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**AUTHORITY FLOWING DOWNWARDS?
LOCAL GOVERNMENT ENTREPRENEURSHIP IN
THE CHINESE WATER SECTOR**

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**Submitted to the faculty of the University Graduate School
in partial fulfillment of the requirements
for the degree
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in the School of Public and Environmental Affairs and
the Department of Political Science
Indiana University**

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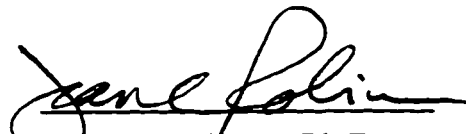
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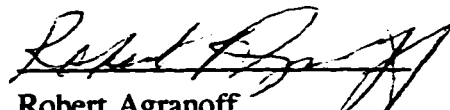
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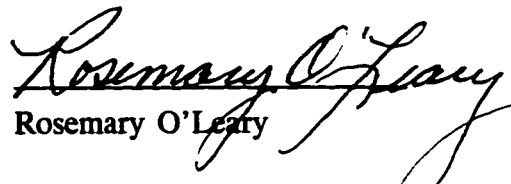
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Jennifer L. Turner

**AUTHORITY FLOWING DOWNWARD?
LOCAL GOVERNMENT ENTREPRENEURSHIP
IN THE CHINESE WATER SECTOR**

In this study I investigate the factors that shape and enable local governments to evade, modify, or innovate central government policies during implementation. I consider the ability of local governments to undertake any of these three actions as examples of policy entrepreneurship. This study explores how the increase in decentralization in China has affected local government discretion and entrepreneurship in water policy implementation. Many scholars researching China's reforms maintain that the decentralization policies have enhanced local government power and autonomy. But the qualities, limitations, and causes of this enhancement merits a more thorough exploration. In order to address this broad research question, I create an analytical framework to explore the intergovernmental dynamics in Chinese water policy implementation as more responsibilities and authority have been devolved to lower levels of government.

This framework has three components which help to capture the qualities of local discretion and the dynamics of bottom-up policy making in the Chinese water sector. The framework moves from an analysis of overall decentralization in the water sector to a detailed examination of central government goal-setting and monitoring ability. The third and final component of the framework provides an analysis of local water bureau resources and incentives to implement policies. I use the framework to examine the implementation of three water policies in one Chinese province--water fee collection, the water withdrawal permit system, and the policy of developing sideline economic operations. This three-tiered

investigation helps illuminate how devolution of authority in the water sector in China has changed the strategies, preferences, and power resources of local and central government actors. Most importantly, this framework enables me to systematically map out some of the causes and qualities of the water policy entrepreneurship in the counties under study. The study concludes with a discussion of how the increasing devolution of authority has influenced the management, use, and conservation of water resources in China.

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Acronyms

CCP--Chinese Communist Party
EPB--Environmental Protection Bureau
IGR--Intergovernmental Relations
MOF--Ministry of Finance
MWR--Ministry of Water Resources
NPC--National People's Congress
PRC--People's Republic of China
SEO--Sideline Economic Operations
TVE--Township Village Enterprises
UCB--Urban Construction Bureau
WCF--Water Construction Fee
WF--Water Fees
WRF--Water Resource Fee
WWPS--Water Withdrawal Permit System
ZGSLNJ--Zhongguo Shuili Nianjian (Chinese Water Conservancy Almanac)
ZJNJ--Zhejiang Nianjian (Zhejiang Provincial Almanac)
ZJRB--Zhejiang Ribao (Zhejiang Daily Newspaper)
ZJWB--Zhejiang Provincial Water Bureau

Units of Measure

1 Mu = 1/15 hectares = 1/6 acre
1 Yuan = approximately U.S. \$0.50-\$0.80
1 Yuan = 10 Mao 1 Yuan = 100 Fen

Chapter One

Local Government Entrepreneurship in the Chinese Water Sector

*Leaders see with the eyes of the whole nation,
hear with the ears of the whole nation,
think with the knowledge of the whole nation.
For this reason, their directives reach all the way to the
lower echelons,
while the feelings of the masses come to the notice of
the leaders.*

(From The Tao of Politics 1990:29)

The paternal, authoritative voice of the Communist Party in China often appears to echo the sentiment expressed in this ancient Taoist quote. Namely, that the country needs omnipotent and benevolent leaders to guide the whole nation properly. From the inception of the People's Republic of China, the communist leaders have worked to structure the political system to facilitate the dominance of the Party. When viewing China from the outside, researchers, the media, and many politicians paint the Chinese political landscape as one in which the central party and government leaders wield authoritative control over lower levels of government and the populace. This perspective does not, however, help us in explaining how or why lower levels of government often steer policies away from central government goals and prescribed procedures. Viewing China through an authoritative lens does not, for example, explain how and why some county water bureaus in China have been able to disregard the water fee collection law, which was issued over ten years ago and has been repeatedly pushed as a central water reform priority by upper level officials.

Moreover, how is it possible that some county water bureaus have pushed the limits of a revenue raising policy by opening discos, clothes factories, and hotels? Why are county water bureaus so powerless to protect their administrative turf from encroachment by other local bureaus even after the State Council in China has granted water bureaus supreme authority and responsibility over all water management policies and work. In this study, I present a framework to move beyond the authoritative facade and investigate the intergovernmental dynamics which empower county water bureaus to innovate, modify, or evade central policy pronouncements.

Introduction

Since its formation in 1949, the People's Republic of China (PRC) has vacillated between rather drastic centralizing and decentralizing governance strategies. During the Great Leap Forward (1957-1960), and then again during the Cultural Revolution (1966-1976), considerable amounts of administrative and financial decision making authority were transferred to China's provincial governments. After each of these campaigns, however, the central government recentralized some of the powers that it had granted to the provinces. In the era of Deng Xiao-ping (1978-1997), the Communist Party leadership in Beijing has undertaken an even broader decentralization strategy representing a notable break from the past. Most significantly, this program has been extended to the subprovincial levels and has relied increasingly on free market forces in marked contrast to the previous practice of central planning. From the central government perspective, the main goals behind

the current devolution of authority and responsibility, undertaken in numerous sectors (e.g., industry, agriculture, finance, natural resource management, and environmental protection), have been to improve the efficiency and quality of government service delivery and management, to stimulate the economy, and, even more importantly, to lessen the financial burden on the central government coffers.

The extensive devolution of authority in the post-Mao era has significantly altered intergovernmental power relations in China. In recent years, Chinese press reports, as well as works by China scholars, have been replete with descriptions of how the central government has been forced to combat the growing problem of "localism." It is often argued that decentralization has compelled Beijing to face increased difficulties in limiting provincial protectionism, collecting taxes and constraining policy experimentation by local governments or even farmers (Kelliher 1992). In the economic sphere, local governments are often leading reforms and it would, therefore, appear that the increase in local government discretion has indeed weakened central government power in China. I believe it is an oversimplification to assume that empowering lower levels through decentralization completely explains the effect of local government policy innovation and bottom-up policy making in China or any other country. An intergovernmental lens is helpful to capture the contours of the changing power distribution which may have been sparked by decentralization policies.

The puzzle I address in this study concerns the question of what shapes and enables local governments to evade, modify, or innovate central government policies

during implementation. I consider the ability of local governments to undertake any of these three actions as examples of policy entrepreneurship. *Evasion* means that the policy is ostensibly ignored by those in local government bureaus who should be implementing it. *Modification*, on the other hand, means lower level government bureaus introduce slight changes to the policy during implementation, but these changes do not lead the officials at the national level to reformulate the policy goals or content. *Innovation*, as I define it, refers to cases in which lower level government modifications of a policy diffuse back up to the national level and lead upper level officials to reformulate the policy to mirror the reality at the lower levels. In public policy and political science literature, this latter phenomena is variously referred to as bottom-up policy making, vertical diffusion (Hecht 1995) or policy entrepreneurship (Kirchheimer 1989; Schneider and Teske 1992).

In this study, I investigate how the increase in decentralization in China has affected local government discretion and entrepreneurship in water policy implementation. Many scholars researching Chinese local-center relations maintain that numerous post-Mao policies and reforms advocating decentralization have enhanced local government power and autonomy (Naughton 1990; Walder 1986). But the qualities, limitations, and causes of this enhancement of local government discretion merits more thorough exploration. In order to address this broad research question, I use an intergovernmental approach to examine how the increase in local government discretion has influenced the implementation of three major policies in the Chinese water sector. Of principal interest is how decentralization in the water sector

has changed the strategies, preferences, and power resources of local and central government actors and how these changes have influenced the management and use of water resources. The consequences of decentralization on natural resource management and use is a topic which has been given little attention in both the general literature on decentralization¹ and specific work on local-center relations in the PRC. To fill this gap, my study will also provide insights into how the intergovernmental dynamics surrounding decentralization affect water resource use and management.

Over the past decade, numerous China researchers have asserted that reforms in China have led to an overall increase in local government discretion (Oi 1992; Solinger 1993; Walder 1986; Wong 1987). Such broad statements provide evidence of an important general transformation in center-local relations, but the research literature on local government in China needs to go further in determining the dynamics or variations of this change, particularly the change in local discretion. It would be an overgeneralization to assume that the changes in structural arrangements between the central and local governments in China would have identical effects on local discretion as local governments implement all types of policies. In other words, the central government may have a differential attitude and ability across different policy issues to set parameters concerning the discretion they permit local governments (Chung 1995). Therefore, to go deeper into the question of local

¹The issue of how level of government control affects common pool resource management has been addressed in some of the local government and institutional analysis literature (Blomquist 1992; Lam 1994; Ostrom 1990; Ostrom, Schroeder, and Wynne 1993; Tang 1992; Uphoff 1986).

government discretion, one step of my analysis of local-center relations focuses on central government policy design. To incorporate a sufficient variety and to promote comparison, I selected three water policies which differ in their type, scope, and nature.

Another analytical approach, which would greatly enhance the above focus on diverse types of policy, would be to focus on how local government resources and perceptions of costs and benefits of implementing policies can enable and motivate local governments to evade, modify, or innovate on policies. As mentioned above, in this study actions of evasion, modification or innovation by local government agencies during implementation of a policy are considered forms of political entrepreneurship. Blecher (1991) notes that in many previous studies on economic decentralization in China, the characteristics of initiative, creativity, and innovation were assumed to be absent from bureaucracies and government offices. These characteristics were assumed to only exist in the private sector. His case studies presented evidence that during the reform era some local level governments in China successfully took initiative and responsibility for local economic development. Therefore, he believes that in examining the economic reforms in China we should theoretically include entrepreneurship in studies of government action in the economic sector. I argue further that this concept of entrepreneurship has utility outside the economic sector and can provide insights into the creative actions of numerous local government offices in a variety of policy areas.

Framework for Investigating Local Government Implementation

In order to better capture the dynamics of the broadening local government entrepreneurial activity in China, I utilize a framework which first focuses on the overall level of decentralization in the polity and then moves to examine the central government oriented policy perspective followed by the local government implementation perspective. The interplay of the various levels of government in policy implementation is complex and challenging to analyze. To capture this complexity, I employ a framework with three components so as to encompass all the dimensions needed to explain local government entrepreneurship (See Figures 1 and 2 for graphic summaries of the following section). Specifically, in this study I analyze the implementation of three water policies from both a top-down and bottom-up perspective in order to gain insight into entrepreneurial activities of county level water bureaus. Before delving into the top-down and bottom-up intergovernmental analyses of the water policies, however, I will examine the overall level of decentralization in the water sector.

To evaluate the level of decentralization in the water sector I first reconstruct a picture of the political, legal and financial environment in which the local water officials operate. To discern the influence of the relatively decentralized policy environment on county water officials in China, I focus on four measures, namely, *legal factors*, *functional responsibilities*, *resource capture* and *resource dependence*. These measures serve to delineate the major changes in intergovernmental relations within the water sector. A detailed understanding of the responsibilities, authority,

and resources which have been devolved downward, provides a general insight into the kinds of opportunities, risks, and limitations facing local water officials in implementing the three water policies under study.

I then move to the top-down *central government policy perspective* which will facilitate a more detailed understanding of the central government's role in promoting or limiting local government discretion in implementing policies. This second approach evaluates the extent of local discretion according to the characteristics of a policy. Chung (1995) initially proposed this model to classify policies according to scope, type, and nature. These three factors highlight the central government's intent and ability to monitor and set boundaries on the implementation process, as well as reveal the level of policy goal clarity. Chung maintains that policies which are encompassing in scope (mandated for all lower levels), non-allocative in type, and routinized in nature will allow low local policy discretion, while those policies which are selective (either optional or required for only some local areas), allocative, and new in approach will permit a high level of local discretion.

While such a typology may be useful in explicating central government behavior and motivation, as well as reveal the magnitude of discretion the central government has granted the lower levels, I feel a top-down analysis will not suffice in completely explaining how and why local governments are motivated to innovate, evade or modify policies. Therefore, the analysis must move to the level of implementation.

FIGURE 1. Policy Entrepreneurship Framework

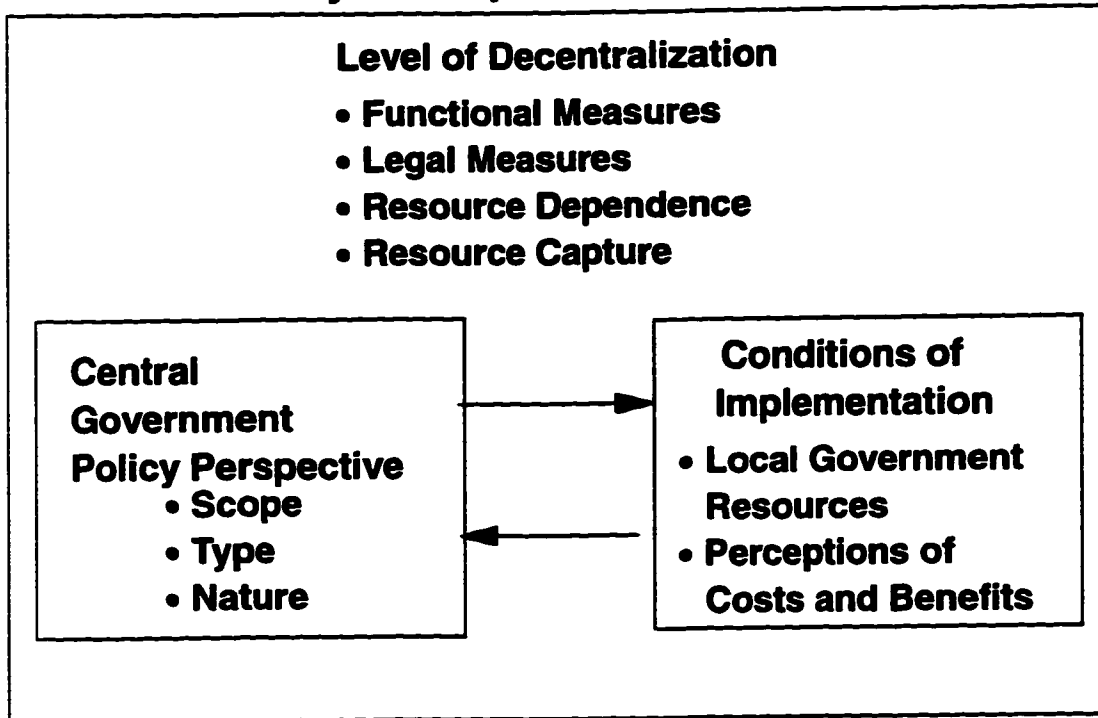
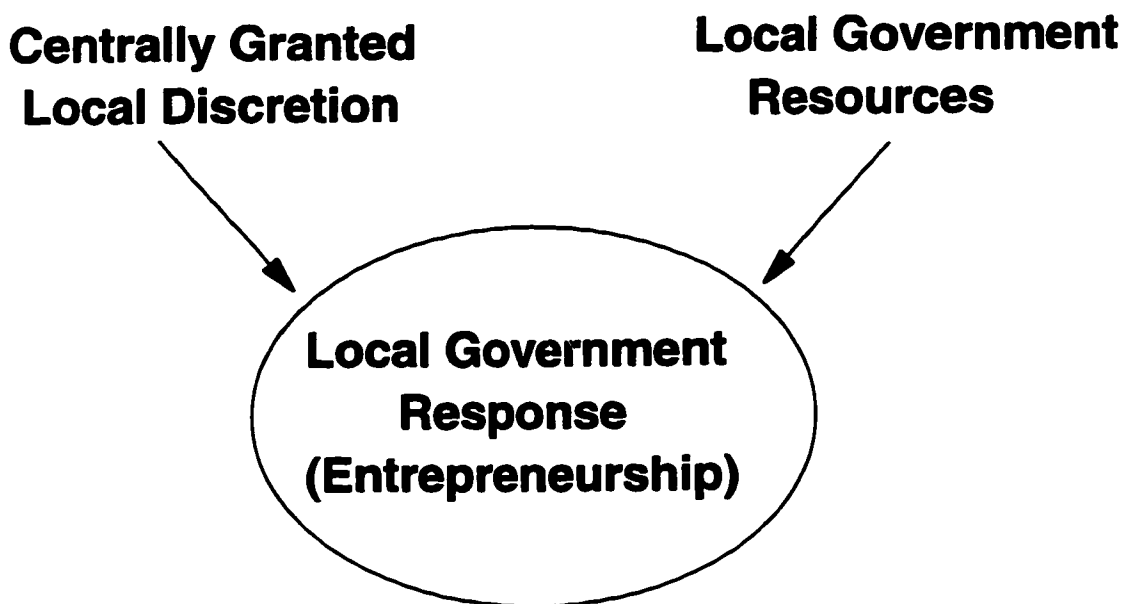


FIGURE 2. Intergovernmental Dynamics of Entrepreneurship



The final component of the framework is the *conditions of implementation*, in which I examine the level of local government resources and the perceptions of local government officials on the costs and benefits of implementing a policy. Judging costs and benefits also includes assessing how a new policy will interact with other policies previously or currently being implemented. Regarding the type and level of local government resources, I apply the concept of resources broadly to encompass political, human, and economic resources. In this study, uncovering this information enabled me to analyze county water officials perceptions of opportunities and risks in implementing certain water policies, which in turn provided valuable insights into the resources and motivations they may possess to evade, modify, or innovate on three water policies.²

In summary, the above framework contains three components which move from an analysis of overall decentralization in the water sector to a detailed examination of local and central government actions. The broadest element of the framework assesses the *level of decentralization* in the water sector by focusing on four measures--two measures include the types and degree of *functional* and *legal* authority which have been devolved to the subnational water bureaus and the two other measures concentrate on financial issues, namely, the ability and power of lower level water bureaus to *generate revenues* and *determine expenditures*. This first step

²This segment of the framework was shaped in great part by the emerging public entrepreneurship literature which focuses on the cost-benefit decisions local government officials make in acting on opportunities and in undertaking risks (Schneider, Teske, and Mintrom 1995). I will discuss this literature more thoroughly in the following chapter.

of analysis paints the intergovernmental power distribution in broad strokes, but does not provide sufficient evidence as to how and why local government entrepreneurship occurs. To refine the picture, I move to an investigation of the *central government policy perspective*, which highlights the type, nature, and scope of each water policy. This top-down analysis helps determine the central government's differing goals in formulating each policy, as well as revealing its ability to monitor and set boundaries on the implementation process. With the third part of the framework I narrow the analysis and examine how the resources of county water bureaus and the water officials' perceptions of costs and benefits have enabled and motivated them to evade, modify, or innovate during the implementation of these water policies.

This three-tiered investigation helps illuminate how devolution of authority in the water sector in China has changed the strategies, preferences, and power resources of local and central government actors. Most importantly, I have been able to systematically map out some of the causes and qualities of the water policy entrepreneurship in the counties under study.

Policy Case Selection

The three Chinese water policies I have chosen for examination in this study are the sideline economic operations policy, the water fee collection program, and the water withdrawal permit system. These policies vary not only in content, but also in the clarity and scope when they were initially announced by the central government. The first two are local revenue raising policies with notably different fund-generating

methods and fund-utilization goals, while the third is a regulatory policy. Significantly, participation in the sideline economic operations policy has been voluntary, while the other two have been mandated, albeit with differing intensity. These three water policies were chosen not only because they provide sufficient variation in policy design and permitted discretion, but also because how they are implemented directly affects water resource conservation and the overall efficacy of work done by the county water bureaus.

As will be shown in the literature review, in the area of decentralization research, few studies have compared the local government discretion in the implementation of different policy types within a generally decentralized policy sector. Moreover, as mentioned above, many decentralization studies on China have generally neglected issues of local government initiative and innovation outside the economic sphere. In the examination of three water policies in this study, I hypothesize that the increased discretion of the subnational governments has enabled local water officials and managers to shape water policy implementation in ways which do not necessarily match the goals or procedures mandated by the central government. The options local governments possess to modify the policy are determined by the level of local resources *and* the scope of centrally granted discretion. Before beginning this study I also hypothesized that it would be the amount of political resources and not simply economic resources which would empower county water bureaus to evade or modify a policy. In chapter four I will explicate how using this intergovernmental framework to gather information on local

and central governments enables us to determine the range of potential entrepreneurship options across policies and across local governments. Moreover, I will illustrate how some changes introduced by the county water bureaus diffused up to the central level and led the Ministry of Water Resources to redesign the policy to mirror the reality at the lower levels.

I will be utilizing this policy entrepreneurship framework to explore how five county level water bureaus in Zhejiang Province in the PRC implemented three water policies. Because of the intergovernmental nature of this framework, I will present archival and interview materials from county, municipal, provincial and central government water bureaus. Above, I have presented an introduction of the policy entrepreneurship framework to be used in this study for analyzing the discretion available to Chinese county level water bureaus. Analytical frameworks carry with them an aura of generalizability and I believe this framework can be employed to analyze local government entrepreneurship in other countries. The quest for generalizability, however, should not totally overshadow the fact that every country possesses unique political, social, and/or cultural qualities. One does not limit an analytical framework by acknowledging some unique features of a country. Instead one creates a more accurate, richer picture of the context and the phenomena under study. In examining Chinese water policy it is thus not only important to examine the functions water bureaus at different levels of government played in shaping the implementation process, but it is also crucial to reflect on the role of the Communist Party over lower levels governments generally and the water sector, specifically.

Therefore, in the next section I explore the changing role of the Communist Party in the era of reform. This will be followed by a discussion of the research methodology used for this study. I conclude this chapter with a brief section outlining the organization of the study.

The Communist Party in the Era of Reform

To fully capture the significance and potential of decentralization and local government entrepreneurship in China, one must delve into the most significant feature in the Chinese political landscape--the Chinese Communist Party (CCP). Of particular relevance for this study are insights into the relatively recent transformation in the party's role in policy making and lawmaking, as well as the alterations in the party management, particularly the party job appointment and promotion system which is known as the *nomenklatura* system. Below, I will briefly review how the Communist Party's role and power have changed in the post-Mao era. This discussion provides contextual information into the party's general ability and desire to monitor local cadres' implementation work. Accepting the importance of the Communist Party does not nullify the possibility of local government entrepreneurship. On the contrary, better understanding of the CCP's power will better enable me to map out the specific constraints and opportunities local water officials face as they attempt to evade, modify or innovate on water policy implementation.

Since the founding of the PRC, government bureaus have been supervised by a parallel party bureau or committee. Prior to the Cultural Revolution (1966-1976),

party committees throughout the political system commonly usurped the work of their government counterparts. During the Cultural Revolution, party control was strengthened, which in practice led to party and government bodies being fused into a single unit (Lieberthal 1995). Since 1978, the party and government organs have been officially separated again and central party authorities have directed party organs to pull back from overly intrusive supervision of local government bureaus. Nevertheless, the Communist Party retains a grip over the government bureaucracies through *nomenklatura* appointments, interlocking directorates, and party core groups. I discuss the firmness of this grip below.

Since Deng Xiao-ping came to power in 1978, numerous central government decisions have devolved more decision making and financial authority to the provincial and subprovincial levels. This wave of decentralization combined with the increased interdependence between central and provincial governments contributes to the impression that Communist Party power over local government policy work has decreased. It must be emphasized, however, that the reforms to decentralize greater authority in China only came about *because* the central party leaders sanctioned them. The central party's commitment to the decentralization reforms has been contingent upon preserving its political security. Periodically during the post-Mao era, the Communist Party has responded to perceived political threats of its authority with calls for greater recentralization and a curtailment of the reforms. Numerous studies on China indicate, however, that a significant recentralization of power is unlikely because the central government has become increasingly dependent on subnational

government support to implement economic reforms (Zhao 1994). Burns (1994) has argued that the increased interdependence between the central and provincial governments has also served to nullify the recent recentralization of the *nomenklatura* system.

In 1984, following the decentralization trend, the central party decided to switch from a three-level downward to a one-level downward principle for *nomenklatura* authority.³ This move subsequently released many local leaders from central control. The 1989 Tiananmen pro-democracy demonstrations, however, led to a partial reversal of this decision to decentralize the *nomenklatura*. China's leaders believed the 1984 decentralization of the *nomenklatura* had produced a decay in party control of leadership selection and caused a temporary and severe loss of the party's control over the propaganda network. Moreover, the ability for the Communist Party to enforce *nomenklatura* was considerably weakened by Zhao Zi-yang's 1988 decision to abolish party core groups in most government departments. In an attempt to reassert party control over local cadre management, the *nomenklatura* was reissued in

³In the 1950s, the *nomenklatura* system extended down three levels of government and enabled Beijing to exert control down to the county magistrate (Manion 1985). This highly centralized control of party job appointments provided the central party authorities with considerable surveillance and policy control powers over local officials. Under the 1984 decision, the central party's authority to make appointments only extended down to top ministry and provincial heads.

1990 to extend down two levels (Burns 1994).⁴ After the social unrest in 1989, party core groups, which exist at the ministerial level, have also been reinstated.

Formally, the central government has regained more power of appointment, but considerable *nomenklatura* authority continues to be shared between the central and provincial levels. In practice many provincial level appointments are more the products of negotiation and bargaining than unilateral decisions by the central party organization. According to Burns (1994), these usually protracted negotiations signify a relative weakness of the center. This weaker bargaining position in leadership selection stems from the dependence of the central authorities on provincial leaders' support in carrying out the reforms. In other words, the provinces are granted more authority for leadership selection in exchange for promoting the center's reform programs. Notably, the central party maintains formal authority to appoint and dismiss provincial leaders, which can be an effective threat to provincial level officials.⁵

In his thorough analysis of the reform era, Dittmer (1994) maintains that an overall decrease in party authority has occurred, but he points out that in three main

⁴The 1990 *nomenklatura* list extends central party control to deputy bureau chief level in all central and provincial level organizations, as well as heads and deputy heads of prefectures and prefectural level cities. Of possible relevance to this study, is the fact that these changes would include appointments of leading water officials in the Ministry of Water Resources and in the Zhejiang provincial water bureau.

⁵The *nomenklatura* system governs authority over regular leadership changes, but when the central party undergoes an extreme change in political orientation, corresponding changes in leadership at the lower level tend to follow rapidly. These changes are initiated top-down by the center in order to attain rapid reorientation of local leaders. One example which demonstrates the power central party officials can occasionally wield, occurred within Hubei province in 1982 where 90 percent of cadres at the provincial, prefectural, county and commune levels were dismissed, retired or transferred to another province.

areas the CCP has not relinquished all control. First, in the post-Mao era collective ownership has been abandoned and collective farmlands have been redivided into family plots. Nevertheless, the state retains ownership of all land, as well as other natural resources, and central authorities have adamantly refused to forswear the possibility of eventual resumption of private control.⁶ Second, the Communist Party has also recanted the class struggle in its "violent turbulent" form, but maintains that "the enemy class remnants and the struggle against them will continue indefinitely" (Dittmer 1994:201). This statement indicates a continued willingness to use force when CCP authority appears endangered. The government's violent military suppression of the pro-democracy demonstrations on Tiananmen Square illustrates that this willingness to use force against those who overstep the boundaries of acceptable behavior *is* genuine. Lastly, while mass movements are officially renounced as means of policy implementation, the post-Mao regime has periodically staged political campaigns to safeguard party authority, such as the criticism of spiritual pollution or

⁶The question of water rights in the PRC is still undefined. The state owns all of the water and authority to plan its distribution and utilization, but is severely limited in its ability to monitor water use. One county official (Interview 10) commented that placing all water resources under state ownership is commensurate to saying no one owns it. Water is therefore treated as an open access resource which has often led to severe water wastage.

bourgeois liberalization in the mid-1980s.⁷ In chapter five, I will speculate on the ideological significance of the renewed use of mass campaigns in the water sector.

