has not been implemented through the participation

Under the normative perspective, it is argued that participation is not about indirect influence, but it concerns the direct involvement of citizens in the decision-making processes in public affairs(Campbell & Im, 2016). The direct involvement encourages the empowerment, transparency, accountability and trust of the citizens as well as encourages a decrease in the alienation of citizens from the political process. This sort of participation will result in the improvement of policy and its outcomes since the insightful knowledge is contributed during the process of decision making. More importantly, it strengthens the cooperation and support for the implementation of the particular policy.



Pateman (2000) points out that there are many different kinds of theory that mention the word “participation.” In accordance with the participatory theory, participation consists of two key components. The first is the equal participation in the making of decisions. The second is the equality of power in determining the outcome of decisions. He also argues that the different dimensions of the participation can raise multiple different types of consequence questions and implementation

In the case study of the Kraseaw irrigation project, participation of relevant stakeholders such as farmers, non-government organizations, government, and private sector in irrigation management planning, designing, construction, making decision, operation and maintenance have been promoted as the main components of the participatory project so Pateman’s participatory theory (2000) has been adopted to analyze the participation of stakeholders in Kraseaw irrigation management. Equal power in the decision making process and outcome determination of each stakeholder have been investigated to understand the domination of the decision making in the irrigation management and water allocation pattern.

2.2.2) Ladders of Participation

It is not only participation that has been defined in multiple different ways; the evaluation of participation also has differences of perspective, understanding and directions. The ladders of participation have been derived from the emergence of public participation (Arnstein, 1969). The ladders of participation explicitly imply the level of capability of citizens to get involved in particular activities. This significantly results in ability to make the decision as well as to determine the impact of the decision on those relevant issues affecting their lives through the public sphere. The ladders of participation have been classified in multiple different directions and levels.

With the analysis of the process of information dissemination, determination of objectives, resource allocation, policy operationalization, and benefit shoring, Arnstein (1969) classified participation into three types which are: Citizen Power, Tokenism and Non-participation levels, respectively. These three types of participation consist of eight ladders, ranging from Citizen control at the top to



Manipulation on the lower rungs. It is explained that these ladders of participation will illustrate the level of power redistribution through public policy.

Types of Participation	Ladder of participation	Brief Description
Citizen power	Citizen control	The responsibilities in demanding, decision making, and managing the program are taken by the citizens.
	Delegated Power	The decision making is dominant by citizens when the citizen has the power to assure accountability of the program.
	Partnership	There is the negotiation between citizens and state in planning and decision-making policy. The power must come from the citizen themselves, not because of the state provision.
Tokenism	Placation	Community Representatives are included in the policy making process.
	Consultation	Citizens' opinions are listened, however, there are no assurance that the opinions will be taken into account.
	Informing	Citizens are informed about their rights and responsibilities. It is a one-way communication mostly from government to citizen through medias, poster and news.
Non – participation	Therapy	People are told to do something. However, once when it does not work, people cannot do anything about it.



Types of Participation	Ladder of participation	Brief Description
	Manipulation	Policy aims to educate people, or the general meeting is considered in this level of participation.

Table 2: Arnstein's Ladders of Participation (1969)

Although the ladders attempt to illustrate graduation of participation by differentiated fundamental distinctions of participation, it seems simplified because the power is perceived as monopolized. In actuality, power is more pluralism where different actors exercise their power and respond to reproduce their power through different sources and mechanisms. However, acknowledging these ladders of participation can enhance the understandings of differentiation of participation and its contribution to power redistribution.

According to the emphasis on PIM, it is very important to understand how participation is evaluated since the levels of participation explicitly explain the power and capability of citizen in the decision-making process and the determination of the result of the issues that affect their lives. Similarly, it is addressed that the engagement where a small elite group is in charge of the decision-making result differently from when all members of the community engage in the decision-making together (Cornwall, 2008). Furthermore, despite the emphasis on those who participate, those who are excluded should also be taken into account.

2.2.3) Participation in Development

Participatory method and participatory approach have been popular in international development. They have been used as instruments to collaborate all stakeholders into project organization reformation. With the claim of production of local knowledge, the term participatory has been employed with the intention to aggregate local communities to projects. Considering a liberatory perspective, participation has been considered as a substantial part of transformative strategy and a

means to gathering the target group into the projects. Looking through the lens of an activist-oriented approach, there is a difference between the participatory approach and participatory method. While the participatory approach refers to potentially transformative strategy, the participatory methods refers to the simply instrumental strategy.

It is reported that in development, participatory methods and approaches have been used in standardized management. Basically, this approach and methods could be employed in a group of people attending in the discussion of problems to determine the situation and response. This particular type of designed institutional form has been associated with and has facilitated the discursive process of the participatory approach, where the facilitator and assistant work with beneficiary groups through a sequence of annalistic stages. It could be claimed that local knowledge and local ownership implies a sustainable strategy to be perceived as local realities. However, this process serves to narrow down the knowledge and make it accessible for communities.

Participatory methods in development have been criticized for their ambiguity in institutional reform, which has been referred to as management technology so-called governance. Looking through the case of Tanzania, it is reported that the discourse of transformation into a participatory approach is very bureaucratic. Working under the framework of governance, the participatory approach has been considered as a boundary object in development project. Without the awareness of depoliticization, the failure of participatory approach has been caused by the power imbalance where there is the domination of elite where the power has not been balanced (Maia, 2010).

2.3) Irrigation Management

Water has become one of the most popular concerns in the past several years, because of several interconnected water crises covering drought, flood, and polluted water. This crisis has led to the existence of severe vulnerability. The very first approach applied to the water allocation system is largely known as water



management. It is considered that the water allocation requires professional and technical knowledge and expertise. Therefore, it is put into state bureaucracy responsibility to manage water resources. Accordingly, in Thailand, the water is mainly managed by the government office. The decision to implement tackling water scarcity and to maintain the water security is decided by the government sector covering the reservoir construction; the water allocation of the reservoir and the amount of water reserved in the reservoir in each period of time to prevent the high risk of flooding and drought.

However, looking through history, in Thailand, the water allocation management experiences has failed, although it is managed by so called experts and technicians who are government officials. It is argued that in Thailand, technical solutions face the failure because it lacks the social education (Imamura, 2007). Therefore, rather than providing the promised outcomes, it leads to more complex conflicts. A possible way to solve this problem is the negotiation of all stakeholders.

Arunpark (2005) conducted the research in Thailand called Bang Pa Kong Diversion Reservoir. A Failure Resources Management, the author mentions that with the lack of participation in the agreement of the reservoir's construction, the reservoir fails to fulfill the objectives to sever the industrial expansion and to support the economic and social development. Even though the government spent 5000 million Baht to construct the reservoir, the reservoir is left unmanaged. The reservoir does not function at all. Furthermore, there are lots of impacts regarding the existing of reservoir covering the biodiversity lost, the severe flood, and the prolonged drought the agricultural productivity of local people. The author argues that the construction is made without the participation of local people or relevant organizations (Arunpark, 2005).

Since there are a large amount of problems emerging from the water allocation, the policy and the decision are mainly made by the government officials. There becomes a request of the water allocation system reformation. There are many different approaches emerging attempting to present adaptive methods to tackle the problems of water allocation. It is well explained that the new innovative policies are



requested to pursue the fulfillment of the demand of water needs and at the same time protecting environment.

Alcock, et al argue that currently, the tradition of water management employs a prediction and control approach with an emphasis on technical solutions which have been challenged by the uncertainty arising from global change in general and climate change. Therefore, there is a request for changes in current water management practices. More adaptive and flexible approaches should be applied in the water management paradigm as well as a shift in water management from a prediction and control to a management as learning approach. The aspect of environmental, technological, economic, institutional and cultural characteristics of river basins should be considered in the new integrative water management. This approach will help the reduction of vulnerability to global change. However, the major obstacles of the integrative management are the understandings of people of the new management regimes (Alcock et al., 2006)

Water governance is well known as one of the famous approaches to tackle the problem of water allocation. The word “governance” has it significant implication to the water allocation system since it implies the participation and involvement in the water allocation system of the relevant stakeholders. With the failure in water allocation of the top down approach, many of the government compensated to the water governance with its implication of the interaction between all kind of individual actors, organizations and government. With the claim of inclusiveness and accuracy, this becomes the new water allocation regime applied to water allocation.

Iribarnegaray and Seghezzo (2012) employed the concepts of governance and sustainability to explore the local water management systems as well as combine these two concepts into a new conceptual framework. They identify the governance as the power relationships between all relevant actors in the specific issues. It mainly refers to the process that institutional and individual actors become involved in the processes which choices are made. While water governance is considered a decision-making process, the sustainability is defined as a combination of spatial, temporal, and personal aspects. They find that the water governance encourages the relationship



between social institutions and the public affairs of a given society. Moreover, they promote a new approach to investigate the situation relevant to water governance and water management. In their case study, the city of Salta, in northern Argentina, they report that the individual in that area are not satisfied in the level of participation that they could get involved in the decision making as well as the level of capability to access the available information. Meanwhile, there are the affordable relevant tariffs

In the paper entitled, “The Use of System Dynamics Simulation in Water Resources Management,” the authors state that the water management problem is a contentious issue with the effects apparent both in long term and shorter term. Moreover, water management becomes more complicated over time owing to the limited available water resources. Employing the concept of dynamics to analyze the situation of water management, they argue that the involvement of stakeholders will lead to the achievement of n water management since a well-grounded and realistic approach will be provided in the water resources management (Brierley, Trowsdale, & Winz, 2009).

2.4) Learning Process in PIM

With the intention to seek understandings in the sustainability of water management practices, in public participation and in learning processes, Kumnerdpet (2010), a government official and environmental engineering officer, has conducted research on PIM adopted in the Kraseaw irrigation project. She was seeking to illustrate the status and approach of PIM across the country, especially a case study of Kraseaw Reservoir. Moreover, the participatory character of community engaging in water management through PIM. Additionally, there were the learning processes of the community to participate in water resource management. It was concluded that three important implementations that contributed to the success of PIM project on Kraseaw irrigated area are: public participation; the establishment of the WUO; and a participatory meeting for PIM evaluation.



The research started with the descriptive information of the history of irrigation management in Thailand, which has been introduced to serve the cultivation of rice farming. The development of irrigation in terms of the storage capacity has started since 1950 when World Bank provided the loan to Thailand. There was an increase in the number of reservoirs in Thailand, especially after the first national development had been drafted and implemented. However, irrigation officers still experienced the failure to manage water allocation from the reservoir although the staff had tried to invent many different techniques. Eventually, the Royal Irrigation Department (RID) tried to collaborate with farmers hoping to mitigate the failure in water allocation.

The researchers have illustrated the character of participation and involvement through being a member of WUOs. Regarding the relationship of the WUO as a self-governed organization and other organizations, it is reported that the WUOs and government officials have been well-coordinated due to the strong commitment of the staff to create a mutual connection between them. The irrigation staff performs as technicians who provide technical information in the meetings. Therefore, the JMC could make the decision on water management and schedule water allocation timeframe respectively. At the beginning of the IWUG establishment, the meeting was organized twice a month regarding drafting the regulations. Nowadays, the meeting of IWUG are organized twice annually at the beginning of dry season and of rainy season. The meeting of WUG is claimed as a public sphere that water users are authorized to exercise their rights within. The WUO has assisted to disseminate information and news on water allocation and relevant information. Additionally, the WUO also plays an important role in providing clarification to water users. For example, in the case that there is a rumor of a large amount of water consumption of the private sectors, the WUOs are the most helpful to approve the transparency of the water allocation (Kummerdpet, 2010).

Employing educational transformative theory, the education processes and public participation in the PIM has been identified that the water users learn about public participation through two main ways which are instrumental and communicative learning. Individuals have learned by participating in WUG activities.



Firstly, instrumental learning at the ground assists in gaining the knowledge to manage and manipulate the resources. There are 4 meanings of learning in the case of the Kraseaw irrigation management project. The first meaning is learning through sharing information and earning skills. RID staff have earned the skills and gained information from training program and disseminated it to water users. It is important to note that water users exchanged information during the meeting both about water and agriculture information. Moreover, water users have earned teamwork skills when they participated in the meeting and discussion on finding the solution to conflict in the community. Secondly, water users have learned through employing technical processes, namely political, legal, social, economic and administrative tools. The concept of equal information, balancing power, meeting resolution, and conflict resolution has been employed by both irrigation staff and water users. Thirdly, the cause-effect relation has been applied throughout implantation of PIM project. The faith in local leaders is a very important component that decreases the conflict among the group since the water users will listen to the headers. Finally, they have learned about task-oriented problem solving and applied it when there is a conflict happening in the irrigated area. For instance, when there was a conflict between farmers, and those who were not in the irrigated area wanted to get access to it, the irrigation officers used acquaintanceship to solve this problem.

In addition, the researcher has acknowledged that the water users have been learning through communicative learning for which the rational discourse is dealing with feeling values and morals. Under this learning process, water users have obtained more profound understandings on-grounded issues, on-grounded situations, people's interests, communicative strategies, and critical reflection. It is indicated that water users feel that they more clearly understand the issues and situations relevant to water management. Apart from that, they could also understand their interest and voice their desire in a proper way while they could listen to others' opinions. Accordingly, the rational discussion has been organized, which is considered as a communicative strategy. The negotiation and meditation about the raising conflict has been completed.



The linkage between participation, learning and PIM activities has been identified in the way that participation and learning result in the sustainable practice of water management. Participating in the meetings, farmers have access to information about Kraseaw reservoir and the situation of water. Farmers also learn, gain knowledge and skills which are relevant to water allocation. As a result, they could adjust themselves to the situation of water. They could collaborate and come out with the resolution for any kind of problems. Therefore, they can practice water uses in more sustainable way.

