# CHAPTER I

# INTRODUCTION

Through economic system reform and an "open door" policy being implemented deeply, agriculture, farmers and rural communities (*SanNong*) have become the central issue for national government leaders. Since the rural population is about nine-tenths of the whole and their livelihood is the basis for economic and social stabilization, rural areas have become the new focus for Chinese government policy reform. Changing from "Big government Small society" to "Lean government Big society", the Chinese government is currently implementing policies which lead to a decentralization process. This is being carried out by strengthening the local community's role in natural resource management. Water resource, considered as vitals to agriculture, has received an increased budget and projects. Therefore, irrigation and water resource development are critical issues which are relevant to local and national concerns and rural development efforts. How the local community and its institution are adapting to the decentralization policy, market and local social-economic situations are the main subjects of this case study.

## 1.1 Background and Rationale

### 1.1.1 State Policy Impact on Local Natural Resource Management

China is the largest developing agricultural country with an area of 9.6 million square kilometers and the population of 1.3 billion. Water, forest, land and so on natural resources can be seen as the base of its agricultural production and national development. So natural resource management is evidently an important component of Chinese government policy.

After establishing the People's Republic of China, land reform policies were successfully implemented in China. First, following the socialist principles, the new

Chinese government as the representative of the proletarian class confiscated all natural resources from landowners and the capitalist class, and move it under the control of the new Chinese government. After that, the utilization right of land and other resources were distributed to every household in the country, but the ownership was not.

The period of 1958-1968 is known as the period of the "Great Leap Forward" in China. During this period, the Mutual Aid and Cooperation movement was launched by grouping all the households as productive teams, which means production was practiced collectively by productive teams rather than individual households. Rural natural resources were managed communally. Communal ownership and management of local natural resource were continually practiced for about thirty years until 1978. During this phase, China has implemented a "Central-Planning-Economy". Local resource management was based on government plans working down step by step. For instance, in the period of the "Smelt Steel Movement", much rural forest was cut down to fuel furnaces as instructed by the government. This was the first massive deforestation in China.

In the last twenty years of the 20th century, changes in China have been rapid and dramatic, attracting attention from the world (Zuo and Xu, 2000). All these changes have had as their source privatization, "open door," and market economy, have been successfully brought into practice after1978. In this phase, rural areas were introduced to the "Household Responsibility System". Natural resources in local areas were redistributed to individual households. At the same time, economic reform was moved towards an economy regulated by market institutions under which resource allocation decisions were increasingly left to market mechanisms. This is also true for local resource management. The privatization and marketlization process has greatly improved productivity in rural areas, but has also caused negative impacts in local resource management. For example, in the end of the 1980s, rural households used their trees to build houses and sell to the market. This caused another massive

deforestation in China.

A parallel process to the market economy is an implementation of decentralization. Based on consideration about local diversity and market regulation, Chinese government policies have changed from central planning to market based policies. The central government's role has also changed from direct intervention to facilitator and mediator. Local governments have currently obtained some autonomous power and decision-making to develop the local economy depending on their own situation, just like in decentralization programs in other countries around the world (Kirsten & Muhammad, 1995; Ariel, 1997; Taryn, 1997; Zuo & Xu, 2000; etc.). Decision-making power has been transferred from the centre to the periphery/local, which is the main characteristic of a decentralization process (Goodman & Segal, 1994).

In rural China, this decentralization process has generated great impacts on natural resources management at the local level. For a start, the local government has had some autonomous power. At the same time, local government has become semi-independent within the local financial system, with low support from the central government. Decentralization also means more responsibilities for the local government to balance the local budget and expenses of all local government offices. Thus, some counties with low revenue may have to depend on logging and timber production or on exploiting other natural resources to pay for local office expenses and salaries. These practices use a lot of local resources and have become a main source of degradation of the local environment.

