CHAPTER I
INTRODUCTION

1.1 Rational

Water resource is the essential factor for survival of human beings, plants, and animals. Therefore, our ancestors had chosen to live or settle near water resource in order to make use of it concerning consumption, occupation and transportation. For this reason, human beings have to find ways to water management including researching, asking, practicing to develop water sources in order to utilize water resource constantly.

Thailand is an agriculture country. Thai farmers' way of life is certainly involved in water management. The Royal Thai government once reconstructed the water management system by dividing 25 river basins throughout the country. According to the Ban Na Mai community which is located within Mae Klong river basin, the study showed that the local people mostly faced with water shortage and drought, especially in household consumption and agriculture (Agriculture Office of Amphoe Huaikrachao, 2007).

For Ban Na Mai community, Tambon Wang Pai, Amphoe Huaikrachao, Kanchanaburi province, it was found that the community faced water shortage because it is far from major water sources. In addition, the community has no sufficient water reservoir to store water for all-year use. This problem has clearly damaged agricultural produces. According to the statistics on agricultural damages in 2002, the agricultural produces were reported with damage of 650 rai; in 2004, the damage became 670 rai[1]; and in 2005, it was 480 rai (Agriculture Office of Amphoe Huaikrachao, 2007). Annually, the severe water shortage happens between January

[1] 1 rai is equal to 1,600 m^2.

and May since it is a dry season (Analytical and Planning Officer in Tambon Administration Organization, interviewed on March 2, 2009).

Physically, the community areas are a rolling plain with the soil structure of sandy loam causing deficient water storage. Apart from having rain-fed farming practice during the rainy season, the local people attempted to dig reservoirs or ponds for water storage without much success due to poor soil structure and high rate of evaporation during the dry season. As a result, there was a severe damage of agricultural produces. The local people were trying to solve the problems by asking for government assistances and having water source dredging (Community's member, interviewed on May 15, 2009). For example in 2002, the agriculture Office of Amphoe Huaikrachao provided financial supports to dig ponds in the idle farm areas; and in 2005, the Department of Fisheries provided financial supports to build three public ponds of 3 rai in donated land by local people.

With such solutions, the farmers still faced with water shortage affecting their ways of life. The researcher, therefore, is interested in understanding the water management of Ban Na Mai community, especially its water demand and supply and proper water allocation.

1.2 Objectives

1. To analyze and assess water situation of Ban Na Mai community, Mu 5, Tambon Wang Pai, Amphoe Huaikrachao, Kanchanaburi province.
2. To analyze and propose water management guidlines for Ban Na Mai community, Mu 5, Tambon Wang Pai, Amphoe Huaikrachao, Kanchanaburi province by the participation process.

1.3 Scope of research

1. Study Area

This study investigated the area of Ban Na Mai community, Mu 5, Tambon Wang Pai, Amphoe Huaikrachao, Kanchanaburi province which consisted of 2,040 rai of rice field and 12,096 rai of agricultural plantation. This community is situated far from water reservoir of Amphoe Huaikrachao approximately 10 kilometer and far from irrigation canals of Pai Si community in Tambon Don Salab, Amphoe Huaikrachao around 12 kilometer (Agriculture Office of Amphoe Huaikrachao, 2007; The Royal Thai Survey Department, 1997).

2. Content

The content covers the analysis of water quantity, the demand for water use, reasons of water shortage, and community water management concerning social and economic backgrounds of Ban Na Mai. These issues probably stimulate self-learning on how to solve shortage problems for Ban Na Mai community.

3. Timeframe

As Ban Na Mai community has been established since 1961, this research then focuses all issues between 1999 and 2010.

1.4 Research framework

As shown in Figure 1.1, the water shortage in the community of Ban Na Mai was caused by the relevant factors including technology and irrigation engineering, community water management, and community participation. By considering technology and irrigation engineering aspects, several factors have been taken into consideration. Those factors were project planning, building survey and design of the construction, area preparation for irrigation, quality of soil for