The researchers discussed that the most important factor that contributed to the success of water management at Kraseaw reservoir is meaningful participation. The participation of this project consisted of initiation, inclusiveness and influence. One of factors enhancing the success of PIM participation are PIM guidelines which provide clear steps to achieve ultimate goals. Participation of people has also increased as a result of the provision of opening discussion at the general meeting where they could freely raise their concerns and be respectively listened to. The commitment of the officials has significantly influenced the achievement of PIM. They had tried to build trust by organizing overnight study tour, often visiting farmers, treating farmers respectfully and greeting farmers first.

Considering the theory gap of this research, the researcher has claimed that the project has been successful in terms of educational process in water management projects which leads to the sustainability of water consumption. It is claimed that the process of participation has been successful in accordance with the outcomes of the project which are the establishment of water organization and the complement of milestone activities mentioned in the report. However, the characteristic of the participation of each stakeholder has not been critically analyzed, especially, the ladder of participation. Moreover, it is lacking the evaluation of water allocation. Although the process of participation in the project has been accomplished, it could not be guaranteed that water users could afford to access to water. More importantly, without the analysis of PIM concept, the research is lacking the interpretation of a knowledge package and analysis of context that have earned a dramatic influence on participation of stakeholders. Furthermore, the analysis of the “participation” and its



implications and influences on perception and understandings of people in water management must be explored. Finally, the transference of the PIM and participation from an ideal into on-ground activities has not been explored. The analysis of the transference of PIM and participation will enhance the understanding of stakeholder perception and understanding of PIM and participation which importantly contribute to the outcome of the project.

2.5) Conceptual Framework

The concept of governance, a participatory approach and ladders of participation have been employed in the analysis of the conceptual construction, implementation of irrigation management transform and operation of PIM in the Kraseaw irrigation project, Suphan Buri province.

In 1989, the World Bank mentioned the world “governance” in a report explaining that the weak economic performance of Sub-Saharan Africa had been caused by the bad governance (Sub-Saharan Africa: From Crisis to Sustainable Growth, 1989). The concept of governance has become increasingly popular in development projects including the development of irrigation management. The transformation of irrigation management has deployed the concept of governance where the institution reform and policy reform has been required. A participatory approach has been regarded as a component in institutional and policy reform in several development projects to increase the efficiency, effectiveness and fairness in public service delivery as well as increase the accountability and transparency. Participation of various stakeholders has been identified and anticipated on the power decentralization where the authority and responsibility to manage public service delivery has been relocated to citizens.

In Thailand, the governance concept was proposed in the agricultural development plan of 1997. Under the governance concept, covering transformation of institution and policy, there are requests of reorganization of Department of Agriculture (DoA) including the irrigation department and reformation of relevant



policies covering irrigation management. The adoption of a participatory approach in irrigation management has been agreed and implemented. Participation of all related stakeholders has been promoted in irrigation management reform under the participatory approach hoping to increase the effectiveness and efficiency of irrigation management to increase agriculture productivities.

The influences on consideration of the adoption of PIM are the enforcement of a 1997 constitution, mentioning civic participation in public affairs and the economic recession through which agricultural sectors contributed to mitigation of the impacts of the crisis. The influence from the 1997 recession and the 1997 constitution have granted legitimacy to the adoption of the project in order to boost up the economy.

The project has planned for outcomes and milestones activities to be completed. Technical procedures and tools have been mentioned hoping to make the project successful where participation of related stakeholders has been specially focused. However, the term participation has embraced a wide range of possible meanings and the evaluation of the participation has also varied upon the differences of perspective, understanding and directions. Adopting Pateman's Definition of participation (2000), two compulsory elements of participation are the equal participation in the making of decisions and the equality of power in determining the outcome of decisions.

In the implementation level of the project, there are some local conditions such as power relation. The local leaders namely chief executive of Sub-district Administrative Organization, and village headman have been required to disseminate the participation concept to their community members and facilitate the establishment WUG. The irrigation officers who have specialized technical knowledge and administrative skills have been assigned to be assistants of irrigation management acting as experts who provide valuable technical information to water users.

As a result of the design of the project, the existence of formal groups has been hugely focused. It is claimed that the establishment of water organization serves the requirement of local participation. The result was the announcement that irrigation



officers have successfully promoted self-governed and self-motivated WUO. The justification of the project and the discourse of participation has been evaluated through project activities according the checklists of institutional establishment namely WUG, IWUG and JMC. The participation has been derived from activities such as training programs, general meetings and study tours.

At an operational level, the focus of the existence of formal connections and organizations in the implementation process and the unawareness of pre-existing power relation leads to the failure of empowerment water users in irrigation management. Moreover, technical knowledge and local knowledge ha also contributed to in the operation irrigation management. The reproduction of power and knowledge has occurred, parallel. The irrigation officers with their power of occupational prestige and technical knowledge have immense influence on water allocation pattern. In terms of local knowledge, it has been selected to strengthen the technical knowledge since the ones who address local knowledge are leaders and irrigation officers. This has resulted in the legitimacy and rationality of the water allocation pattern. Accordingly, the conflict of water access among water users and between irrigation officers and water users has dramatically decreased. The dominating power of irrigation officers and community leaders has become more powerful in irrigation operation. At the end, rather than decentralizing the power of irrigation management, the more powerful stakeholders (since before the adoption of the project) have reproduced their power through the implementation and operation of irrigation through the project. Moreover, it exists without any resistance because of the discourse of participation.



3640904066

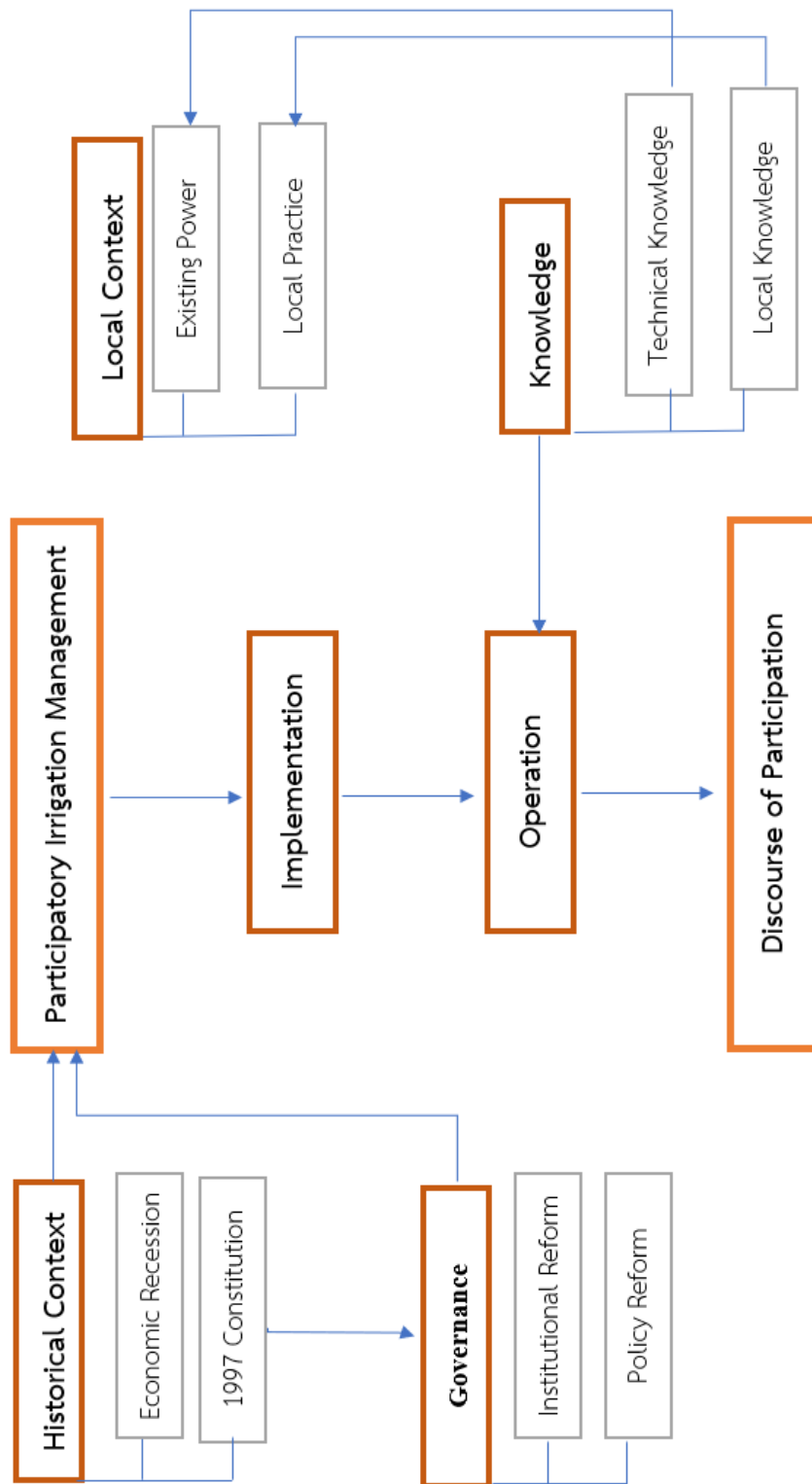


Figure 2: Conceptual Framework

Chapter 3

Conceptual Construction of PIM

This chapter will explore the conceptual construction of PIM. The historical background of Thailand has been identified because it largely influences the consideration to adopt PIM in Thailand. The composition of PIM has been considered as a significant component to the existence of “participation” of relevant stakeholders in the project.

The first part of this chapter pays attention to irrigation management transfer (IMT) in development of irrigation management. The second section of this chapter presents the main approach applied in PIM and its implication to the implementation of the project. In the third section of the chapter, the historical context of the PIM project in Thailand has been identified. In this section the influence of historical context on the government’s decision making at that time of adopting participatory approach in irrigation development have been discussed. Then, following section manifests the composition of irrigation management project in Thailand and its objectives.

3.1) Irrigation Management Transfer (IMT)

The demand of irrigation management transfer along with its request of redistribution of authority and responsibility in irrigation management emerged during the early 1970s (Garces-Restrepo, Vermillion, & Muñoz, 2007). It emerged because the people were disappointed by the dysfunctional performance of the irrigation management. The irrigation management transfer (IMT) is well known till date as the broader concept of “Irrigation Management Transfer (IMT)” and “Participatory Irrigation Management (PIM)”. It has a broad meaning as it transfers responsibility and authority (Poddar, Qureshi, & Syme, 2011). However, to be more specific, it refers to partial or full relocation of responsibility and authority for irrigation management from one organization to another (Sagardoy & Vermillion, 1999) . Most of the time, the responsibility and authority has been shifted from



government agencies to non-governmental organizations, such as Water Users' Associations (WUAs) or financially autonomous utility.

IMT has been increasingly emerging worldwide. Governance concept has been applied in the irrigation management transfer. To achieve good water governance, it is believed that there needs to be increased perception on sense of ownership, decision-making involvement, and active participation in irrigation system management (Garces-Restrepo et al., 2007). Accordingly, these will assist in enhancement of the commitment of irrigator users to perform irrigation management more effectively. It also hopes to raise a sense of obligation to take responsibility of the irrigation management both in terms of cost of operating the irrigation scheme and maintenance of it.

In Australia, the IMT has been motivated in accordance to the perception of farmers rising cost and poor operation. As a result, they have an initiative to take over the irrigation management. The program has been advocated by four important stakeholders namely farmers (water users), government department, irrigation agencies and industries. This water reform framework has relocated the power to farmers (water users) to irrigation management which is the most important component of the transfer. Farmers have been involved in the management of irrigation system with the belief of having strongest incentives. Since they depend on irrigation water, they will manage it more carefully. All farmers have been involved as members of large irrigation department while the engineers have been considered as employees who operate the system, allocate water and maintain primary distribution canals capacity.

3.2) Participatory Irrigation Management (PIM)

Participatory irrigation has been considered as a component of irrigation management transfer. PIM normally refers to the involvement of water users in irrigation management, along with the government (Sagardoy & Vermillion, 1999). PIM refers to the involvement of irrigation users in all aspects and at all levels of



irrigation management (Groenfeldt, 2000). PIM has focused on enhancement of irrigation users' participation in irrigation systems because it affects their livelihoods.

Although the IMT and PIM share some common ideas of shifting responsibilities in irrigation system management and promoting participation of irrigators, there are some differences in its means and implementation which result in different outcomes of the project. The differences between IMT and PIM are the roles of each stakeholders in irrigation system management both in operation and maintenance. While the aspiration in participation of water users in irrigation management transfer seems related to the service fee, the aspiration of PIM is to get access to water. The procedure in irrigation management has some differences where the irrigation officials have been regarded as employees in the irrigation management transfer, in PIM, the irrigation officials have been seen as an expert and consultant in water allocation who provides hydrological information and tactical knowledge including administrative knowledge to WUO.

3.3) Historical Background of Thailand

PIM was introduced in Thailand as a part of Agriculture Development project hoping to improve irrigation management efficiency and effectiveness by increasing the participation of relevant stakeholders. The core strategy of the irrigation management project is to enhance the fully participation of farmers who get access to irrigated water resources. The participation includes planning, designing, construction, making decision, operation and maintenance. Moreover, the PIM enhances the involvement of local administrative organizations to serve the decentralization of power in government sector. Historical context significantly influenced the decision to consider the implementation of the project and to adopt participatory approach.



3.3.1) Economic Recession in 1997

Financial crises have been remarkably impacted in world economy from time to time. The rapid liberalization on financial sector in Asian countries has eventually led to the economic recession in 1997. Thailand has been dramatically impacted by this economic recession followed by social and political problems.

Before the recession occurred, Thailand's economic spiked rapidly during 1985 – 1995 due to the liberalization of financial sector. Large-scale business had borrowed international loan with lower interest than internal financial institutions. Capital flows to Thailand and developing countries such as South Korea, Indonesia, Malaysia, and the Philippines have rapidly increased. Almost of all direct investment has come from Japanese manufacturing firms. Thai's export market earned approximately 1 billion baht in 1994. In stock market, there is spike in its values and trends.