Decentralization and economic reform have had some negative impacts on local resource management. For example, according to some researchers and Chinese government officers, watershed forest destruction has caused increased environmental degradation in the upstream and caused flooding of the downstream areas of Yangzi River in 1998. Because of this, the Chinese government has taken action to gain back

a central decision-making power for environmental protection in this area. A "Logging Ban" policy was declared during 2000. After this policy, some villagers whose livelihood was based on the local forest may have experienced uncertainties in their living and earning. Moreover, local government agencies have found it very difficult to implement this policy because they didn't have a strong financial support (Shen, 2001; Xu, 2000; Zuo & Xu, 2000).

Community management as an alternative way for local resource management has attracted the interests of more and more people around the world (e.g. Ostrom, 1990; Bromley, 1992; Uraivan, 1995a; 1995b; Gerd, 1997; Peluso, 1998; Tan, 1999; Anan, 1995; 2000; etc.). The Chinese government has also realized that there is a necessity to strengthen local communities' capability for participating in natural resource management (Xu, 2000; Zuo & Xu, 2000). A "Community Democratic Construction Law" was passed in 1998 to support this reform. Following this law, local communities have been considered as a local autonomous unit organized by the local people themselves to carry out decentralized power for local resource management.

Recently the Chinese government has been scaling up a project under which all poverty alleviation programs will be based on a community development plan which should be made through local participation. This chance for the ideas of local people to be used in their own development may lead to local people being even more willing participants in development. Moreover, to reduce income pressure on farmers, the Chinese government carried out a reform entitled "Change Expenses to Tax". In this reform, the central government encoded some kinds of expenses as tax be collected by the local government which fixed them against artificial inflation. Other charges defined as expenses which were collected in the past were canceled. The objective of this policy was to prohibit abuse of the power to collect more expenses from the farmers by the local government. Local government's expenses have been reduced and their duties have been partly devolved to the community level. For example, in

the past, township governments collected construction fees from villagers, and decided how to use this fee to build infrastructure. Now this work can be done on community level. So recently, local communities have more and more opportunities to manage their own natural resources.

Due to these policies, seeking successful local institutions for supporting community management reform has became a concern of many scholars and legislators. In the southwest of China, there are many diverse ethnic groups. There are also many successful cases of local institution for resource management (e.g. Gao, 1998). So this is a good source for stimulating further reform in China. Definitely, local institutions and their continuing roles seem to be well accepted by the national government. However, there are certain gaps in knowledge about what and how local institutions really work. The in-depth analysis on Dong people's institutions and water resource management will increase some understanding on emerging models of local institutions under the decentralization process.

### 1.1.2 Water Resource Management in China

China has about 2,800 billion cubic meters of water. The per person yearly water consumption was about 2220 cubic meters when surveyed in 1997. Following the rate of population increase, the number of per person water occupation will decrease to 1760 cubic meters in 2030. According to international water shortage standard, supply of less than 1700 cubic meters per person is a shortage. By current estimates, China will be the water-lacking country in the future (China Academy of Sciences, 2000).

Through the last fifty years, as the country's economy and population has grown, water utilization has also grown quickly from 100 billion cubic meters in 1949 to 556.6 billion cubic meters in 1997 and water resources will be very limited in the future. At the same time as the water resource use rate for the whole country is very low, water wastage and water pollution are very high. The total water utilization of

China is the same as that of the USA, but the GNP of China is just one-eighth of that of the USA. Therefore, how to use water efficiently is the main focus of the Chinese government's water policy reform efforts (China Academy of Sciences, 2000).

After the founding of the People's Republic of China, the Chinese government built and rehabilitated many irrigation systems. Today, irrigation water for agricultural production makes up about 75.3 percent of total water utilization, and the irrigation area is 5333 million square meters. Irrigation water is the main part of Chinese water consumption. But the rate of irrigation water utilization is 0.4-0.45, lower than that of many western countries which can have rates of up to0.7-0.8. Although irrigated areas grew during these years, there was also about 600-2000 million square meters drought in China. So the demand for irrigation water is increasing continually (China Irrigation Association, 2001).