Dittmer characterizes the post-Mao regime as one that undertakes a "stop-and-go" pattern. In other words, reform policies are carried out under routine circumstances, but during systemic crises (e.g., perceived threats to the party's authority and legitimacy) there exists the tendency to revert to "revolutionary" behavior (e.g., mass movements, factional struggle, and purges) (Dittmer 1994:204). Local government officials are aware of this tendency and therefore watch for changes in the political winds and always proceed discreetly with policy implementation modifications. No lower level cadre wishes to ever *appear* disloyal to the Communist Party or unsupportive of its policies.⁸

Beyond these general "big-picture" statements of job assignments, revolutionary behavior, and loyalty is the specific question of how tightly the central

⁷Another important example of the Communist Party's erosion of control is presented in Tanner's (1994) study of lawmaking. Tanner asserts that the Communist Party Control over lawmaking has decreased since 1978 due to the fact that many important policy issues are resolved outside of the party's central decision-making organs. Moreover, the Communist Party has become less interventionist in law making, particularly in the assertion that not all laws must undergo party review. Party officials are predominantly concerned whether laws fit into the general direction (*fangzhen*) of the party's policy. Tanner notes that while policy making access, influence, and resources have now been granted to more elites, bureaucratic institutions and social groups, one must be aware that not all such devolution of authority has been institutionalized. Lack of institutionalization means the decentralization of lawmaking authority is subject to reversal.

⁸On the question of loyalty of local party cadres, Lieberthal (1995) relates that interviews of local level Chinese officials have tended to support the notion that new local level cadres who have come to power in the post-Mao era are better educated than their predecessors and are generally supportive of the reforms and rapid economic growth. However, their level of enthusiasm for a revolutionary party remains uncertain. Chinese newspapers illustrate this latter point in stories relating how new cadres often exhibit some political and ideological weaknesses and shortcomings (Lieberthal 1995). We will see in chapter five how many of the county water officials who were most enthusiastic about pushing the sideline economics policy were fairly young men.

party controls subprovincial party officials--the officials who ultimately supervise lower level government implementation of policies. In the post-Mao era, the occurrence of interlocking directorates, which is the practice of placing many key party officials in charge of government positions and the party committee in the same territory, has been significantly reduced (Lieberthal 1995). At the central government level this "multiple hat-wearing" remains common, but has been virtually eliminated at the provincial and subprovincial levels (Lieberthal 1995). This indicates a possibly greater separation of party and government bureaus at the subnational level and a subsequent decrease in party control of lower level government work.

In Beijing, the party's Central Organization Department establishes cadre policy, but it very infrequently convenes conferences to discuss and guide policy implementation. Therefore, the main locus of supervision of policy implementation is the subnational party organization departments. The party organization departments at every level of government assume the role of guiding policy implementation by investigating and supervising the work done by the party organization department at the next lower level. Conversely, the lower office requests guidance and instructions on professional matters from the upper level department. This formal institutional linkage between the upper and next lower party organization departments is termed a "professional relationship" (*yewu guanxi*). The entire hierarchy of party organization departments are linked by these two-level professional relationships. Manion (1985:210) asserts that "even on policy matters the [Party] organization departments at the various levels find their interaction circumscribed by the lack of a formal

relationship of *leadership* directly linking them (italics added)." Manion does not believe that giving guidance to lower levels is synonymous with providing leadership.

Another particularly significant observation by Manion (1985) is that by reporting to only the department at the next highest level there appears to be no direct line of command from the central party organization to the local level party organization departments. Therefore, instead of viewing the party organization system as a powerful centralized operation, Manion sees each *separate* organization department as possessing the most power over cadres. In other words, party power appears to be localized. Manion states that it is difficult to know the significance of this localization of cadre management practices. I would argue that this localization contributes to a fragmentation of party authority and increased autonomy for lower level party organizations. Greater local autonomy of party authority combined with the increased devolution of authority granted government bureaus would create the proper environment for these officials together to focus more on the interest of their locale as opposed to upper level orders. The question of fragmentation of authority contributing to the increase in policy implementation "slippage" in China has been explored by researchers adopting the fragmented authoritarianism model (Lieberthal and Lampton 1992; Lieberthal and Oksenberg 1988).

This, albeit brief, discussion of the Communist Party's power in the era of reform indicates four major conclusions, which I will take into account in my analysis of local water bureau entrepreneurship. First, the increased devolution of power to subnational governments has not transformed the relationship between the central and

provincial levels into a simple a zero-sum game. In other words, decentralization does not necessarily mean the central government (e.g., the Communist Party) has less power, rather the range and tools for exerting influence on lower levels have changed.

Second, following Dittmer's "stop-and-go" depiction, it is reasonable to assume the party will continue to increase and decrease *permitted* government discretion while periodically calling for recentralization. I believe that the speed and degree of local government policy experiments and entrepreneurship have in great part followed the vacillations of the central leadership's support for the reforms--slowing in times of political retrenchment and accelerating in more liberal political climates.⁹ Therefore, in examining water policy implementation in China, one must be aware of the changes in the political climate which emanates from the top Communist Party leadership, for it provides keys into the magnitude of policy entrepreneurship. In chapter five I will relate how county water implementation of the sideline economics operations policy was particularly sensitive to the shifts in the political climate.

Third, local level government officials are keenly aware of the potential dangers of overstepping the boundaries in policy experimentation and overtly contradicting the central party's policies (Kelliher 1992; Lieberthal and Oksenberg 1988; Oi 1989). The central party leaders can check extreme cases of perceived local level dissent by criticizing, removing, or threatening to remove provincial leaders or

⁹For example, after the Tiananmen incident, the "mood" in Beijing was to slow down or stop the reforms. In such a climate one could imagine a significant reduction in local government policy entrepreneurship. Another contrasting example was Deng Xiao-ping's trip to the south of China in January of 1992, in which he told the public to forge ahead with reforms. This promoted renewed policy experimentation throughout China.

even a large majority of subprovincial authorities.¹⁰ Notably, large purges of local level leaders have not occurred often in the post-Mao era. The dependence the center has on lower levels in implementing the reforms may have curtailed excessive central purges of local leaders. Nevertheless, the water officials I interviewed, like most other local officials in China, stayed within a certain range of policy modification or cover up their policy evasions with false statistics and reports.

Fourth, I have asserted above that the party authority is not nearly as centralized as in previous periods in the PRC's history. Party authority appears instead to be more localized and fragmented. Party committees at every level still supervise their corresponding government bureaus. In fact, some research from the mid-1980s indicated that county party committees still dominated the county administrative organs (Lee 1991). Regardless of whether this control has been decreasing, it is logical to assume that *local* government policy experimentation can not occur without the awareness of *local* party officials. Policy entrepreneurship is thus condoned, or even encouraged, by local party officials. In light of Manion's observation on the localization of party authority, perhaps local government officials possess more incentives to conform to the wishes of their local party committees as opposed conforming exactly to upper party policies. Local party officials may also overlook some policy experimentation as long as it appears to be promoting local interests and is generally following the "correct" policy direction. Finally, perhaps the vacillations on the question of decentralization and the lack of a direct line of

¹⁰See footnote number four.

command from the central party have created an unsure environment, in which local party officials are uncertain themselves whether to judge modifications of policy implementation as unacceptable.

Research Methodology

Since the People's Republic of China initiated reforms and the "open door" policy in the late 1970s, social science researchers have enjoyed the opportunity to enhance the scope, depth, and quality of political and policy case studies, particularly those concerning local governments, intergovernmental relations, and state-society relationships. To answer the broad question of how increased devolution of administrative and financial authority in China influences local government discretion, a comparative case study conducted at the local level is but one possible research design. The advantages of using a comparative case study design is that it enables the researcher to increase the number of cases or policies for study and more systematically identify key phenomena from within their contexts (Agranoff and Rubin 1991). The question of decentralization and local discretion encompasses a broad range of intergovernmental activities. Therefore a comparative case study is needed to capture some of the inherent complexity in local-center relations and to decipher patterns of government behavior. Comparing the contextual conditions of a variety of county water bureaus, as this study does, could help answer some intriguing questions. Namely, how and why these bureaus have affected or reacted to various political and policy structures and processes. Moreover, we can understand more

about the motivation behind the central government design of certain water policies and how central officials have responded to their implementation.

In this comparative case study, besides exploring the specific dynamics of local water bureau behavior in China, one larger aim is to provide a focused and detailed framework for discerning and analyzing local government entrepreneurial behavior during policy implementation. I believe that while China is a country with many unique historical, cultural, and social characteristics, the developments in Chinese intergovernmental relations during this era reform hold insights for researchers investigating decentralization and structural reform in other countries, particularly the former communist countries and countries with strong central governments, such as France. This case study stresses the need to incorporate a systematic analysis of local government entrepreneurship to studies of decentralization. Moreover, this study provides an important supplement to the public entrepreneurship literature in that it applies the concepts used in that approach to a country besides the United States.

The data for this study are drawn from interviews with water officials in the PRC and archival materials.¹¹ Significant background information was obtained from primary sources such as national level water resource almanacs and books published

¹¹In light of the paucity of information in the U.S., before beginning my interviewing of county and provincial officials in China, I undertook archival research at the University Service Centre at Chinese University in Hong Kong. Additionally, during my stay in Hong Kong I met with several researchers who specialize in Chinese local-center relations. Documentary information collected in Hong Kong was supplemented and put into context through interviews with water officials at the central, provincial, municipal, and county levels between February and July in 1995. I spent two weeks at the Water Ministry in Beijing interviewing an official who was intimately involved in writing the 1988 Water Law and other major water laws in the 1980s and 1990s. This official also participated in the inter-ministerial negotiations over these major water laws. The work in Beijing provided me with crucial information on the background to the major water laws and the goals of the Ministry of Water Resources. I was thus able to pursue more informed interviews at the county level.

by the Ministry of Water Resources (MWR) containing both new water laws, as well as central government policy pronouncements concerning water management. Zhejiang provincial almanacs and county level gazettes provided specific information on subnational water resource management and policies. Whenever they could be obtained, copies of local government water laws or documents, internal circulars, and policy statements have been examined. Some of these materials are often considered "internal" (*neibu*), which means they are not published openly and therefore not to be disclosed to foreigners. Notably, the materials I obtained on local water policy are innocuous and contain nothing that could be considered threatening to China's national security.

Most of the interviews were held with officials in the offices of Water Resources Management at the four levels of government. In Zhejiang, I also fortuitously obtained interviews with the provincial level Comprehensive Management Office (responsible for sideline economic operation activities) and the major water basin management department, as well as one interview with a vice-deputy in the Environmental Protection Department. Many China researchers have pointed out that in interviewing Chinese government officials it can be challenging to obtain reliable information, for individuals in China are wary about making comments on government policies which differ from the party/state line. Moreover, foreigners have often been suspected of being spies and their interviewees as traitors. Contrary to these more negative experiences of other researchers, most of my respondents were generous with their time and materials and on the surface appeared open. One glaring

qualification on their openness was the fact that not one water official ever mentioned the Communist Party's role in supervising the activities of water bureaus.

To put my respondents at ease, no tape recorder or questionnaires were used in the interviews. Instead, I conducted guided conversations in which I engaged the water officials in open-ended discussions about the role of their office in carrying out various water policies and how water management has changed in the era of reform. Because my interviews were generally many hours long, I took notes, which did not appear to disquiet the officials. When the conversations switched to potentially sensitive topics, however, I would put down my pen and reconstruct that portion of the conversation later in the interview or after leaving the office. I began my interviewing with a set list of questions, which I revised as the interviewing progressed and my understanding of local water management and policy implementation increased.

Approximately half of the interviews were arranged through informal channels, i.e., introductions through friends or professors at Hangzhou University. The other half were arranged through formal channels, namely the Foreign Affairs Office of Hangzhou City. For the informally arranged interviews I was alone with the water officials and sometimes free to simply sit in the offices all day to drink tea and chat with a variety of officials. In those formal interviews arranged by an official in the Hangzhou Foreign Affairs Office, I was accompanied by a county level foreign affairs officer. These officers either joined in the interview-cum-discussions with water officials or sat passively on the side. Water officials appeared equally forthcoming

regardless of the presence of county foreign affairs officers. With the exception of the water officials from one municipal office, most officials seemed very at ease, even flattered with the visit of a foreign researcher. In addition to appearing delighted to talk with a Chinese-speaking American, most officials allowed me to photocopy county gazetteers, local water documents and/or some statistical information. To protect the anonymity of interviewees, names are not be used in this study. Appendix A provides interview date, location, and interviewee's position. Interviews are cited by the number they were given in the appendix.

Dependent and Independent Variables

Analyzing the dynamics of intergovernmental relations, particularly the issue of decentralization and policy entrepreneurship required engaging in multiple levels of analysis. Therefore, I gathered information from the central, provincial, municipal, and county levels concerning the dependent and independent variables of interest. Policy type and conditions of implementation are the independent variables in this study while the type of local government policy entrepreneurship represents the dependent variable. I will first delineate the level of decentralization in the water sector by examining measures of functional, legal, and financial authority and responsibilities held by different levels of water bureaus. These measures will help to paint a picture of the overall context in which water officials operate. This contextual portion of the analysis provides material for understanding the interaction between the independent and dependent variables in this study.

As I illustrate in the literature review, decentralization is not a particularly neat linear process or an exact zero-sum power game. In other words both local and central governments play major roles in the dynamics of power distribution. Therefore, I will examine certain policy making or policy implementation activities in order to answer questions on local government discretion. In light of this dual influence, I consider both *policy characteristics*--which focus on central government goals and ability to monitor--and *conditions of implementation*--which address local government resources as well as local water officials perceptions of opportunities and risks--as the independent variables in this study. The dependent variable of interest in my research is the capabilities of the local to governments modify, evade or innovate on the three water policies in question.

Data Analysis Procedures

The interview and archival data gathered for this study produced a plethora of information for writing detailed historical and contextual descriptions on policy design and implementation of Chinese water policy. To prevent drowning in data, I coded and organized the qualitative data into tables and charts. Coding and organizing data into coherent categories can prevent data overload and facilitate analysis (Miles and Huberman 1994). After each interview, field notes were transcribed into more intelligible written drafts and I added reflective remarks, such as tentative interpretations and observations on the interviewees attitude. Later these notes were reviewed and codes were attached to sentences or paragraphs to help reduce the data

to themes or categories. The list of codes were created predominantly from the content of the analytical framework (e.g., economic resources and central investment). Coding interview notes and documents made it significantly easier, for example, to identify the four measures of decentralization--functional responsibilities, legal mandates, resource dependence and capture. Also, codes were used to help identify information for charts displaying the independent variables. These charts and tables display summaries of the more detailed descriptions within the text and facilitate the identification of patterns among the independent variables, which advance explanations of the water policy implementation.

The goal of this study is to explain how and why county water bureaus either evaded, modified, complied, or innovated on a policy. The measure of these actions of policy entrepreneurship will be a ranked evaluation of the evolution of policy implementation and interaction between the local and central levels over the policy. County water bureau implementation will be judged as either a modification, an innovation, or an instance of evasion/minimal compliance or compliance with the central government's policy. The first question is whether these policies were implemented as the central government originally intended. In other words, have any modifications been made? Modifications of policy include situations in which county water bureaus use standards or procedures which differ from those clearly stated in the original policy, law or regulation document. The second question is whether local water bureaus developed more innovative, local methods of carrying out policies.

Innovations are changes which not only vary from the original policy outline, but later led to the policy being changed at the central level.¹²

Policy evasion is a slightly more challenging evaluation to make. In China, local government officials often delay carrying out a policy for of fear that the central government will suddenly change the policy and they will be accused of disobedience. Local governments may also delay carrying out a policy until implementation measures or clear policy communiques are issued at the central or provincial level. Caution is the central principle of local government officials. As the previous discussion of the Communist Party revealed, party officials work at every level of government to supervise government bureau activities. Because government officials do not wish to be found completely ignoring a policy, they might, instead, make some nominal effort to implement the policy (e.g., issue a document) to create a facade of compliance. In order to differentiate between evasion and delay, I have chosen three policies for which implementation measures or a policy communique has been issued by the central or provincial government. If the local levels have not acted to implement following upper level admonishment or encouragement, I will regard their actions as policy evasion.

To address the issue of internal validity, in other words, does the information collected for this study match reality, I collected both interview and archival data. To ensure no language miscommunications occurred, I periodically summarized my understanding of a certain policy situation with interviewees and often asked the same

¹²In the policy literature this phenomena is often referred to as diffusion or bottom-up policy making.

questions of different people in the same office. Dialogues with professors at Hangzhou University often served to reconfirm interpretations I had made of some interview material.

Although my contacts with county level water bureaus were dependent on introductions, a sufficient number and variety of counties in Zhejiang province were covered for this study. I opted, however, not to visit counties inside Special Economic Zones or those under direct central government supervision. While the number of these types of counties is growing, they do not yet reflect the administrative structure or experiences of a majority of counties throughout China. While I visited a total of seven counties, only five were selected for examination. The two excluded counties contained many useful insights, but overall the amount of information obtained was considerably less than the other five, because only single visits were possible. The variety among the five counties should provide adequate data concerning the question of whether similar dynamics of local discretion exist in more than one county. Within the five counties I conducted a total of sixteen interviews. At the provincial level I visited three water bureau departments and held ten interviews. Below I provide a brief description of the five counties, while more detailed information on the counties will be addressed in chapter five.

Ideally, studies of counties in other provinces would have been conducted to expand the scope of comparison, but the reality of time and funding constraints limited this study to Zhejiang province. Nevertheless, I believe because of its intergovernmental focus, this comparative case study of five water bureaus captures

many contextual issues common to other county water bureaus in China. Nationwide, all water bureaus have faced similar changes in their administrative and financial circumstances, such as decreasing budgets; a significant increase in upper-level mandated rules, regulations and administrative responsibilities to carry out and enforce; a shift from collective to private management of agriculture which has led to destruction or severe neglect of previously collective or county water projects; as well as the challenges of managing water distribution in a rapidly developing economy. Eighty percent of the water resources in Zhejiang are consumed by agriculture and the remaining twenty percent is for industrial and municipal use. This ratio holds true for most of China. Moreover, like most other provinces, Zhejiang water bureaus are facing increasing problems managing water supplies due to severe water pollution as well as experiencing similar disagreements with other departments over controlling water management (Lampton 1992b).¹³

Scaling up to the provincial context in which the county interviews took place, one could argue Zhejiang province is representative of the other east coast provinces in that the central government has granted these provinces significant economic and administrative authority, and all have experienced rapid economic growth over the past decade. Although the rate and scale of economic growth in Zhejiang province far surpasses that of many internal provinces, what is similar among most of the thirty provinces in China is that economic conditions have improved and the goals and

¹³Another fact supporting the generalizability of the experiences in these counties is that the central government reactions and policy changes in the water sector have been a response to local policy implementation throughout China and not just specifically directed towards Zhejiang province.

strategies for development have been very similar. Increased industrialization in rural areas and increasing number of unfunded mandates being handed to county level offices are two major trends that have taken place in nearly all of the provinces. Initially, substantial economic and administrative freedoms were granted to areas on the east coast of China, but increasingly these freedoms have spread--not always with central government permission--to other provinces. Therefore, while the economic development conditions in Zhejiang may not be identical to other provinces, Zhejiang does represent the direction of development in China.

Case selection for this study was done following the logic of a similar systems design. All five are located in Northeast Zhejiang province within the Qiantang river basin and all are similar in size, population, distance from the provincial capital,¹⁴ and all face comparable water management demands. They differ on the variable which is most often assumed to influence local government autonomy, namely, level of economic development. Some researchers have maintained that wealthier local governments can more easily evade or modify upper level policies, because of less dependence on financial resources from above (Zhao 1994; Cheung 1994). When addressing the question of local government entrepreneurship we need to expand our analysis beyond simply economic factors. Other factors may come into play which

¹⁴One can reach all five counties by train, bus, or car within two to four hours. By choosing these counties I wished to control for one possible rival explanation of local government entrepreneurship. Namely, the belief that counties further from the capital are difficult for the provincial (or central) government to monitor. Distance often provides local governments with greater leeway in policy implementation (Vogel 1989; Goodman 1986). An adage from imperial times shows that the ancient Chinese were aware of how distance decreases central government control. The phrase is *bianchang moji*, which literally means "the whip is limited in its reach" and is still used to describe local level activities which are beyond the reach of the central government's power.

influence a local government bureau to take risks in order to modify or evade central government policies. If economic level of development is the key factor in promoting local government entrepreneurship we should therefore see more significant entrepreneurial behavior in the two fastest growing counties in the province--Zhuji and Xiaoshan. The speed of economic development in Fuyang and Shaoxing counties has increased over the past several years, but they have not reached the level of Zhuji and Xiaoshan and can therefore be categorized as having moderate levels of economic growth. Economic development in Linan county ranks among the lowest in Zhejiang province. In chapter five it will be illustrated that even the most economically poor county in the study was also able to innovate on one policy. This indicates that other factors beyond economic resources may empower county water bureaus.

The Organization of the Study

In order to delve into how scholars have dealt with questions of local government discretion and power, I present in chapter two a broad literature review which includes a discussion of the general literature on decentralization, the relatively small literature on public entrepreneurs, and, finally, I conclude with an assessment of the growing literature on decentralization and local-center relations in China. In the literature review I include discussions of problems, shortcomings, and areas where further research is needed in decentralization studies to sharpen the research on local government discretion and policy entrepreneurship. Within the literature review, I

stress the merits of studies which contributed to the approach I have developed for this study.

Chapter three introduces the first component of the analytical framework, namely, the evaluation and measurement of the *level of decentralization* in the Chinese water sector. Chapter four advances my adaptation of Chung's policy type model for examining central government intentions in policy design. I then use the *central government policy perspective* component of the framework to evaluate how the scope, type, and nature of the three water policies have influenced the level of local government discretion the central government has granted for each policy. This is followed by a discussion of the limitations of predictions we could make concerning local government discretion and entrepreneurship by examining policy design alone. Chapter five moves the analysis from the policy design stage at the central level to the implementation phase carried out by county water bureaus. I apply the *conditions of implementation* component in chapter five to the implementation of the water policies by using data gathered from five counties in Zhejiang province. To facilitate an evaluation of the policy implementation, a brief introduction to water law and management in Zhejiang province generally and the five counties specifically is also included in chapter five. In chapter six I draw together the components of the framework and explicate my conclusions concerning county water bureau discretion and policy entrepreneurship.

Chapter Two

Literature Review

This study of local policy entrepreneurship is analyzing intergovernmental relations (IGR) within the Chinese water sector. This literature review covers theories and studies on decentralization, policy entrepreneurship, and local-center relations in China. These three research areas guide this study on water policy implementation, but only capture one aspect of the IGR literature, namely, intergovernmental policy-focused studies. The IGR lens for understanding political interactions between levels of government can be divided into five general categories;¹

- National-state relations--includes studies which focus on the legal element of how power is distributed and shared between and within levels of government.
- Intergovernmental behavioral patterns--these studies adopt a more human focus and delve into the attitudes of officials, networking between professional communities and policy communities, political parties, lobbying, and issue networks.
- Regular interactions among officials--consists of studies on managerial operations, e.g., strategies, means of guidance, control, and evaluation within bureaucracies.
- Intergovernmental patterns and instruments--this category encompasses studies of subsidies, taxes, grants, and regulation.
- Policy studies--such studies adopt a broad analysis of how various actors and government bureaus/departments affect the development and implementation of specific policies.²

¹These categories are adapted from Wright's (1988:15) description of the distinctive features of intergovernmental relations.

²Wright (1988) points out that IGR policy studies tend to center on finances, e.g., policies addressing IGR revenue, expenditure, borrowing, and debt issues. This study on water policy in China, however, illustrates that other types of policies can be examined.

By focusing on the IGR dynamics of policy formulation and implementation, the analysis will also draw from the other four categories listed above. The main difference of policy-focused studies from the other four types, however, is that such policy-oriented IGR studies provide an *interactive* view of officials and government bureaus and illustrate the flow of resources in the political system and how this flow varies across policies. Policy-focused studies are dynamic and reveal the diversity and similarities of IGR between and within polities, be they unitary, federal or something in between. My research focuses on how IGR dynamics shape county water bureau entrepreneurship in implementing water policies in China, but, as will be discussed in chapter six, this study also provides some insights into the changes in power distribution within the Chinese polity since 1978.

As mentioned above, this literature review covers considerable ground, in that three areas of literature are presented. First, I evaluate the general literature on decentralization and elucidate some methodological shortcomings. Next, I briefly introduce the public entrepreneurship literature, for I view works in this area as a most promising supplement to analyzing and interpreting how decentralization affects, and is affected by, local government discretion. In the third and final section, I summarize and critique the literature on Chinese local-center relations. Throughout this review I highlight perspectives I have adopted or modified for this study, as well as comment on how my study might fill some of the extant gaps. One of the central themes in my commentary is that studies on decentralization need to be more intergovernmental in focus instead of relying predominantly on top-down or bottom-

up approaches. The three areas of literature reviewed below have helped guide and shape my inquiry into intergovernmental policy dynamics within the Chinese water sector.

Decentralization Literature

Both in theory and in descriptive case studies on decentralization, researchers and policy makers have often focused primarily on the end goal and too often the assumption is made that devolution of power will automatically lead to more efficient and successful policies. For example, theorists using the liberal perspective for evaluating decentralization generally adopt the normative position that local level governments should have a measure of autonomy, for increased self-governance promotes democratic decision making within lower-level institutions (Smith 1985). Those supporting liberal arguments maintain that decentralization is the best means of conducting local administration of public services, for local level leaders have been locally trained and possess a first-hand understanding of issues in their region. This insight into the local area enables them to conduct more effective experiments with policies than the distant central government. Moreover, local democratic governance supposedly facilitates political stability, encourages political equality, and provides citizens with the opportunity to participate in public policy making. Greater accountability and responsiveness of local government also results from local self-regulation and closer links between elected administrators and citizens. Empirical

evidence, however, has not always supported many of these claims, particularly the assertion that citizens participate more in local politics (Conyers 1986; Smith 1985).³

The public choice approach also views decentralization favorably in that increasing the number of governmental units and their degree of specialization of function will produce greater benefits and consumer satisfaction to citizens who participate than when they participate in larger units of government. A diverse range of empowered government jurisdictions also encourages competition and greater efficiency within the public services sectors (Ostrom 1991). Bennett (1990) points out, however, that the public choice theory does not acknowledge the extreme difficulties in containing certain externalities, such as pollution to outside areas or overextraction of groundwater resources within the boundaries of the locality. Moreover, local governments can not always take advantage of certain economies of scale in public service delivery as well as central governments can.⁴ In other words the issue of local government capacity is not always addressed.

³Marxist theories provide a view of decentralization which contrasts markedly with the liberal theories. Namely, Marxist theorists believe that although local democracy can permit local governments to be run by "classes or factions hostile to the interests dominant at the centre," the central government can reduce the independence of local governments through fiscal controls and the assignment of local functions to regional agencies (Smith 1985:40). The Marxist theorists perceive centralization as taking place in terms of class interests and conflicts. In other words, centralization represents the state attempting to satisfy needs of monopoly capitalism which leads to the interpretation that central policies and institutions control local governments to gain funds and other resources for the state's monopoly capital needs.