The major cause of economic recession in Thailand was the massive capital inflow, which were invested in real estate rather than in real sector. Then Thailand experienced a decrease in export sector and oversupply in real estate sector. After that serious problems in the real economy became prominent. The companies were incapable of paying the loan back, so the loan has become non-performing loan. Correspondingly, the financial institution and the stock market values have dramatically dropped. There is no trust in Thai economy. The stock market crashed in mid-1996. There is soaring concern on the Thai Baht currency among commercial bankers and investment bankers. As a result, the investor withdraws their investment and the investors started selling their holdings in local currencies. The financial institution responded to this situation by stop providing loans. As a result, small-scale and medium scale companies have collapsed. After the crash of property market, there was difficulties in overall financial sector.

The Thai baht faced drop in its currency value. Thai central bank tried to boost up its value but finally they gave up because the reserved treasury dropped low levels. In conjunction to that, there were six major crises in Thai's economy including



3640904066

inflation, capital outflow, short-term loan crisis, currency instability, lack of internal reserve, and budget deficit. After the financial crisis occurred, the government made decision to use the managed flow rate. The inflation has resulted in the devaluation of Thai baht and raise in price of goods. The capital outflow resulted in the circulation of money of each company. It respectively resulted in the real sector and the export sectors bankruptcy. This devaluation of the Thai baht also caused currency crises to several countries across the world, for example, Southeast Asia, Taiwan, Hong Kong, Korea, Japan, Russia, Brazil, Australia and New Zealand.

After Thailand experienced the economic recession of 1997, the agriculture sector played a significant role as a source of income, employment and economic growth. Moreover, agriculture also played an immensely significant role to the industrial sector since manufacturing activities at the time were predominantly agriculture-based exports. The agriculture-based exports covered fresh and processed fruit and vegetables, frozen seafood and frozen poultry. Realizing the importance of agriculture sector to mitigate the impact of economic recession, the Agriculture Development Project has been proposed in Thailand in 2001 which irrigation management reform was one of the main objectives.

3.3.2) 1997 Constitution

In Thailand, civic participation in public affairs has been provided a first legal basis on the establishment of the 1997 constitution. The 1997 constitution has established civic involvement as both state policy and civic rights. In terms of state policy, the 1997 constitution expands the civic sector participation in decision-making process of any issues that might affect national or public interests such as Economic and Social Development plan, transparency and accountability of government agencies (Article 60 and Article 70). In terms of civic rights, the 1997 constitution expands civic rights to preservation and restoration of the local culture and tradition. Civic sector rights also include the right to participate in resource management, maintenance of environment quality, and balanced exploitation of natural resources and biological diversity in sustainable way (Article 46, 56 and 79).



The emphasis on civic sector participation in the 1997 constitution has dramatically resulted in the development project. Participation of community and local people has been promoted in development project after the amendment of 1997 constitution. Ideally, the traditional top-down approach seems to be transformed into a more pluralistic and multilevel system. Local communities and local governments have been addressed on their greater roles in public affairs.

As a result, PIM has been introduced as a part of the Agriculture Development project hoping to improve efficiency of irrigation management by increasing the participation of relevant stakeholders. The core strategy of the irrigation management project is to enhance the full participation of farmers, who receive irrigation resources. Participation includes planning, designing, construction, making decision, operation and maintenance. Moreover, PIM enhances the involvement of local administrative organizations to serve the decentralization of power in the government sector.

3.4) Agriculture Development Plan

Regarding the dramatic effects of economic recession since 1997, Thailand experienced major challenges with its economy, especially, in the industrial sector. Agriculture sector had played a significant role as a source of income, employment and economic growth. Moreover, agriculture had also played an immensely significant role to industrial sector since manufacturing activities in that time were mostly agriculture-based exports. The agriculture-based exports covered fresh and processed fruit and vegetables, frozen seafood and frozen poultry. Realizing the importance of agriculture sector to mitigate the impact of economic recession, the Agriculture Development Project has been proposed in Thailand in 2001.

Along with the intention to increase productivity in agriculture sector and enhance the competitiveness of agricultural products in domestic and export market, governance concept has been applied in the Agriculture Development Plan. The reform of policies and institutional structure has been requested in natural resources



management such as land, coastal, water, and watershed protection and rehabilitation. The reform of policies and institution have proposed further require provisioning of access to credit, research development, education, business promotion and subsidies.

Irrigation management has been proposed as one of the most important components in the Agriculture development program because agriculture sector highly depends on the water resources and there is an immense amount of water consumption proportion by the agriculture sector. Moreover, water scarcity has emerged as the most important issues across the world along with the recognition of its tremendous impacts ranging from economic, food security and livelihood of people. Thailand as a rice-based socioeconomic country, the stress has been placed on irrigation management to solve the intense competition for water, less water availability, and severe water shortages in the dry season.

The efficiency and sustainability of water consumption in agriculture sector has been increasingly discussed. In conjunction to the discussion, the approach to development of irrigation resources t has been changed from quantitative to qualitative oriented. The efficiency and reliability of irrigation management will responsively ensure and increase the agriculture productivity which has provided a major contribution to the national economic as the main source of income and employment in Thailand. Correspondingly, the improvement in the effectiveness of water consumption has been spotlighted in replacement of an increase of amount of water provision. Therefore, the challenge of Thailand is to develop an effective irrigation management to cover both efficiency and equity standards.

3.5) Concept of PIM in Thailand

The irrigation management has been significant to Thailand in terms of agriculture sector owing to the need of large proportion of water consumption. The irrigation management has been introduced to the cultivation of rice farming, the main exported goods of Thailand, during the reign of King Rama 6 (1868 - 1910). The Canal Department was established in 1902 which becomes RID nowadays. The very



first reservoir in Thailand was mostly earth dam. In 1950, Thailand had been provided loan for irrigation development form World Bank. However, it was mainly spent on the physical reservoir construction. There were several types irrigation structures, for instance, weir, diversion reservoir, storage reservoir that had been constructed in Thailand with different sizes ranging from small to large-scale reservoir.

PIM has been introduced to Thailand as a part of Agriculture Development Project due to the fact that agriculture sector has highly depended on water resources and there is an immense amount of water consumption proportion of agriculture sector. It is hoping to develop the efficiency of irrigation management and reliability of amount of water that serves agriculture sector.

The concept of governance has become one of the important development discourses. In broader sense, governance has been consisted of accountability, transparency and participation. However, components of governance have been defined with more directions which are legitimacy and voice, direction, performance, accountability and fairness (Amos et al., 2013).

PIM project funded by Asian Development Bank (ADB) has been introduced as a part of the Agriculture Development project hoping to develop the efficiency of irrigation management by increase the participation of relevant stakeholders. Governance concept has been a major approach in of this irrigation management project. The project has been trying to achieve all components of the governance. In terms of legitimacy and voice, the core strategy of the irrigation management project is to enhance the fully participation of farmers, who get access to irrigated water resources. The participation includes planning, designing, construction, making decision, operation and maintenance. Moreover, PIM enhances the involvement of local administrative organizations to serve the decentralization of power in government sector. The long-term direction of active self-organized WUG, the effectiveness and efficiency of water delivery, sustainable practice of water resources uses, accountability of the project and fairness have been mentioned as objectives of the program.



The development of irrigation management has been identified on its focus on effectiveness and efficiency of water delivery where the community participation has been promoted. RID has been requested on their contribution on establishment of organizational units for PIM and the plan and procedures for participation along the project cycle covering identification, design, operation, and management of facilities. RID has been responsible for organized training programs for WUO which is jointly with farmer organizations, of irrigation distribution networks.

3.5.1) Expected Outcomes

To achieve the success in promote participation in irrigation management, RID have defined the existence of 11 outcomes which must be completed as following.

- (1) enhancement understandings of participation
- (2) making an agreement of participation
- (3) establishment of WUG
- (4) strengthening the capacity of WUO
- (5) development of WUO
- (6) establishment of JMC of irrigation management
- (7) establishment irrigation fund
- (8) hiring for maintenance of irrigated line
- (9) enhancement of participation operation and maintenance
- (10) assessment of WUO capacity
- (11) report fundamental information of the project

3.5.2) Water Users' Organizations

RID of Thailand defines the terms WUOs as groups that have been established by a group of farmers who are in the irrigated area with the objectives to manage water allocation and water maintenance program. The WUOs have been categorized into many different types (Public Participatory Promotion Division, 2005). In accordance with the legal status, it can be classified into two main groups as following.



1) Non-legal Entity

Water User's Group (WUG) manages one trench canal which covers less than 1.6 square kilometers of irrigated area. The group comprises of one leader, one assistant (if necessary) and water users in the irrigated area those who use water from the ditch.

Integrated Water User's Group (IWUG) is consisted of several representatives from each WUG gathering to manage the primary canal or an irrigated zone or even the whole project of irrigation which covers less than 32 square kilometers of irrigated area. The committee of the group comprises of representatives from each WUG who share the same primary canal. the chair person will be elected by the representatives of the WUG.

2) Legal Entity

Farmer Group (FG) must register under the provincial agriculture department. This group is aiming to provide advocacy and consultation among the group.

Water User Association (WUA) must register under Minister of Interior under the same conditions to IWUG both in terms of area of coverage and administrative structure. This type of water organization has the main objective targeting to water allocation management.

Water User Co-Operative must register under Cooperative Promotion Department aiming to manage irrigated water. The benefit from the activities of the co-operative can be shared among members. The area of coverage and administrative structure are similar to IWUG.

3.5.3) Guideline of WUG Establishment

With respect to enhance participation of farmers in irrigation management, RID addressed that farmers must engage in the irrigation management through membership provided by the WUG (Water Resources Development and Management Division, 2003). Respectively, the establishment of WUG is strongly required in contemplation with the requirement for farmers registration to be members of the



group. There are 8 methods to strengthen the capacity of WUG being mentioned by RID.

- Farmers should establish WUG after the irrigation staff disseminated information and enriched understandings of resolution of conflict in water management.
- The community leaders namely Chief Executive of SAO, Sub-District Headman and Village Headman have responsibility in establishment of WUG and related activities. Irrigation officers have responsibility to explain structure and mechanism of the WUG to community leaders. The community leaders must be invited to the meeting and in charge of the consultant of WUG.
- The regulation of WUG must be drafted through the participation of all members.
- The committee must operate the activities to serve the interest of the majority of members in contemplation to government policies.
- The fairness and transparency must be focused. The members are authorized to elect for the inspector of all activities.
- The committee must organize the meeting at least twice a month. The general meeting must be organized at least 1-2 times annually.
- The information dissemination should be frequently and inclusively updated.
- Irrigation officers must provide advocacy to WUG frequently in order to strengthen capacity of WUG.

The expected outcomes of the project have largely been concerned of establishment of WUG with technical processes. Although the project signified departure from previous systems, it still indicated the top-down planning systems which was contradict to the institution reformation attempting to decentralize the power and authority to water users. Since every implementing procedures, roles of each stakeholders and expected outcomes of each step were designed by the central government and Department of Agriculture, it hinted the control over the project from central government rather than control of marginalized water users to irrigation management.



3.6) Conclusion

Irrigation management transfer was originally introduced due to the dissatisfaction of water users to irrigation management which was performed by government line agencies. Water users demanded for changes in responsibility within irrigation management. Thus, there was a partial or full relocation of authority and responsibility and water users participated in irrigation management.

In Thailand, participation of water users and related stakeholders was identified in a project to improve irrigation management in 2001. The economic recession and 1997 constitution significantly influenced the decision to adopt the project and the platform to achieve the objective. After Thailand experienced the economic recession, agriculture sector importantly contributed to economy because it was the source of income and employment. Since agriculture activities dependent on water resources, improving irrigation can help to increase productivity and boost up economy of Thailand. The 1997 constitution highlighted civic participation in public affairs. Civic participation will increase irrigation effectiveness and efficiency.

The project was planned by central government and RID. They identified collection of technical milestone activities and technical processes for implementing the project. The participation of water users and relevant stakeholders was assessed through existence of formal matters such as WUOs, meetings, and training programs which cannot reflect the meaningful engagement and participation of water users.



3640904086

Chapter 4

RID Implementation of PIM Structure

Agriculture sector has highly depended on water resources and there is an immense amount of water consumption proportion of agriculture sector. The efficiency and sustainability of water consumption in agriculture sector has been increasingly discussed on its approach to development of water resources. In Thailand, participatory approach funded by Asian Development Bank[®] has been adopted in the irrigation management of pilot site both in small-scale irrigation project, medium-scale irrigation project and large-scale irrigation project. Kraseaw irrigation operation unit was chosen as one of the pilot sites of large -scale irrigation project adopting the PIM. This 3-year project lasted from 2001 to 2003.

To enrich the understandings on the participation of each stakeholders in the implementation of the participatory project in Thailand, this chapter consists of 2 main parts which are the overview of the case study, and the process of implementation of PIM structure during 2001 and 2003. The first session of overview of the case study comprises of the general information of included the physical features of Kraseaw reservoir, diversity of water consumption, and seasoning timeline. The second session presents the analysis of participation of relevant stakeholders in the implementation of the project. The portrayal of implementing processes of participatory approach in irrigation management covering the introduction to stakeholders, the involvement of stakeholder will be identified.

4.1) Overview of the Case Study: Kraseaw Reservoir

Kraseaw reservoir is the earth-based reservoir constructed in 1981. Kraseaw reservoir is located in the North West of Suphan Buri Province in Natapin Sub-District, Danchang District, Suphan Buri Province. It is constructed across Kraseaw stream which is 140 kilometers long below Wongduenha Mount. Kraseaw reservoir is 4250 meters long and 32.5 meters high. Kraseaw reservoir covers 28,750 Rai with the



storage capacity of 290 million cubic meters. The Kraseaw river has steep slopes that contribute to extensive flooding in the Samchuk District during the rainy season (September- October). Moreover, during the dry season severe drought is experienced by farmers. As a result, Kraseaw reservoir was constructed to solve these particular problems. Kraseaw reservoir serves 130,000 rai covering household consumption, manufacture companies and agriculture productivity. The reservoir serves 110,563 Rai of irrigation area in 3 districts of Suphan Buri province which are Dermbang Nangbuad, Nongyasai and Samchuk.