Moreover, industrial water use is also expanding quickly due to the industrialization process. Recently, there have been allocation and conflict issues between irrigation and industrial water use. A major challenge is how to solve these water shortage problems based on effective water management strategies and practices (Wang, 2000).

During the *Mao* period, from the 1950s-1980s, the Chinese government focused on building irrigation systems. In this period, China built about 300 big irrigation systems (with irrigation areas of more than 30 million Mu), 5000 middle irrigation systems (with irrigation areas of up to 1million Mu), and a lot of small irrigation systems around the country. In this "Centrally-Planned-Economy" period, all these irrigation systems belonged to, and were managed by the government. After the end of this building period, water resource management policy changed from construction to management improvements (China Irrigation Association, 2001).

In the process of implementation of "market economy" "open door" and

"decentralization" policies in China, the government's water management system have faced a lot of difficulties. At first, many irrigation systems had large maintenance cost every year. This became a big financial pressure for the government. Secondly, water management based on fulfilling government quotas conflicted with actual water demand since the farmers' water use was aimed at producing excess goods for sale. Thirdly, there was not enough government staff to effectively manage water after a streamlining of the agencies involved in water management. At present, a new direction is being followed. Since the mid 1990s, the Chinese government has started a water policy reform titled "Participatory Irrigation System Management" (China Irrigation Association, 2001).

This latest water sector reform has been supported by the Asia Development Bank (ADB) and World Bank (WB), and was first started at some big irrigation systems in Hubei, Hunan, Jiangsu, Anhui provinces. The core change involved in this reform was the transfer of ownership and management of irrigation sub-systems (*zhiqu*) from the government to the local community. However the main focus of this reform has been how local communities manage water resource (China Irrigation Association, 2001).

### 1.1.3 Water Resource Management in Guizhou Province

Guizhou province is a Karst mountain area; therefore, water resources are very limited. The topography is described well by a Chinese saying: "Nine-tenths mountains, the rest, half water and half land." Since there are mostly mountain areas and small plains suitable for small irrigation systems, Guizhou has many small-scale systems. The central government has a policy that if an irrigation system is under the II-type(reservoir: 100 thousand cubic meters cubage; irrigation canal: can irrigate 5 thousand Mu), the central government would not make an investment. So in Guizhou province, where the irrigation systems are small, they are almost all constructed and managed traditionally by local ethnic groups.

Compared with government management of water, local traditional water management institutions demonstrate more efficiency and equitability. This is also the case in many other countries of the world (e.g. Jeffrey, 2000; Nyoman 2000; Vermillion, 2000; etc.). Being a large agricultural producer, rural China is well known as an efficient and equitable manager of water, especially in some mountainous areas such as Guizhou. There are many small water resources, such as ponds, small basins, and community irrigation systems, managed by local people in their traditional ways. Through history, these local management institutions have displayed their efficiency and adaptation in water management. So, the results of study of local traditional water resource management institutions could stimulate further water policy reform in China.

### 1.1.4 *Kuan* Institution of Dong People

The southwest mountainous areas of China, including Yunnan, Guizhou, Guangxi, Tibet, Sichuan and Chongqing make up the upstream part of the Yangzi watershed which has an important ecological position as can be proved by the Yangzi floods in 1998. This case woke up public attention to the environmental issues of these areas. These areas are often characteristized by a diversity of ethnic cultures, mountainous environments and a wildness of nature including plants and wildlife. Guizhou is one of these areas. It is typical in its multi-ethnic nature province, being the home of 11.2 million people from 48 minority groups. Dong is the third indigenous minority group in Guizhou Province in terms of population. According to the $4^{th}$ national census in1990, the population of Dong was 1.61 million, accounting for 12.5% of the total population of the minorities in Guizhou.