⁴Another portrayal of the possible negative side of decentralization would be Glennerster's study (1990) which illustrates that over-decentralization in the state-owned housing sector in the U.K. has prevented any integration of housing services and extremely inefficient service provision to renters. In one edited volume on centralizing and decentralizing trends in federal states the editor comments that the recent tendency in federal countries to devolve power to the lower governmental units could lead to over-decentralization and a disintegration of Canada, as well as other federal states (Brown-John 1988).

In regards to decentralization promoting accountability, responsiveness, and political equality, Smith (1985) and Fesler (1965) both counter that local officials can often exploit power for themselves and do not always use their power to redistribute resources equally. Additionally, many theories ignore the fact that the discretion of local governments is almost never unlimited and that local authorities must seek compromises between local electorates and the controls of the national government (Smith 1985). This insightful comment by Smith underlines the need to conduct bottom-up *and* top-down analyses of decentralization policies to ascertain the extent and impact of local discretion on policy implementation.

Overall, much of the literature on decentralization has tended to focus more on top-down power relations and, with the exception of the pluralist and center-periphery studies, has not sufficiently delved into the complex intergovernmental relations which produce the decision to devolve authority downward. Elitist theorists, for example, tend to view decentralization as a conscious choice made by rational central leaders (Dye 1983). In other words, the central government is seen as the main instigator of power devolution. In contrast to this simplified elitist approach to decentralization, the pluralist perspectives--ranging from de Toqueville to Dahl--view the political structure as more complex and subject to influences beyond the central decision making elites. Other writers combine the above theories with a central-periphery approach, which views decentralization as a result of crises between the central government and the periphery. This latter combination depicts central elites reacting to various demands from lower units of governments and the society or pressures from foreign countries

or the world market.⁵ While this approach, as well as the elitist and pluralist theories, provide insights into how decentralization occurs, they do not address the question of outcomes of policies and programs after power has been devolved. What is needed is a greater appreciation of how a decentralized environment produces new power arrangements and changes the incentives of the central and local governments. Research in this direction will lead to richer studies with better explanations of policy implementation. Smith (1980 and 1985) believes that most studies have oversimplified both the process and impact of decentralization.

According to Oates (1990), one aspect of decentralization that has not received sufficient empirical attention in the literature is the role of decentralized government in fostering innovation in public-sector programs. Such a research question necessitates adopting a more bottom-up analysis of decentralization, which could supplement the previous top-down studies. There also exists surprisingly few studies which examine the impact of non-political actors on decentralized policies and programs. As early as 1968, Fesler complained that many decentralization studies had been narrowly administrative and neglected the "interplay between administration and other elements of the political system and of society itself" (Fesler 1968:376).

⁵Some recent articles concerning decentralization in socialist countries have notably integrated more complexity into the analysis. Such articles have adopted a more pluralist perspective and link two major aspects of decentralization, namely, intergovernmental decentralization and decentralization from governments to market and non-governmental organizations. For example, in his study of OECD countries, Bennett (1990) argues that the pressures on central governments to decentralize to local governments and markets arise from increasing difficulties the central governments face in sustaining the responsibilities as the major provider and planner for the country. This has led many central/national governments to "roll back the boundary of government" in an attempt to shift away from welfarism. Bennett's study resembles many others in that it views decentralization as a primarily top-down phenomena and does not address the possibility of decentralization stemming from or being increased by local demands or policy innovation.

Another lacuna in the decentralization literature is that most such studies tend to accent vertical relations in government rather than on the horizontal relations. The latter focus raises the question of how horizontal networking at the lower levels alters decentralized policy making. Moreover, does the increased autonomy which can accompany decentralization policies promote conflicts among local levels of government?

One valuable point stressed in the literature from the eighties maintains that although decentralization may lead to an increase in local decision making power, it does not necessarily mean that the central government has less. Smith (1985) points out that administrative decentralization can coexist with political centralization. The central government may, for example, receive some credit for devolving policies and resources and thereby increase its influence and legitimacy (Bryant and White 1982). Furthermore, the central government can possess levers to exert control over lower level governments by attaching conditions to the power that is transferred. Fesler (1968) remarks, however, that once power is delegated to a sub-unit of government it can be difficult for the central government to pull back, for the lower level can develop alliances with administrative, political, and economic groups that prefer lower level governance to central governance.

While numerous studies maintain that central officials can not understand problems at the local level and promulgate inappropriate laws and standards, it is a risky to assume that local officials always have local interests at heart or even understand local needs. Some writers who challenge this optimistic view of

decentralization cite evidence of situations where decision making and implementation responsibilities are transferred to the local level, local elites use the opportunity to benefit themselves (Conyers 1986; Fesler 1968; Smith 1985). For example, some studies have mentioned the possibility that if the central government threatens to re-centralize previously devolved powers this could motivate local governments to act somewhat "irrationally" (e.g., severely degrade their natural environments, overinvest in certain industrial sectors) in order to obtain as much economic benefit as possible while they temporarily possess more power or control over property rights. Additionally, one question which merits study is whether lower levels of government possess sufficient infrastructure and institutions to undertake new responsibilities.

The above discussion of horizontal relationships, re-centralization, and local-center power struggles illustrates that once begun, decentralization is not a particularly neat linear process or an exact zero-sum power game. Therefore, my study of local-center relations which embraces both a top-down and bottom-up perspective will better capture the complex dynamics involved in initiating and carrying out decentralized policies.

This literature review has been succinctly focused on several main theoretical approaches in the decentralization literature which, in my opinion, demand enhancement. The goal has been to identify and critique areas in the literature which this study on water management in China can supplement. The limited number of specific works mentioned has hopefully not misrepresented the rich and broad scope of studies dealing with decentralization. The literature on territorial decentralization

and centralization encompasses a wide range studies and theoretical work, such as the literature concerned with federalism (Brown-John 1988; Porter and Olsen 1976), local government (Merkl 1985; Rowat 1980), center-local government relations in Western democracies (Pickvance and Preteceille 1991; Rousseau and Zariski 1987) or communist countries such as China (Wong 1987; Vogel 1989), as well as a voluminous literature on decentralization and development in the Third World (Bryant and White 1982; Cheema and Rondinelli 1983; Rondinelli 1981). It is to this last area of research that I now turn the review. Subsequently, I will address some methodological problems prevalent in decentralization studies.

One major branch of the literature on decentralization contains descriptive and prescriptive studies on decentralization policies in developing countries. The growth in literature on decentralization in developing countries was prompted by the failure of many of the centralized strategies for development in the sixties to produce "successful" results. Rondinelli (1981) states that in the 1970s, international aid organizations followed a relatively liberal theoretical perspective and concluded that decentralizing development planning and management would promote more equitable growth and increase local participation in decision making and thereby promote more efficient implementation of policies and programs. In the seventies, many governments in developing countries began to experiment and restructure political and administrative arrangements for formulating and managing decentralized development programs and projects (Cheema and Rondinelli 1983). By the 1980s, of experimentation in countries like Tanzania, however, promoted only a moderate

amount of decentralized power to lower levels. Those in the administrative structure had not been able, or perhaps willing, to establish the necessary mechanisms to increase local participation. Not surprisingly, much of the recent literature concerning the restructuring of political systems in developing countries criticizes decentralization programs in the seventies and the liberal theories upon which they were based (Coyners 1986).

Methodological problems in the study of decentralization cited by Fesler nearly 30 years ago have still not been completely solved. The three main problems he cited include language, measurement, and differentiating degrees of decentralization within a single country at a given time. Fesler (1968) states that our language tends to dichotomize the concepts of centralization and decentralization, which oversimplifies and misrepresents the reality that the concepts exist on a continuum. Another related language problem stems from a tendency in the literature to associate the words "decentralization" and "centralization" with emotive overtones (Conyers 1986; Fesler 1968; Smith 1985). In general the word decentralization is given a positive connotation in that it is seen to promote popular participation, equality, democracy, debureaucratization, and can supposedly lead to the development of better and more innovative administrative capability among local governments (Rondinelli 1981). Conversely, the word centralization tends to possess somewhat negative associations, for often central governments are viewed as insufficiently responsive to local needs and the cause of impairment of local self-governance. It would help the development of theories on decentralization if future writers could avoid attaching value judgements

to the concept, for as the failure of many decentralization programs in developing countries has illustrated, decentralization should not simply be pushed as a cure-all administrative fix. Objectivity will help considerably in measurement and analysis of decentralization and centralization.⁶

Another measurement issue is the fact that many writers do not carefully specify which form of decentralization (e.g., deconcentration, devolution, and privatization) they are studying or systematically attempt to measure the degree of decentralization in the policy area of interest.⁷ Within this study a method for measuring decentralization systematically is used to evaluate the level of decentralization in the water sector in the PRC. Another issue which merits attention is how to more clearly depict and understand the mutual influence of center and local governments on policy implementation in a decentralized environment. In an attempt to fill this lacuna, this study has included two separate analyses for examining top-down and bottom-up influences on policy implementation.

⁶This tendency in the literature to have a bias towards decentralization, local self-government, and regionalism could be changing, for recent articles and books increasingly include discussions of decentralization policies which did not produce beneficial or desirable effects (Bennett 1990; Smith 1985; Wolman 1990). The literature often refers to decentralized policies that do not meet the goals of the central/national government as failures, which is ignoring the desires and needs of local government officials and local communities.

⁷See Silverman 1992 for a succinct definition of the various types of decentralization.

Public Entrepreneurship Literature

Within the field of political science and policy studies there has been an increase in the study of entrepreneurs, who can be defined as "individuals who change the direction and flow of politics" and create innovative or unexpected policies (Schneider and Teske 1992:737). Traditionally, entrepreneurship in the public sector has been attributed to some charismatic or strong government or community leader, which generally limits studies to profiles of high-level bureaucrats or politicians (Doig and Hargrove 1987; Lewis 1980; Riker 1986). The studies on public entrepreneurship vary considerably in both type and scope. The studies on the U.S. range from analyses of public entrepreneurship in federal, state, and municipal governments. For example, Sapat (1997) discusses one federal level study which investigated how the fragmentation in the institution of the U.S. Congress was key in facilitating access to resources and opportunities, which in turn provided the motivation for congressional representatives to take the risks and innovate on water pollution control legislation.⁸ One state government study assessed how the New York state government used new opportunities to experiment with welfare programs and create new social policies (Kirchheimer 1989). Both of these studies stressed that the unit of analysis in studies on entrepreneurship must focus on institutions and not only on individuals. O'Leary (1994) also dealt with innovation in the U.S. water sector in an analysis of how lower and middle level bureaucrats in the U.S. Department of Interior and the Nevada

⁸For studies with a local level focus on public entrepreneurs in the U.S. water sector see Ostrom 1965 and Blomquist 1992.

Department of Wildlife undertook a clandestine effort to have legislation enacted which would empower them to make changes in their programs to protect wetlands. The goals of these bureaucrats went against the wishes of their superiors, which meant that the "deviant" bureaucrats needed to obtain outside support for their policy agenda so as to pressure their departments from outside instead of from within. This study illustrates the kind of networking which individual policy entrepreneurs need to build in order to successfully promote policy innovations. Roberts and King (1996) show a similarly complex process of networking in which a collective of entrepreneurs--which included various state level departments, non-profit and lobbyist organizations in Minnesota--succeeded in promoting innovative changes to school choice policy.

Schneider and Teske (1992) comment that most studies of entrepreneurship focus on case studies of heroic individuals, formal theories on agenda setting, or incentives of leadership. In their opinion, such studies lack generalizability and simplistic to the point of not sufficiently capturing the true dynamics of local government political situations. In contrast, Schneider and Teske's work on local city managers synthesizes "aspects of an economic approach to entrepreneurship with concepts used in political science and apply the results to local government" (Schneider and Teske 1992:737). Their research has sought to develop theories on local entrepreneurial behavior in the public sector. Therefore, the focus of their study was expanded from innovative individuals to a study of a larger class of local officials who help launch political and policy change. Specifically, their study aimed to

identify the conditions that affect the emergence of entrepreneurs in suburban municipal governments in the U.S.

The literature on public entrepreneurs (Kirchheimer 1989; Schneider, Teske, Mintrom 1995; Schneider and Teske 1992) and policy innovation (Berry and Berry 1992; Polsby 1984; Walker 1973, 1981) provides some insight into three factors which influence local government discretion and policy entrepreneurship. First, researchers in the public entrepreneurship literature predict that local policy entrepreneurs are alert to opportunities to change and innovate policies which will produce "profits" for them. Notably, the concept of profits in the public sector is not restricted to simply monetary benefit. Psychological and policy rewards are included as well (Schneider, Teske, and Mintrom 1995). I believe keeping local constituents content and facilitating local government work could also be viewed as profits to local government officials, particularly local managers who have the most contact with policy target groups. Secondly, in order to earn "profits" local policy entrepreneurs are willing to venture risky action to take advantage of the opportunities which arise in the policy and political environment. Lastly, local entrepreneurs are capable of coordinating actions of other people to achieve their goals.

To summarize, a researcher using these three factors could assume that when local government officials (potential entrepreneurs) are faced with implementing a policy they would first evaluate the *local costs and benefits* of carrying out the policy as it is originally stated. If *opportunities* exist for them to improve the policy's impact on the locale, they would then be motivated to undertake the reputational, financial,

and emotional *risks* of changing a policy. Moreover, they are capable of *mobilizing enough support* to execute policy innovations.⁹

Chinese Local-Center Relations Literature

Since the People's Republic of China (PRC) was formed in 1949, the Communist state has vacillated between relatively centralized and relatively decentralized development strategies. This has made the topic of decentralization and division of power key to many political science and policy studies of the PRC. A quote from de Toqueville provides an excellent introduction to a discussion of the literature on local-center division of power in China:

China appears to me to present the most perfect instance of that species of well-being which a highly centralized administration may furnish to its subjects...I imagine that when China is opened to European observation, it will be found to contain the most perfect model of a centralized administration that exists in the universe.

(de Toqueville 1945:94:fn49)

Before the late 1960s, most Western researchers viewed the political system in China in a way very similar to de Toqueville, namely that China was ruled by a "perfectly centralized" political system. While admitting that the revolution of 1949 had brought about changes to the Chinese polity, Western scholars held that the communist political system retained many of the same totalitarian and hierarchical

⁹This review of the policy entrepreneurship literature centered on a narrow range of studies which are of most utility to this study and therefore does not completely capture the diversity and depth of the literature on policy entrepreneurship and innovation studies. For a review of research on policy innovations in a federal system see Savage 1985. Sapat (1997) provides an overview of more recent diffusion and innovation literature in his comparative state analysis of hazardous water and groundwater protection regulations. Other informative studies on entrepreneurship and innovation include Eisinger 1988; Golden 1990; Lewis 1980; Schneider and Teske 1993.

characteristics of imperial China and continued to portray the Chinese polity as being centrally led and organized (Barnett 1967; Lewis 1963; Schurmann 1966). The implications for such a view for the study of the policy process and institutional formation in China were clear. To understand the policy process in China, one needed only to focus on central decision makers, as decision makers at the lower levels were thought to have minimal impact on eventual policy outcomes.

Although most scholars in the 1960s were stressing the supremacy of the central government, Schurmann's 1966 tome on ideology and political organization in the PRC did present a theory concerning two types of decentralization--Decentralization I and II--over which Chinese officials had begun debating in the 1950s. Under Decentralization I, decision making authority is transferred to the production units and collectives, while Decentralization II refers to the devolution of decision making authority to a lower-level regional administration, usually the province. According to Schurmann's analysis, devolution of economic and decision making from the center to the provinces facilitated the simultaneous centralization of subprovincial governments to the provincial level. This centralization stemmed from the empowerment of the provincial Communist Party committees which led to a weakening of the power of the central government branch agencies and ministries. Schurmann's conceptualization of Decentralization I and II has also been revisited by

China scholars in an attempt to interpret the impact of post-Mao reforms (Meiser and Blecher 1982; Kallgren 1985).¹⁰

After the Cultural Revolution (1966-1976), more works on policy making in China have also shown the assumption that politically power was almost completely centralized was--and is--inherently flawed. These works contend that the central government in Beijing has not wielded unlimited power, and that policies have not been exclusively shaped by the central leaders. From these studies, two predominant images of the dynamics of the policy process in China have emerged: the bureaucratic-structural approach and the "cellular" perspective. Studies taking the bureaucratic-structural approach (Lieberthal and Oksenberg 1988; Lampton 1987; Shirk 1985; Ross 1988) assert that the bureaucracies in China are semi-autonomous and capable of pursuing different policies from those initiated by the central leaders. Primarily carried out through interview methodology, studies in this vein have typically focused on the dynamics of inter-agency bargaining and consensus building (Lieberthal and Lampton 1992).

In contrast to the bureaucratic-structural approach, the cellular approach focuses on local government and community power and capabilities vis-a-vis the central government. G. William Skinner created the cellular approach in his 1964 study of traditional Chinese marketing systems in rural China. His articles challenged the, then dominant, assumption that the administrative system in Imperial China

¹⁰One fairly recent study using Schurmann's approach details how the provinces have used their increased economic power (Decentralization II) to control state-owned enterprises, which have been granted greater autonomy from central control (Decentralization I) (Wong 1987).

exercised primary control over rural villages. This study also refuted the claim that peasant life in China was centered in the self-contained world of the village. Skinner maintained that rural areas in China were organized in a cellular pattern, which was based on marketing networks.¹¹ The second smallest market--the standard market--was the focus of Skinner's study, for it formed a distinct community or "cell," which was somewhat isolated from other institutions in the larger society. According to Skinner, this standard marketing community possessed important social as well as economic dimensions. For example, a variety of formal organizations (lineage or religious service societies) and voluntary associations took the standard marketing community as their unit of organization. Additionally, local elite, which operated within this marketing community, often acted as an intermediary, or buffer, between the peasantry and bureaucratic elite. These social and economic linkages were posited to create significant integration within each marketing community, which often enabled the community to protect itself from unfavorable central government policies and extractions. Moreover, Skinner claimed that this pattern of organization, formed in Imperial China, was resilient and continued to exist into the communist era.

Eight years after Skinner's work, Audrey Donnithorne (1972) revived this cellularity concept and used it to explain the effects the Cultural Revolution was having on the Chinese economy and power of the central government. Instead of focusing on rural marketing systems like Skinner, however, Donnithorne took his

¹¹The four types of rural markets he delineated were (in ascending order) minor, standard, intermediate, and central markets.

"cell" concept and scaled it up to the provincial level and utilized it to explain the significant increase in economic power at the provincial level. Donnithorne claimed that the over-decentralization of administrative decision making in the economic sphere combined with the civil revolts during the Cultural Revolution (at that time in its sixth year) had severely weakened the central government's ability to administer and control the provinces' actions in many sectors of the economy. Donnithorne posited that this decrease in central power, combined with Mao Ze-dong's continued stress on provincial self-reliance, intensified China's tendencies towards a cellular economy.

In the 1980s and 1990s, articles and books using the cellular approach predominantly analyzed the nature of state and society interactions in Chinese politics. For example, some recent works on Chinese politics and society have shown that not only does the Chinese state¹² have limitations to its power, but certain societal groups can also possess a certain amount of power. Books by Kelliher (1992), Oi (1989), Shue (1988), and Walder (1986) are but four studies which analyze how the reach of the Chinese state has been limited by patron-client relationships in sectors such as state-run factories, rural production teams, and peasant farm families.

These studies using the cellular perspective to analyze local-center relations in post-1949 China indicate that policies to increase devolution of decision making authority have enhanced the abilities of local governments to modify central policies or initiate their own policies (Kelliher 1992; Shue 1988; Wong 1987). Moreover, the

¹²"State" in this paper refers to the central government.

local governments have, in effect, been able to "pull" more authority down to themselves. These studies have addressed how the new resources and opportunities created or enhanced by this devolution of authority have enabled and motivated the local political officials to adapt some of the new policies to better suit local needs and conditions. Moreover, some researchers have argued that when the resulting policy output matches or supplements the central government's goals or targets, the local procedures are often later officially sanctioned by Beijing. But when the resulting policy overly contradicts central government intentions, or if local discretion appears too great, Beijing could attempt to re-centralize the authority and force local governments to alter their behavior (Cheung 1994; Kelliher 1992). Recentralization is often undertaken by imposing sanctions or criticizing local governments. The ability of local governments to disregard these recentralization attempts can be quite strong, for once power is delegated to a sub-unit of government it can be very difficult for the central government to recentralize it (Fesler 1968; Luo 1994).¹³

Shue's study of production teams warrants a brief description, for it provides a clear example of how the concept of cellularity has been used. In her work, Shue hypothesizes that the parceled pattern of rural socioeconomic organizations has prevented the state from completely penetrating and controlling rural society. The

¹³Luo (1994) states that fiscal reforms which decentralized fiscal responsibility to the local governments strengthened the incentive to maximize local interests through exercising of local property rights. Increasing local property rights leads to the expansion of local industrial assets, which makes it more difficult for the central government to recentralize the fiscal responsibilities and rights.

focus of her analysis was on local leaders at the team level.¹⁴ Shue points out that team leaders could be considered both actors for the state and for the society because, although they have been given their positions by the state, they are usually from the localities they administer and are dependent on the local community for their wages and food. Such a situation encourages team leaders, who are ultimately the implementors of rural agricultural policies, to stress loyalties to the locality rather than Beijing.

Each team can be considered one relatively, self-reliant "cell." According to Shue, each team "cell" has been able to deflect or decrease certain central demands on their team's agricultural resources and labor. Altering statistics, lying, falsifying reports, encouraging smuggling, acting as lobbyists, and bargaining with local brigade or commune leaders represent the main tactics employed by local team leaders in modifying policies sent down from the center. It is important to realize, though, that team level "cells" are not merely independent entities that separately deal with vertical demands from the central government. All teams, or "cells," have formed informal horizontal connections a situation akin to the social and commercial connections described in Skinner's study. Strong horizontal networks, which were both economic and social in nature, strengthened the individual cells and made them less dependent

¹⁴Previously, the team was the lowest level in the political hierarchy. The levels of government before the reform era in ascending order were: team, brigade, commune, county, province, and central government. Today, however, the hierarchy has been changed: the vertical hierarchy now is village, township, county, municipality, province, and central government. The hierarchy has been complicated by the establishment of Special Economic Zones and Special Economic Cities which have been granted the authority of provinces and represents a significant increase in the horizontal hierarchy. Moreover, some regional agencies have been re-empowered, e.g., river basin commissions.

on vertical channels. This horizontal interdependence--to use the language of Schneider, Teske and Minstrom (1995)--represents one important resource to undertake the risks in changing policies. One of the other key reasons one team "cell" was often able to deflect central policies effectively was due to the fact that *all* other cells were simultaneously doing the same! There is power in numbers. Shue interprets the most recent reforms promoting decentralization in China as a deliberate attempt by Beijing to restructure local cellular power structures and break the patron-client relationship between rural cadres and peasants.¹⁵ Using the cellular perspective, Shue, like Oi and Walder, was able to provide many insights into past and present dynamics of state and societal relationships at the lower levels of government.

Contrary to Shue, Oi (1992) maintains that fiscal decentralization during the reform period has strengthened local, particularly rural level governments and has actually reinforced the cellular nature of rural society. Oi states that the fiscal reforms have provided local government officials with incentives to pursue economic, especially industrial, development. Access to greater fiscal resources and decision making power have also enabled local governments to maximize their local interests through planning and coordinating economic activities. Contrary to many others writing on the recent extractive behavior of local governments in industrial development, Oi argues that the high rates of extraction of local officials from

¹⁵Her claim concerning the intent of Deng's reforms is strengthened by the description of recent responsibility system reform. This reform dismantled the commune system and forced independent peasant households to become more self-reliant. This and other reforms have significantly limited the local team leaders' ability to reward or penalize the peasants, which in turn has weakened this patron-client system.

industry do not necessarily mean that they are corrupt and willing to drain the industrial enterprises under their control. As evidence she points to thriving industrial sectors in many rural areas. Decentralization during the reform era has enabled the local governments to become a kind of corporation that coordinates economic enterprises in their territory. As the local government "corporations" thrive, the power of the central state to control lower levels has been weakened. Oi concludes with a bold prediction that continued growth in local state corporatism may in the long run cause the emergence of a federal type of system in which the rights and power of the localities are more clearly recognized by the central government.

While providing insightful pictures of local government behavior, some researchers of local-center studies in China have tended to portray the central government as having become relatively weak in enforcing policies as the reform era has progressed (Shue 1988). As recent studies reveal, this conclusion is a gross oversimplification of the intergovernmental division of power in China. Kelliher's (1992) fascinating study on peasant power illustrates, the central government will sometimes devolve more authority to a certain sector upon which it has become dependent, but stands ready to act should lower levels exceed their mandate. For example, in order for the post-Mao regime to succeed in promoting rapid economic growth there needed to occur a significant improvement in agricultural outputs. Peasant farmers were able to take advantage of this central government dependence on agricultural production and increase their autonomy and power. The increased devolution of authority created by the central government dependence creates a

narrow range of autonomy within which local level actors can initiate policy modifications and innovations. In Kelliher's example, farmers were able to push this range of autonomy a bit further when they compelled the government to accept the reestablishment of independent family farms. Kelliher provides examples of how the central government was quick to restrict some experimentation that took place too far outside the narrow range of autonomy it had originally granted the local areas. This concept concerning dependence and a narrow range of autonomy supplies researchers with a more realistic approach to local and central government relations both within and without China.

Taking an insightful intergovernmental relations perspective, Solinger (1993) asserts the central government has pursued a decentralization strategy in order to spur local economic initiative and break inefficient vertical controls on economic development. Boosting economic development is meant to increase the state's receipts from the national economy and raise the state's ability to address social needs. Solinger's essays provide evidence that despite devolving more power to lower levels, the central leaders have continually undertaken measures to try and retain financial controls at the top of the political system. Nevertheless, the combination of the still less-than-free market and inefficient central planning system has promoted uncertainty among local governments and the adoption of local self-protectionist measures in an attempt to shield themselves from central government extraction and policies detrimental to local economic growth. Historically, local governments in China have reverted to self-reliance tactics whenever it has appeared that the central government

cannot provide economic assistance or overly threatens the economic strength of their territories. Solinger's argument lends support to the claim that a cellular structure exists in many localities, particularly rural areas. Like other researchers she states that the central government is increasingly unable to reverse such local protectionist tendencies. This does not mean, however, that the central government has been left with no tools of control.

In a recent edited volume on local-center relations in China (Jia and Lin 1994) the contributors do not focus on the influence of societal actors in limiting state capacity to the extent that Shue and Kelliher have. Instead, these authors argue that the central government's capacity to govern is being influenced more by Beijing's decreasing ability to maintain coherence among the government hierarchy than by its attempts to continue its dominance over society. These authors maintain that the most significant result of the reforms which promote decentralization has not been the establishment of an independent, self-sustaining society, which can challenge and compete with the central government's power. Rather, the increasing devolution of authority has led to a breakdown of cooperation and interdependence within the government hierarchy.

Although totalitarian theories are passé, some studies supply important reminders, that despite significant decentralization the continuing power of the central government cannot be underestimated. Cheung (1994) explains that although the autonomy of Guangdong province has been greatly enhanced due to the increasing decentralization of economic powers, several mechanisms for central control continue

to exist. In another key study of intergovernmental relations in China, Lieberthal and Oksenberg's (1988) thorough analysis of energy development policy provides insightful details on the bargaining relationship between center and province in China. They show how during the reform era, the relationship between center and province has increasingly become one of *mutual* dependence in some policy areas, for both sides continue to possess resources the other needs. In a later study, Lieberthal (1992) maintains that while the reforms in China have devolved a considerable amount of economic decision making and control to lower levels, simultaneously, the success of the reforms has elevated the central government's political legitimacy and increased Beijing's authority to acquire information in some policy areas. Like Solinger, Lieberthal stresses that despite decentralization, the central government has still found ways of exerting pressure on lower levels regarding economic decision making.