Figure 3: Kraseaw Reservoir

The Kraseaw reservoir serves 6 key advantages. The first is to mitigate natural disaster namely flood and drought both inside and outside the irrigated area covering 350,000 Rai. Secondly, it is reported Kraseaw reservoir project serves 130,000 rai while the irrigation area of Kraseaw comprises 110,563 Rai in 3 districts of Suphan Buri province which are Dermbang Nangbuad, Nongyasai and Samchuk. Thirdly, it serves as the tourist attraction and public park. Fourthly, there is aquaculture sector

above the physical reservoir. Additionally, it is to serve industrial sector. Finally, the reservoir provided water for household consumption.

Kraseaw reservoir water is diverted to 7 primary distribution canals. The irrigated area has coverage 130,000 Rai which includes 6740 water users (Public Participatory Promotion Division, 2005). The irrigated water serves household consumption, agriculture sector and industrial sector. The irrigation service area covers 50 villages, 11 Sub-Districts from 3 districts of Suphan Buri province.

- Dermbang Nangbuad District: Wangsriratch, Borgu, Nongkatum
- Nongyasai District: Jang-ngam, Nongpho, Nongyasai
- Samchuk District: Nongsadao, Nongpaknak, Kraseaw

The Kraseaw irrigation system has implemented under the PIM approach. The participation mechanisms are identified by the RID as following.

- (1) To establish the WUG which covers the irrigated area of each canal
- (2) To establish the IWUG by gathering the WUGs at the shared primary distribution canal
- (3) To establish the coordination of WUO
- (4) To establish the JMC

After the Kraseaw irrigation project adopted a participatory approach in irrigation management, the JMC has been regarded as the centrality of the decision making on irrigation of Kraseaw Reservoir. The JMC consists of representatives from 4 different agencies including farmers, private companies, local administrative organization and government authorities.



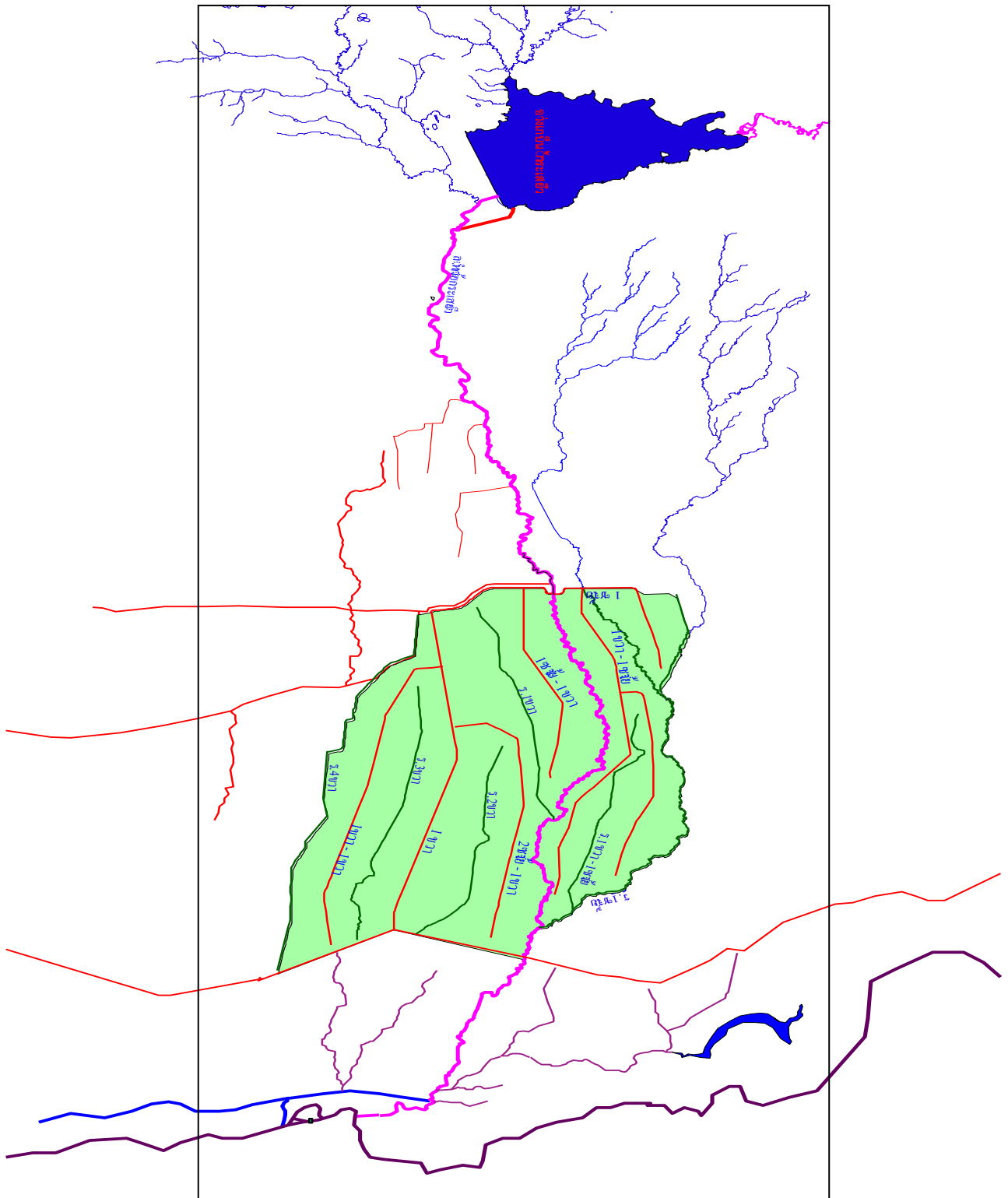


Figure 4: Map of Kraseaw Irrigation Project

4.2.1) Seasonal Timeline

The water allocation of Kraseaw reservoir has been divided into 2 main seasons which are dry season and rainy season according to the farming activities. The dry season lasts from January to June while the rainy season lasts from July to December.

In different seasons, each kind of farm requires different amount of water meanwhile the amount of the water stored in the reservoir is also different. For example, growing rice, in rainy season, it requires around 120 million cubic meters while in dry season, it might require almost 170 million cubic meters. Therefore, the management of water allocation become more complex with this condition.

The classification of the seasoning timeline is based on the rice farming productivity, the majority crop in the area. This influences on the decrease in diversification of farming produced in Kraseaw irrigation area. The vegetables and fruit farming have been gradually decreased.

4.2.2) Diversity of Water Consumption

Kraseaw irrigated area comprises a wide range of activities both agriculture sector and private sector. The agriculture activities consist of rice farming, sugar cane farming, fruit farming, vegetable farming and aquaculture (see table below) whereas the private sector consists of Mitr Phol Sugar Mill, Thai Agro Energy Public Company Limited and Waterworks Authority of Danchang District. The diverse needs of water results in the conflict of competition to access water. It leads to difficulties in irrigation management.

1) Agriculture Activities

The main source of income of population in Suphan Buri province is agriculture activities followed by retailing, wholesales, industrial and service provision, responsively. It is well-known that Suphan Buri is an agriculture-based province where the agriculture products have been produced and it is also producers



of processed agriculture food. About 87.9 percent of population is a farmers (Governor's Office of Suphan Buri Province, 2017). The agriculture products offer Suphan Buri approximately 20 million Baht per year. The well-known agriculture products are rice, sugar cane, cassava, corn, vegetables, mango, and aquaculture such as fish and giant freshwater prawn.

In Kraseaw irrigation area, it is also well known as agriculture production area of Suphan Buri province. the main agriculture products are rice, sugar cane, vegetables, mango, and aquaculture. These diversities of agriculture plantation have required different amount of water in different time frame, so it becomes big challenges for irrigation management.

Types of Farming	Coverage Area (Rai)
Rice	83270
Sugar Cane	25567
Fruit	1277
Vegetable	365
Aquaculture	84
Total	110653

Table 3: Diversity of Water Comsumption

(1) Rice Farming

Rice is the biggest source of income of population. In Suphan Buri province, there are approximately 1.5 million Rai of rice farming. there are two seasoning timelines for cultivation of rice which are dry season and rainy season. Rainy season rice farming has been started cultivating during May and harvesting during August and September. Then, the dry season rice farming has been started and harvested during February and April. In some area, farmers could grow dry season farming twice. The first lasts from September to January whereas the second lasts from January to late May.



Figure 5: Rice Farm

In Suphan Buri, rainy season rice farming covers approximately 1.4 million rai producing approximately 703 million tons of rice in 2013. Averagely, farmers could produce 0.75 tons of rice per Rai. Meanwhile, dry season rice farming covers approximately 1.1 million rai producing approximately 732 million tons of rice per year. Averagely, farmers could produce 0.81 tons of rice per Rai (National Statistical Office of Suphan Buri Province, 2014). In the Kraseaw irrigation project, rice farming is the majority crop covering approximately 80 percent of overall area (Kruseaw Irrigation Operational Unit, 2017). It is also first placed source of income of water users. Water users can cultivate rice twice a year, one in rainy season and one in dry season. Some years, when there a less water stored in the reservoir, if the JMC make the decision not to grow rice, they cannot cultivate dry season rice farming.

(2) Sugar Cane Farming

Sugar cane has been regarded a second place of income of population in Suphan Buri Province. There are approximately 0.8 million Rai of sugar cane farming in 2013 with its productivity of 6 million tons. Farmers could harvest the sugar cane only one time a year in accordance with the sugar factory's purchasing timeline during December and April. The sugar cane provides around 3,600 million Baht per year to the population of Suphan Buri Province (National Statistical Office of Suphan

Buri Province, 2014). In the Kraseaw irrigation project, sugar cane is the second source of income to water users (Kraseaw Irrigation Operational Unit, 2017).



Figure 6: Sugar Cane Farm

(3) Fruit Farming



Figure 7: Mango Farm

Fruit Farms has been accounted as the third placed of agriculture activities in Suphan Buri Province. Mango ears the largest proportion of fruit farming in the province covering approximately 50 thousand Rai (National Statistical Office of

Suphan Buri Province, 2014). In Kraseaw irrigation project, most of the fruit farmers also cultivate rice farming and sugar cane farming since it takes longer time to harvest the fruits.

(4) Vegetable Farming

There is the expansion and relocation of vegetable farming in Nonthaburi to Suphan Buri Province. The vegetable farming covers around 25 thousand Rai in the area. The main vegetables are chili farming, long bean farming, kale farming, cucumber farming and baby corn farming. In the Kraseaw irrigation project, vegetable farm is also the alternate choices when they cannot grow dry season rice.



Figure 8: Beans Farm

(5) Aquaculture

Aquaculture that has been popular in Suphan Buri Province are fish farming and giant freshwater prawn farming followed by Striped Snake-head fish, catfish, Nile Tilapia fish, Java Barb fish, Snake Skin Gourami fish and Snake-head fish. The aquaculture occupies about 60 thousand Rai



Figure 9: Fish Farm

2) Private Company

(1) Mitr Phol Sugar Mill

Mitr Phol Sugar Mill is the third place in sugar export worldwide. Mitr Phol sugar business was initially established in Ratchaburi province as a small family business producing and trading condensed syrup to sugar mills. In 1990, Mitr Phol Sugar Mill was established in Danchang District, Suphan Buri Province. The company produces sugar products, syrup, and ethanol products.

(2) Thai Agro Energy Co., Ltd.

Thai Agro Energy company has been established since 2003. The company has produced the ethanol. The company production plant is located in Danchang District. Currently, the company operates two production lines. The first line produces 0.15 million liters per day using sugar cane molasses as its raw material while the second produces 0.2 million liters per day using both sugar cane molasses and tapioca as the raw material.

(3) The Waterworks Authority of Danchang District

The waterworks authority of Danchang District has been serving 5,369 households. It consumes 4600 cubic meters a day which is averagely 1.7 million cubic



meters annually. Recently, there is an increase of number of household and amount of water used in household consumption. The only water resource in water supply is Kraseaw reservoir.