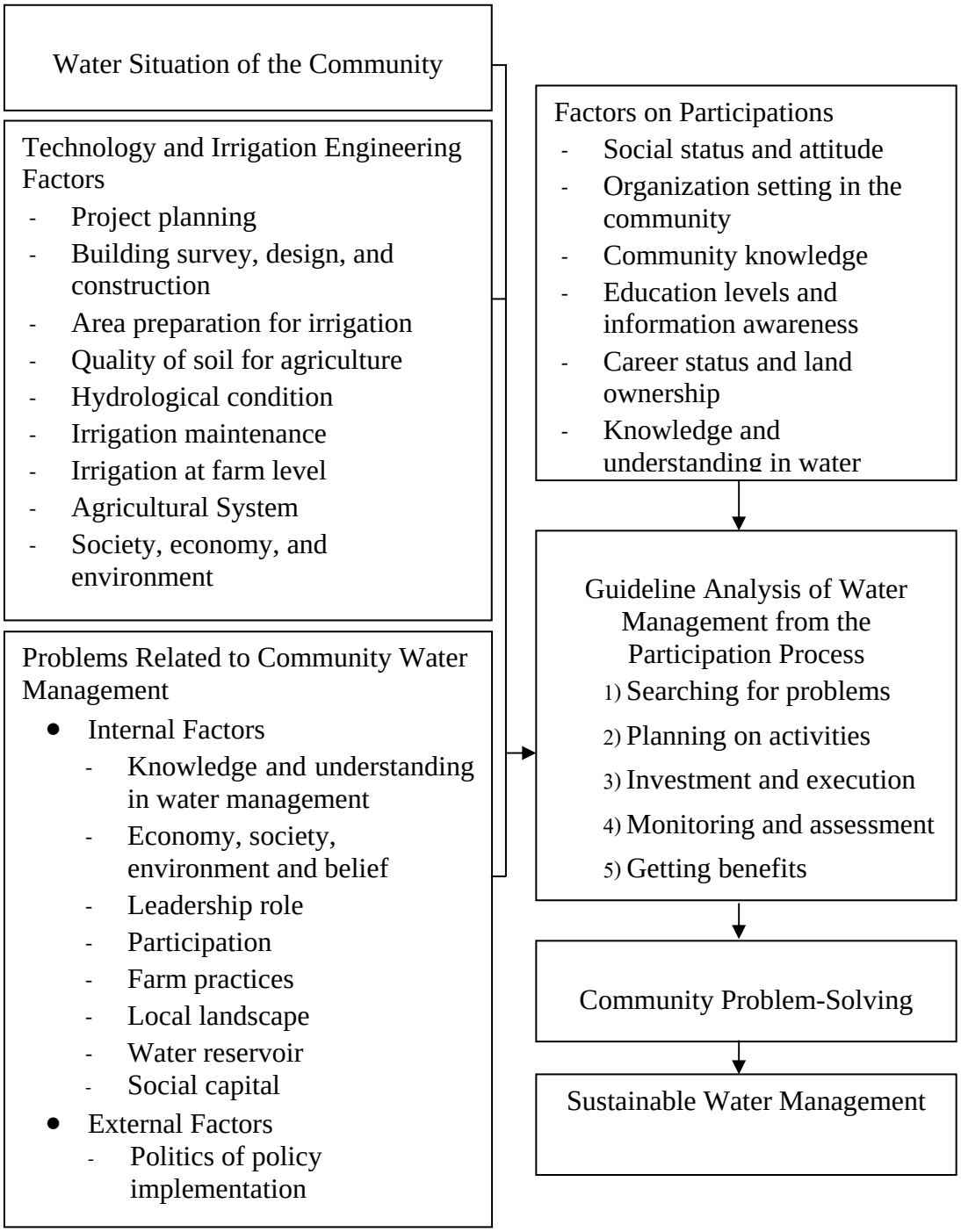
agriculture, hydrology condition, irrigation maintenance, irrigation at farm level, farm practices, as well as society, economy, and environment.

On the other hand, the water management factors were economic condition, society, environment, belief, attitude, knowledge on water management, information system on water and agriculture, land ownership and use, leadership, and the public development policy and implementation.

Furthermore, factors on participation that probably cause success or failure in solving community water problems were related to social status, attitude, organization setting in the community, community knowledge, education levels, information awareness, career status, land ownership, and knowledge and understanding in water preservation.

All in all, all relevant factors were influential in providing solution to solve community water problems and in analyzing the efficient water management strategies in the future.

Figure 1.1 Research framework of sustainable water management at Ban Na Mai



1.5 Expected Results

1. Being able to gain information on water situation of Ban Na Mai community.
2. Getting solution to solve community water problems through the participation process of local community.