Blecher's recent study (1991) on economic development in one municipality and one county during the post-Mao reform era takes both a top-down and bottom-up approach to analyzing industrial reforms. In addition to tapping into the complex intergovernmental relations over decentralizing control of state-owned enterprises, his study critiques traditional assumptions that the bureaucracies in socialist countries lack initiative, creativity, and innovation and that the state system is void of entrepreneurs. In studying economic decentralization in China, Blecher states that generally entrepreneurship is presumed to lie with the industrial enterprises and that the local governments merely play the developmental role of planner, coordinator, regulator, or developer of infrastructure. Blecher contrasts this usual theory of developmental states

with an entrepreneurial state theory, in which the local governments establish and successfully control enterprises of their own. He then provides an example of a county government in Sichuan that possessed many strong entrepreneurial qualities and was able to promote its own economic development and water projects despite economic and structural obstacles in the 1970s. Blecher's entrepreneurial theory and Oi's local corporatism approach are similar in that they both relate examples of local governmental units using newly acquired control of economic and administrative power to enrich and protect themselves from central government extractions.¹⁶

To put Blecher's view into perspective, it should be pointed out that devolving responsibilities to local governments has not always meant that they are capable of handling the tasks. For example, the central government has an education policy that stipulates all students must receive nine years of education, but because it can not afford to fund all schools in the countryside, the central government emphasizes self-reliance, local autonomy, and popular participation to carry out educational responsibilities in rural areas. Therefore, Beijing has continually supported the need for rural *minban* (people-run) schools. Robinson (1991) points out, however, that lack of funds and trained teachers in rural areas has meant continued poor education in the countryside. The paper by Robinson illustrates how decentralization in China can lead to poor policy performance when the central government "dumps" responsibilities on poor, ill-equipped local areas. Therefore, one could surmise that sometimes local

¹⁶Wong (1987) and Naughton (1990) wrote two other notable articles which address how provincial and sub-provincial governments have used the power they have gained both before and after the post-Mao reforms to modify and pursue industrial policies contrary to Beijing's demands and goals for industrial reforms.

government's evasion or modification of policies stems predominantly from insufficient capacity.

Conclusions

Although many of the above studies portray slightly differing views on the power and capabilities of local governments after decentralization, a theme that links them all is the acknowledged importance in investigating local-center governmental relations in China. Moreover, most of the researchers do discuss some of the issues raised in the public entrepreneurship model proposed by Schneider and Teske. Namely, all list various resources or opportunities (e.g., financial independence, patron-client relationships, and horizontal connections), which have enabled the local governments to mobilize local people and take risks to modify policies. The variance among the studies could in part be due to the different policy sectors under study, which underlines the need for more studies examining the extent of local government power and entrepreneurship over a number of policy areas and policy types. In reading the literature on local-central relations in China, it is noticeable that many of these scholars do not draw upon the "mainstream" decentralization literature. As the first half of this literature review revealed, numerous recent works have clarified some of the gaps and shortcomings in previous decentralization studies. China researchers should take note of these observations and use them as guidance in formulating more systematic and exhaustive studies concerning specifically how decentralization promotes local entrepreneurship. While it can be argued that the

Chinese polity possesses many unique qualities, I feel that the changes in the intergovernmental division of power and the impact of new development strategies in China can and should be linked to the broader social science literature. The policy results stemming from the increased devolution of financial, administrative, and political authority hold significant lessons and insights for other communist, formerly communist, and developing countries as they struggle with reforming their heavily centralized systems.

While various policies promulgated in a relatively decentralized environment have quite likely created narrow ranges of autonomy for local governments to exercise greater discretion concerning water policy, as several studies above noted, however, this autonomy has limits. What are these limits on local policy entrepreneurs in the water sector? In my study I endeavor to discover the extent of growth in the autonomy which local governments have been given or have taken in the area of water resources use and finance management. Moreover, what kind of dependence does the government have on lower level water agencies and local governments' water policy enforcement? Has this dependence on lower level water management combined with increases in overall devolution of authority in China provided lower level governments with the power and opportunities to create financial and management institutions as they wish? In addition to local-center competition for changing water management institutions, I believe differing distribution of power *among* local government actors will also be very influential in shaping the water withdrawal permit system, for water is a critical resource many governmental agencies need to promote

their own economic development. The question of how decentralization has altered horizontal governmental relations is also a relatively neglected topic in decentralization studies generally, as well as in studies on the Chinese polity.

Blecher (1991) also sees a great need for more locally-based studies on China instead of continual "macro-level theorizing," which is an argument that led this study to focus on local level ability to change or evade central government water policy. Nevertheless, many of these new locally-focused studies have succeeded in depicting the Chinese society and local government agencies as complex and able to react to the state's extractions, but the Chinese central government is often portrayed as a rather unidimensional actor which simply desires to reach in to control and extract from lower level governments. Such studies seem to imply that *all* of the policies from the center are aimed at simply extracting. Although local government autonomy is this study's primary focus, it is important to understand Beijing's priorities in setting water policies, as well as the motivation and capability of the central government to enforce such policies. Such details have often been overlooked in some of the previous central-local studies. Therefore, this study will attempt to gather information and analyze the complex interactions of central-local relations as they are played out in the area of water policy.

Chapter Three

Measurement of Decentralization The Ebb and Flow of Power Within the Chinese Water Sector

In the multitude of case studies presented in the preceding chapter, it is apparent that researchers have addressed decentralization in many policy areas and have covered considerable ground both theoretically and geographically. The issue of measurement of decentralization has not, however, been sufficiently considered in most studies (Smith 1985; Silverman 1992).¹ Without careful measurement frameworks or models, the ability to accurately compare and contrast decentralization experiences within and between countries is greatly circumscribed. Therefore, I believe it is important to develop a framework to measure and clarify the level and scope of decentralization in a policy area. Utilizing such a framework could enable researchers to gain crucial insight into intergovernmental dynamics and changes in power distribution.

My first step in undertaking a study of decentralization was to devise a fairly systematic framework to measure the extent of decentralization in the policy area of interest. No policy occurs in a vacuum, thus, in order to capture the interaction between policies the measurement framework should also include some measures of

¹One notable attempt towards improving the measurement of decentralization for comparative purposes, was undertaken by Bennett (1990). In his study, Bennett constructs one model which categorizes intergovernmental relations by the character of their dominant method of resource allocation, namely government or market, and the level at which government action is dominantly exercised (center or local). His model touches on the method of resource allocation (mainly capital/material resources), but not the broader issue of how decentralization of other powers or responsibilities could limit the effectiveness of the resource allocation.

overall decentralization in the polity. This would entail measuring and examining *some* decentralization policies in sectors related to the policy under study. An illustration of linkages between policies will help clarify the importance of this point. For example, an increase in local government power in collecting and retaining tax revenues could enable the lower level governments to decrease their dependence on central government funds. This increased financial independence in turn could allow the lower level governments to "informally" devolve more power to themselves and enable them to pursue local goals in other policy areas. By undertaking a broader, more systematic assessment of the scope and types of decentralization taking place in several key sectors, one acquires an understanding of key contextual factors, particularly the resources available to various levels of government.

Few scholars studying local-center relations in China have systematically investigated or created frameworks for measuring decentralization in one or more policy sectors. By developing a framework to measure decentralization, China researchers could not only become more confident in the data gathered, but as mentioned above, could also more easily compare the dynamics of decentralization in China with the experiences in other countries. Studies by Gong and Chen (1994) and Cheung (1994), which are detailed below, represent the first examples of comprehensive frameworks to measure the extent and forms of decentralization in China. I have designed a framework to measure decentralization by modifying the work of the above authors, as well as drawing from detailed work on the topic by Smith (1980 and 1985) and Wolman (1990). In this study, the purpose of the

measurement framework has been to clarify the degree of decentralization in the water sector which has occurred during the reform era in China. More specifically, this framework has facilitated a more thorough understanding of the distribution of power and responsibilities among county, provincial and central governments concerning water resource management issues. This insight into intergovernmental power distribution lays the groundwork for assessing the opportunities, risks, and constraints that the local water officials face as they implement water policies.

Below, is a summary of studies which have been thorough and systematic in measuring decentralization. Drawing from these models I present a measurement framework which contains four main measures. The last section of this chapter covers how I use this framework to measure and evaluate the degree and form of decentralization in the Chinese water sector.

Previous Measurement Frameworks

Smith (1985) created a set of detailed measures for examining decentralization. His eight measures include: the shift in government functions; legal changes in the type and extent of delegation to lower level governments; division of revenue-raising power; method adopted by the central government to create area governments; extent of lower level government financial dependency on the center; the size of area governments; the effect of party politics on decentralization; and finally, the structure of the system. In a similar framework, Cheung (1994) looks at central-local relations along five major dimensions: constitutional, administrative, political, fiscal, and

policy. Cheung examines how each dimension was affected by the overall devolution of authority in the economic sphere.

Gong and Chen (1994), as well as Cheung (1994) stress that although the question of which level of government controls specific economic resources is important for understanding the decentralization process in China. The "contest" between Beijing and the subnational governments over economic resources must be perceived in the broader context. Instead of limiting analysis to the process of devolving power over economic and fiscal resources one needs to include issues of how political and administrative powers have been reshuffled and how these changes have altered the overall intergovernmental bargaining positions. Expanding the analysis to include some other key policy areas enables one to paint a more complete picture of decentralization in China or in any other country. The conceptual framework to measure changes in central-local relations which Gong and Chen (1994) propose, involves an examination of institutional design, institutional function, and institutional differentiation which affect central-local relations.

Following their definition, *institutional design* refers to the formal and informal organizational arrangements which influence central-local relations. Ironically, however, Gong and Chen do not provide examples of specific informal organizational arrangements in their paper.² Regarding formal organizations they include both organizations within political boundaries and the decision making

²Most likely these informal organizational arrangements include informal or illegal economic activities and the institution of *guanxi* (informal connections).

institutions at the national level (the legislature and central ministries), as well as specialized organizations such as special economic zones which often cross governmental jurisdictions. *Institutional functions* include legal, executive, and personnel management functions. For example, they focus on the change in distribution--both formally and informally--of legal functions. The executive functions refer to decentralization of investment, allocation, and managerial powers throughout the polity, while personnel management functions refer to the decentralization of the Communist Party's power of job assignment and promotion. The category of *institutional differentiation* focuses on the changes in inter-institutional relations such as the Communist Party and the state and the relations between the administration and industrial enterprises.

Notably, the above authors focus on similar areas for measurement and each of these three frameworks greatly simplifies the task of delineating and measuring decentralization. Gong and Chen (1994) and Cheung (1994) supplement Smith's framework in that the former authors raise important issues of *informal* organizational arrangements and expanding the analysis to include institutions which cross governmental jurisdictions. The salience of party politics or party-state relations is also encompassed by all three frameworks and is an issue which must be carefully explored in analyzing policy implementation in China.³ I have chosen to integrate

³The Communist Party in China has played the central role in governing the country and prior to 1978 the party generally retained tight control over government organs. Therefore, subtle changes in the party-state authority relationship, such as the gradual devolution of party appointment power, can significantly increase the power and discretion of government organs to formulate and implement policies.

some of the similarities within the above frameworks into a modification of another framework for measuring decentralization developed by Wolman (1990).

Employing four categories, Wolman's framework encompasses most of the measures discussed in the above three frameworks. The four categories are: functional measures, legal measures, resource dependence, and resource capture. Below, I will present Wolman's measures with the addition of several questions concerning informal or illegal activities which may be undertaken by local or central governments as powers are increasingly decentralized. I then apply this modified framework to an investigation of decentralization in the water sector in China.

Wolman's Framework

Functional measures consist of a list of functions for which subnational governments are responsible. Examples of functional areas include lawmaking, fiscal powers, executive and administrative authority. In cases where functions are shared, one should look for which is the "dominant" provider. This can be determined by uncovering which level accounts for more than 55% of direct expenditure in the functional area. Are there any areas, however, in which one level *should* be carrying out certain responsibilities, but are not? In evaluating the intergovernmental distribution of functions one should distinguish whether tasks assigned to local governments are whole functions (education), part functions (elementary education), or merely low-level policy making (school buildings) (Smith 1980).

Legal measures address the questions whether subnational units are only permitted to engage in activities explicitly authorized by the national government. For example, does the national government impose legal limitations on subnational government fiscal activity? Are lower level governments permitted to appoint or hold elections for local government and party personnel? Does central control of lower levels take the form of initiation or veto? To answer these questions one must examine whether specific laws have been passed delineating local government rights and powers. The significance of formal laws and constitutional amendments concerning center-local relations, however, should be evaluated by discovering if they have been carried out as stated. Moreover, researchers must also take into account the limited ability of the central/national government to monitor and enforce its laws. Are lower level governments obeying central government laws? If not, is there any discernable pattern concerning the types of laws lower levels are disobeying or altering?

Resource dependency addresses the extent to which lower level governments are dependent on the national/central government for their revenues. This would include an examination of tax and fee collection systems, as well as subsidy, grant, and loan programs. The concept of resources should also include the power and right to use and manage natural resources, as well. To address informal or concealed resource dependency one should attempt to uncover whether the central government continues subsidies and grants to lower levels even after proclaiming that such assistance would be halted.

Resource capture refers to the proportions of public expenditure accounted for by subnational governments as opposed to national governments. Nevertheless, one should keep in mind that the total volume of public expenditure is never available for decentralization (e.g., defense and foreign affairs). Moreover, to measure where expenditures take place does not necessarily reveal the locus of political decision making, for lower level governments could simply be making expenditures in order to implement national government policy. According to Cheung (1994), researchers need to uncover what control mechanisms the central authorities can use to influence local governments even after devolving the authority over expenditures.

Operationalization and Application of the Measures

Below, I specify my adaption of the Wolman measures and use these measures to assess the level of decentralization in the water sector in China. The water sector obviously does not exist in a vacuum, therefore, throughout this section of analysis I include some questions of decentralization in sectors which could influence intergovernmental relations in the water sector. I conclude the chapter with an evaluation of overall decentralization in the Chinese water sector by drawing together the individual analyses of the functional, legal, resource dependence and resource capture measures. These four measurements are naturally interrelated, but some inconsistencies among them will be observed. For example, legal changes in the water sector have generally lagged behind the transformations in functional and financial responsibilities between central and local governments concerning water management

and project construction. Additionally, as has been the case in many sectors in China, functional responsibilities have been devolved without an equivalent increase in local control over financial resources.⁴

Functional Measures

Since 1978, the leaders in China have undertaken a broad, self-imposed reform program, the design of which has developed in a somewhat ad hoc fashion. Despite the lack of a blueprint, these reforms have altered--in varying degrees--the role of the central government and the Communist Party in the administrative, financial, economic, as well as the social and cultural spheres. With the general goals of raising economic production and government efficiency, the leadership in Beijing initiated gradual and evolutionary administrative and economic reforms. Over the past eighteen years, the state planning system has been transformed into a more free-market oriented economy, foreign trade and investment have grown considerably, private enterprises and individual business entrepreneurs have prospered, and the annual average growth of the GNP has been a phenomenal ten percent. Concurrent with these striking economic reforms have been official as well as the unplanned changes in the distribution of power and responsibility among levels of government in China.

⁴In a discussion of pre-reform China, Christine Wong (1992:207) states that "Despite substantial decentralization in many spheres, the budgetary process remained quite centralized throughout the Maoist Period. The Ministry of Finance approved not only the consolidated budget but annual revenue and expenditure plans at the provincial level and set the amount of revenue transfers. Provinces in turn supervised formulation of budget plans at the municipal level and county levels. Local government enjoyed little budget autonomy." During the reform era, the central government has often limited the access or amount local governments have to bank loans.

In other words, the economic and administrative reforms initiated by the central government have led to intended as well as unanticipated increases in the devolution of authority to subnational governments. How these administrative changes have recast the functional, legal, and financial responsibilities between levels of government is the core issue in this and the following four sections.

Interwoven in the discussion of functional changes in the water sector will be summaries of the major shifts in functional responsibilities between the central and subnational governments. The inclusion of the general changes in governmental responsibilities will put in context the alterations which have occurred in water administration. These areas include:

- Changes in the Communist Party⁵
- New tax collection methods⁶
- China's transition to a more market-oriented economy
- Changes in decision making in the agricultural and industrial sectors
- The significant expansion of county government functions.

Throughout the analysis of the four measures I will integrate brief explanations of how reforms in these five areas have altered, or may affect, the distribution of power and resources to the water bureaus, particularly those at the county level.

⁵Reflection on the continuing transformation of the Communist Party allows us to understand how increases and decreases in party supervision of lower level governments has potentially influenced the operations of subnational water bureaus.

⁶The variety of intergovernmental tax collection and revenue sharing methods which have been employed during the reform era will reveal much about intergovernmental bargaining powers, as well as inform us of the potential financial strength of lower level water bureaus.

Power Flows in China's Water Sector--Functional Measures

I begin this section with information on the Chinese government structure--the one-party state--for this will enable us to more fully understand the breadth and limitations of the authority and power water bureaus possess. Next, I move to a description of the administrative structure in the water sector and the specific responsibilities water bureaus possess. The bulk of the discussion of functional measures will be devoted to the changes in executive functions in the water sector during the reform era. Of central interest is the extent power has been devolved in planning of water distribution and use, as well as in investment and water facility management. Insight into these changes will reveal how the division of authority has changed between central and local government bureaus for administering and planning water resource management and use.

At first glance China would appear to be a near-perfect model of a unitary system, for it is clearly a one-party state. Under the supervision of the Communist Party, the central government, prior to 1979, monopolized economic planning and distribution of resources. The Communist Party continues to appoint top leadership in government and the party organs. Ultimately major decision making rights lie within the Communist Party. Huang (1996:28) underlines this unitary perspective in stating that "local governments [in China] derive their authority and decision making rights solely from the central government and their duties at the local level are performed on behalf of the central government."

Every sectoral ministry in Beijing has corresponding bureaus at the provincial level of government and *officially* the relationship between the central ministries and their provincial bureaus is one of direct subordination. Nevertheless, this does not mean that the administrative relationships between local and central government bureaus in every sector are identical in their allocation of power. As we probe deeper, we will see that the unitary picture of the Chinese polity does not capture the full reality of intergovernmental relations in China.

The authority relationships between levels of government are more complex than they appear to be on the surface. Lieberthal and Oksenberg (1988) describe the government structure of authority as being fragmented with local and central levels of government possessing resources the other needs. Due to this interdependence, local and central levels of government must often bargain to reach agreement on distribution of resources and policy implementation issues. Wealth, economic strategic significance, personal connections, ambition, and acumen of provincial leaders are all factors which determine the amount of bargaining leverage each province can exercise over the central government (Lieberthal and Oksenberg 1988). Numerous studies also reveal that provincial governments are not bereft of bargaining power with the central government, particularly in the reform era, during which the central government has devolved more administrative and decision making authority to provincial governments. Notably, most provincial bureaus take their primary orders from their provincial government instead of from their ministries in Beijing (Huang 1996).

A brief examination of the formal administrative relationships between central and provincial governments should further illustrate the complexity of intergovernmental relations in China and set the stage for analysis of the water sector. The Chinese government divides leadership relationships between central and provincial governments into two categories: administrative leadership relations (*xingzheng lingdao guanxi*) and professional leadership relations (*yewu lingdao guanxi*). Central ministry and provincial bureau relationships are a mixture of either one, both, or neither of these two types of leadership relations.

When the a central ministry and its provincial bureaus are characterized by leadership relationships the upper level ministry exercises some control over the appointment, removal, and transfer of cadres within their provincial level bureaus, as well over payroll expenditures (Huang 1996). For example, the Ministry of Water Resources can use its administrative leadership authority to suggest candidates for top leadership positions in their provincial level water bureaus. The provincial party standing committee, which is closely supervised by the central party authorities, must, however, give final approval for the Water Ministry's choice. The party leadership groups in Beijing have generally been careful in supervising the selection of provincial leaders so as to foster provincial loyalty to the agenda of the central party. As was discussed in chapter one, some authors question the effectiveness of provinces in recent year due to a fragmentation of party control.

The second type--professional leadership relations--grants the central ministry power to issue binding operational directives and to make some personnel decisions

regarding top officials of their provincial bureaus. This power generally takes the form of provincial bureaus requesting ministerial approval for plans and policy implementation documents.

If a central ministry exercises *both* administrative and professional types of leadership relations then the central and provincial bureaus are seen as possessing a strong "vertical" (*chuízhi*) authority relationship. This situation can be likened to what, in western public administration literature, is called field administration. Under these field administered or "vertical" relationships, a central ministry makes operational decisions in formulating investment plans, as well as securing the funds and investment for projects on behalf of the provincial bureau. In a vertical relationship the provincial bureau's *nomenklatura* and payroll are more tightly controlled by the central ministry as well (Huang 1996). This could indicate that party authorities wield more control over provincial bureau offices which are under a central ministry with strong vertical authority.

Huang (1996) notes that the Ministry of Water Resources is one of the fourteen ministries which exercises "vertical" authority over their provincial water bureaus.⁷ Most provincial bureaus are not subject to such centralized field administration by their central ministries. Instead, most of the management authority of provincial bureaus rests with the provincial party committees and the provincial government. These provincially-led bureaus do not, however, ignore their central

⁷Most of these fourteen bureaus deal with infrastructure (transport, communications), natural resources, or banking.

ministries, but according to Huang (1996), they do possess considerable operational autonomy and ministerial instructions are less binding than they are for bureaus, such as provincial water bureaus, which in theory are subject to more centralized vertical/field administrative control. In the section below discussing the specifics of water administrative functions I will elaborate on an argument that even the relatively centralized authority system dominating the water sector has become increasingly decentralized and weakened during the reform era.

Administrative Structure of the Water Sector

In China, water resources are administered by a nested hierarchical administrative system. At the central government level the Ministry of Water Resources works with both the State Council and the State Planning Commission in devising and negotiating the content of water plans, policies and laws. After these high level negotiations are complete, laws and policies are sent to the National People's Congress (NPC) for approval. Generally, the NPC passes any law which the State Council and/or State Planning Commission approve, but in recent years the NPC has become more than merely a rubber stamp. For example, Water Ministry officials informed me that some water legislation, such as some proposed water conflict mediation rules, were not even submitted for review due to strong opposition by many NPC members (Interview 2).

Located between the central and provincial level water bureaus are seven water basin commissions which are under the direct control of the Ministry of Water

Resources. These basin commissions have an inter-provincial jurisdiction and are responsible for determining the water distribution and water consumption plans for their river basin, as well as mediating large water conflicts within their jurisdictions. Lower level water bureaus are required to base their water use plans on those issued by the basin commissions. It is only over the past few years that these river basin commissions have become more empowered to carry out their duties.

Continuing downward, there are water resource bureaus at the provincial, prefectural, and county levels. The lower level water resource bureaus are not only linked vertically to the Ministry of Water Resources, but are also required to work together with the People's Governments at their respective levels. This is a form of dual leadership, which often can lead to conflicting orders and priorities being placed on the water bureaus (Lieberthal 1995).

These subnational water bureaus also work with the Provincial Planning Commissions for project planning issues. Specifically, all county water bureaus must send their project construction proposals to the County Planning Commission, which can approve small projects. Larger projects require the approval from the Provincial Planning Commission. Prior to the 1970s, most small or medium water projects were granted approval by county, provincial, or central authorities, due to an abundance of central government funding for such projects. Since the mid-1970s, however, because of limited funding and increased concern for coordinating and harmonizing water use between regions, the approval for projects must always be granted by the government at the next higher level. If a county government can raise all the necessary funds,

approval is, generally, granted. Large projects, even those with foreign funding, require central government approval. The goal of central officials in cutting back on excessive project building is to bring to an end the practice of "drinking out of the iron water pitcher" (*he tie shuiguan*), namely, ending lower level over-dependence on central funding. In 1994 the Ministry of Water Resources promulgated two measures to control excessive project construction and strengthen project management.⁸

Completing the preparation for funding and planning, as well as submitting a project feasibility study are now the minimum requirements for project application.

Water Management Stations at the township level and their equivalents are the lowest level of water administration. The performance of these township level water stations is monitored by the county bureaus, but financially these stations are required to be mainly self-sufficient. Additionally, special water districts have also been formed within provinces to operate irrigation, drainage or flood control programs.

This somewhat neat hierarchical picture is complicated by disagreements among government ministries over the State Council's 1988 Accountability Policy (*sanding fangan*) which designated the Ministry of Water Resources the administrative department in charge of carrying out all of the unified management of water resources,⁹ administering the water withdrawal permit system, planning for urban and

⁸The two measures were "Water Conservancy Pre-Construction Funding Collection and Funding Management Measures" and "Water Conservancy Pre-Construction Project Planning Management Measures."

⁹"Unified Management" means that all other bureaus and ministries must receive the approval of water bureaus for work which impinges on water resources or could potentially affect water project facilities adversely. For example, increased water consumption or diversion as well as moving bridges or drainage facilities are all actions which would first require water bureau approval.

rural water resources, as well as managing rural water conservancy and village-township water supplies. The most significant disagreement stems from the assertion by officials in the Ministry of Urban Construction that they possess the rights to collect fees and implement the water withdrawal permit system in urban and suburban areas. Ironically, in 1988 and in 1990 the State Council *also* issued documents that declared the Ministry of Urban Construction responsible for the management of urban water resources. This division of urban and rural water resource management and the inter-bureau debate over control of water resources appears firmly embedded into the administrative system. Discussion of the cases in later chapters will illustrate how this debate has been exacerbated as more authority has been devolved to lower level governments in the water sector.

Water Distribution and Water Consumption Planning

The plans and criteria for water distribution and conservation are initiated when the Ministry of Water Resources devises a general water use plan. The seven water basin commissions, which are under direct control of the MWR, formulate more specific water use plans for their basins. Provincial Water Bureaus translate these plans into provincial water allocation/consumption plans. It is up to lower levels to base their water use plans on the plans devised by the higher levels. The function of planning would appear to be quite centralized, but in fact, plans are often vague and incomplete due to lack of sufficient scientific knowledge of existing water resources. The MWR mandates that a variety of water plans be promulgated at the

lower levels, but when I inquired into the types of plans the Zhejiang water bureau had issued, I was informed that most have not been completed. Besides the paucity of hydrological information, plans are also difficult to formulate due to the obligation that water bureaus at all levels must work together with other ministries and bureaus to draw up long term and yearly water supply and demand plans. When bargaining stalls, plans will fail to materialize. The ten year plan document from Zhejiang Province, appears to contain mainly principles of water use and a lists of water project investment plans. This document reveals that it is the subnational level governments which are required to generate most of the funds for water work, particularly project construction.

Water allocation was prioritized formally by the Ministry of Water Resources in the 1988 Water Law. Specifically, the law states that "[t]he development and utilization of water resources should first satisfy the water use of urban and rural residents in their daily life. Then the requirements of agricultural and industrial water use should be taken into consideration. Lastly, the water needs for navigation should be met."

In terms of water supply priorities, the water ministry and its bureaus have traditionally stressed the importance of agricultural water needs, which means that the distribution of water resources has been considerably skewed to favor agriculture. In China the agricultural and industrial sectors consume the most water using 80% and 15%, respectively. Since the reform era began, in both agriculture and industry the number of water users have increased and diversified, which in turn has also

challenged the authority and ability of water bureaus to manage water resources. For example, the metamorphosis of agriculture from communes to individual family farms, combined with the expansion in private and state-run factories, have caused monitoring and management of water resources to become more difficult for lower level water bureaus.¹⁰ The growth in industrial water use has also exacerbated water pollution, which creates challenges for water bureaus to provide adequate clean water to users. Not surprisingly, agricultural and industrial bureaus at the lower levels both pressure the water bureaus to grant more water to their sectors.