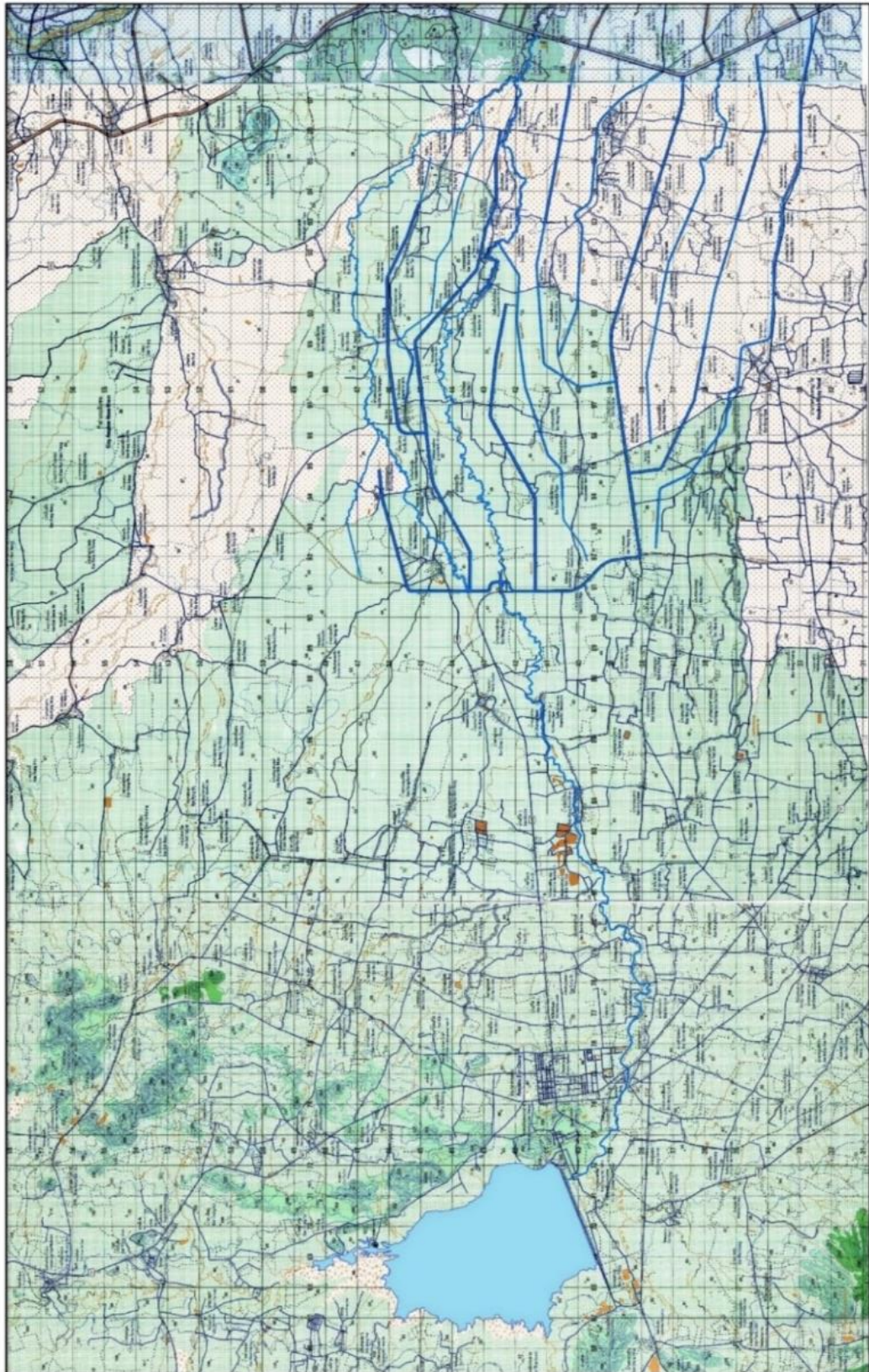


Figure 10: Map of Kraseaw Irrigation Project

3640904056

4.2) Implementation Process of PIM Structure

Improving irrigation efficiency and effectiveness to increase agriculture productivities is the main purpose of the participatory project funded by Asian Development Bank. Under the governance approach focusing on transforming of institution, participation of relevant stakeholders in WUO was addressed. The establishment of water user's institution has been considered a component of transforming to new scheme of irrigation management where responsibilities in irrigation management was aimed to be oversighted by water users' institution. Since, in 2001, the participation and participatory approach was a new emerging term for stakeholders, the explanation of how stakeholders understand participation and become involved in the project will lead to the understandings on the current operationalization of the project.

Since the project was aiming to redistribution power in managing irrigation scheme to water users in a community scale, the establishment of the structure and water users' institutions was considered a main outcome of the project. The project manager mentioned that

‘my responsibility is to improve the irrigation management and water allocation by promoting participation, so the establishment of JMC is the most important priority. Thus, to make the project success, I tried to establish the primary group in the first year of the project. The second year, I had to finish establishing the IWUGs.’

4.2.1) Establishment of WUG

Since participation was the new emerging term at the time, in the first year of the program, irrigation officers attended training program organized by the irrigation department to enrich their understandings on participation and application of participatory approach. There was a recruitment of 22 community coordinators to do the survey on WUGs in Kraseaw irrigation area. These community coordinators had responsibility to establish the primary groups upon each trench canal within 1 years.



The community leaders were invited to be the facilitators in the establishment of WUOs. They attended the meeting with irrigation officers and attended the workshops on irrigation management. the study found that the community leaders decided to help being the collaborator because the irrigation officers addressed that the project was part of the national development plan. Being the facilitators, they were assigned to collaborate between water users and irrigation officers.

‘I told the leaders of community that RID will change the irrigation management patter upon the national development plan and 1997 constitution so they agreed to help in the establishment of WUOs.’

Irrigation officers came to survey the area of Kraseaw irrigation area. With the formal requirement, community leaders have facilitated them in conducting survey and establishing the group. The local coordinator, the irrigation staff with the facilitation from the community leader set up a meeting to inform the villagers of the PIM project and to register as the WUGs to gain water access.

‘I told the water users that we give you the rights to elect your leaders of WUGs. You have to choose those who are able to meditate the conflict. This is democracy way.’

Having heard that the irrigation management benefits their agricultural activities, some water users decided to register as member of the WUGs as requested by irrigation officer and their community leaders. Although they did not know about participation and participatory approach, with it’s the claim of 1997 constitution, they anticipated somethings better that what it was at that time.

The study found that almost of all farmers made the decision to registered because they normally do whatever their community leader suggested. At first, no one thought that the irrigation management would be improved. As a result, most of the leaders in any level of WUOs are the community leader or those who seems to be more educated such as teacher.



To enrich the understandings of water users on participation, several booklets, brochures, posters and journals were disseminated such as guidelines of establishment of WUG and how it would benefit water users. The irrigation officers stated that the booklets and brochures have been designed in cartoon version which helps the water users to easily understand the contents on establishment of WUG. In addition, there was the presentation of irrigation officers in the monthly meeting of each community. In 2001, irrigation officers finished establishing all of 278 primary groups.

รูปที่ 2.2 โครงสร้างการบริหารกลุ่มผู้ใช้น้ำชลประทาน (กลุ่มพื้นฐาน)



Figure 11: Example of Content in Booklet

There was, however, the strong opposition from some of the community leaders. They did not believe that the irrigation would decentralize their power to community because there were some conflicts occurring before. They experienced that the irrigation staff used to claim on legal basis to prohibit local people to open that gate of the primary distribution canal. However, at that time, they did not know what to do when it came to the matter of technical requirements since they oversaw

the community leaders and had been required by their upper organization to help establishing the WUG. Yet, they presented their strong opposite to irrigation management behind the scene.

4.2.2) Establishment of IWUG

The establishment of the IWUG has been identified as the major objective of the second year of program implementation. The WUGs have been grouped upon their primary distribution canals and have been requested to cooperate in higher level called IWUG. The election of the leader of each IWUG had been organized. Knowing that they experienced the opposite from some community leaders, the irrigation officers lobbied the election of the leader of the IWUG in that area. The opposite side had been elected to be the leader of that IWUG. It has been revealed during the interview that the reason they lobbied the election is because they believe that if they could persuade the opposite side to be theirs, all the project would be more rapidly proceeded. After the election of the leader of IWUG, they were trying to provide the power to that leader to make him feel that he is significant to the project and they really give power to local people.

‘Some community leaders did not believe that we will give them power to open and close the water distribution gate. Thus, we lobbied the election of leaders of IWUG to let him be the leader.’

Because of the ideal of leaders suggested by the irrigation officers were those who can handle with the conflict among water users and those who are respectful, so the election of the leaders of IWUGs ended up that the leaders of the community were elected to be the leaders of WUG and committee of IWUG.

There are 9 IWUGs divided by the 7 primary distribution canals. Each group of IWUG consists of WUGs upon each distribution canal. The IWUG has the authority to open and close the water gate of the distribution canals. The representatives of each IWUG have played a major role in implementation of the program since they oversaw the collaboration between the farmers and the irrigation officers. Several workshops, training programs, study tour and meetings were



organized to enhance the understandings of the leaders in the physical reservoir, the project and to empower the leaders in managing water allocation.

The leaders have been very enthusiastic with the information that they received during the training program, especially, the information about the physical reservoir since they never get access to that information before. They revealed that this information is very helpful for them to understand how the irrigation works and how the water is allocated.

4.2.3) Establishment of JMC

After the establishment of IWUGs, JMC had been established. The irrigation officers oversaw the establishment and the design of JMC. The study found that the concept of participation was interchangeably understood with the term democracy and vote.

‘Participation was a new thing. I had no clue about participation. The JMC was the ultimate goal of the project. It made the project completed. But at that time, I did not know who would be included in JMC. However, since the project has focused on the participation of farmers, the number of farmers as a committee should have been majority. Then, I required each IWUG to elect three representatives for their IWUG to join the committee.’

As a result, three representatives from each IWUG have become the members of the JMC. There were two government departments which are irrigation officers and Department of Agriculture (DoA), chief executive of SAO, and private sectors.

Accordingly, Kraseaw irrigation scheme is managed by the JMC. There are 53 members of the committee who are representatives from 4 major groups of actors which are IWUG, local administration, government organization and private sectors described as following.



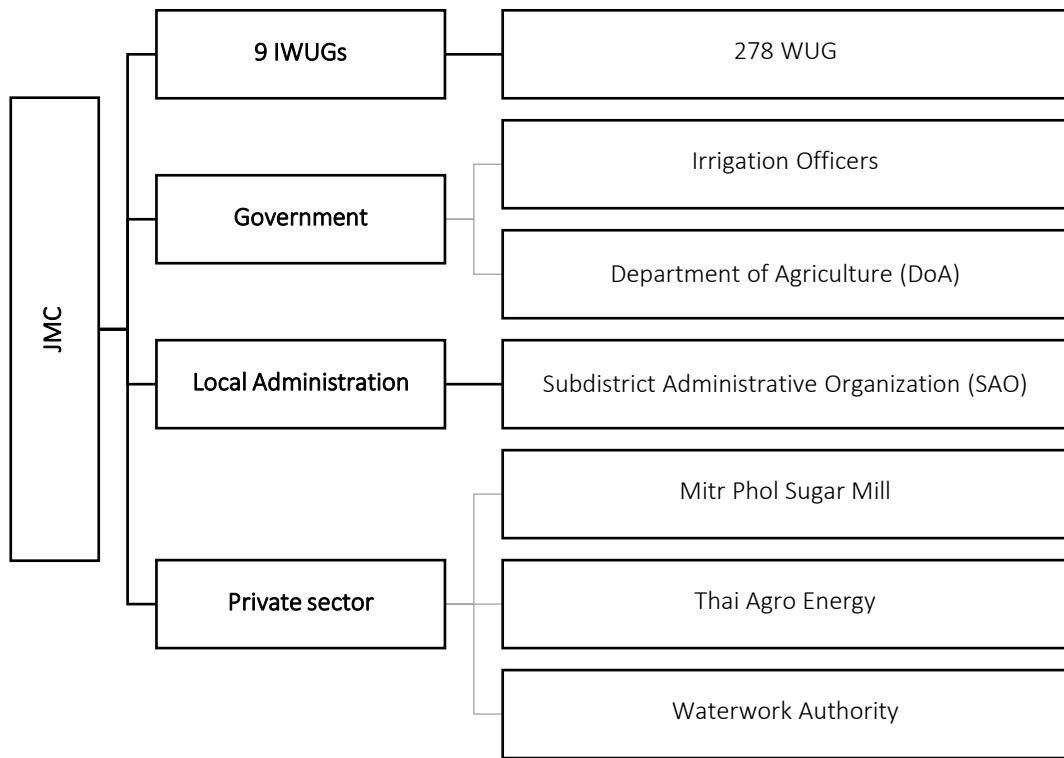


Figure 12: Structure of JMC



Chapter 5

Stakeholders' Operationalization of PIM

This chapter investigates the participation of each stakeholder in the operationalization of PIM addressing the current situation of irrigation management process. This will be undertaken using the ladders of participation as outlined by Arnstien (1969) to classify each of the stakeholder groups participation in the process. In addition, the study seeks to explore the transforming in irrigation management after the adoption of a participatory approach to advance our understandings on impacts of the operationalization in the Kraseaw irrigation scheme.

In terms of theoretical investigation, the study employs Pateman's participatory theory (2000) as a basis of investigating the level of participation of each stakeholder. Equal power of stakeholders in the decision-making process and in determining the outcome are focused as the main components of participation. In addition, this study employs Arnstien's ladders of participation (1969) to explore the capability of stakeholders to participate in irrigation management.

The chapter starts with the elaboration of the irrigation management system in the Kraseaw irrigation scheme before the adoption of participatory approach and highlights the conflict between farmers and irrigation management over access to water before 2001. The second section is the analysis of participation in operationalization of irrigation management. Thirdly, the domination of the decision-making process and determination of outcomes in irrigation management are elaborated. It is found that the pre-existing power relations and knowledge have contributed to domination in irrigation management. Fourthly, the results of transforming irrigation management under the participatory approach are identified and linked to the analysis of participation.



5.1) The Kraseaw Irrigation Management: Before 2001

Before the implementation of participation irrigation management, the only department that had authority and responsibility to manage the irrigation system was the irrigation officers both in terms of operation and maintenance of the irrigation. At the time, there were a lot of conflicts around the irrigation management due to dysfunctional water allocation and the lack of transparency in the matter in which water was allocated.

The first problem was water allocation pattern managed by the irrigation officers did not align with farmer water practice and their agriculture activities. Accordingly, it led to the conflict between irrigation officers and water users. The water users did not have any legal authority to open the gates of the primary distribution canal and trench canals. As the water allocation pattern did not serve their needs, they attempted to open the gates to allow water to flow to their farmers which was viewed as illegal by the irrigation officers. This resulted in the irrigation officers informing the police who led to the arrest several water users as explained by both irrigation officers and farmers as following.

‘Before establishing the JMC, there was serious conflict between water users and officers because water users destroy the water gate to drain water to their farm.’

In part, the conflict between irrigation officers and water users occurred because there was no information sharing and no attempt to disseminate information between the irrigation officers and water users.

‘People lacked knowledge about Kraseaw reservoir and water allocation pattern. When we stopped allocating water, we never inform them the reasons. Sometimes when they asked, irrigation officers just said that we did that according the national plan.’

Sometimes, the water users mobilize as a group at the office of irrigation operation and submitted their complaints to provincial politicians to force the



irrigation officers to allocate water upon the need of water users, it resulted in the irrigation officers agreeing and they allocated water accordingly.

In addition, there were conflicts among water users trying to gain access in water resource. When the water was allocated to the distribution canal, upstream water users consumed large amounts of water and downstream wanted water in the same timeframe since the major use of the water was for growing rice. Moreover, the trench canals were not well maintained. It resulted in limited water flow in trench canal. This led to the conflict among water users. Downstream water users tried to open the gate to let the water flowing to their farm while the upstream ensured that the gate was kept closed. A water user mentioned during the interview that the conflict between water users was very intense. Water users fought with each other to get access to water allocated in the area as addressed by many farmers and village leaders.