The Dong has more than 2000 years history. Today, this ethnic group mainly inhabits the border areas of Guizhou, Hunan, and Guangxi provinces. About twenty counties of Guizhou, especially the counties of Congjinag, Rongjiang, Liping etc., are

the main areas for the Dong people to live, with about 55.7 percent of Dong people (Xiang, 1991). The Dong generally lives in small river valleys surrounded by mountains. In these areas, the local climatic conditions such as temperature, rain and soil is good for rice production. So the Dong have specialized in rice production. Fishery is also a stable livelihood which has a long history for the Dong. They raised fishes not only in fishponds belonging to the commune or to individual households, but also in household rice fields. Traditionally, fish can be seen as a symbol of social status for the Dong, possession of a large number of fish indicated a high social rank (Huang, 1991; Pang, 1997a).

From historical records, the primitive Dong society had developed through three stages including the first stage of tribal community, the second stage of clan community and the last stage of rural community. From the *Qin* dynasty to *Tan* dynasty, Dong areas have officially been part of the territory of the central Chinese government but in reality the Dong have never been under any tribute system. During this period, Dong society had been differentiated into two classes: *Dongguan,* who privately owned abundant rice fields, and *Dongding* who were landless. From the *Yuan* dynasty to the *Qing* dynasty, the central government gradually centralized control of the Dong by using the institution *Tusi*. Under this institution the central government selected a powerful figure of the local Dong (*Dongguan*) as a government officer to administer the Dong people. The Dong were united under a local organization called the "*Dong Kuan,*" which aimed to be a critical unit for the local people to be able to maintain their power, and to resist the diverse external controls applied by the central government and others. After this the "*Dong Kuan*" then continued to a key roles within the local community (Huang, 1991; Yang, 1991; Oakes, 1997).

At first, *Kuan* was an organization that to created alliance between different tribes. In that stage, the organization of *Kuan* functioned to allow different groups to marry cross-tribes and cross groups. Individual groups primarily practiced endogamy, which

means that they accept that people should marry only with their group members. After that, this organization facilitated holding the feasts and festivals during leisure periods. The Dong struggled and united together to fight against the control of outsiders by gradually developing this organization. Since this organization became more and more strong, it became a system not only for political safeguards, but also a management system for the internal affairs of Dong society. So *Kuan* can be seen as a local autonomous resource management system of the Dong. (Dun & Wu, 1993; Yang, 1988).

Some villages combined make a small *Kuan*, several small *Kuan* together make a middle *Kuan*, and then all the Dong villages in one watershed (e.g. *Duliujiang* watershed) create a big *Kuan*. So *Kuan* is an alliance organization of different villages. In this organization every village is equal in participating in the *Kuan* activities. The spirit of the *Kuan* lies in its common law and administrative system. This law was made by the Dong people themselves. Each village selected some leaders (*Zailao*) to execute the law. They meet in the village's public area, either the drum tower or the *KuanPing* (a public area for collective meeting) to execute the law. All villages have an executive committee. This committee manages all affairs by using *Kuan* law and in the past, collected young man to participate in the big *Kuan*'s struggle against outsiders. All of the Dong people belong to their *Kuan* and need to abide the law of the *Kuan*. So the law of *Kuan* has become a powerful institution influencing the local people's way of life (Huang, 1991; Xiang, 1991).

*Kuan* plays a durable institutional function in sustaining local autonomy and continuing to maintain local social unity among the Dong villagers. Although after the establishment of the People's Republic of China, *Kuan* organization had disappeared from the formal local administrative structure in Dong areas, actually, key rules derived from *Kuan* continued to adapt and guide local interactions among the Dongs. As an institution which has existed for more than 1500 years, *Kuan* has sustained the management of local natural resources, especially water, which is the most important

resource for the Dong (Pang, 1997b).

Zengchong village is a typical Dong habitation, which has a history of more than five hundred years. As indicated above, the Dong depend on rice production and fishery, and the main resource for production of both of these is water. Water is also used for drinking, washing and some other domestic uses. And specially, Dong people construct their granaries above the water beside their houses. This way of construction prevents mice damaging their rice. It also prevents their houses, which are wooden, from fire disaster. So water management in this village serves multi-functions in irrigation, fishery, drinking, washing, fire and rodent protection and so on.