Local governments have encouraged the development of industry so as to increase local revenue sources, which in turn places added stress on water resources. Moreover, state funding at all levels for agricultural water projects has sunk considerably during the reform era. Simultaneously, the central government has demanded increases in agricultural production so as to fuel the economic reforms and propaganda campaigns stress that agriculture must not be neglected and that water bureaus play a key role. Water bureaus at the lower levels are thus caught between conflicting and often unrealistic demands of what water uses they should prioritize. In light of the conflicting horizontal and vertical demands on water, water bureaus have

¹⁰The household responsibility system transferred considerable authority to decide on crop production from the commune to the individual farmer household. While this reform has been heralded as a success in increasing agricultural production, it has adversely effected some water management work in rural areas, particularly irrigation management. The rise in individual household farming brought to an end communal work on building, management, and maintenance of irrigation projects. Numerous water officials I interviewed stated that much of the irrigation infrastructure, which had been developed under the communes fell into disrepair after 1979, for county water bureaus alone are unable to provide the necessary funding for repairs.

been struggling to determine their jurisdiction of authority and how they will carry out their responsibilities.

The above discussion of planning for water distribution and project construction would seem to indicate that these administrative functions in the water sector are fairly centralized. Nonetheless, one also needs to look at the contribution each level of government makes to these and other functions. Most significant are the increasing contributions for investment and managerial work provincial and subprovincial water bureaus play (See table 3.1). Subnational level water bureaus also play a large role in setting standards and devising implementation measures, which will be discussed later in this chapter. Despite the apparent centralization of water allocation, some water allocation rights have been devolved to lower levels. For example, the 1988 Water Law initiated the formation of a water withdrawal permit system, which ostensibly is privatizing usufruct rights for water. Also, some county governments have auctioned off some small river basins in areas where the water bureaus lack the personnel to manage and develop the basins.

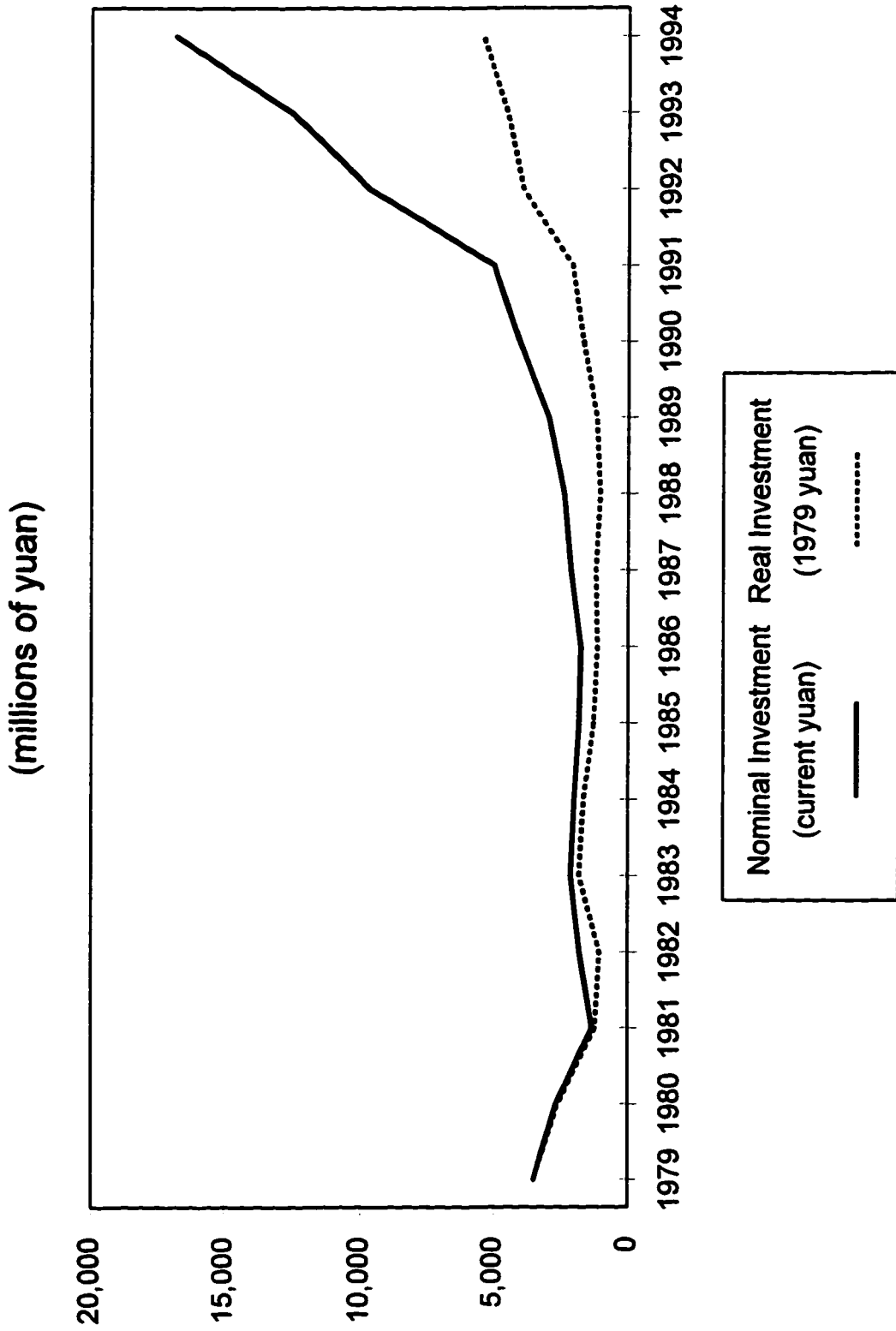
Lastly, the success of the centralized planning system needs to be called into question. Not only are some plans never written, but lower level water consumption has not always met the requirements in these plans. One partial cause is most likely the lower level water bureaus inability or unwillingness to control the water use of the burgeoning agriculture and industrial sectors. As discussed above, the devolution of management authority in the these sectors has intensified the horizontal conflicts over water resources. The case studies in chapter five will show that these horizontal

conflicts are ones which the under-funded and understaffed water bureaus often lack the ability to overcome. These horizontal obstacles which markedly limit local water bureau capacity perhaps grant the lower levels the discretion to ignore many plans.

Investment in the Water Sector

As noted above in the discussion of measurement frameworks, nearly all of the authors stressed the importance of discovering which level of government contributed most to a specific policy area. Following the assumption in Wolman's framework, I examined national and provincial water almanacs to determine which level of government accounted for more than 55% of direct expenditure in various water management, construction, and policy areas. This enabled me to ascertain which level of government dominated in various functions in the water sector. In 1989, the central government contributed an average of sixty-five percent of the investment in the water sector. As table 3.1 indicates, however, this percentage has been falling significantly since 1989 with the central government contributing a mere twenty-five percent of water sector investment to provinces nationwide. When controlling for inflation, however, the increases in central government investment in the water sector are negligible (See Appendix B) and subnational government contributions constitute the majority of investment. Figure 3. shows how, when controlling for inflation, that water sector capital construction investment has not risen significantly during the reform era.

Figure 3. Water Sector Capital Construction Investment, 1979-1994



There are three main types of investment needed in the water sector: project design and construction, project maintenance, and hydrological research. Those relating to project construction receive the lion's share of investment. Before the reform era, the central government provided most of the capital investment for major water projects. Such investment was needed to purchase cement and other supplies. Labor was provided through mass campaigns organized by local governments. Local governments were also responsible for feeding and housing the masses who provided labor for construction projects. A phenomenal number of dams were constructed throughout the 1950s and 1960s by using campaigns to mobilize workers to "contribute" their labor to help China grow.¹¹ During the chaos of the Cultural Revolution very few major water projects were constructed, but with the stability and economic prosperity in the 1980s the number of major inter-provincial water projects has slowly grown.

Today, however, mass campaigns have been for the most part abandoned as a policy tool for constructing water projects. Mass campaign methods of water project construction would also not be appropriate in building the more recent projects. In the reform era water projects have often been technically more complex in their design than previous projects which has resulted in the demand more mechanized construction methods as well as the use of better trained laborers. Laborers today also

¹¹In Zhejiang province the number of dams reached 3614 and 3628 in 1992 and 1993 respectively (ZGSLNJ 1994). Twenty of these are large, predominantly centrally funded, dams. Nationwide, there are approximately 84614 dams, 374 of which are large. Despite the large number of dams, China has still not completely utilized the hydroelectric potential of its main two rivers the Yangtze and the Yellow River. The present hydroelectric projects on the Yangtze exploit only tap 3% of the river's electric producing potential.

refuse to work for little or no pay, for options now exist for even uneducated rural workers to earn more money through private agricultural production or to obtain fairly well-paying work in rural or urban factories. This dependence on machinery combined with the loss of "free labor" has naturally produced a greater demand for capital investment in water projects than the previous mass campaign method of construction. The central government, however, has made it clear that local governments must depend on their own resources to generate the needed investment.

Lowering central expenditures and raising revenue have been two major goals of the officials in Beijing during the reform era. In an attempt to reduce the strain on central coffers, subsidies and investment in many areas have decreased during the reform era--most notable has been the shrinkage of investment and subsidies for the military, agriculture, and heavy industry. The central government has also maintained that the tax reforms after 1980 allowed local governments to collect and retain more revenue, therefore local governments should shoulder a greater burden in capital construction investment.

Overall central government investment in water project construction has been on a marked decline throughout the reform era. This is reflected in the marked increase in the percentage local governments investment into water projects. Table 3.2 provides some evidence on how local governments in Zhejiang have increased their share in water sector capital construction, but this chart does not include the expenditures water bureaus must make to maintain and operate local water projects. The section below discussing resource dependence will provide a more exhaustive

account of funding trends in the water sector, with specific details of intergovernmental division of water investment in Zhejiang province.

Setting Standards/Devising Implementation Measures

As will be discussed in greater detail in the section on legal measures, within each of the water laws it has promulgated, the central government has specified whether implementation measures and standards will be set by a ministry level agency or by a provincial level agency. It is common practice in China for the central government to delay promulgating implementation measures until some lower level experimentation has been undertaken. Central officials can then examine which experiments have been "successful" and model their implementation documents accordingly. Ironically, a wide range of experimentation has been allowed during the reform era, but usually only *one* successful experiment is chosen to be promoted in nationally promulgated implementation measures (Kelliher 1992). In other words, national uniformity is usually the required norm. Other times, instead of issuing implementation measures the central government states that a new law or regulation should be "implemented according to local conditions." In the water sector, the central government has been conspicuously slow in issuing implementing measures based on the 1988 Water Law. Such a delay has most likely prevented some provinces from issuing their own documents, but has also allowed for local level policy experimentation. Conferences are often convened to allow provincial and county water officials share their experiences and successful experiments with each

other. Despite ministerial level warnings, local level water bureaus often appear to possess sufficient leverage to tacitly refuse to issue implementing documents. This represents a survival strategy, for if the policy winds shift and suddenly implementing a certain policy is considered "wrong," local water bureaus have protected themselves from criticism. It should be noted that the lack of a local implementing document does not mean that water bureaus are not implementing the policy!

Managerial Responsibility

Following the 1988 Water Law, the MWR established a new water resource administration bureau, which was to oversee all of the new water management and conservation provisions stipulated in the law. Slowly over the subsequent years, provincial and county water bureaus throughout the country created their own water resource administration offices. Within these local offices special water law enforcement divisions were created. The new offices were meant to draw up the necessary local documents and procedures on implementing many of the new water law provisions and regulations, as well as monitor local compliance. One of their key responsibilities has been to improve management of water project facilities.

The decreases in investment funds combined with the expansion in water management duties have together spurred a shift towards privatization of water facility management. Lacking the resources and personnel to develop water resources or manage existing water facilities in their area, most county and township water bureaus have come to increasingly rely on the development of contract responsibility systems.

For example, local, particularly county level water bureaus have partially privatized some of their previous responsibilities or facilities. For example, the work of managing some irrigation districts has been contracted out to individuals or some pumping equipment or well-drilling equipment may now be contracted out to farmers. The larger water facilities, such as reservoirs, must remain under water bureau supervision and contracts are thus issued to the water bureau workers running these facilities. Such contracting has improved water facility management and increasingly has delegated government responsibilities of smaller facilities to private individuals.

As the above discussion indicates, with the reforms the role of county water bureaus has changed significantly. In addition to adopting more responsibility to delegate and monitor water management work, indirect activities have become a proportionately larger part of their work. For example, county water bureaus may subsidize the interest farmers must pay on loans they took from the Agriculture Bank for water resource development investments. Water bureaus have also become more commercialized, in that some construction or technical units within county water bureaus have taken to hiring themselves out or charging for consulting.¹² The fees they charge are high enough to turn a profit and this money is used to subsidize the county water bureau's work and supplement employee wages (Blecher and Shue 1996). The other major change in county water bureau activity has been the

¹²This commercialization also takes place at the provincial level. For example, in Zhejiang, the provincial-level Qiantang River Basin Commission now regularly takes fees for hydrological survey work they do for county water bureaus or other government departments (Interview 7).

development of sideline economic activities, which will be discussed in the resource dependence section, as well as chapter four.

On January 10, 1994 the State Council approved a new plan concerning functional allocation, structural reform and personnel downsizing within the Ministry of Water Resources (Zhongguo Shuili 1994). For this study the most relevant points from this plan include provisions that a national water management system needs to be strengthened at every level within the water administrative system. The plan also recommends devolving more responsibility and power to subprovincial water enterprises and bureaus. Another change advocated in this plan was for water projects to "turn towards the market" in that various units bid for construction rights and once hired they are contracted to stay within budget. This has been a propaganda slogan since the late 1980s, but many articles in the MWR journal lament that the water project construction system often still works like it did under the planned economy with administrative orders and intergovernmental bargaining dominating more than market forces or responsibility contracts (Ministry of Water Resources Auditing Bureau 1994).

Legal Measures

Below, the major changes in water legislation in the reform era will be detailed and compared with previous laws and practices. In assessing legal measures the focus will be on whether the laws in the reform era are promoting more centralization or more decentralization of authority in the water sector as compared to

the pre-reform era. In other words, are there now more laws or policy pronouncements which assign greater authority and responsibilities to lower level water bureaus? For example, I will examine how various laws have specified the intergovernmental division of water allocation rights, as well as how laws or regulations have altered and clarified local managerial power and water project and maintenance investment responsibilities. Another relevant area to further examine is whether subnational level governments have been promulgating implementing legislation for many of the issues addressed in the 1988 Water Law and other major central water legislation.

The abundance of water laws and regulations which have been adopted in the 1980s and 1990s are part of an overall trend in China to strengthen the legal system and move away from the practice of ruling by policy and subjecting the country to the whims of dictatorial leaders. Initiating a rule of law was meant to both act as a check on the uncontrolled exercise of arbitrary power by individual leaders and to strengthen the reforms taking place in the economic, political and social spheres (Clarke 1991).

Chinese law is complex in that the relationship between law and party policy is not yet well-defined. For example, while the power of the Communist Party to directly intervene in many aspects of governmental and administrative activity has been curbed during the reform era, Dicks (1989:542) points out that "the Chinese legal system remains, indirectly in any event, the tool of a ruling Communist Party, to be assessed and, if necessary, realigned in accordance with the party's policies" and priorities. The meaning here is that the procedures for approving major pieces of

legislation at the central level still require approval of the Central Communist Party organs.

The advent of new water laws and regulations has served to clarify the expanded responsibilities of lower level water bureaus and the standards they must enforce. Every water official I visited in China spoke of how the rule of law had already begun to help them in their work. Increasingly, they point to laws which have granted them greater authority and clearer working guidelines. As we progress with the analysis in chapters four and five we will be better able to address the question of how some centrally promulgated water laws been promulgated to mirror the local government innovations and initiatives.

1988 Water Law

In 1988, the State Council and the MWR promulgated the first comprehensive water law. In addition to stipulating the basic principles for formulating water law and regulations at lower levels, the water law also initiated a water withdrawal permit system and new enforcement mechanisms, as well as procedures for mediation and arbitration to resolve water conflicts. After the law was promulgated, the State Council, Water Ministry, provincial, and subprovincial levels issued numerous laws, regulations, provisions, and plans. In addition, a large number of pilot projects have been conducted throughout China on water management, fee collection, protection of small river basins, financial diversification, and investment. The Water Law appears to have served a planning function and accelerated reform and experimentation in the

water management and policy sector in China. Experimentation has been initiated by both the central and lower level water bureaus, although not all experiments and policies run smoothly.

Although the list of water legislation promulgated in the 1980s is impressively long (See Appendix C), it should be noted that many of the laws are temporary and/or lack implementing legislature. It is not clear what "temporary" law means, but it often signals that policy experimentation is still taking place. Another major problem is that legislation for several types of environmental sectors, including water, consists of mainly regulations (*tiaoli*), which are issued by the Ministry of Water Resources, as opposed to laws (*fa*), which are issued by the State Council. Regulations, notably, do not possess the status or the enforcement power of a law. For example, because soil protection measures remain in the category of regulations, soil conservation bureaus must continually bargain and attempt to persuade other ministries to adopt costly, unpopular policies. In contrast, many environmental measures have been given the status of law (*fa*), which has increased the effectiveness of the Environmental Protection Bureau to charge effluent fees or levy fines to offending individuals or government agencies (Ross and Silk 1987).

One article in the MWR journal Zhongguo ShuiLi (Water Resources), maintains that considerable progress in local water legislation work has been made in that by 1991, the People's Standing Committees or People's Governments in nine provinces (or autonomous regions) had promulgated Water Law implementation measures or water resource management regulations. Such regulations are seen as

building the foundation for the formation of more local water legislation (Ke 1991). The fact that only nine out of thirty provinces or regions had formulated water law implementation measures could on the surface indicate that the provinces have not given a high priority to the measures stipulated in the 1988 Water Law. Another possibility is that the provinces were still carrying out experiments in water management and development and were delaying the implementing legislation until they knew what might actually work. Yet another explanation could be that political in-fighting over the right to manage water and other issues at the subprovincial levels (i.e., financing difficulties) are hindering the promulgation of implementing legislation at provincial levels. By 1994, however, most provinces passed some form of Water Law implementing legislation.

Not surprisingly, subprovincial levels of governments also delayed in issuing local water law documents. For example, in Hebei province alone, 63 of the 85 areas, cities, and counties in which the People's Congresses or governments had not promulgated any sort of water resource unified management document by 1992. One possible major cause of slow formulation of local laws has been the lack of clarity over which governmental departments possess the right to manage water. In other words, who possesses the right to collect water fees and give out water withdrawal permits has not been clear to local government officials (Cao 1992). Local leaders evidently complain that disputes between ministerial departments over control of urban groundwater combined with disputes in Beijing and inside provinces over the

control of other water resources make it increasingly difficult for lower levels to manage water well or formulate local laws (Cao 1992).

Management Responsibility Systems

The new policy direction to contract out the rights to manage a water facility such as an irrigation district was discussed above. Most of these contracts are issued to employees of the water bureaus, but some smaller facilities, such as pumping stations or wells at the township and village level, are contracted out to individual farmers. The first national level legislation promoting contracting in the water sector began with a document issued in 1980 "The Water Conservancy Project Management Unit Financial Contract Temporary Measures." In many areas this push for contracting has, ostensibly, privatized the management of many small scale water projects. How the terms of agreement are set up appears to be at the discretion of the local water bureaus issuing the contract.

Local Government Implementing Legislation

In China, locally enacted regulations fall into three categories, each possessing a different degree of centralization. The first, most centralized type, are regulations which are needed to implement laws issued by the central government. A second type of local regulation includes those which supplement laws promulgated at the central or provincial levels. For example, the Water Law calls for the establishment of water conflict resolution procedures and regulations, but no detailed provisions were

provided. Without specifications from the center, local governments are afforded some leeway in how to create their local regulations. The third type addresses strictly local issues and is, perhaps, the most decentralized of the three types (Hsia and Johnson 1986).

Following the promulgation of the 1988 Water Law, most provinces were very slow to issue their own provincial water law measures. It is common for provinces to delay issuing implementing legislation, for they do not wish to take on the costs of carrying out a law or policy which the central government does not intend to stress or support. In the case of the Water Law, the delays can be attributed to provinces waiting to see if the central government issues implementing legislation based on the provisions in the Water Law. Only when more related legislation was issued at the central level and when the State Council issued communiques stressing the importance of a new Water Law did it become clear to the lower levels that the center *was* committed to the new law.

In addition to centrally promulgated laws, the Ministry of Water Resources also issues numerous Communique or Opinion documents which are generally used to clarify some rule or regulation or to inform the lower level water bureaus of an issue which merits more attention. These communiques are often cues to inform the lower level water bureaus that a certain law or policy should be taken seriously. In light of the overabundance of new laws, lower levels need signals as to which laws and regulations they should prioritize or which will be more tightly monitored. Such information most likely allows lower level water bureaus to strategically comply to

some laws while ignoring others. This uneven implementation will be illustrated in chapters four and five for the three water policies under study.

Water Rights

In order to place the present-day water rights system in context, I will briefly elucidate the general division of water management authority and rights in imperial China.¹³ The most significant difference in water rights between communist and imperial China is that under the communists water resources have been deemed state-owned and the state has attempted to determine priority of water uses through centralized planning. In ancient and not-so ancient China, although the emperors rule was supreme and all property--including water resources--belonged to the emperor, in practice the imperial administration supervised mainly large water projects and allowed lower levels of governments and the peasants to work out their own water rights systems. This decentralization of water management authority appeared to be both a result of choice and necessity. During the Qing dynasty (1644-1911), which was China's last, imperial control over regional governments was strengthened so as to permit the Qing emperors to supervise and exert greater control over high-priority and dangerous issues. These issues included creating and maintaining a strong military, promoting social-economic stability through low taxes and fiscal restraint, overseeing the monetary system, and investing in the hydraulic infrastructure (Leonard

¹³For more thorough treatment of ancient water management arrangements see Leonard 1996; Schoppa 1989; Wittvogel 1957).

1996). The main investment and construction orders from the imperial palace concerned maintenance of the grand canal to facilitate grain shipments to the capital and flood prevention projects to protect crops and citizens. Flood control work was viewed as crucial in promoting stability in the country and key in maintaining the emperor's political legitimacy. Investment and supervision of large hydraulic infrastructure projects was a major concern of the emperors, for if the country was plagued by large water disasters it was commonly believed that the emperor had lost his "mandate from heaven" (*tianxia*) to rule the country (Fairbank, et. al 1978; Leonard 1996).¹⁴ Other types of water project work and water rights were under the control of regional governments, particularly the county magistrates. County magistrates usually negotiated with the local landed elite in making decisions concerning water project construction and water rights. In many areas the county magistrate would post these rules on a stone obelisk next to the river or lake (Interview 10). In some areas the county magistrate and the elites would allow peasants considerable leeway in devising their own water rights systems. Villages which shared water use on a river sometimes came together to negotiate water rights in time of drought and floods. Sometimes when water conflicts arose between two villages they were mediated by bringing forward two men who would both plunge a hand into a pot of boiling water. Whichever man could keep his hand below water the longest won superior water rights for his village (Interview 1 and 10). When such mediation or negotiations failed, however, water rights were then outcomes of armed

¹⁴These projects mandated by the emperor were constructed by peasants who had been forced into corvee labor.

conflicts between villages and towns. When the peasants could not resolve their own conflicts the county magistrate would usually step in and dictate water distribution (Schoppa 1989 and Interview 10).

From this, albeit cursory, description of ancient water sector IGR, it should be noted that water rights were predominantly *locally* determined through either peasant negotiations or negotiations between county magistrates and the landed elite. The diversity of water rights systems in the pre-communist era stands in contrast to the system of central planning of water distribution which was mandated after 1949. As was mentioned above, by decreeing water state-owned, water has ostensibly become an open access resource, over which individuals, villages, and government bureaus fight. The ambiguity and debate over water rights in China parallels the controversies taking place in the economic sphere where the political-legal questions of privatization contradict the Marxist principles upon which China's socialist system is based. Officially, all industries, property, and natural resources belong to the state and collective ownership. Since 1949, use of water resources has been prioritized according to policy mandates and planning. Officially, privatization of water rights is not permitted.

All officials I spoke with commented that the number of water conflicts--both those between individuals and those between government bureaus--had increased significantly over the past 15 years. Instead of bringing out pots of boiling water, the main means for resolving water conflicts has been mediation by upper level water bureaus and the introduction of a water withdrawal permit system.

The advent of new water laws and regulations have served to clarify the expanded responsibilities of lower level water bureaus and the standards they must enforce. Every water official I visited in China spoke of how the "rule of law" had already begun to help them in their work. Increasingly, the laws have granted them greater authority and clearer working guidelines in some areas. Nevertheless, many county water bureau officials have been struggling to finance and supervise all of the new unfunded mandates from above. Although an impressively long list of water legislation has been promulgated by the central government in the 1980s, many of the laws are temporary, lack implementing legislature, or are very vague as to how they should be carried out. The lack of clarity in many of the new water laws and regulations appears to often give lower level water bureaus more leeway in how they carry out implementation.¹⁵ After the case studies are presented in chapters four and five, I will return to a discussion of this latitude in implementation for county water bureaus and how a lack of local participation in forming water rights systems may be a major factor in hindering peasant compliance to the water fee and water withdrawal permit system.

In summary, the formulation of water laws is dominated by the central government, but lower levels have been empowered to create more local regulations to complement the upper level laws. The sheer magnitude of laws has created

¹⁵One increasingly common occurrence cited in articles dealing with Chinese law is that some of the new laws and regulations contradict each other. Therefore, lower level water officials either quietly ignore both laws until upper levels clarify what the policy direction should be, or they take advantage of the ambiguous policy environment and experiment.

difficulties for both the central and lower level governments. The central government faces challenges in monitoring implementation, while the lower levels are struggling to find sufficient resources to implement many of the new, centrally mandated water laws.

Resource Dependence—*Fiscal Reforms within the Water Sector*

The Ministry of Water Resources has no revenue generating capacity and therefore is dependent on state budgetary allocation to finance all of its activities. Provincial and subprovincial water bureaus are predominantly financed from local government recurrent budgets. In order to finance new medium- or large-scale water resource development projects or major repairs, these lower level water bureaus are dependent on capital grants from the central and/or provincial governments.

Throughout the reform era, there has been a significant shift of financial authority to the lower level water bureaus. As Appendix B and Figure 3 show, during the early 1980s there was a drop in central government capital construction investment for the water sector. Although the investment has gradually increased, when one takes into account inflation, which has averaged eight percent during the reform era (World Bank 1990), the absolute amount of investment allocated to the water sector has not yet returned to the investment level reached in the late 1970s (See Appendix B).¹⁶ In 1985, the central government supplied sixty-five percent of

¹⁶The rate of increase in central capital construction investment in the water sector has lagged behind the central government's increased investment in other sectors. For example, investment in the energy sector increased 88%, the postal service received a 205% increase, but investment in the water sector only increased 73%. Such investment in the water sector is only 2.5% of the central government total capital construction investment (ZGSLNJ 1995).

the capital construction investment to provinces, but by 1994 this figure dropped to twenty-five percent (See table 3.1). These aggregate numbers point to overall financing trends, but mask how the central government has shifted its investment priorities among provinces.¹⁷ Generally, provinces which have been fairly successful in stimulating economic growth during the reform era have been granted less water investment. Priority provinces are the poor inland provinces or those provinces in which large-scale, inter-provincial water projects are being constructed (e.g., the Three Gorges Dam and the Yangtze River Diversion Project). Table 3.1 presents how central investment to Zhejiang province has been dropping since 1985. Economically, Zhejiang province is one of the fastest growing provinces in China, but only one fairly large-scale central government water project is presently being undertaken presently in Zhejiang.¹⁸ Also noteworthy on table 3.2 is the significant decrease in central funding for subprovincial water projects. In 1993 and 1994 central government support for Zhejiang province water activities sank below the national average.