‘Downstream water users wanted to get water, they mobilized groups of water users to the water distribution gate. It led to the damage of the gate. Sometimes, they fought with each other and leading to crime because they brought knives and gun to scare others. It always happened in our area because it is the downstream canal where the canal is very long.’

There were considerable conflicts that emerged around irrigation management and water allocation both among the group of water users and between the water users and the irrigation officers. The conflict became increasingly intense during the dry season period. Farmers were directly impacted because they could not cultivate their crops and ran the risk of losing their entire crop due to a lack of water, this having a significant impact on their financial position.



5.2) Participation in Operationalization of PIM

After the implementation of participatory structure during 2001 – 2003, the WUO starts to manage the irrigation scheme where JMC is the highest level of operational unit of irrigation scheme. Decisions over water allocation period are made by the JMC. The meeting of JMC has been organized at the beginning of each season. As the scheme is dominated by rice producer, the cropping calendar is split into two periods, dry season and rainy season to meet the water requirements of a double cropping season of rice.

Analyzing the participation of stakeholders, the study found that each stakeholder has different ladders of participation in irrigation management. There is the domination of irrigation offices and some leaders of the groups in managing irrigation scheme.

5.2.1) Government Agencies

1) Royal Irrigation Department (RID)

The irrigation officers present the hydrological knowledge in the annual meetings and daily water situation and water allocation pattern via social media including Line application, Facebook and Website. The prediction of water situation and the amount of water stored and potentially to be consumed in each farm. The information has dramatically influenced on the decision to grow or not to grow dry season rice farming. They see themselves as a facilitator. However, the study found that the decision-making was highly dependent on the irrigation officers. They are also responsible for making the water allocation plan before the participatory approach was adopted in the irrigation scheme.

‘JMC has discussed about the water allocation and the solution of the conflict (if any). Irrigation officers act as the facilitators to the committee on hydrological information and legal matters. We do not have any power to control the decision making. When the committee agreed on the starting date of water allocation, we just response to their vote accordingly, and work out



for the plan of water allocation upon the starting date that they agreed. Then, we informed them on the plan that we made and teach them how to cultivate their crop to help them save water. We adapt the technical knowledge and local knowledge in the water allocation and conflict resolution such as we let the leaders of community solve the conflict because the members feel respectful to their leaders.’

2) Department of Agriculture (DoA)

In the meeting, the Department of Agriculture usually disseminates information about farming diseases, farmer registration and related information about agriculture activities. The study found that their participation is in the ladder called ‘informing.’ Although they are also the information sharer, this information has no influence on the irrigation management. Rather, the information is mostly relevant to the crop diseases and the way to prevent it.

5.2.2) Sub-District Administrative Organizations (SAO)

The study found that the participation of Executive chief of administrative organization in irrigation management is in the ladder of “consultant.” Looking back to the implementation of the project in 2001 – 2003, it significantly results in current participation of executive chief of administrative organization. During 2001 – 2003, they became involved in the project by being invited to be the facilitators to irrigation officers. They significantly contributed to the establishment of the participatory management approach as they were seen as the coordinators who brought together the irrigation officers and water users. As a facilitator and with their position in the society, their voice is counted in the implementation process and further to the operationalization of irrigation management. In the current scheme of irrigation management, they raise their voice as a representative of their community. At the same time, they also significantly contributed to the dissemination of information because, in Kraseaw irrigation scheme, loud speaker is the easiest and the most effective way that water users can get information.



5.2.3) Private Companies

The study found that the participation of private companies in irrigation management has been classified at the ‘informing’ level. The private companies such as Mitr Phol Sugar Mill, Thai Agro Energy Public Company Limited would present their purchasing timeline for their companies and the price of agriculture products. In this context, both companies purchase sugar cane from the farmers. The companies are open for milling over a limited period where they will take cane from farmers, this being in the dry season what the sucrose levels are at their highest. Generally, the companies start purchasing sugar cane in November and stop in April. As a result, the purchasing period has an influence on water allocation timeline. Both of the private companies have similar definition of participation of attending the meetings and sharing information in the meetings. They perceive they do not have any power in the water allocation as mentioned below.

‘Since the participation focused on farmers participation, we do not have that much influence on the water allocation.’

They also mentioned that the adoption of the project caused some difficulties for them since they have to formally inform the irrigation officers for all activities related to the water consumption from primary canal. However, the information about water situation helps them in long-term planning of water use.

Waterworks Authority is one of the stakeholders that consumes water from reservoir. They defined their participation as attending the meetings. They perceive that participation in irrigation management does not affect their consumption of water and possibility to get water because they have signed a contract with the irrigation department to provide water resources as they mentioned that ‘attending the meetings helped us to understand the situation of water but we do not have any concerns in water allocation because we signed the contract with irrigation department to provide water to us.’



5.2.4) Water Users' Organization

1) Leaders of IWUG

The study revealed that the participation of the leaders of WUGs is in the ladder named 'Placation.' With two important factors which are knowledge and their position in the irrigation management, the leaders of WUGs, especially, those who are in the board of JMC, has higher participation. They have directly influenced decision-making on water allocation although they are influenced by hydrological knowledge from irrigation officers. With the position of leaders of WUG, their voices are counted in the decision-making and determine the outcome of the water allocation.

2) Water Users

The study found that the participation of water users in general is at the level of informing. Although it is not in the high ladders of participation, it is developed. Water users' participation in the irrigation management scheme before the adoption of participatory approach was in the ladders of manipulative or even non-participation. There is no channel for information exchange, so water users just waited for the water allocated by irrigation officers. Sometime, in the dry season, irrigation officer just stopped allocating water without any announcement of the plan and reasons. After the participatory approach has been adopted, the communication between irrigation officers and water users and even among the water users has been increased.

Farmers perceived that irrigation officers are helpful as officers provide technical information to them. It allows them to understand the situation of water resources and the reasons behind the planned water allocation schedule.

'Irrigation officers significantly contribute to the irrigation management. They inform us about the water conditions and the water allocation every day. We know how to react to the situation of water because of their technical knowledge so we can prepare to upcoming situations.'

Farmers considers their participation when they attend the maintenance program of trench canal. They perceive their participation as full 'participation'. They



mentioned the benefit of the participatory project as they get access to information, so they can prepare for their cultivation and adapt agricultural activities to the water allocation pattern. After there is agreement on when the water allocation starts, the leaders of IWUG will inform their members about that and will inform the members to maintain the trench canal. Information is generally disseminated through the loud speaker.

5.3) Power Flow and Absorbance of Participation

Participation in participatory approach has been claimed as an instrument to promote power equalization and reduce the differences of power between less powerful and more powerful stakeholders. Development organizations have been trying to promote participatory approaches in development projects hoping to provide equal power to relevant stakeholders. The equalization of power is set to provide efficiency and effectiveness in public affairs. However, the local context such as power flow in the project has not been recognized during the conceptual construction and implementation of the project. Power is composed of many different sources where different actors could muster and deploy it in the negotiation. Similarly, there is a tremendous effort in growing the tree of hydrological knowledge and engagement practices in irrigation management. Participatory approaches have been proposed in reformation of irrigation management where the power of central government is decentralized. The power in decision-making process of public affairs has been transformed into a more pluralistic and multilevel system.

However, it is observed that participation has failed in the distribution of power in local communities. This participatory project has identified different stakeholders and to bring them together hoping for consensus in water allocation patterns which is seen as fair for all beneficial participants. Without awareness of social structures, the project has assumed that giving one vote to each stakeholder is to provide them equal power to make decisions and to determine solutions. Ensured that the project has been proceeded in the correct manner, the activities have been



viewed only through the lens of technical matters. In the local context, there is no free-floating stakeholders, the project procedures allow the domination between stakeholders to occur. By having the vote does not represent equal power in negotiation. Each pilot site has its distinct culture and tradition which affect participation and domination of power. In the context of Kraseaw irrigation scheme, there is a power flow in irrigation management where different stakeholders exercise their power through different mechanism which results in the domination of the decision-making process in the project. In constructing the legitimacy for their domination in irrigation management, different sources of power have been instrumentally used in the irrigation management project. Knowledge, social status, and education have played very important roles as a source of the domination of power in the decision-making process.

5.3.1) Pre-existing Power Relation

Thailand is a hierarchy society. Government employees have been classified as being at a higher level in the society compared to farmers because of their level of formal education and job stability. Being an official makes them become more respectful than being farmers. The tradition that water users called the irrigation officers as “Jao-Nay.” This word signifies the belief of a different caste between irrigation officers and water users. In the focused group discussion, it is observed that irrigation officers have an influence on the way the farmers answer the question and narrate their stories. The questions during the interview are answered with a few guide words from the irrigation officer.

The leaders of IWUG are the community leaders either the headmen and representatives of the community in sub district administrative organization. Similar to government employees, community leaders have seen as respectful on their qualification and contribution to society. The political power that they have has an influence on the election of leader of WUG and IWUG. Being the leaders of IWUG also, in return, provide them political power. The farmers (water users) who are in the JMC identify their participation as when they participate in the decision making of irrigation management including planning when irrigation officials start allocating



water from the reservoir which is mostly made through the vote of the committee. Their participation also includes organizing the meetings of IWUG and voting as a member of JMC.

5.3.2) Knowledge

1) Technical knowledge

There is the parallel reproduction processes of power and knowledge where knowledge is selectively deliberated and operated. The interaction between knowledge and power has never been shaped in one certain form because knowledge comes from multiple sources and different sides and dynamic. In this case, it comes along with local context, for instance, local economic situations, traditional belief, local connection and local wisdom.

After the economic recession, government management in public affairs has been considered dysfunctional. The propose of new approach in public affairs seems to be the best solution in mitigating the economic impacts. Involvement of other relevant stakeholders has been proposed in public affairs. The knowledge package of governance focusing on participation and collaboration from all relevant stakeholders has been disseminated. PIM has been proposed in the context that civic participation is a smokescreen. Participation becomes a new term in Thailand at that time RID has been assigned to implement the participatory project in the area. All water users have been invited to join the workshop which provides information about participation. There is an attempt to promote a greater role of farmers and communities to oversee the public affairs which affect their lives.

Knowledge becomes an effective instrument for the formulation and accumulation of power. The technical knowledge of hydrological knowledge has been produced by RID who closely oversees the accumulation of hydrological knowledge. In return, being a specialized expert, they are reasonably legitimated to domination of irrigation management. It is also reasonable for their intervention by holding technical knowledge.



2) Local Knowledge

Local wisdom has been selectively presented in the project to grant the legitimacy to modern hydrological knowledge. The similar component of local wisdom to modern hydrological knowledge has been referred as applying the local wisdom for instance the water allocation pattern and family connectivity. The solution of pattern of water allocation has been attached to local wisdom such as the water must be allocated from upstream to downstream. Correspondingly, it is reasonable that downstream water users get water for their agriculture activities after upstream water users with the claims of modern hydrological knowledge from RID and local wisdom from community. Yet, the main problems before adopting participatory approach in irrigation management are ineffective water allocation system of RID and severe competition in water consumption between upstream and downstream water users.

Since it is very difficult to identify the local knowledge, hydrological knowledge seems to influence on the irrigation officers in selection of local knowledge to be implemented in the irrigation scheme. Therefore, it is important to identify and unpack local knowledge when working with knowledge systems at the local level. It is also significant to identify what is included as local knowledge and what is excluded. It is important to be aware that knowledge become selectively chosen and implemented. Local wisdom can be used as an instrument to bound state and community as well as to prevent the opposition from local people. Participatory approaches have been used in standardized management. Basically, this approach could be employed in a group of people attending a discussion of problems to determine the situation and response. This could be claimed as local knowledge and local ownership which implies the sustainable strategy to be perceived as local realities. However, this process serves to narrow down the knowledge and to make it acceptable for community.

It is argued that the lack of awareness of reality, the development project, instead of achieving the decentralization of power, they assist the expansion of power of bureaucratic state (). The development project eventually turns to be the anti-



3640904066

political machine. It is not only the RID that could reproduce their influence regarding their legitimacy of hydrological knowledge, the elite officials and powerful community leaders have also an influence on the irrigation management. There are various aspects of social status that leads to the domination and reproduction of power in PIM. In the context of Kraseaw irrigation, political status has significantly contributed to the domination of decision making process and reproduction of power.

It is observed that the only group of water users who actively participated in irrigation management are the leaders of the group. Farmers perceive their participation in irrigation management when they are participating in the maintenance program before the water is allocated. They receive information mostly through the loudspeaker of the community. They leave the decision making to the leader of their water user groups believing that the leaders are capable to identify their demand and needs.

Private companies as perceive their participation as when they attend the meeting and join the annual ceremony of water users. They mention that since they consume a small amount of water from the reservoir, they do not have much power to demand for water. Their roles in the meeting is to gain information about water and to spread information about their companies such as the schedule for their companies and the price of agriculture products.

5.4) Operationalization PIM and Conflict Reduction

The study found that after the adoption of participatory approach, conflict around the irrigation management has significantly decreased. As the information and knowledge about irrigation management has been disseminated through the water users' network, the levels of participation have been shifted from the lowest ladder called 'manipulative' into the higher ladders called 'informing.'

There are more channels to disseminate information about irrigation management and the reservoir. The training program helps enrich the understandings



on hydrological knowledge and general process of allocation. The general meeting of the JMC and IWUG are where key stakeholders can exchange information and gain insightful information from irrigation officers, department of agriculture, private companies and subdistrict administrative organizations. The dissemination of information by community loud speaker is also a very effective way where not only water users but also all community members can get access to information. In addition, in the Kraseaw irrigation scheme, social media such as Line application, and Facebook play a significant role in disseminating the most updated information. As a result, water users can get access to information and understand the current situation and current plan of irrigating water so there is less conflict between water users and irrigation officers and among the water users.

The information does not only enrich understandings of stakeholders on irrigating water, but it also provides predictability of water distribution pattern. With a predictable scheme and the frequent updates of water allocation plan, water users can adjust themselves to the current situation and can be well-prepare for farming activities and making decisions.