Water resource management in this village is observed to be complex and adaptable, through all seasons, and among different uses by all villagers. In the past, a network of water users were members of Dong's clan groups who together bind themselves into a village water user's unit. A physical network of water use units was also a complex social unit jointed together as water users and as clans. In the past, different clans constructed rules for multifunctional water use based on their social position, and this complex and adaptable arrangement was practiced through the *Kuan*. Right now, the water resource is currently shared among different users who carry out several activities including paddy rice, fishpond, domestic household use and others. These arrangements are practiced under the "*Cun Gui Min Yue*", which is the community law based on their traditional *Kuan* law.

So in this village, the water management institution used in the past was the *Kuan,* and in the present day water management institution used is the "*Cun Gui Min Yue*" which is based on the *Kuan*. So actually in some form the *Kuan* remains to be the main local institution for Dong villagers. A study on local institutional arrangements for water resources should explain the role of *Kuan* in local water resource management, how it has been established, sustained and changed historically? and how it has been impacted by external factors? All of these questions answered in this

case study can be help create an understanding of how the local community and its institutions are involved in community resource management, which could stimulate the further rural reform of China.

## 1.2 Research Questions

Within the broader framework of the questions outlined above, this study specifically seeks to investigate following four questions:

1. How did local people manage water resource in the past, what were the principles of their water management used in the past? The answer of this question will primarily be concerned with the practice of *Kuan*----a local institution guiding multi-use of water for many tasks such as irrigation, fishery, domestic use and so on.
2. How has the institutional arrangement been practiced today, in terms of "*Cun Gui Min Yue*", to guide decisions on water allocation and distribution among Dong households?
3. How have local water institution been changed or sustained during the institutional process from *Kuan* to "*Cun Gui Min Yue*"?
4. What were the impacts of external factors such as state policy and market mechanisms on this institutional process? How did these factors really work?

## 1.3 Objectives

Based on the real situation in the study site, the specific objectives of this study are as follows:

1. To study local institutional arrangements for the management of water at different stages of this village's history.
2. To analyze the interrelationship of institutional practices in different stages.
3. To analyze the impact of external factors on local water resource management institution.

4. To understand the principles of local institutional change and institutional sustainability.

## 1.4 Organization of the Thesis

This thesis is organized into seven chapters. Chapter II presents the theoretical background and reviews relevant literature for this study concerning with, first, institutional sustainability for community-based natural resource management, and second, legitimation of power.

In Chapter III, the relevant concepts are applied to form a conceptual framework. It then presents the methodology adopted for this research and outlines, step by step, the research procedures used during fieldwork. These include research design, methods of data collection, fieldwork, data processing and analysis.

Chapter IV introduces the background of Zengchong village. Working from general to detail, the first part describes this village's physical background and customs. The second part introduces this village's history dividing it into four stages, the clan stage, class stage, collective stage and household stage. The changes in local community and livelihoods are presented in the last two parts.

The development of *Kuan* and multifunction of water utilization is introduced in Chapter V. The first part presents the local social structure and how it has changed through each of the four stages of development of Dong society and its impacts on local *Kuan* institution. The second part presents the multifunction of water in four stages. In turn it describes water for irrigation, water for fishery, water for domestic use and water for other uses. Each part presents how one kind of water function has been practiced differently during the four different stages, and under different water sources, such as rainwater, spring water and river water. By using detailed description, this chapter presents the dynamism of the local social system and water management

system, which supports an exploration of the basics of the structure of power and interests to prepare an analyses of legitimation in chapter VI.

Chapter VI historically analyzes water institutional practices in these four stages by using the conceptual framework of legitimacy. In each stage, four levels of institutional practices have been described and analyzed. Then, the interaction of these four institutional levels has been analyzed as the legitimation process of the local water institution. Finally, local institutional changes are concluded.

Chapter VII starts from each stage, then crystallizes the threads running through the four stage institutional practices together to make major findings on local water institutional sustainability. Following this a theoretical discussion about the research findings drawing together the theoretical and empirical material presented throughout the thesis. The policy implications of the research are suggested towards the end of this chapter as are some areas for further research.