¹⁷According to 1990 statistics, in 18 of the 30 province-level units, over half of the water conservancy capital construction investment came from the central government. In 4 of the 30 (Heilongjiang, Shanghai, Jiangxi, Hubei) the central government's investment was approximately half of the total investment, while in the remaining eight provinces (Shandong, Liaoning, Fujian, Guangdong, Guizhou, Yunnan, Gansu, Qinghai), most of the funding came from local or foreign sources and not from the central government (ZGSLNJ 1991).

¹⁸The project in question is the inter-provincial Taihu Lake management project. There are also several proposed medium-scale projects which are soliciting central funding, but as many water officials informed me, it is becoming increasingly difficult to acquire central funds for medium- or even large-scale water projects.

Table 3.1

Resource Dependence--Zhejiang Overall Water Capital Construction Investment 1989-1994

	Overall capital construction investment in Zhejiang's water sector (in millions yuan)	Percentage of central government contribution in total water sector investment in Zhejiang	Average percent of central government water sector investment to provinces nationwide
1985	66.9 ^a	-	-
1986	55.9 ^a	-	-
1988	61.2 ^a	77 ^a	-
1989	90.9 ^c	68	65
1990	101.3	64	57
1991	175.5	55	52
1992	292.4	34	40
1993	333.6	18	31
1994	563.4	8	25

^aInformation for 1985-1988 taken from Zhejiang Provincial Almanacs (Zhejiang Provincial Government Economic and Technology and Social Development Research Center 1992 and 1994, hereafter Zhejiang Provincial Government).

^bDashes indicate information was not provided in almanacs.

^cInformation for 1989-1994 taken from National Water Conservancy Almanacs (ZGSLNJ).

Table 3.2

Resource Dependence--Local Water Capital Construction Investment In Zhejiang 1989-1994

	Capital construction investment for local government water projects in Zhejiang (in millions of yuan)	Percent of central government contribution to local government water projects in Zhejiang	Percent of central government contribution in local government water projects nationwide
1985	-	-	-
1986	-	-	-
1988	-	-	-
1989	84.7 ^a	66	55
1990	93.9	62	48
1991	157.7	49	40
1992	232.3	29	26
1993	219.6	23	22
1994	448.5	6	17

^aInformation for 1985-1988 taken from Zhejiang Provincial Almanacs (Zhejiang Provincial Government 1992 and 1994).

^bDashes indicate information was not provided in almanacs.

^cInformation for 1989-1994 taken from National Water Conservancy Almanacs (ZGSLNJ 1990-1995).

As central subsidies and investments in the water sector have shrunk, loans, both from domestic, centrally controlled banks and foreign banks have increased.¹⁹ Foreign loans and aid must, however, always be approved of by the MWR or the central Ministry of Finance. Foreign loans are welcome as long as the locality receiving the loan can repay it without central funds (Interview 27). Before the reform era, loans from the central government were often considered "gifts" to lower level water bureaus. Water officials I spoke with in China commented, however, that in recent years they are hesitant to take out domestic loans, for now they are truly obligated to pay them back (Interview 13 and 27). Other permitted funding avenues include allowing lower level water bureaus to open joint stock cooperatives with local water users, auctioning off the management of small river basins, or contracting out management of small projects to private individuals. Moreover, some units within the water bureau system--particularly construction and engineering units and bureaus--have formed corporations and are financing themselves by contracting out their services. This marked decrease in central investment would support the argument that subnational water bureaus have become significantly more self-reliant during the reform era.

¹⁹Beginning in 1982, the water sector began using loans to fund large or medium scale irrigation drainage or key flood control projects. By 1994, 19 such projects have relied on loans for their funding. Between 1990 and 1993 the amount of loans from domestic banks rose 270% from 3 million yuan to 1585 million yuan (Ministry of Water Resources Planning Bureau 1994).

Fiscal Reforms Nationwide

Fiscal decentralization in the water sector mirrors the phenomena taking place in all sectors. Decentralization of fiscal powers has generally bestowed more responsibilities than resources or formal powers on local governments, which in turn makes local economic growth all the more imperative. Without accelerated economic growth, local governments are unable to meet their new expenditure requirements (Wong 1992). During the 1980s, a profound transformation in intergovernmental relations was sparked by two major reforms, namely, administrative decentralization and the decision to allow provincial and subprovincial governments to retain more of collected tax revenue. The central government initially envisioned these reforms as a means to give local government incentives for promoting local economic growth and improving local administration. However, the outcome of these reforms went well beyond the central government's intended goals in that policy discipline and the central government's effectiveness in rule making was weakened in many sectors (Hao and Lin 1994, Naughton, 1995).

Numerous studies have pointed out that the administrative and tax reforms together initiated a significant shift of control over national resources from the center to local governments. For example, budgetary revenues amounted to 35% of GNP in 1978 and declined to approximately 20% of GNP by 1988 (Naughton 1995). This decline also paralleled a decline in three types of central budgetary expenditures, namely, fixed capital investment, military spending, and allocations for working capital. These three types of expenditures accounted for 21% of GNP in 1978, but

only 7.1% of GNP in 1988 (Naughton 1995). Below, I'll discuss more fully how the drop in fixed capital investment served to significantly lower investment in the water sector.

The decreased dependency on central government redistribution of taxes has often weakened policy discipline and vertical chains of command, which lowered the central government's effectiveness and authority in rule-making (Hao and Lin 1994). To "correct" these unanticipated outcomes, the central government initiated economic retrenchment programs five times over the past 15 years with the most stringent attempts in 1988 and 1989. The 1988 program aimed to revoke, but only succeeded in temporarily curbing, some of the most important economic and administrative reform policies, such as the local fiscal responsibility system and the rural household responsibility system (Hao and Lin 1994). After the Tiananmen incident in 1989, hardline conservatives within the central government initiated a significant rollback of economic reform by initiating macro-economic austerity policies, fiscal recentralization and strengthened planning and preferential policies for state-owned industry (Naughton 1995). We will see in chapter five how these austerity policies temporarily discouraged the implementation of some economic reforms in the water sector. Local governments strongly opposed fiscal recentralization because their revenues had already been lowered due to the austerity policies, but their expenditure obligations remained the same. Naughton (1995:283) states that local governments "spoke in unison" and successfully blocked the 1990 proposal for fiscal centralization. With the failure of extreme austerity policies to revert the economy back towards the

planning system and to place more resources and revenue under central control.

Beijing turned to reforming and ostensibly federalizing the tax system.

The new tax system which went into effect on January 1, 1994 represents the most dramatic restructuring of the tax system in PRC's history. In the reform era the central government has faced the difficulty of devising a tax system that enabled it to increase its share of tax revenues. Under the previous tax systems local governments have collected most taxes, which left the central government dependent on local remittances to raise its revenues. Under the new tax system the central government collects all of the value-added tax and about 70% of the total taxes. Lower levels now depend on tax remittances from the central government.

I believe that the devolution of investment, taxation, and other fiscal authority has afforded even the provincial bureaus under the more centralized vertical relationships some amount of autonomy. Moreover, as the later discussion of policy implementation in the water sector will reveal, the increasing autonomy of provincial and subprovincial bureaus has exacerbated horizontal competition among various government bureaus. Overall, subnational water bureaus have fared poorly in this bureaucratic competition for investments and administrative authority over water resources.

In summary, it is clear that, financially, provincial and subprovincial water bureaus have become substantially less dependent on central investment. Instead, subnational water bureaus are encouraged to seek out new financial channels such as loans, stock markets, contracting out water facilities, and opening sideline economic

operations. The lack of financial resources has led to a considerable drop in project construction, a decrease in irrigated land, and county water bureaus are increasingly incapable of financing necessary repairs and maintenance of existing water projects. Finally, the decrease in central investment has removed a previously powerful tool the MWR possessed to encourage lower level water bureaus to comply with central water policies.

Resource Capture

As indicated in the above discussion of functional measures and resource dependence, the management, regulatory, and enforcement responsibilities of county water bureaus have expanded considerably throughout the reform era without a comparable increase in funding from the upper level governments. This expansion of expenditure responsibilities within the water bureaus mirrors the same trend taking place among all county government bureaus.

In the area of expenditures it is becoming increasingly common for the central government to "dump" more financial responsibilities on lower level governments. Such instances of giving local governments unwanted responsibility could be viewed as forced decentralization. While such unwelcome devolution of authority might not produce efficient results it does represent a situation of increased decentralization nonetheless. Disagreements between central and local governments concerning local investment provide evidence of a relatively decentralized degree of local resource capture. However, if local governments are consistently spending money on policies and projects which the central government mandates, it would appear that the degree

of the local government's resource capture has not increased significantly. Since the actions of county level water bureaus are the focus of this study, I will close this section with a brief overview of reforms and expansion of county government functions.

Reform and Expansion of County Government Functions

Throughout the Deng era, county level governments have been the focus of much structural reform, which has included expanding functional and financial responsibilities and streamlining staff. In light of the tax reforms which allowed local governments to retain a greater percentage of tax revenue, it would appear logical to conclude that subnational governments have received substantial financial benefits throughout the reform era. In contrast, some researchers such as Wong (1991a:693) argue that

[w]ithin the budgetary sphere, changes introduced in the reform period have been much less favorable to local governments than commonly assumed, and local budgets have *shrunk* as a share of national income. At the same time, local governments face greatly expanded expenditure responsibilities, many stemming from obligations imposed by national policy. The result is that local governments at all levels are starved of revenue and forced to seek growth.

Revenue has risen, absolutely, for the county governments over the past 15 years. Nevertheless, the expansion of regulatory and other responsibilities has burdened county governments with expenditures which have surpassed the increased revenues (Naughton 1992). On average, local government revenues doubled during the 1980s, but expenditures expanded even more dramatically--quadrupled (Blecher

and Shue 1996). In addition, increases in either subsidies or locally generated revenue has not kept up with inflation, particularly the increases in capital construction costs.

Although expenditure targets are set along with revenue targets in budget negotiations between county and prefecture officials each year, the expansion of county government functions has not been simply a result of upper level mandates, but is also a result of the growth in local rural and urban areas. For example, after the implementation of the household responsibility system rural areas developed a more affluent rural economy which, in turn, has demanded that the county governments expand themselves into more complex arenas of regulation of land use and rural industries. At the county level, water bureau officials previously concerned themselves primarily with project construction and flood control activities. In the 1980s, these lower level water bureau duties were expanded to include implementation and enforcement of new water regulations. Moreover, local water officials have come increasingly under the pressure to devise means for raising their own funds for project operation and maintenance. As the economic reforms have progressed, industrial and urban water demands have grown sharply. County water bureaus have needed to hasten the development of water supply projects, while simultaneously protecting agricultural water supplies. A challenging balancing task in light of agricultural water consumption averaging around 80% of total water use.

Today, county governments are forced to be more selective in how much they fund county level bureaus. During the reform era tax laws changed to allow lower level governments to retain more taxes as well as expand control over local economic

decision making. As a result of these changes, county governments have been diverting more investment towards bureaus which generate more profits for county coffers. Therefore, water bureaus have been receiving increasingly less financial support from county governments, which has meant during the reform era county water bureaus have been burdened with more and more responsibility for their own expenditures. The greater obligation for county water bureaus to take on expenditures has been caused by the decrease in both vertical and horizontal support.

Conclusion

In summary, along all four measures there has been some shift of authority or responsibilities to the lower level water bureaus. Functionally, the Ministry of Water Resources--with party approval--sets the general direction of policy reform in the water sector. Many of the reforms over the past 15 years have delegated increasing responsibility for fund-raising and expenditures to lower levels. By decreasing upper level investment, it appears the Ministry of Water Resources has lost some of its previous leverage over lower level water bureaus. In terms of legal authority, the MWR has increasingly allowed lower levels adjust centrally promulgated laws to suit local conditions. With the advent of the water withdrawal permit system, the power to determine water rights is in effect being shifted to the subnational water bureaus. In the financial sphere, the increase in unfunded government mandates has decreased lower level water bureau dependence on central subsidies. Moreover, the dwindling of

financial support from both the central and county level governments has put a greater burden on county water bureaus to cover their own expenditures.

This portion of the analysis has painted intergovernmental power distribution within the water sector in broad strokes, but does not provide sufficient evidence as to how and why some county water bureaus innovated, modified, or evaded the three policies studied. Therefore, in the next two chapters I will move onto a policy-specific, intergovernmental analysis of the water sector. Chapter four focuses on the central government policy perspective to examine the design of the three water policies. Chapter five will analyze the level of resources possessed by county water bureaus, as well as the diversity in policy implementation among the five counties under study.

Chapter Four

The Central Government Policy Perspective Authority Flowing Downward

In the previous chapter I presented the first component of the policy entrepreneurship framework, namely, an analysis of the level of decentralization in the water sector. After examining the level of decentralization along four measures I asserted that authority, particularly financial and administrative, in the water sector in China has become considerably decentralized over the past fifteen years. As mentioned in the previous chapter, such an insight, however, does not sufficiently inform us how and why some county water bureaus innovated, modified, or evaded during the implementation of the water policies under study.

To refine the analysis into the causes and limitations of local government entrepreneurship, I move to an investigation of the *central government policy perspective*, which highlights the type, nature, and scope of each water policy. This top-down analysis helps to determine the central government's differing goals in formulating each policy, as well as revealing the intent and ability of central organs, particularly the Ministry of Water Resources, to monitor and set boundaries on the implementation process. How a policy is designed determines the level of local government discretion, which notably varies from policy to policy. The classification scheme I use is a modification of one which Chung (1995) developed to analyze the level of local government discretion within the Chinese polity. I believe, however, that this classification scheme has utility in evaluating policies in other countries as

well. Below I define the three policy characteristics and explain how differences in policy design determine whether the central government has granted a high, medium, or low level of local government discretion.

Scope: The scope of a policy may be either *encompassing* or *selective*.

Implementation of encompassing policies is mandated for all lower level governments, while under selective policies implementation is optional or required for only some lower levels governments. Under the former, the central government potentially possesses a greater capacity to monitor, for if all areas are required to carry out a policy, non-action will be more readily apparent. Conversely, selective policies may be more difficult for central governments to monitor. It is possible that central government officials opt to designate a policy as selective when they do not feel there is a need to monitor implementation closely and/or when they wish to stimulate lower level experimentation.

Nature: A policy may be either *new* or *routinized* in nature. Routinization means employing policy tools and methods which have been used in previous policies. Past experience with certain policy tools suggests that central and lower level officials are already familiar with how a similar current policy should be carried out. This familiarity with the effectiveness of previous policies also enables central officials to issue relatively clear goals. On the other hand, when new policies contain unfamiliar policy tools with untested effectiveness the goals set by the central officials may be

relatively unclear. A policy new in nature may be viewed by the central government as more experimental and therefore it is acceptable that goals are not well articulated. Nevertheless, the lack of clarity in a policy new in nature may afford local governments more discretion than a routinized policy which has clear goals.

Type: Type refers to policies which are *allocative* or *non-allocative*. Allocative policies require central government capital investment and non-allocative policies depend on locally generated funding. I believe the central government will be more inclined and capable of monitoring the implementation of policies in which local governments depend on central investment, than they will in monitoring the implementation of non-allocative. One can conclude that allocative policies will tend to encourage a higher degree of central scrutiny and, hence, allow for less local government discretion than non-allocative policies.

To summarize, if a policy is encompassing in scope, allocative in type, and routinized in nature it will allow for a fairly low level of local government policy discretion. Conversely, if a policy is selective in scope, non-allocative in type, and new in nature it will permit a relatively high level of local government discretion. None of the three water policies I studied in China were allocative in type, consequently, I could control for type and remove the allocative/non-allocative classification. I was thus able to create table 4.1 which facilitates categorizing policies as either possessing either a high, medium, or low level of local discretion.

Table 4.1 Central Government Policy Perspective (Local discretion either high, medium or low)

	ENCOMPASSING POLICY Required for all lower level governments (Central government potentially possesses a greater capacity to monitor)	SELECTIVE POLICY Voluntary for lower level governments (Potentially difficult for central government to monitor)
ROUTINIZED (Central government goals relatively clear)	Low Local Discretion	Medium Local Discretion
NEW (Central government goals possibly unclear)	Medium Local Discretion	High Local Discretion

From table 4.1 we see that Encompassing-Routinized policies allow for a fairly low level of discretion, for central monitoring capacity is high and goals are relatively clear. Slightly more discretion is permitted in policies which are designed to be Selective-Routinized or Encompassing-New. In the former, monitoring may be difficult or not desired, but the goals of the policy are clear. In Encompassing-New policies monitoring capacity is high, but goals are potentially unclear. Finally, due to difficulty in monitoring and a lack of goal clarity, the highest amount of local discretion granted by the upper level policy formulators will be in policies which were designed to be Selective in scope and New in nature.

Using this classification scheme I was then able to categorize the three policies I investigated during my fieldwork in China according to policy design. The design and characteristics of the three policies, which are summarized in table 4.2 and will be detailed in the text below, notably vary in the level of discretion allocated to the lower levels for implementation. These three policies were promulgated during the 1980s, which was a time when the Ministry of Water Resources and the State Council issued a plethora of new water resource and project management policies and laws, as

well as a variety of lower level funding initiatives. I chose these three water policies, for together they capture some of the key goals the Ministry of Water Resources and the State Council have established for reforming the water sector.

Table 4.2 Central Government Policy Perspective
(Local discretion for three water policies presently being implemented in China)

	ENCOMPASSING POLICY	SELECTIVE POLICY
ROUTINIZED	<i>Water Fees</i> (Low Local Discretion)	
NEW	<i>Water Withdrawal Permit System</i> (Medium Local Discretion)	<i>Sideline Economic Operations</i> (High Local Discretion)

The logic behind the design of these three policies stems from central officials trying to solve two major problems related to water management in China. First, is the challenge of meeting the demands of rising water needs as China's economy rapidly grows. The second area of concern has been how to fund the expansion of local water bureau responsibilities and improve their efficiency as upper level subsidies for water management and construction activities decreases. I will briefly outline the specific water supply and financial problems facing the central government in the water sector and then explain how each of the three policies in this study have been designed to address these two problem areas. I then examine the evolution of policy design for each of these policies. This analysis moves from identifying the original factors which motivated the Ministry of Water Resources and the State Council to promulgate these water policies to tracing the progression of change in policy design and goals.

To complete the top-down analysis, I extend the analysis beyond simply narrating the goals of central officials and address also the challenges--both logistic and ideological--these three water policies pose for the Communist Party and the Ministry of Water Resources. The intent of this chapter is to explicate the goal clarity and the central government's ability and desire to monitor each of these three water policies. The information I present below enabled me to identify the scope and nature of the policies and thereby evaluate the level of discretion the central government has permitted for each of these three water policies. I will conclude this chapter with a discussion of the utility of this top-down analysis in capturing the intergovernmental dynamics which influence local government entrepreneurship.

Challenges Facing the Water Sector

Water Supply and Management Problems

A glimpse at ancient history reveals that the Chinese were among the first civilizations to undertake large-scale water project construction (Greer 1979; Leonard 1996; Van Slyke 1988; Wittfogel 1957). This history remains strong in current memory and many of the Chinese water officials I met enthusiastically related stories of grand, state-sponsored hydraulic projects built in ancient times. The success of massive irrigation systems, innovative flood control projects, and the construction of a 1000 mile canal bespeaks not only the talent of early Chinese hydrologists and engineers, but indicates an impressive ability of the state to organize and control the large labor forces needed to undertake this construction work. After the 1949 communist revolution in China, the PRC leaders also proved adept at mobilizing the

masses to construct large water projects. In the early 1950s, mass mobilization was used to build dams to upgrade flood control and irrigation capabilities. Nearly 27 million hectares of farmland were brought under irrigation during this time period (Wu 1994).

From the late 1950s until the end of the 1970s, the focus of water project construction expanded to overall development of river control with a particular stress on increasing agricultural water supply. Over this twenty year period, 80,000 reservoirs were built and 175,000 kilometers of river dikes were constructed.¹ Moreover, total irrigated area rose to 48 million hectares, which accounted for 47% of total cultivated land. These numbers are impressive, but today many of these hand-built dams, dikes, and irrigation canals are crumbling, and funds for repair work are not readily available. In addition, some of these earlier water projects have never operated properly because they were never fully completed or lacked sufficient auxiliary facilities (e.g., dams without adequate canal networks to expand water delivery) (Wu 1994).

Water management in China has generally been dominated by engineers who have stressed supply side solutions for meeting water needs. In the early 1980s, it became clear to officials in the Ministry of Water Resources that technical ingenuity and building new projects would not be sufficient to meet the growing demand for water. The amount of water needed to fuel economic development and quench the thirst of an ever-growing population far exceeds extant water resources in many parts

¹Notably, most of this water project construction took place before the onset of the Cultural Revolution in 1966.

of the China (Lampton 1992b; Interview 2). In my conversations with county water officials in Zhejiang province it appeared that many of the local water shortages were not simply due to a paucity of reservoirs or natural droughts. Most water officials stated that their reservoirs and water supply facilities could adequately satisfy the massive increase in water demand if water wastage could be substantially curtailed. "Sick" (*bing*) water projects such as leaking dams are one of the main causes of water loss. Since the early 1980s, renovating poor quality water delivery systems, as opposed to building new water projects, has become the central strategy for improving supply management. Construction of new water supply projects is also becoming less and less an option due to the fact that reservoirs consume too much land and the costs of relocating people have become prohibitively expensive. In light of these limitations on building and renovating water projects, demand management methods have been undertaken by water bureaus during the reform era in order to create incentives to promote conservation among water users. To place the development of policy design of the three policies examined in this study, I now turn to a brief outline of water reforms in the 1980s and 1990s.

In the 1980s, the Ministry of Water Resources initiated a series of reforms to correct weaknesses in water supply capability and to expand the mission of water bureaus beyond project construction for agricultural needs. The MWR now stresses strengthening of project management and the implementation of water conservation measures. This shift in priorities to a more demand management focus naturally

required new policies and laws.² After nearly eight years of intergovernmental bargaining,³ the first comprehensive water law was promulgated in 1988. In addition to stipulating basic principles for formulating water law and regulations at lower levels, the Water Law also initiated a water withdrawal permit system and called for the creation of new enforcement mechanisms to administer water conservation measures such as the 1985 water fee policy. The water fee collection and water withdrawal permit system are two of the major policies which the MWR put forth in the 1980s to encourage water users to conserve water. The urgency to adopt conservation measures, particularly the water withdrawal permit system, stems in great part from the droughts in the 1970s, which led seventeen provinces to adopt a water supply strategy of using wells to mine groundwater. This supply management "solution" led to a drastic depletion of groundwater resources and land sinks, particularly in northern China. The severity of the impending water crisis thus became clear to central leaders (Interview 2).

²The desire to resolve water supply problems with technical solutions has not been totally abandoned. For example, in order to satisfy the water hungry north-east of China, a large water diversion project, which dwarfs the grand canal, is presently being constructed to transport water from the Yangtze River. This "South Waters Northward" (*nanshui beidiao*) diversion project is, however, small when compared to the Three Gorges Dam project which, after decades of debate, began construction in 1993. The Three Gorges project will produce the largest dam in the world and a 250 mile long reservoir. The goal of the project is to provide electricity for northeastern China, flood control for the lower Yangtze and irrigation water supplies for the farms in the upper reaches of the river basin.

³Drafting of the Water Law, which entailed bargaining within the MWR, began in 1979 and was finally completed in 1984. The opposition of other ministries to this draft law led the State Council to order the formation of a small leadership group which was made up of deputy ministers from all the "concerned" ministries. Together over the next four years compromises were found and it was finally sent to the National People's Congress for approval. Its passage through the legislature was unusually difficult, for the Water Law faced opposition from provincial representatives. The water withdrawal permit system was one of the contentious segments of the law (Interview 2).

Besides introducing specific conservation measures and stressing repair of extant projects to lower water loss, another strategy for improving water bureau performance was to strengthen formally the authority of the Ministry of Water Resources. In 1988 the State Council issued the Accountability Policy (*sanding fangan*) which designated the Ministry of Water Resources as the administrative department in charge of carrying out all of the unified management of water resources. This means that all other ministries and bureaus are supposed to defer to the MWR in issues regarding water resources.

Clarifying the authority of water bureaus was meant to improve water management and decrease intergovernmental conflicts over water. This authority of water bureaus to manage water resources is, however, not secure. In 1988, the State Council also granted the Ministry of Urban Construction supreme authority in managing water resources inside urban areas. This division of water management authority between urban and rural is thus firmly embedded into the administrative system and, as will be apparent in chapter five, has created severe obstacles in the implementation of the water fee and water withdrawal permit system policies.

In addition to water loss due to crumbling water projects, another main cause of water wastage has been attributed to the state ownership of water (Nickum, 1982; Ross 1988). In theory, water allocation and consumption have been controlled through planning, with the goals of promoting equitable water distribution. As was indicated in chapter three, planned water use, however, has generally not been achieved in practice. Nickum (1982) notes that state ownership of water in China has meant that

the rights to water use have generally been vague and have produced "anarchy" and conflict over the use of water resources. Anecdotal evidence from interviews and water almanacs indicate that the number and severity of water conflicts between individuals, villages, and government jurisdictions increased during the reform era. During interviews in Beijing, ministry water officials maintained that the increase in water conflicts was attributed to the push for economic reform (Interview 2). The expansion of private agricultural, and township and village level industrial activity has evidently intensified the competition for water resources in rural areas. At the same time, urban areas are seeking more water resources to fuel their economic development. Disputes between provinces for water resources have become so intense that central government mediation has been needed⁴. I was informed that the increase in water conflicts precipitated the call for the creation of a water withdrawal permit system in the 1988 Water Law.

The formation of centrally issued water plans was meant to bring clarity to state ownership of water, but the inability to enforce these water plans has often turned water into an open access resource in China. At the micro-level some agricultural areas did create local water right systems akin to riparianism (Nickum 1982). These small scale agricultural water rights systems have not been sufficient, however, to solve the conflicts which have arisen among rural users and between urban and rural users. In addition to the problem of water conflicts, the fact that

⁴Examples include inter-provincial disputes over the construction of the Three Gorges Dam (Lieberthal and Oksenberg 1988), the conflict concerning flood control and drainage needs of Lake Taihu which affects Zhejiang and Jiangsu provinces, flood management on the Yellow River, etc.

property rights in China have been held in common has meant that natural resources have been treated as cost free (Ross 1988). Viewing water as free has posed considerable obstacles to implementing fee collection measures and promoting other conservation policies. The water withdrawal permit is meant to clarify water rights and also to provide water bureaus with more exact water usage data. This information will enable water bureaus to levy fees more accurately and promote conservation of water use. In chapter six, I will return to a discussion of how amorphous water rights has influenced the implementation of the water withdrawal permit system and water fee collection in the five counties under study.