‘When we know that the amount of water stored in the reservoir is less and we could not grow rice, we can reduce the risk in wasting our money in investing in the farm. With this information, we can plan for it in advance. We usually change from growing rice to sugar cane or vegetable such as beans because it consumes less amount of water. Receiving information, we can prepare and management to have vegetable seeds and stuff in time.’

The existence of water users’ organizations and the greater information dissemination ensures the reliability of water allocation. They have more understandings on the water allocation pattern and the reason behind its design. It helps to reduce the conflict between the upstream and downstream water users because although downstream water users will get water late than upstream, they are confident that they have enough water for their farming activities. In this sense, the leaders of WUGs play an important role to guarantee that water users will get enough water to use in their farm.



Additionally, WUGs also function as a monitoring unit to support the current scheme of water distribution. It helps to prevent water users stealing water. Moreover, it helps to reduce the cost of maintenance program from irrigation office because the responsibilities have been shifted to water users. In the case of Kraseaw irrigation scheme, it is very effective means to maintain the trench canal because all interviewed water users pay a lot of attention to the maintenance program. Water users are very enthusiastic to participate in these activities because it directly affects the water flowing into their farms. The motivation to participate in maintaining the trench canal is partly from the penalty of the groups where they have to pay larger fines if they do not participate in maintaining distributed canal. Information has played an important role in that the leaders of each canal will make an appointment for maintaining activities through community loud speaker. When water users of each distributed canal come to participate the activities, they could have some informal conversation and the information will be disseminated as well.



3640904066

Chapter 6

Discourse of Participation

6.1) Claims for Participation

The failure of government in public management has resulted in the emergence of participation. The top-down approach has been criticized for the failure of public management. Participation of community members in irrigation management has been anticipated to enhance efficiency and effectiveness of irrigation management as well as democracy and community empowerment. It is assumed that participation of community members could contribute to the sustainability in terms of the water delivery services and infrastructure facilities. Participation has been regarded as beneficial for the participants given that its principles and processes have been followed through.

Participation has been widely adopted in Thailand since 1990s as a result of the enforcement of first legal basis on civic participation in 1997 constitution. The participatory approach has been identified to enable the civic participation in development project because previously the public policy has been formulated through top-down planning processes with the results on its failures. It has attempted to include all relevant stakeholders in the issues that affect their lives. Community members who has been considered as being separated and isolated from production of knowledge have been empowered through their participation. Participation of community has been seen as the grassroot mobilization and the bottom up processes in tackling the public problems.

However, civic participation, at that time, have not been clearly identified. People might know the enforcement of 1997 constitution with its mentioning of civic participation, yet, the understanding have been varied upon their experiences and their assumption. Lots of questions have been raised around the subject of participation in terms of its initiative, directions, function, procedures and application. Accordingly, the understanding of people to participation is that it is a new transformative approach



where power will be decentralized and shifted from government to citizen. It has been viewed as a good opportunity for citizen.

PIM has been identified as a development goal in irrigation management. The economic crisis in 1997 has been a major influence on the adoption of PIM since agriculture has hugely contributed to the income and employment in the country. Aiming to increase the agriculture productivity, the efficiency in irrigation management has been increasingly highlighted and concluded as a component of agriculture development program. In the case of Kraseaw irrigation operation unit, the reference to 1997 constitute and national development plan have significantly influenced on the collaboration of community leaders to facilitate the program and the collaboration of water users to register as a member in WUG.

Arguably, rather than participation being demanded by the community, it was the project itself that had to demand community to participate. It has been contradicted to its originate ideas where the motivation to participate have originally from community members. Ironically, the participation of stakeholders has been designed and controlled by the government.

6.2) Discourse of Participation in Implementation Process

Participation in irrigation management has been translated and implemented upon the collections of technical processes where the technical tools and means have been designed by the government. All milestones activities have been designed and requested to be strictly followed. The specific roles and responsibilities have been provided. The detailed procedures have been mentioned. More ironically, all stakeholders must follow all procedures with the claims on success of the project.

Regarding the strict procedures, the irrigation officers have become a major agency in implementation of PIM. The concrete outcome has been planned and requested to be completed. For instance, the establishment of all primary WUG must be done within the first year of project implementation while in the second year, the



IWUG must be successfully established, and the JMC must be existing by the end of the project's third year.

To establish these formal organizations, it is planned that some milestones activities must be completed. In the establishment of primary groups, the expected milestone activities include the recruitment of local coordinators, the training program for local coordinators, survey research on water user's member in assigned area, meeting of irrigation officers and community leaders, training program for community leaders and meeting with water users. Irrigation officers have overseen in the knowledge dissemination on the formal steps to form the group and the formal means to management the group. They facilitate the establishment of the group and the draft of each group regulation (as requested in the technical procedures). The domination for irrigation officers has inevitably occur through the establishment of formal groups with their action of being the expertise in legal basis and specialized administrators.

The community empowerment and power equalization have been considered the main components in PIM. However, to empower community members to be eligible to manage the irrigation system, community members (water users) must be educated. With these technical techniques, procedures and the assumption in community members lacking understandings on participation, lacking knowledge about legal basis to establish the groups, and lacking skills to manage the groups, they act as an expertise to enrich the understanding of community leaders. It is reviewed that the training programs and meetings have been planned even before the adoption of participatory development. It resulted that training for the community organization has been organized by irrigation officers mostly through the presentation. Irrigation officers as the translators of participation have greatly significant to the understandings of stakeholders on participation.

In addition, the importance of institution has been placed on the visibility of formal water user organizations where only formal connectivity has been identified. The remaining informal communal connection, activities, and livelihood have been overlooked. Responsively, the ability of project to provide equal power between powerful and powerless has been failed. It is not only the power relation within the



3640904066

community, it is also the relocation of power from government officers to community organization.

In case of its processes, the project has adopted approach of participation where the involvement of stakeholders has been focused. Discussing on the role and relevance of each stakeholder in the project, the irrigation officers, community members, community leader, private sector have been assigned on their strict roles of their involvement in participatory project. The irrigation officers have already designed the strict and specific role and responsibilities for each stakeholder and even for themselves. The community has been considered as a unit of engagement which individuals have been selected to be a representative upon specific social categories to participate through meetings. The irrigation officers have presented themselves as external facilitators and information disseminators. The aversion of cooperation has occurred where the process to provide inclusion has been implemented. It was found that this inclusion project results in some form of control the targeted people which ends up with reproduction of power of the implementers to dominate the targeted groups. Rather than encourages the community empowerment, the project depowers the powerless.

Participation has failed the distribution of power in local communities. This participatory project has identified different stakeholders and bring them together hoping for the consensus in water allocation pattern which seems fair for all beneficial participants. Without the awareness of social structure, the project has assumed that giving one vote to each stakeholder is to provide them equal power to make the decision and to determine the solutions. Ensured that the project has been proceeded in the correct procedures, the activities have been viewed only through the lens of technical matter. Since in the local context, there is no free-floating stakeholders, the project procedures allow the domination between stakeholders to occur. The vote could not represent the equal power in negotiation. It has resulted in the strengthen of domination that has happened in general before the implementation of the program.

At the end, the collaboration and participation have been existing regarding the technical matters. Motivation to participation has emerged from only technical matters



with technical roles and responsibilities. Community members attend the meeting because it is their responsibility as a technical matter of the project. They turn into the information receivers waiting for the announcement on water allocating pattern through the radio or loud speakers and waiting for the appointment to gathering within their groups to clean their trench canal. Private companies attend the annual meeting as a committee to disseminate their information and vote for the water allocation pattern. The waterworks authority joins the meeting to receive information about water situation but since they sign the contact with irrigation department, they will get enough as usual. Department of Agriculture comes to share information on their plan and farming disease. All of these actions of participation have fulfilled the technical procedures of PIM.

6.3) Knowledge Production in Participatory Approach

6.3.1) Technical Knowledge and Technical Procedures

In modern era, there is a world of expertise. Scientific knowledge has become increasingly significant. Technical knowledge has been considered a solution in any problems. It has played very crucial roles in irrigation development. In the context of the Kraseaw irrigation project, irrigation officers have been regarded as the expertise who are knowledgeable and specialized on hydrological knowledge and administrative knowledge.

The knowledge production in participation has majorly been performed by irrigation officers with their technical hydrological knowledge, management skills and legal information. Irrigation officers as the translators in the context of Kraseaw irrigation have reproduced their power through their legal basis and technical knowledge. The representation of the knowledge has been conducted by irrigation officers through training program to local coordinators, meetings with community leaders, training program to community leaders, meetings with water users, training program to water users. the community. Moreover, several booklets, and journals have been disseminated to water users hoping to enhance the understandings on participatory



approach in irrigation management, guidelines of establishment of WUG and how it would benefit water users. The irrigation officers stated that the booklets and brochures have been designed in cartoon version which helps the water users to easily understand the contents on establishment of water user group.

Facilitators in the participatory approach were community leaders and local coordinators with a basic level of understanding on participatory approach. The training facilitators have focused on transfer the basic set of techniques and a collection of information. It is contested that the short trainings are sufficient to enrich understandings on participatory management and application.

It is observed through the case study of Kraseaw irrigation operation that study tour has played a very significant role in decrease the complaints in the water allocation pattern. Representatives from each IWUG have to attend the study tour program organized by the irrigation officers. The simplified comparison between the outcomes of irrigation management have been conveyed to other water users by representatives where it always come out that their scheme is better than other. For example, they went to the irrigation operation unit in Chiang Mai where has been well-known on the increase in rice farming productivity. The representatives found that the productivity in Kraseaw irrigation area is higher than the particular irrigation operation. They came back and illustrated to their members in the groups. Yet, the information that they provided did not conclude the geographical profile of that particular area where it is mountain area.

6.3.2) Local Knowledge

The study discovers that not only the technical knowledge that have strengthened the rationality of the current water allocation pattern, local knowledge has been mentioned in the water allocation pattern and irrigation management. In participatory development, local knowledge symbolizes the consultation, demand and influences of community members to irrigation operation. It dramatically represents the participation of community in the planning and decision making where the focus has been provided to community. This local knowledge, however, has been selectively



presented in the case study. The set of local knowledge that has been selected to be present in the project is the one that compatible to hydrological information which has been shaped even before the adoption participatory approach. Consequently, instead of the irrigation management being shaped by local knowledge and irrigation officers learning local knowledge, community members have to learn to understand the participatory planning.

In the context of Kraseaw irrigation operation, local knowledge has been addressed by the consultation of irrigation officers to community leaders. The irrigation officers have conducted the study on local knowledge through the community leaders' point of view. It has been claimed during the process of water allocation pattern and its sustainability. It is claimed that upstream to downstream water flows will assist the sustainability in water practices based on the rice farming pattern. Accordingly, it is rational to allocate water to upstream farmers before downstream. It is rational that downstream farmers receive water after. However, it is arguable that if this pattern of water allocation is functional, there should not be any conflict on competitiveness to access to water between upstream and downstream water users. Similarly, it is mentioned that the informal connection such as kinship have been deployed as an instrument to mediate the conflict. In this case, this study indicates that the local knowledge functions to further the power of irrigation officers and powerful leaders in irrigation project. Therefore, the local knowledge should be well-studied, well-reconsidered and well-unpacked to be more effective in an adoption of participatory in irrigation management.

6.4) Results in Discourse of PIM

The study depicts that participatory approach in Kraseaw irrigation operation does not function as anticipated. Rather empower marginalized community members, it allows the powerful agencies to reproduce the legitimacy on their new form of power. In relation to the case study, participatory approach functions an effective engagement tool. It arranges diverse stakeholders around a set of activities of irrigation management



both operation and maintenance. It also resulted in the decrease in the conflict around water allocation by using the rationality of knowledge.

The RID has introduced the success of Kraseaw irrigation operation as role model of sustainable development project. After the well-announced in success of the Kraseaw irrigation project in adoption of participatory approach in irrigation management, anticipatory approach has become the standardized operation of irrigation management in Thailand. Nowadays, all irrigation operation departments has adopted participatory approach in irrigation management. Some activities have been mentioned and identified as a mean to achieve sustainability in water allocation and irrigation management.



Chapter 7

Conclusion and Recommendations

In this final chapter, the conclusion of the study has been presented in relation to the objectives of the study. This chapter provides brief answers for the research questions and objectives. The objectives of the study include the exploration of conceptual construction, and compositions of PIM, the explanation of implementation process of PIM project during 2001 – 2003 along with the involvement of stakeholders, influential factors on participation of each stakeholders in the project, and the elaboration and analysis of participation in operationalization of PIM after 2003. The roles and responsibilities of each distinct stakeholders, power relation and the results of the participatory approach are identified. Then the recommendations on PIM scheme have been provided. In addition, the recommendations for further study have been identified for those who are interested in irrigation management in Thailand.

7.1) Conclusion

7.1.1) Conceptual Construction of PIM

The disappointed to dysfunctional performance of irrigation management has resulted in the demand of citizen to relocate the authority and responsibility to manage irrigation system. The demand leads to the irrigation management transform. The changes of institution and policy have been requested in order to provide effectiveness and efficiency to water service delivery. Participation of community in managing irrigation has been adopted to the irrigation management because of the effects of irrigation to their livelihood. The participation includes planning, designing, construction, making decision, operation and maintenance.

Looking through the historical context of Thailand during the agreement to adopt PIM, there are two important influential circumstances which are the enforcement of civic participation in public affairs in 1997 constitution and the increasing economic difficulties in 1997.



The emphasis on civic sector participation in the 1997 constitution has very much influence on the means and implementation of development project. This constitution has been well-announced as the first legal basis on civic participation in public affairs. Participation of community and local people in public issues has been increasingly concerned. Although this civic participation has not been clearly defined, it provides some signal to roles and responsibilities of citizen in public concerns. Civic participation has come along with its means as an instrument to create transparency and accountability of government hoping to improve performance of government in management of public interests. When the participatory approach has been introduced in the irrigation system management project, it has provided legitimacy to the project with its promises on improvement of government administrative management and especially, on authority of local people to examine the accountability and transparency of government department.

After Thailand experienced the economic recession, agriculture sector had played a significant role as a source of income, employment and economic growth. Moreover, agriculture had also played an immensely significant role to industrial sector since manufacturing activities were mostly agriculture-based exports. Realizing the importance of agriculture sector to cushion the impact of economic recession, the Agriculture Development Project has been proposed in Thailand in 2001. The recession has granted legitimacy to government to deploy agriculture development program.

The financial crisis provides the legitimacy to agriculture development program to be implemented with its willing to boost up the national economy in Thailand since agriculture sector has vastly contributed to income and employment. The 1997 constitution and its enforcement of civic participation in public issues has strengthened the legitimacy to deploy participatory approach in irrigation management.

7.1.2) Composition of PIM

Hoping to improve the efficiency and effectiveness of irrigation management, governance approach has been undertaken in irrigation management where participation and collaboration between stakeholders in irrigation management has



been identified. The immediate outcomes of the project include (1) enhancement understandings on participation, (2) making an agreement of participation (3) establishment of water users' primary groups in three levels, (4) strengthening the capacity of primary groups of water users, (5) development of primary groups of water users in to IWUG, (6) establishment of JMC of irrigation management, (7) establishment irrigation fund, (8) Hiring for irrigation infrastructure maintenance, (9) enhancement of participation operation and maintenance , (10) assessment of water users' organizations capacity, and (11) report fundamental information of the project. There were also a set of technical processes and procedures that must be done to achieve the objectives in efficiency and effectiveness of irrigation management to serve an increase in agriculture productivities. The immediate outcomes and technical processes have resulted in the implementation and the operation of irrigation management where the attention has been paid on the technical processes. The Kraseaw irrigation project has been announced on its success in the implementation of technical processes of participation.

7.1.3) Implementation of PIM Project

Participation in irrigation management has been translated and implemented upon the collections of technical processes. The specific roles and responsibilities of each stakeholders in the establishment of water users' organizations have been identified. To achieve the objectives of the project, all stakeholders were requested to follow technical procedures.

The importance of institution has been placed on the visibility of formal water users' organizations where only formal connectivity has been identified. The remaining informal communal connection, activities, livelihood have been overlooked. Responsively, the ability of project to provide equal power between powerful and powerless has been failed. It is not only the power relation within the community, but also the relocation of power from government officers to community organization. The domination for irrigation officers has inevitably occurred in the establishment of formal groups with their action of being the expertise in legal basis and specialized administrators.



7.1.4) Operationalization of PIM

Employing Pateman's participatory theory (2000) and using the ladders of participation by Arnstien (1969) as outline to classify each of the stakeholder groups participation in the process, the study found that each stakeholder has different ladders of participation in irrigation management. The significant influence on the different ladders of participation is power relation before the implementation of the project. It is found that the more powerful stakeholders have more occupational prestige and knowledge and they can reproduce their power in the implementation of the project. Accordingly, the decision-making was highly dependent on the irrigation officers with the negotiation with of leaders of WUGs and consultants from Executive chief of administrative organization. The remaining stakeholders such as private companies, DoA and general water users are the information receivers.

In addition, the study found that although the participatory approach failed to redistribute equal power in the irrigation management, it results in shifting participation of water users from manipulative into informing. The participatory project also results in the reduction of conflicts in irrigation management. The degree of the conflict has dramatically dropped because there are more channels to disseminate information, so people have more understandings on irrigation management, more predictable water allocation scheme. The information helps water users on their decision to manage their farm. With the access to information, water users can prepare and adapt themselves to the water allocation. For example, if the stored water is less, water users can consider for alternative way such as growing sugar cane or vegetable farm instead of rice farm because it demands less amount of water. Accordingly, it reduces the competitiveness among water users to get access of water in drought period. Moreover, the existence of WUGs helps to reduce the conflict in the way that the water allocation is systematical and reliable. People feel confident that they will get water although it might be late than upstream water users.



7.2) Recommendations to Development of Irrigation Management

Firstly, the identification of local context additional with their specific characters as such culture, tradition and conditions should become concerned in drafting development project since there are distinctive conditions in each community which lead to different outcomes. The specific and appropriate means and implementations should be selectively provided upon their conditions.

Secondly, to reduce the domination of powerful stakeholders, I would suggest transforming the irrigation management delivery service agency from government agency to incentive-oriented entities or organizations because it can enhance the performance of more effective water uses, a decrease in government subsidies, more efficiency in maintenance and operation, devolution of power and diversification of irrigated crop. The incentive-oriented organization own water delivery service results in the effective uses of water uses. The collection of water delivery service will enhance the sustainable water practice of farmers. The government subsidies in irrigation system will be decreased since this organization could earn enough money from the delivery service. The efficient in maintenance and operation program will be provided through incentive-oriented organization because there is an aspiration to improve their delivery service to earn most benefit from their business. The continuity of delivery service improvement will be carried out to further their benefit of water allocation. The irrigation management will achieve the devolution of power where power has been provided to farmers. As experienced through the case study, there is less and less diverse farming upon the time because the water allocation scheme has been planned according the major crop farming.

7.3) Recommendations for Further Research

Participatory approach in irrigation management has been now adopted in all irrigation operation projects across Thailand. However, few operational projects have been well-announced on its success. Even in the well-announced successful participatory operational project as the Kraseaw irrigation project has been misleading



on community and local participation. The study on local context and its influence on irrigation operational project is critical to understanding of the factors that lead to failure since each community has distinctive culture, tradition, understanding and character of people. Identifying these factors will assist in determining the innovative and effective means and directions that irrigation system management should perform. The success in irrigation management does not lead to only agriculture productivities but also correspondingly results in decreases of water scarcity and increases of food security in the climate change era.



REFERENCES



Alcock, F., Haberl, H., Karlsson, S. I., Lambin, E. F., McConnell, W. J., Myint, T., . . . Young, O. R. (2006). A Portfolio Approach to Analyzing Complex Human-Environment Interactions: Institutions and Land Change. *Ecology and Society*, 11(2).

Amos, B., Graham, J., & Plumptre, T. (2013). Principles for Good Governance in the 21st Century. *Institute On Governance*, 1-6.

Arnstein, S. R. (1969). A Ladder of Citizen Participation. *Journal of the American Institute of Planners*, 216-224.

Arunpark, K. (2005). Bang Pa Kong Diversion Dam : A Failure Resources Management. *Damrong Journal*, 1-16.

Bagia, A. (2016). Understanding Governance in the Twenty-first Century. In S. Singh (Ed.), *Governance Issues and Challenges* (pp. 9-23). New Delhi: SAGE Publications.

Brierley, G., Trowsdale, S., & Winz, I. (2009). The Use of System Dynamics Simulation in Water Resources Management. *Water Resources Management*, 1301-1323.

Campbell, J. W., & Im, T. (2016). Perceived Public Participation Efficacy. *Public Personnel Management*, 308-330.

Cornwall, A. (2008). Unpacking 'Participation': Models, Meanings and Practices. *Community Development Journal*, 269-283.

Garces-Restrepo, C., Vermillion, D., & Muñoz, G. (2007). *Irrigation Management Transfer*. Rome: FAO.



3640904066

- Governor's Office of Suphan Buri Province. (2017). *Annual Report of Suphan Buri Province*. Retrieved from Suphan Buri Province:
- Grindle, M. S. (2004). Good Enough Governance: Poverty Reduction and Reform in Developing Countries. *Governance*, 525-548.
- Groenfeldt, D. (2000). Introduction: A Global Consensus on Participatory Irrigation Management. In D. Groenfeldt & M. Svendsen (Eds.), *Case Studies in Participatory Irrigation Management*. Washington: World Bank.
- Imamura, M. (2007). Introduction. In L. Lebel, J. Dore, R. Daniel, & Y. S. Koma (Eds.), *Democratizing Water Governance in the Mekong Region*: Mekong Pres.
- Kraseaw Irrigation Operational Unit. (2017). *Kraseaw Royal Irrigation Department Annual Report*. Retrieved from Suphan Buri Province:
- Kumnerdpet, W. (2010). *Community Learning and Empowerment Through Participatory Irrigation Management: Case Studies from Thailand*. (Doctor of Philosophy), University of Manitoba, (R3T 2N2)
- Maia, G. (2010). Making Development Agents: Participation as Boundary Object in International Development. *The Journal of Development Studies*, 46(7), 1240-1263. doi:DOI: 10.1080/00220388.2010.487099
- National Statistical Office of Suphan Buri Province. (2014). *Annual Report of Suphan Buri Province*. Retrieved from Suphan Buri Province:
- Orlandini, B. (2003). Consuming 'Good Governance' in Thailand. *The European Journal of Development Research*, 16-43.



3640904066

- Pierre, J., & Peter, G. B. (2000). *Governance, Politics and the State*. New York: Macmillan Press.
- Poddar, R., Qureshi, M. E., & Syme, G. (2011). Comparing Irrigation Management Reforms in Australia and India - A Special Reference to Participatory Irrigation Management. *Irrigation and Drainage*, 60, 139-150.
doi:10.1002/ird.551
- Public Participatory Promotion Division. (2005). *Water Management and Water User Group Management*. Bangkok: Royal Irrigation Department.
- Sagardoy, J., A., & Vermillion, D., L.,. (1999). *Transfer of Irrigation Management Services Guidelines*. Rome: FAO.
- Singh, S. (2016). Introduction. In S. Singh (Ed.), *Governance Issues and Challenges* (pp. 1-6). New Delhi: SAGE Publications.
- Sub-Saharan Africa: From Crisis to Sustainable Growth*. (1989). Washington: The World Bank.
- Verba, S. (1967). Democratic Participation. *The ANNALS of the American Academy of Political and Social Science*, 53-78.
- Water Resources Development and Management Division. (2003). *The Establishment of Water User Organization*. Bangkok: Royal Irrigation Department.
- Williams, D., & Young, T. (1994). Governance, the World Bank and Liberal Theory. *Political Studies*, 84-100.
- World Bank. (1992). *Governance and Development: A World Bank Publication*.
- World Bank Annual Report*. (1994). Retrieved from Washington:



APPENDIX



Appendix 1: Methodology Matrix and Interview Strategy

Research Question	Data Needed	Information Sources	Methods of Data Collection
How has the participatory approach in irrigation management been initiated?			
What is the knowledge package behind participatory approach in irrigation management?	What was the situation when PIM had been proposed?	Relevant Document	Documentary
	Were there any problem or concerns emerging when PIM had been proposed?	Relevant Document	Documentary
	What are the objectives of PIM project?	Relevant Document	Documentary
	What is the approach that has been proposed on PIM project?	Relevant Document	Documentary
What does it compose of?	What is the component of PIM project?	Relevant Document	Documentary
	What are expected outcomes of PIM?	Relevant Document	Documentary
	What is the assessment of PIM project?	Relevant Document	Documentary



3640904066

Research Question	Data Needed	Information Sources	Methods of Data Collection
How has participatory approach project been implemented on ground?			
How do the community members get involved in water user organization?	How did people know about PIM project?	Relevant Document	Documentary
		Farmers, Private sector, Government	In-Depth Interview, Observation
	Who had introduced PIM to community and how?	Relevant Document	Documentary
		Farmers, Private Sector, Government	In-Depth Interview, Observation
What has been the main influences on stakeholders to participate in the project?	Why did they decide to be member of Water Users' Organization?	Farmers, Private Sector, Government	In-Depth Interview, Observation
	What did they expect from being a member of Water user organization?	Farmers, Private sector, Government	In-Depth Interview, Observation



3640904066

Research Question	Data Needed	Information Sources	Methods of Data Collection
How has participatory approach been operated in irrigation development?			
How have people participated in water management?	How did they participate in Water User Organization?	Relevant Document	Documentary
		Farmers, Private sector, Government officials	In-Depth Interview, Observation
	What were their responsibilities as a member of Water user organization?	Relevant Document	Documentary
		Farmers, Private sector, Government officials	In-Depth Interview, Observation
	What were activities that they are involved?	Relevant Document	Documentary
		Farmers, Private sector, Government	In-Depth Interview, Observation



3640904056

Research Question	Data Needed	Information Sources	Methods of Data Collection
How does the RID perceive PIM and understand participation?	How does RID think about PIM?	Relevant Document	Documentary
		RID staff	In-Depth Interview, Observation
	How does RID define and process the concept of participation?	Relevant Document	Documentary
		RID staff	In-Depth Interview, Observation
	What are activities of PIM project that enhance the participation of water management?	Relevant Document	Documentary
		RID staff	In-Depth Interview, Observation
	How had participation been evaluated by RID?	Relevant Document	Documentary
		RID staff	In-Depth Interview, Observation



3640904066

Research Question	Data Needed	Information Sources	Methods of Data Collection
How does the stakeholder perceive PIM and understand participation?	How does stakeholder consider PIM?	Farmers, Private sector, Government	In-Depth Interview, Observation
	What are activities of PIM project that enhance the participation of water management? How?	Relevant Document	Documentary
		Farmers, Private sector, Government	In-Depth Interview, Observation
	How can the water users increase their participation in water management?	Farmers, Private sector, Government	In-Depth Interview, Observation
	Do they think the PIM help them to improve their water use practices and their farming plan?	Farmers	In-Depth Interview, Observation
What is the power relationship between stakeholder?	What is the relationship among all stakeholder?	Relevant Document	Documentary
		Farmers, Private sector, Government	In-Depth Interview, Observation



Research Question	Data Needed	Information Sources	Methods of Data Collection
	Who has the most influence on decision-making on water management?	Relevant Document	Documentary
		Farmers, Private sector, Government	In-Depth Interview, Observation



3640904056

VITA

Miss Somruedee Karnphakdee completed her Bachelor Degree of Arts (English) from Silpakorn University in 2017. She had majored in English and minored in Economics. She studied in Master of Arts in International Development Studies (MAIDS program), the Faculty of Political Science, Chulalongkorn University.