Financial Problems in the Water Sector

As I described in chapter three, the water bureaus in China have been faced with the challenge of expanding their work responsibilities with less subsidies from the central government. The dependency on upper level subsidies was dubbed "drinking from the iron water pitcher" (*he tie shuiguan*), and pre-reform era attempts at limiting this reliance on upper level funding were, ostensibly, unsuccessful.⁵

Besides inadequate funds for water project construction and repair, subprovincial water bureaus have also faced limited resources for paying and providing for the welfare of their personnel. Speeches by ministry officials often cite

⁵For example, a water fee policy was initiated in the 1960s but was minimally carried out by lower levels. Several water officials informed me that the failure of the previous water fee system was because peasants had contributed their labor into building water supply projects thus felt they had already paid for the water.

the lack of financial security as one cause of the low level of productivity and enthusiasm of water sector employees, particularly those at the subprovincial level (ZGSLNJ 1994). Another personnel problem which has affected the efficiency of water bureaus has been the common practice in China of overstaffing in government bureaus. In order to deal with these financial problems the Ministry of Water Resources and the State Council introduced a series of reforms and cutbacks during the reform era. For example, the range of fund-raising mechanisms lower level water bureaus may use has been expanded considerably. This augmentation of revenue generating sources is particularly necessary since most financial responsibility for provincial or subprovincial projects has now been devolved to lower level water bureaus. Some examples of new revenue raising methods include subnational water bureaus taking out loans, levying various water use fees, and opening stock cooperatives to help fund the construction, operation and repairs of local water projects (Qian 1991). Central funding for special, high tech projects is available, but such subsidies are highly competitive.

Mirroring the reform strategy in the industrial and agricultural sectors, the Ministry of Water Resources has instructed lower level water bureaus to adopt contract responsibility systems. Contracting water management responsibilities within water bureaus, as well as contracting out to farmers, has been viewed as a method to improve management and financial efficiency. Slogans declare that the contract responsibility systems are meant to break the iron water pitcher system (*shuai tishuiguan*). Encouraging water bureaus, particularly those units managing water

projects, to develop sideline economic operations (SEO) has been another method promoted by the MWR to help lower level water bureaus raise more funds and become financially self-sufficient. In addition, indirectly, the SEO policy was also seen as a way of improving the quality of water management because well-funded water bureaus and well-paid water workers would be potentially capable of carrying out their water work more efficiently.

This section has provided some insights into the water supply and finance problems which the Ministry of Water Resources and the State Council have sought to alleviate through the creation of policies promoting water conservation, management responsibility, and financial self-sufficiency. This context affords a clearer picture of the general goals and priorities the central government possesses regarding water resources in China. With this context in mind I now turn to descriptions of the water fee, water permit and sideline economic operations policies, which will enable me to explicate the nature and scope of each of the policies. I will present the evolution of each of these policies individually, but at the conclusion of this chapter it should become clear that these policies are somewhat interwoven together, and jointly they encompass the main reform goals the central government has set for the water sector.

Water Fee Collection

Background and Objectives

In 1965, the State Council promulgated the "Water Project Fee Collection Use and Management Temporary Measures." This law represents a significant change in

water management in China because for the first time water project units were given the authority to collect water fees. Due to the Cultural Revolution, however, clear implementing legislation and enforcement requirements were not promulgated at the central or provincial levels.⁶ The general practice for agricultural activities was to base fees on the amount of land under irrigation, rather than the exact amount of water used. The disadvantage of such a fee scheme was that it did not penalize inefficient irrigation projects. The 1965 water fee collection measures were also ineffective when faced with the pervasive belief that state owned water truly belonged to the masses and, therefore, was free for consumption. Peasants in particular felt that since their labor had been used to build the water supply projects, they had already paid their "fee" to the state.

In light of the ideological hurdle of free state-owned water and the lack of clear enforcement measures, it is not surprising that throughout the 1960s and 1970s the water fees which were assessed were extremely low and did little to cover the expenses water projects incurred to supply the water. With continued low water prices, there existed no incentive for agricultural collectives to change wasteful water use practices or repair extremely inefficient irrigation canals. In addition, city governments were not motivated to install water meters in factories or individual homes to curb wastage. Low water fee rates also meant that water projects continued

⁶During the Cultural Revolution (1966-1976), government officials often spent more time "making revolution" than carrying out their agency's work. County water officials informed me that during the chaotic ten years of the Cultural Revolution almost all water project construction was halted and other local water work was done cautiously or not at all (Interview 10). Fee collection was out of the question in most areas for fear of being accused of overburdening peasants.

to be dependent on state subsidies to cover maintenance and large repairs (Ministry of Water Resources 1985a).

In order to rectify this situation, the MWR conducted a survey to illustrate for the State Council how essential it was to transform and expand the collection of water fees. This was the first such water economics survey that the MWR had undertaken. The goal of the survey was to determine the optimal price rate for water to cover costs of water project repair and management work, as well as ascertain how high fees would need to be to encourage conservation efforts.

The survey spurred the Communist Party and the State Council to issue a document in 1982 calling for revisions in water fee assessment and collection for village township industry and agricultural water uses. Specifically, this document stated that water fees could be used to help water projects cover water supply costs. This document which officially initiated the reform of the water fee system was, however, followed by a communique which stressed the need to protect agricultural water use and maintain some subsidies for water bureaus. In the 1982 communique, the Ministry of Water Resources stated that agricultural water use should be priced lower than industrial water use (Ministry of Water Resources 1985a). Moreover, in order to guarantee low prices for agricultural water the finance department at the next higher level of government should give the water project management unit some subsidies to help the water units continue their operations. This indicates that the financial safety net from upper levels was still to remain partially intact. Another example of continued upper level support was reflected in the statement that upper

level water bureaus can provide a small amount of money to help water projects cover depreciation costs. Although this support is not to exceed twenty percent of the depreciation cost, when combined with the directive to keep agricultural water priced low, it is clear that there was a lack of will within the central government to directly confront the problem of high agricultural water use.

Despite the initial contradictory reception for water fee reform within the upper levels, by 1983 eighteen provinces had promulgated new water fee standards and water management measures (Ministry of Water Resources 1985b). It would appear that these provincial measures combined with numerous national meetings on water fee reform, laid the groundwork for the water fee collection measures which were promulgated in 1985. The urgency behind instituting effective water fee collection measures was to guarantee sufficient water supplies for fueling China's economic growth. As the economic reforms progressed in the early 1980s, agricultural and industrial water users were able to significantly increase their production profits while still paying the same low prices for water that they had in the 1960s. Most likely, the MWR pushed more intensely for water fee reform after 1980 due to a desire to tap into the economic growth that was taking place in the agricultural and industrial sectors. Moreover, as was discussed in chapter three, during the early 1980s there was a precipitous drop in central government investment in the water sector, which exacerbated the thirst for funds within the water sector.

The 1985 Water Fee Collection Policy

It was not until 1985 that a comprehensive and clear water fee policy was issued by the State Council. The document was titled "Water Project Water Fee Assessment, Collection, and Management Measures." Broadly stated, the objective of this document was to treat water as a commodity rather than a gift of nature. The opening article of these water fee measures states the conservation and financial goals, as well as the scope of implementation:

Every water project should receive compensation for water supply in order to promote the rational use of water resources and encourage conservation of water use, as well as to guarantee the funds needed for management work, large repairs and renovation of water projects....Industrial, agricultural, and other water users should all follow these regulations and pay the required water fees to water project management units.

In later policy pronouncements and speeches, central water officials elaborate on how water fees can advance "rational" water use. Using water fees to foster a decrease in the amount of water consumed by agriculture is one step towards "rational" water use. Decreasing agricultural water use will in turn allow more water to be diverted to meet the ever-growing industrial and urban water demands. In other words "rational" water use is a term referring to water consumption which promotes economic, particularly industrial, development.

In Article Four of the water fee measures, it is stated that water fee standards are to be based on the calculated cost of supplying the water, which includes water project operation and management expenses, as well as major repair and depreciation costs. On the surface this would indicate that fee assessment should be a relatively straightforward task, but in fact it is not. Fee assessment will vary according to the

end use of water and fee rates remain subject to inter-bureau bargaining. The water charges are supposed to be determined, however, by what the water actually costs for different uses over different times of the year. As Article Five stipulates, the assessment of water fees will vary according to the end use, with agriculture receiving the cheapest rates and industry being charged the highest. Agricultural water fees are to be completely based on water supply costs but do not include fixed asset depreciation or the cost of the farmer labor contributions. Non-grain, profit making crops may, however, be charged slightly higher fees. Fees for agricultural use of water require water units to assess a basic water fee and then add a second fee based on the specific amount of water used.⁷

The fee standards for water consumed by industrial users are calculated according to the cost of supplying the water, which in this case includes farmer labor contributions. Moreover, to this amount 4-6% more can be charged to provide water supply facilities with some "excess profits."⁸ In areas where water resources are in short supply, water bureaus may collect more fees when industrial and agricultural water users are excessive in their consumption of water. Industrial users will still be charged higher fees in these cases than agricultural users.

⁷This fee may change according to the season. For example, using flood water for irrigation would be considered water use outside of the water supply plan and water fees could then be reduced.

⁸During the reform era, targets and plans are supposed to be minimized in intergovernmental dealings, however, most upper level water bureaus will demand that water supply facilities meet certain profit targets. When the amount of money the water supply facility raises exceeds this targeted amount, these monies are called "excess profits."

Urban and township domestic water use fees also must cover or may be slightly higher than water supply costs. These water fee standards may be lower than industrial water use charges. Article Five also specifies the percentage of electricity price from hydro-electric stations which must be paid to cover water supply costs. Small hydroelectric stations which have been newly constructed by farmers are allowed to be charged particularly low water fees. With the exception of the farmers and some private industries, these fees are generally not directed at individuals. Rather, most must be collected from other government bureaus such as the urban construction bureaus for domestic water supply, light and heavy industry bureaus, and township governments. Fees for hydro-electric generation are also assessed to the hydro-electric bureau. Although in some counties the hydro-electric bureau may be merged with the water bureau. In such a case the fee would be an intra-bureau exchange, but such fees may be as difficult to collect as the fees charged to outside bureaus!

Article Three states that collectively managed water projects should follow the water fee standard and collection measures which have been locally set. This indicates that at the lowest levels some autonomy in the range of prices has been allowed. For example, in water rich areas fees may be lower than in water-starved regions. When floodwater is used for irrigation the fees may also be set lower than normal. In the Addendum to the 1985 measures the MWR also permits the provincial water bureaus to integrate these water fee measures with the local conditions. This means that the provincial water bureau may negotiate with the commerce and finance bureaus, as

well as other related bureaus to set up specific water fee standards and water fee management measures. Provincially set measures must be reported and approved by the provincial government and reported to the MWR. The MWR most likely allowed inter-bureau bargaining at the provincial level in order to alleviate the previous intergovernmental disputes which caused the 1965 measures to be ignored. Despite the discretion to adjust fee rates according to water conditions or through intergovernmental negotiations, the 1985 water fee measures and subsequent policy pronouncements make it clear that all water supply projects, particularly new projects, are to assess fees regularly.⁹ The decrease in central government subsidies to lower levels is also meant to promote fee collection.

Under the previous water fee law, water fees were collected by water units and then passed to the local government finance bureau. The local government finance bureau would then reallocate some, or all, of the funds back to the water unit for specific repair work. Under the new water fee measures, the authority to distribute and charge for water has been decentralized, and all of the collection and use of water fees is carried out by the units managing water resource projects and irrigation projects themselves. The logic is that if local water users know that the funds will definitely be reinvested into local water supply work they will be more willing to pay

⁹The 1985 water fee measures also include fee collection authority for water units not responsible for water supply. For example, managing units of projects such as sluices, dikes, dams, ocean dikes and other drainage, waterlogging projects can turn to industries, farms, individual farmers, and other units to collect project maintenance and management fees. Such fee standards will be determined according to the project's operating management expenses and large repair costs. All officials I spoke with commented that these fees are even more difficult for water bureaus to collect than water supply fees, until there is a flood. Often it is only after a flood disaster that water users begin to place a value on flood protection work.

fees (Svendson 1992). In a Ministry of Water Resources communique issued shortly before the 1985 water fee measures, it is stated that all revenue collected by irrigation districts and by lower level water bureaus are to be used for local expenses (Ministry of Water Resources 1985c). This means that upper level departments should not arbitrarily appropriate water fees which lower levels have collected.

The role upper levels play in fee collection is to approve fee rates, set certain collection quotas and provide subsidies for needy water projects. For example, if a water project unit surpasses this quota and has excess funds *after* repair work, some of these excess profits must be passed to the upper level. If a certain quota is collected, but costs cannot be completely covered, the upper level finance bureau will provide some subsidies. The 1985 water fee measures also state that after covering water supply expenses most of the net profits are to be used to establish facility development funds. Some of these profits may be used for collective welfare and bonus funds, but the ratio of these two funds must be approved by the responsible, usually finance, bureau at the next higher level. It is therefore clear that in the design of this policy the use of water fees does not allow substantial lower level discretion.

In 1990 the Ministry of Water Resources issued a communique addressing the implementation of the 1985 water fee measures (Water Conservancy and Hydroelectric Publishing House 1993:317). The MWR comments that although a number of provinces have created a water fee system, these reforms are still in the initial stages of development. There are still local areas which are not collecting fees at all. To help correct this problem the MWR demands that provincial governments

should diligently implement the 1985 water regulations and amend the water fee standards in their own provinces. One alteration in the policy is the directive which allows provinces to change the present method of collecting cash from agricultural water users and instead accept payment in kind. Water project units could accept grain and then sell the grain themselves. In this 1990 communique the MWR reiterates that when water users do not pay their fees that water project units have the authority to cut water supplies.

Classifying the Water Fee Collection Policy

Although fee collection was not overly effective in the years prior to economic reforms, the assessment of fees is a policy tool with which water bureaus have been previously used, which means this policy can be considered routinized in nature. Fee charges are levied on a volumetric basis rather than a flat rate, but the present fee rates remain low. The Ministry of Water Resources has conducted a considerable amount of research into water fee assessment in other countries and is committed to increase the price of water over time. The goals of water fee collection are thus laid out quite clearly in the 1985 policy and subsequent policy announcements. Despite some local level discretion in adjusting fee rates, the Ministry of Water Resources is strict in its requirement that all water users must pay for the water they use. This indicates the policy is encompassing in scope. Because this policy is encompassing in scope and routinized in nature the discretion granted by this policy is relatively low.

Implementation of Water Fee Collection and Central Response

It would be logistically difficult for the Ministry of Water Resources to monitor the fee collection activities of all water projects throughout China. Hence, provincial water bureaus have been granted the main monitoring responsibility for water fee collection. One method of ensuring water fee collection has been to require provincial water bureaus to sign contracts to provide the provincial government with a certain amount of water fees each year. For example, since 1994, the provincial water bureau in Liaoning province has been committed to furnish the provincial government with 5.5 million yuan in water fees annually. The Liaoning provincial water bureau can, however, retain any fees which exceed the contracted amount (ZGSLNJ 1995). Although such a contract agreement may guarantee a greater rate of water fee collection, this contract arrangement violates the principle set forth in the 1985 water fee collection measures which stipulates that water fees are to remain in the areas they were collected. Another tactic used by provincial governments to combat poor performance in water fee collection has been to assign collection targets to county water bureaus and link fulfillment of targets with provincial funding payments. Instead of direct monitoring, I believe that the main strategy for pressuring lower level water bureaus to collect water fees has been the significant decrease in upper level funding for the water sector. While the number of fees collected has grown over the past decade, the amount of money raised has still been insufficient in covering water supply costs and maintenance work.

In 1980, nationwide, state managed water projects collected 222 million yuan in water fees and this increased to over 1000 million yuan in 1988 and rose even higher to 1270 million yuan in 1989 (Ke 1991). National level data aggregating water fee collection has been rarely reported. Increases in the 1990s have often been related in terms of percentage increases. For example, the Ministry of Water Resources reported that between 1991 and 1992 water fee collection revenues increased 20% (ZGSLNJ 1993). This increase in water fee collection in the 1980s has been attributed to the promulgation and implementation of the 1985 water fee measures. These numbers are deceptive, for the growth in fee collection has actually been nominal when one takes into account inflation, which has increased an average of 8% annually throughout the reform era (World Bank 1990). Perusal of table 4.3 also reveals that fee collection has not increased appreciably in the 1990s. Because there has been no national level reporting of water fee collection rates, the data for 1993 and 1994 are estimates based on individual provincial collection (ZGSLNJ 1994 and 1995).¹⁰ Water fee collection performance is also dismal when one takes into account that the vast majority of these fees have been collected in less than one-third of China's provinces. For example, seventy percent of the fees in 1993 were collected by five provinces (Fujian, Hubei, Jiangsu, Liaoning, and Shandong). The distribution was similar in 1994 with five provinces accounting for seventy five percent of all water

¹⁰These calculated data may be underestimating total water fee collection somewhat, for out of thirty provinces, only eleven and ten provinces reported water fee collection data in 1994 and 1995, respectively. Provinces often withhold data when the results do not show sufficient achievement in the implementation of a policy. Thus, I do not feel the calculated totals are much lower than the actual figure.

fees which were collected nationwide (Hubei, Hunan, Jiangsu, Jiangxi, and Shandong). See Appendix D for a table providing a brief overview of the water fee, permit system, and SEO policies implementation in ten Chinese provinces. The table indicates that macro-level economic data does not necessarily predict "good" performance on water policy implementation.

Table 4.3 Water Fee Collection and Total Capital Construction Investment

	Water Fee Collection (In millions of yuan)	Central Government Capital Construction Investment Nationwide (In millions of yuan)	Percentage of Central Government Capital Construction Investment in Subprovincial Projects
1980	222	2653	n.a.
1988	1000	2365	n.a.
1989	1270	2953	55
1990	n.a.	4065	48
1991	nearly 1800*	5016	40
1992	n.a.	6488	40
1993	1123*	12,497 [†]	22
1994	1171*	16,873 [‡]	17

Source: ZGSLNJ 1993

*I estimated the data for these two years by aggregating reports from individual provinces on water fee collection. Such national level data has not been reported in the 1990s.

[†]The substantial leap in water sector investment for these two years is attributed in large part to the commencement of construction of the Three Gorges Dam on the Yangtze River and increases in subnational investment.

To explain why so few provinces have been proactive in collecting fees I first considered the decrease in central government investment. In absolute terms, investment has increased in the 1990s, but, as was pointed out in chapter three, this investment has not kept up with inflation. Moreover, central investment is meant predominately for project construction or renovation and is not to cover operation or management expenses. Overall, as presented in table 4.3, the percentage of central

government investment into local water project construction and renovation has decreased substantially over the years. The average central government investment into the provinces listed above sank even faster than did the national average.¹¹ However, a number of other provinces, such as Zhejiang, have been receiving significantly less upper level investment than the national average, but water fee collection rates still remain low. There would appear to be other catalysts which are leading *some* provinces to collect fees efficiently, while others do not. I believe the analysis in chapter five, which incorporates local level incentives and resources, provides more insights into the diversity in water fee collection than a top-down analysis can.

Water officials cite the two main dilemmas regarding water fee reform as being finding the "right" price for water and the continuation of the practice of subsidizing water projects (Qian 1991). The continuing underpricing of water and the low levels of fee collection have meant that a myriad of water projects remain economically inefficient. Besides not earning enough to cover operation and maintenance costs, water project units also have not been able to improve the standard of living for their employees. Wasteful water use practices also persist due to the insufficient levying of water fees. The poor maintenance of water projects combined with a lack of conservation have exacerbated shortages of water resources and water conflicts (Geng and Huang 1994). The second dilemma facing water fee collection is

¹¹This information on provincial capital construction investment is derived from calculations made using information from the Chinese water almanacs (ZGSLNJ) covering the years 1990-1995.

the continuing practice of upper levels bailing out financially strapped water project units. The endurance of a safety net has weakened attempts to push lower level water bureaus to collect fees and, thereby, become more financially self-sufficient.¹² As I mentioned above, there may also be other factors at the lower levels which are also empowering water bureaus to ignore or minimally comply with the water fee regulations. In chapter five I explore these possibilities by examining the implementation of the water fee measures from of lower level water bureau perspective.

Water Withdrawal Permit System *Background and Objectives*

The 1988 Water Law initiated a water withdrawal permit system tied to the levying of water fees, particularly the collection of a new water resource fee. Briefly, under this system, all individuals and units are required to apply for a water withdrawal permit for water drawn directly from rivers, lakes, or ground if the use goes beyond that necessary for household or livestock and poultry water consumption (ZGSLNJ 1990). The motive behind the permits is for the local water bureaus to discover where and how much water is being withdrawn and to charge for water use in order to promote conservation.

The objective for instituting a water permit system, however, goes beyond simply discovering the location and amount of water withdrawals. The permit system

¹²This problem of soft-budget constraints has also been pervasive in the industrial sector as the central government insists on maintaining subsidies for large state-owned enterprises (Naughton 1995).

is also meant to clarify water rights gradually and thereby prevent water conflicts. This policy must perform a balancing act between creating and enforcing a system of usufruct rights while preserving the state-owned nature of water resources. One long-term goal linked to promoting conservation, particularly among agricultural users, is to enable water bureaus to design and enforce water plans better. More effective water planning and efficient water conservation will also enable the water bureau to redistribute water gradually to the industrial sector and to urban areas, which is another, not often explicit, long-range goal of the water withdrawal permit system.¹³

The implementation of the permit system has become connected with the levying of the water resource fee (*shui ziyuan fei*). This new fee was mandated in the 1988 water law and national level implementing measures were issued in June of 1991, which was two years before implementing legislation for the permit system was promulgated. The water resource fee differs from the water fees discussed in the previous section in that water fees are levied at different rates, depending on use. Moreover, for agricultural uses water fees are based on area of land irrigated, and a low fee is assessed for the amount of water consumed. The money collected from water fees is targeted for project repair and expansion. Under the water resource fee, water users are all charged the same rate for water consumed, and the collected funds are utilized to help local water bureaus cover management costs. Sixty percent of the money collected is to be used for funding management and water law enforcement

¹³Agriculture presently consumes eighty percent of the water resources used in China. Limiting overconsumption and wastage of water and increasing the irrigation efficiency by only 20% could supply north China's farmers with the same amount of water which is promised by the "South Waters Northward" (*nanshui beidiao*) water diversion projects (Ross 1988).

work at the county level, while the other forty percent is passed up and split between the city and provincial water bureaus. The use of these funds by higher level water bureaus is, however, not clearly specified.¹⁴

In 1993, nearly five years after the promulgation of the water law, specific implementing legislation on the water withdrawal permit system was finally issued by the State Council and the Ministry of Water Resources. In 1990, three years prior to the issuing of the implementation measures, the MWR issued a communique to commend the model performance of water bureaus in seven provinces which had already begun promoting water permit work (ZGSLNJ 1990).¹⁵ Within the communique the MWR announced that the State Council was definitely intending to promulgate water withdrawal permit implementation measures. In the meantime this communique, which loosely specified the distribution of responsibility regarding permit issuance was to serve as guidance and encouragement for lower levels to begin permit work.

Aside from this communique, very little discussion of the permit system was put forward prior to 1993 in the MWR journals or almanacs, although some locales had been implementing pilot programs. It was not until 1992 that some provinces such as Zhejiang began to issue communiques which stressed the importance of issuing

¹⁴In Zhejiang, the provincial government has required the provincial water bureau to turn over its share of water resource fees to the provincial education bureau. Although this kind of forced inter-sectoral redistribution of funds has been restricted in the reform era, the practice of upper level governments trying to "equalize" funding continues.

¹⁵The seven exemplary provinces were the following Guizhou, Hebei, Heilongjiang, Jilin, Liaoning, Shandong and Shaanxi.

water permits and collecting water resource fees. The official silence on the topic most likely reflects the intergovernmental conflicts over the policy as well as difficulties local officials have faced in the implementation of trial permit systems (Turner and Nickum 1994). Below, I discuss the inter-ministerial conflicts over this policy and in chapter five I delineate the types of inter-bureau difficulties county water bureaus encountered in carrying out early implementation of this permit system.

A major obstacle to the promulgation and implementation of the water withdrawal permit system is the on-going ministerial disputes over implementation rights. The Urban Construction Ministry and the Hydro-Electric Ministry have been competing with the Ministry of Water Resources for the right to implement their own water permit system. In addition, interview data revealed that various government ministries have tried to exempt their water withdrawal activities from permit regulations (e.g., Agricultural Ministry and Hydro-Electric Ministry). This competition for managing water resources is also evident in quarrels concerning the construction of dams. For example, the Hydro-Electric Bureau demands high dams for electricity generation, while the Ministry of Agriculture requests more water be diverted for agriculture. In the previous section I discussed how other bureaus contested for the rights to collect water fees. This array of inter-ministerial conflict over managing water is often referred to as the problem of "too many dragon heads controlling the water" (*duo longtou zhishui*).¹⁶

¹⁶See Lampton (1983) and Lieberthal and Oksenberg (1988) for case studies dealing with inter-ministerial conflicts over water.

The 1993 Water Withdrawal Permit System Implementation Measures

In the 1988 Water Law it was clear that only domestic and livestock water uses were to be exempt from applying for water withdrawal permits. The subsequent water permit implementing legislation still gave priority use to domestic water consumption, but also added that small amounts of water for irrigating crops was another use exempt from being issued a water permit. In the 1993 implementing legislation provincial people's governments are given the authority to determine what constitutes a small amount of water withdrawal for crop irrigation.

The delegation of authority for issuing water permits was clarified in the 1993 implementation measures as following the principle of separate management authority (*fenji guanli de quan xian*). For example, if the amount of water withdrawn is minimal, then a county water bureau can grant the permit without asking the city or provincial level water bureau for approval. Following the traditional practice of upper level supervision, however, county water bureaus must report their information on all permits issued to city or provincial level water bureaus to be put on record.¹⁷ As the amount of water withdrawal increases, higher levels of government are required to oversee the issuing of the permit. The main instances of basin river commissions or the MWR issuing water permits is to occur for withdrawals from bodies of water which cross provincial boundaries. With the exception of some areas along major

¹⁷In order to promote more uniformity in the implementation of the water withdrawal permit system, the seven water basin commissions were given more oversight authority to monitor the permit issuing activities of lower level water bureaus. Water basin commissions are also charged with preventing any interprovincial conflicts from arising concerning water overdrafts.

rivers, provincial governments are permitted to design water withdrawal permit procedures according to local conditions.

Ironically, even before the implementation measures were announced central water ministry officials were critical of lower level performance. In the 1992 Water Withdrawal Permit Management Work Meeting, for example, a report was issued in which the development and implementation of the water withdrawal permit work at the local level was admonished as not having been equal in depth and breadth. Strong suggestions were made that water bureaus needed to create a water administrative management system which would elevate water permit work to a priority status (Water Conservancy and Hydroelectric Publishing House 1993).

Water ministry sources claim that by the beginning of 1994, with the exception of Tibet, all provinces had begun implementing the water withdrawal permit system. Nationwide, over one million units and individuals have been registered to withdraw water directly from rivers, lakes, and groundwater (ZGSLNJ 1994). The first step in the implementation of this policy is to register all water users, which serves as a survey of overall water use and will improve local ability to create more accurate water plans. Perusal of water almanacs showed that most provinces have promulgated their own water withdrawal permit implementation measures or have adopted the central government document directly. In addition, a majority of provinces are reporting near completion of water permit registration work, but somewhat slower progress on the actual issuing of water permits. The policy was delayed in 1994 when the MWR stipulated that permits needed to be identical nationwide, and new permits

were then printed and distributed for lower levels to reissue. The explanation given for the standardization of permits, was to facilitate upper level analysis of water withdrawals nationwide (Interview 1). I have speculated that the first wave of permits were not strict enough. By December of 1994, 600,000 permits had been reissued, which most likely covers less than half of all water using units in China. No national level number exists concerning the total number of water using units, but in Zhejiang alone there are approximately 40,000 water using units.

Despite the confusion of reissuing the new permits, MWR sources claim that the water withdrawal permit system already shows positive results. One example put forward is that in 1994 water withdrawals only increased 1%, while the population grew 1.4% and the economy grew 8% (Zhang 1995). By the end of 1993 the MWR extolled the fact that 1200 out of 2000+ counties had already begun to carry out water withdrawal permit work (ZGSLNJ 1993). In 1995, MWR sources praise Hubei, Shanxi, Shandong and Zhejiang provinces for their efficiency in registering water withdrawals and issuing permits (ZGSLNJ 1995).¹⁸ This pronouncement of early policy success is tempered by three challenges--balancing out conflicting water demands among users, alleviating inter-bureau conflict, and establishing clear water use plans.

First, MWR documents continue to warn lower level water workers that they need to do additional work to balance the needs of various water uses, especially

¹⁸The fact that Zhejiang is commended for exemplary performance in the issuance of water permits raises some doubts as to how well this policy is proceeding, considering the relatively slow rate of water permit distribution in Zhejiang province, which is detailed in chapter five.

domestic water consumption. In other words, the number of water users, particularly those in agriculture, and the amount they may withdraw should be limited. The "contradictions" between agricultural and industrial water also must be alleviated (Zhang 1995). This means that although agriculture takes precedence over industrial water use, agricultural water users should become more efficient in their consumption of water so as to free up more water to fuel industrial growth.¹⁹ Indicative of the level of conflict generated by the policy goal of decreasing agricultural water use, in late 1994 water officials informed me that the central government issued a communique exempting all agricultural uses from water withdrawal permit requirements for two years.

The second, more contentious challenge, is that of "too many dragon heads controlling the water" (*duo longtou zhishui*). The 1993 implementing measures were designed to mitigate intergovernmental competition over issuing permits in that water withdrawals occurring within urban planning zones first had to be investigated and given approval by the urban construction bureaus before the user can apply for a water bureau permit. This procedure is supposed to produce more horizontal cooperation between water and urban construction bureaus, but, in practice, it appears that urban construction bureaus are simply issuing their own permits and collecting water resource fees in urban planning areas. In 1994, two of the main policy slogans

¹⁹It merits mention that in the first three decades of the PRC, Mao Tse-dong maintained in policy pronouncements that agriculture was to be first priority (*nongye diyi!*), for without a flourishing agricultural sector industry would have no stable supply base. In practice, however, most resources were devoted to developing heavy industry and agricultural investment was drained and neglected. This long-standing disregard for agricultural development is most likely one of the reasons agriculture was targeted first for reform in 1979.

advanced by the MWR were to unify the implementation of the water withdrawal permit system and to carry out a unified collection of the water resources fee, but in light of the intergovernmental conflict embedded in the water permit system, implementation legislation realizing unified action is problematic.

Additional insights into the extent of intergovernmental tension surrounding the implementation of the water withdrawal permit system may be drawn from an examination of water resource fee collection. It is clear that the water bureaus at the lower levels have been unsuccessful in attaining supreme administrative authority over water resource fees. For example, in 1991, it was reported that water bureaus collected these fees in 800 counties while urban construction bureaus collected the fee in 440 counties and cities. The total collected reached 550 million yuan. Without citing specific numbers, MWR sources state that the growth in water resource fee collection was "significant" in 1992 (Water Conservancy and Hydroelectric Publishing House 1993:300). No precise national level numbers were available for 1993, however, by aggregating individual provincial reports I calculated that the amount of water resource fees collected in 1994 by water bureaus was approximately 242 million yuan (145 million of this should have remained at the county level while the remaining 97 million yuan was to be passed to provincial and city water bureaus). Only eleven provinces reported collected water resource fees and nearly half of these fees were collected in one province, Shandong. Without relating exact numbers, lower level water officials stated that urban construction bureaus continue to levy water resource fees in many cities and counties.

The third challenge relates to the limited ability of local authorities to establish water plans. Article Six in the permit implementation measures stipulates that water withdrawals are meant to conform to river basin and comprehensive plans, as well as national and local long-term supply and demand plans. What makes this requirement problematic, however, is that upper level plans are not often issued. Moreover, as one ministry official explained to me, the lack of scientific and hydrological information means that the amount of total available water resources is not clear and some upper level plans may be unrealistic. As I discuss in chapter five, the lack of clear planning has meant that lower levels have not always been provided clear criteria for setting water withdrawal limits. This, in turn, has led counties to issue water permits which do not constrain water consumption. This paucity of clear plans combined with restrictions on issuing permits to agricultural and urban water users raises the question of just how much implementation work is available for water bureaus to carry out.

Classifying the Water Withdrawal Permit Policy

Initially, this policy was to apply to all but a few small water withdrawal uses, which led me to classify this policy as encompassing in scope. The recent postponement of issuing water permits to agricultural users still does not change the ultimate long-term goal of bringing nearly all water consumption under the permit system. This policy represents a major new approach to water management in China in that it proposes to move the water rights away from a state-owned system to a usufruct or appropriation system. Therefore, I categorized this policy as new in

nature. Following the criteria discussed at the beginning of this chapter, an encompassing, new policy should lead to a medium level of discretion being granted to lower levels. This categorization is supported in part by the aspects of the implementing measure which allow some discretion at the lower levels on designing implementing procedures, but require upper level inspection of issued permits. Moreover, lower level governments are required to refer large water withdrawals to upper levels for permit approval. The design of the policy, thus, has clear upper level monitoring built into it. From a top-down analysis we could conclude that the implementation was not going smoothly, since agricultural users have now been temporarily exempt from water permit requirements. The precise dynamics taking place during implementation and the success of the principle of separate management authority in providing sufficient monitoring of lower level permit issuance are discussed in the next chapter.

Sideline Economic Operations in the Water Sector

Background and Objectives

During the reform era, the Chinese Ministry of Water Resources (MWR) initiated many policies which mirrored the reforms in the economic sector in that more authority and financial responsibilities have been devolved to lower levels, particularly county level, water bureaus. In 1978, the MWR introduced a policy which permitted county level water bureaus to raise fish in reservoirs they operated. The profits county water bureaus generated from such economic operations were to be

used for repairs and maintenance of local water projects, and eventually it was hoped that profits could grow enough to provide funds for small water project construction. Ministry officials anticipated that this new policy would enable lower level water bureaus to become financially more independent from central subsidies. Throughout rural areas, peasants and some water management units had been raising fish in reservoirs in the 1960s in order to increase food supplies. Reservoir management units also used fish sales to raise money to provide for employee welfare. Such fisheries were highly illegal and were categorized as capitalist activities. It was not until 1980 that fisheries, and even collecting water fees, were praised as being necessary water work (State Economic Planning Committee 1989).

The Sideline Economic Operations Policy Pronouncements 1980-1994

The goals and the state of fisheries and other sideline economic operations in 1980 were first discussed in an official communique issued in April of 1980 by the Ministry of Water Resources, Ministry of Finance and the Aquatic Bureau (State Economic Planning Committee 1989). It was stated that nationwide, approximately forty percent of the 14,000+ state managed water projects were collecting water fees and developing sideline economic operations--mainly fisheries--in 1980. In the communique, examples of profitable operations in several counties and provinces were described to provide models of how successful water units used their SEO revenue to invest in expanding construction of their water project. Sideline economic activities were also portrayed as being a key method for increasing water project unit

financial self-sufficiency and generating funds for water project construction and expansion. In addition, the central ministries which issued this communique (MWR, Ministry of Finance, and the National Aquatic Bureau) encouraged water project SEOs to experiment with tourism, production and marketing services for local specialty products in order to bring in more revenues and foreign currency for the state. In addition to promoting local self-sufficiency for water bureaus, these central bureaus also see economic activities in the water sector as another source of taxes for central coffers. Although official documents stated that the scope of such operations could be broader than fisheries (e.g., agricultural and forestry activities, animal husbandry, processing industries and tourist site development) interviews with provincial and subprovincial water officials revealed that in the early 1980s they felt SEOs were predominantly meant to remain narrowly focused on water-related activities such as fisheries and small hydroelectric generation. In other words, lower levels did not believe the statements of openness declared in the early documents. Nevertheless, as will be detailed in chapter five, after 1982, in addition to establishing fisheries, some county water bureaus did open some small-scale industrial enterprises.

In the 1980 communique the central ministries declared that all newly constructed water projects, or those under construction or renovation, must diligently set up the foundation for SEO needs in order to obtain upper level approval for project construction. The MWR stipulated, however, that the contracts for such sideline economic operations were to be limited to only water bureau employees. As detailed below, by the mid 1980s water bureaus deviated from this requirement by

bringing in locally unemployed people to work in factories managed by water sector personnel.

In 1985, the MWR issued a second document which encouraged broader development of sideline economic operations into the industrial sphere, but the goal of funding water construction and repair remained unchanged. Water bureaus not only ran industrial sideline economic operations, but began to expand into tourist and service activities, such as barber shops, restaurants, and discos. After 1992, various policy announcements were released at the central and provincial levels which formally permitted even further increases in the scope of sideline economic operations in the water sector. Officials in the Zhejiang provincial level sideline economic operations bureau informed me that after 1992 central policy pronouncements were very clear in permitting water bureaus to use any resources at their disposal (land, skilled workers, equipment) to undertake any kind of economic activity they wished. Ostensibly, as long as they were not dealing in illegal substances--such as drugs, weapons, and explosives--water bureaus could officially pursue any kind of money raising method.

In the early 1980s, reservoir management units struggled with learning how to raise fish. Acquiring sufficient eggs and building fish containment areas, as well as learning how to catch the fish, were all skills water units learned by trial and error (Interview 19). Since the late 1980s, actual implementation of the sideline economic operations policy has been diverse. Implementation ranged from minimal economic activities in some county water bureaus to an expansion of economic investment by

some county water bureaus into hotels, factories, tourist sites, barber shops, and even discos. Beginning in the late 1980s and 1990s central documents and speeches praised highly successful county water units which earned high profits through SEO work. Compliments for model water units were usually followed by a longer discussion of the problems and shortcomings in SEO implementation. A glance at table 4.4 shows that growth in the production and profits of water SEOs has not been rapid. Moreover, many county water SEO activities do not generate sufficient profit to invest in water construction and repair work. The profits from the sideline economic operations in many counties have conspicuously *not* been used for water project repair. Instead the profits have been utilized to increase the wages and welfare assistance for *all* the employees in the county water bureau, which initially was not the central governments main goal for this policy. In chapter five, I elaborate on how the goals of county water bureaus for this policy differed from those prescribed by the Ministry of Water Resources and State Council.

In a 1991 speech at a national SEO work conference, one water ministry official declared that the main use of water SEOs is to improve the lives of water workers (Wang 1992). This is to be accomplished by first using SEO revenue to pay wages, bonuses and improve the housing facilities of water workers. The official continued by stating that after these needs are met the remaining money should be used to solve some of the daily maintenance costs of the water project. Some officials within the Ministry of Water Resources now believe that covering these expenses with SEO funds is the first step towards self-sufficiency for water project units. In the

1990s, ministry officials clearly maintained that SEO funds were not intended to cover large repairs or depreciation costs, which stands in stark contrast to the original policy pronouncements made in the early 1980s regarding the utility of water SEO revenue.

Table 4.4 Results of Sideline Economic Operation Nationwide (In millions of yuan)

	Production Output	Revenue	Profits and Taxes for Water Sector Sideline Economic Operation Activities	Profits and Taxes for in-budget State-Run Industrial Enterprises* (Not Water Sector)
1979	Under 1000	n.a.	n.a. ^b	79,940
1980	230	n.a.	n.a.	85,830
1981	n.a.	n.a.	n.a.	84,960
1987	3000+ ^c	n.a.	n.a.	128,300
1988	4000 (estimate)	n.a.	Estimated 690	151,700
1989	734	Has doubled since 1980	n.a.	155,890
1990	9200	9000+	800 ^d	127,080
1991	11,300	n.a.	1050 ^e	141,960
1992	n.a.	16,800 (estimate)	n.a.	167,220
1993	11,376	26,780	2071 ^f	n.a.
1994	10,139	36,730	1761 ^f	n.a.

Sources: ZGSLNJ (National Water Almanacs) 1989, 1990, 1991, 1992, 1993, 1994, 1995 and Ministry of Water Resources Sideline Economic Operations Management Bureau 1992, and Water Conservancy and Hydroelectric Publishing House 1993 *1979-1992 data from Naughton 1995.

^bThe lack of reported profits is most likely due to the fact that there were not any significant profits to speak of in the first decade of SEO development.

^cThis number was reported as not including water and electric fee, which implies that previous and perhaps subsequent numbers do include fee collection. It is a common practice to "pad" SEO data this way.

^d140 million of this revenue was passed to upper levels and 100 million yuan was used to supplement water project repair funds.

^e140 million yuan went towards water project protection expenses.

^fThese data are derived from individual provincial data reported in ZGSLNJ 1995 and 1994.

Classifying the Sideline Economic Operations Policy

Although the 1980 central communique concerning fisheries (State Economic Planning Committee 1989) stated that all new and expanding units must undertake

SEO activities, later documents increasingly portrayed SEO activities as optional for water bureaus to adopt. I therefore categorize the SEO policy as selective in scope. Although this policy is officially selective or voluntary, due to the significant drop in central government subsidies to the water sector, the option to open sideline economic operations has not necessarily been one county water bureaus have been able to lightly dismiss or ignore, which means it is a policy worthy of exploration. A policy which the central government would ignore completely would not be as analytically interesting! Financially strapped county water bureaus may have been motivated to open economic activities because of the freedom the policy afforded them. An example of how much latitude the policy has allowed is reflected in comments from one county water official I interviewed in Xiaoshan. This official stated that no provincial documents existed on sideline economic operations, which meant county water bureaus had only vague policy statements or slogans such as "Develop water economics" as guides. County water officials thus possessed the power to translate these slogans into actions which suited their areas. While this high level of discretion may have been welcome, county water officials, particularly those in poorer areas, believe they have not been receiving sufficient guidance or adequate assistance from upper levels in implementing this policy.

Because the sideline economic operations policy was selective in nature, the central government's ability to monitor has been somewhat limited. I believe evidence suggests that, until recently, the Ministry of Water Resources has not been overly concerned with monitoring SEO activity. Moreover, I believe the policy goals were

not clearly stated in the early years of this policy because it was a new form of generating funding. The fact that the central government has continued to expand and modify the sideline economic policy over the past 10 years illustrates the experimental, ambiguous nature of this policy. Therefore, I conclude that this policy has granted a relatively high level of discretion to lower level water bureaus.

Implementation of the Sideline Economic Operations Policy

According to the, albeit fragmentary, data on table 4.3, it appears that revenue and profits generated by water sideline economic activities have increased over the years. True insights into nationwide performance in implementing the sideline economic operations policy are problematic to calculate due to missing or veiled data. Numbers concerning profits have consistently been combined with the amount of money passed to the center in the form of taxes. In Zhejiang, I discovered that the tax portion was approximately thirty percent for the reported profit and tax data, but since tax rates are subject to central-provincial bargaining, it is possible other provinces paid either a higher or lower amount of taxes to the center. Despite the difficulty in separating out the exact amount of profits, we can still conclude from this table that the amount of reported water SEO profits has increased since 1988. Nevertheless, it is clear that the amount of money being generated in the water sector is relatively minuscule compared to the amount of profits being generated in the industrial sector in China. Moreover, these profits do not make up for the decrease in central funding

to provincial and subprovincial water bureaus (compare with central capital construction investment to local water projects on table 3.2 in the previous chapter).

It would appear that most of the revenue and profits raised by water management bureaus occurs in only a few provinces. For example, in 1993, 75% of the taxes and profits were raised by seven provinces (Beijing, Guangdong, Hunan, Jiangsu, Shandong, Sichuan, and Zhejiang) and in 1994, 67% of the profits and taxes were generated by eight provinces (Beijing, Hebei, Henan, Hubei Jiangsu, Liaoning, Shanghai, and Zhejiang). Jiangsu has consistently been the top performer in water sideline economic activities and in the collection of water fees.

While central government water investment began increasing in the 1990s, a majority of those funds went towards large central projects such as the Three Gorges Dam. Central government water investment decreased significantly both in absolute and in percentage terms in the top performing SEO provinces. One could, thus, surmise that decreasing central investment would be the catalyst for stimulating water bureau SEO activities. Unfortunately, not all provinces with equally low water investments have performed as well as Jiangsu (See table in Appendix D). Using the top-down perspective, one could also hypothesize that provinces with successful SEOs have significant economic infrastructure, namely, the provinces along the coast. Most successful water bureau SEO activity did take place in coastal provinces, but there are some coastal provinces which performed poorly in developing water SEOs and some highly productive inland provinces. To solve the puzzle as of why water bureaus in

some provinces were successful at pursuing economic activities outside water sector work, we need to move the analysis to an examination of county level water bureaus.

In 1990 the revenue generated was 9200 million yuan while profits and taxes amounted to only 800 million yuan. From this 800 million yuan, 140 million yuan was evidently passed to upper levels (Ministry of Water Resources Sideline Economic Operations Management Bureau 1992). Most likely the remaining 660 million yuan were distributed to contracted employees for bonuses and welfare services. Ministry sources also boasted that total of 100 million yuan from SEO earnings were used to supplement water project repair funds. 100 million does not come near to covering the decreases in central funding to lower level water bureaus. Moreover, between 1980 and 1991, only 550 million yuan from SEO profits was used for repairing water projects (Ministry of Water Resources Sideline Economic Operations Management Bureau 1992). Numerous articles in the MWR journal comment that insufficient amounts of SEO are going towards project repair and construction. Instead, a majority of the profits are being used to supplement employee wages and benefits.

Table 4.5 Employment Rates Within Water Sideline Economic Operations Nationwide

	Water Workers Employed	Jobs For Unemployed Outside of Water Sector
1980	300,000-400,000*	
1990	700,000	Nearly 20,000
1991	760,000	20,000
1992	n.a.	20,000
1993	758,000	20,200
1994	1,070,000	20,100

Source: Ministry of Water Resources Sideline Economic Operations Management Bureau, 1992.

*This number includes jobs given to sons and daughters of water workers and other unemployed people outside of the water sector.

While absolute profits may not be high, the magnitude of water employment involvement in SEO activities is striking. In 1990, it was reported that the number of employees in water project management departments involved in sideline economic activities reached 593,911 (ZGSLNJ 1990:681). This number represents approximately 47% of all provincial, city, and county level water project management workers. Later sources reported that by 1994 the number of water workers involved in economic profit making activities rose to over 1,000,000. This latter number, however, encompasses township and village level water workers. Nevertheless, the sheer number of water employees engaged in sideline economic operation activities is quite large. Although it has occasionally been cited as a problem, this large number of employees undertaking economic activities does not necessarily mean that not enough employees are doing water work. Like most government bureaus, excessive overstaffing has been the norm. However, a majority of these employees are most likely found in the handful of provinces where SEO production has been most successful. Table 4.5 also shows how water SEOs increasingly have provided jobs for unemployed people outside of the water sector, which initially was not the intent of this policy.

It is somewhat problematic evaluating the SEO policy based on reported numbers alone, for, as table 4.4 shows, data on nationwide SEO profits have rarely been published openly, even at provincial levels. I believe this is because many lower level water bureaus are truly not making any profits, while others are "hiding" their profits by reinvesting most of the excess revenue into the economic activities or

paying their employees large salaries. Hiding profits has been a common practice among industries throughout China, for profits have often been subject to high taxes or to upper level "borrowing." This paucity of profit and revenue data for water SEOs combined with numerous articles critical of water unit profit making efforts paint a fairly clear picture that at an aggregate level the water units have not been fulfilling the expectations of central officials. Nevertheless, because some areas have been successful and because some areas are suspected of hiding profits, the central government has mandated stricter upper level oversight on financial accounting for water SEOs.

Utility of the Top-Down Perspective

In this addressing the central government policy perspective the Communist Party's role was not mentioned directly. While it is true that the Communist Party does not play a large role in the water sector specifically, nevertheless, the new types of policies which have been developed in the water sector mirror the general policy direction permitted by the party. Despite all of the talk of free market reform and the pulling back of the state, ultimately it has been the Communist Party which has initiated and permitted reforms, the new policies and the direction of the policy experimentation in China. The party's hesitancy towards these new policy methods has, however, directly or indirectly affected the design of the three water policies discussed in this chapter.

For example, the strategy for generating increased revenue in the water sector should be couched within the larger economic reforms taking place in China since 1979. Initially, the strategy chosen by the leaders in Beijing for transforming the Chinese planned economy into a market economy was *not* to substitute private ownership for public ownership, but rather to encourage firms and also government agencies to compete, pursue profits, and develop managerial autonomy (Shirk 1993). Central leaders have, however, vacillated over the years over how far to allow privatization in the economy. The conflict and hesitancy among central officials has been reflected in periodic waves of economic retrenchment during the 1980s and early 1990s. Attempts to recentralize have been fueled in great part by the loss of central revenues, as well as a perceived loss of leverage over lower level governments. It is therefore not surprising that regarding the sideline economic and water fee policies the water bureaus have continually been subjected to contradictory messages. For example, water bureaus are encouraged to "go down the free market path" and "make profits" while simultaneously they are told to fulfill their public service duties and not collect fees chaotically or they are admonished for neglecting their water duties while pursuing profits.

Some of the problems and contradictions in the design of these policies stem from the tension within the Communist Party regarding ideological issues. For example, the water withdrawal permit system is creating a new form of water rights which will guarantee individuals, private industries, and city utility departments a specific right to use water. At the same time the water law and China's constitution

maintain that water, and all other natural resources are owned by the state. The Communist Party ideology is based on the assumption of equity, communalism, and altruism. State ownership of water, land, and industry has enabled the Communist Party to redistribute resources to promote equity. This system of redistribution has often been inefficient from a market standpoint. Although water distribution plans have been drawn up in the past, without any clear water right system, water use has been essentially unregulated. The lack of regulation and consistent monitoring by water bureaus or the water users themselves has facilitated wasteful consumption and inefficient water transfer systems. The water withdrawal permit system is the first step in creating clear usufruct rights. The crux of the tension is how to take the leap to establishing clear property rights.

One part of the ideological tension involved in charging water fees is connected to the property rights issue discussed above. If water belongs to the state and, ergo, the masses, it would appear contradictory to charge the masses for something which is already theirs. Soliciting fees is particularly problematic--both ideologically and practically--in areas where the masses were forced to contribute their labor to construct water supply facilities. Another problem with water fees stems from the proclaimed duty of the party to serve the peasants and promote agriculture. The Communist Party has often sacrificed the needs of agricultural in order to devote more resources to heavy industrial development. Moreover, despite claims of turning the water sector "towards the market" by charging fees for water use, there are still signs that the Ministry of Water Resources sees itself playing a key role in

determining optimal water use by creating allocation plans. One article from the MWR monthly journal states "state comprehensive planning for the large river basins can...promote the rational construction of water project construction and distribution management of water resources" (Liu 1994). I believe editorials such as these reflect insecurity within the Ministry of Water Resources concerning the increased reliance on "market methods" such as increased water prices for determining water allocation and use. Some in the water sector believe that using the market to determine prices moves water management away from its public service mission (Zhang 1994). Some articles and speeches have been quite frank about the lack of progress in moving water investment and water management towards the market. In fact, one article penned by the auditing bureau in the MWR comments that although construction of water projects is now open to bidding, and some areas sell shares to fund project construction, the investment system still, ostensibly, works by the "planned economy" method (Ministry of Water Resources Auditing Bureau 1994).

Implementation of the sideline economic operation activities has been equally, if not more, complex ideologically than the other two policies under study here. The sideline economic operations policies mirror changes which have been occurring in the industrial sector where state-owned enterprises have been encouraged to become financially more self-sufficient and shift from fulfilling plans to pursuing profits. The need to reduce central government expenditures is the main factor which led the Communist Party and central government to promote financial self-sufficiency. The reason central officials are uneasy with these reforms is due to the fear that increased

self-sufficiency will reduce the dependency of lower levels on the center. Upper level officials are concerned that the Ministry of Water Resources will lose some of the leverage they used to possess over lower level water bureaus if water units open sideline economic operations (Nickum 1982). This concern has been borne out in various articles published in the late 1980s in which some county water bureaus were cited with neglecting their water duties in pursuit of economic profits in sideline economic activities (Xu 1988). In order to keep lower level water bureaus in check new rules were promulgated in the mid 1990s which stipulate the establishment of more upper level oversight into the lower level water bureau SEO accounts.

Policy Entrepreneurship

In the above description of tracing the development of these three policies we have clarified the central governments perspective, but are left with several puzzles. For example, why has the water fee policy apparently not succeeded? Why has the scope of the water withdrawal permit system been limited to the industrial sector while it is agricultural users who consume 88% of China's water resources? Why have the goals of the SEO policy shifted from stressing funding for water project repair to commending how the SEOs have improved the economic livelihood for water sector personnel? Moreover, why has the range of acceptable economic activities increased over time? The goals and scope of the water fee policy have not changed markedly, although central pronouncements continue to be released lamenting the low rate of fee collection and stressing the importance of collecting fees. From the

top-down perspective it appears that this policy is not succeeding, which seems ironic, for it is a policy which allows for a low level of local discretion. The SEO policy allows for a high level of discretion, but does this explain why county water bureau implementation ranged from refusal to open SEOs to enthusiastic entrepreneurial water bureaus in which the officials pushed the policy beyond the original goals and mandate? Such variance in implementation by local government officials is unexpected in China which has a history of being a highly centralized, authoritarian country.

The fact that we are left with intriguing puzzles after this top-down analysis accents that insight into the logic of the policy design of these three policies is insufficient to predict lower government policy entrepreneurship. Knowledge of the magnitude of local discretion granted by the central government does not explain how local government entrepreneurship ranged from evasion to innovation. The top-down analysis only captures a partial snapshot into the intergovernmental dynamics surrounding the implementation of these three water policies. Therefore, we need to move the analysis to a local level and examine breadth of local government resources and the perceptions of local water officials which motivate them to comply, evade, or change the policy during implementation. This final component of the framework, the *conditions of implementation*, will examine the implementation of these three policies in five counties in Zhejiang province. The concluding chapter will integrate the top-down and bottom-up analyses by discussing the capacity of the lower level water bureaus and critiquing the central government design of these three water policies.

Chapter Five

Conditions of Implementation: The Drought of Resources

Introduction

In this segment of the analysis I will present interview and archival data collected from the water bureaus at the provincial, municipal and county levels in Zhejiang province. From the data I was able to identify and compare the types and amount of economic, political, and human resources maintained by each of the five county water bureaus, as well as evaluate the sometimes limited ability of the provincial and municipal water bureaus to monitor and support the implementation of the three water policies under study. One of the more significant findings was how the amount of resources, particularly political resources, differed not only from county to county, but also from policy to policy. By comparing and contrasting the resources available to all five counties within and between policies we are capturing insights into the *conditions of implementation*. In addition to investigating county water bureau resources, during interviews I also inquired into how county water officials viewed the costs and benefits each policy had for their county. Examining their goals and the constraints they faced and then evaluating their implementation of the policies provided hints as to why some counties were motivated to evade, modify, or innovate during the implementation of the these three water policies. By gaining an understanding of differing water bureau strategies for implementing the three water

policies we also make headway into discovering how intergovernmental dynamics have influenced the uneven implementation of these policies nationwide.

Before delving into the case study data, I will provide a brief overview of the geographical, hydrological, and economic conditions of Zhejiang province and each of the five counties. The subsequent analysis of provincial level goals and county water bureau resources is broken down according to policy type. I will close each policy section with clear evaluations of the types of entrepreneurial behavior each county exercised. This chapter concludes with reflection on why entrepreneurial strategies varied both within and across counties and policy type.

Overview of Zhejiang Province and the Counties

Zhejiang Province

The five counties I studied are located in Zhejiang Province, which lies on the east-central coast of China. Zhejiang is one of the smallest provinces in China and although it accounts for a mere one percent of China's total territory, in both industrial and agricultural development, Zhejiang has been one of the fastest growing provinces during the reform era. Zhejiang's population density is one of the highest in China, but living standards continue to rise due to highly productive agricultural land and a flourishing rural and urban industrial sector.

In Zhejiang, I conducted interviews in three offices at the provincial level: the Water Administration and Water Resources Office, the Qiantang River Basin Commission, and the Zhejiang Provincial Water Bureaus Diversified Operations

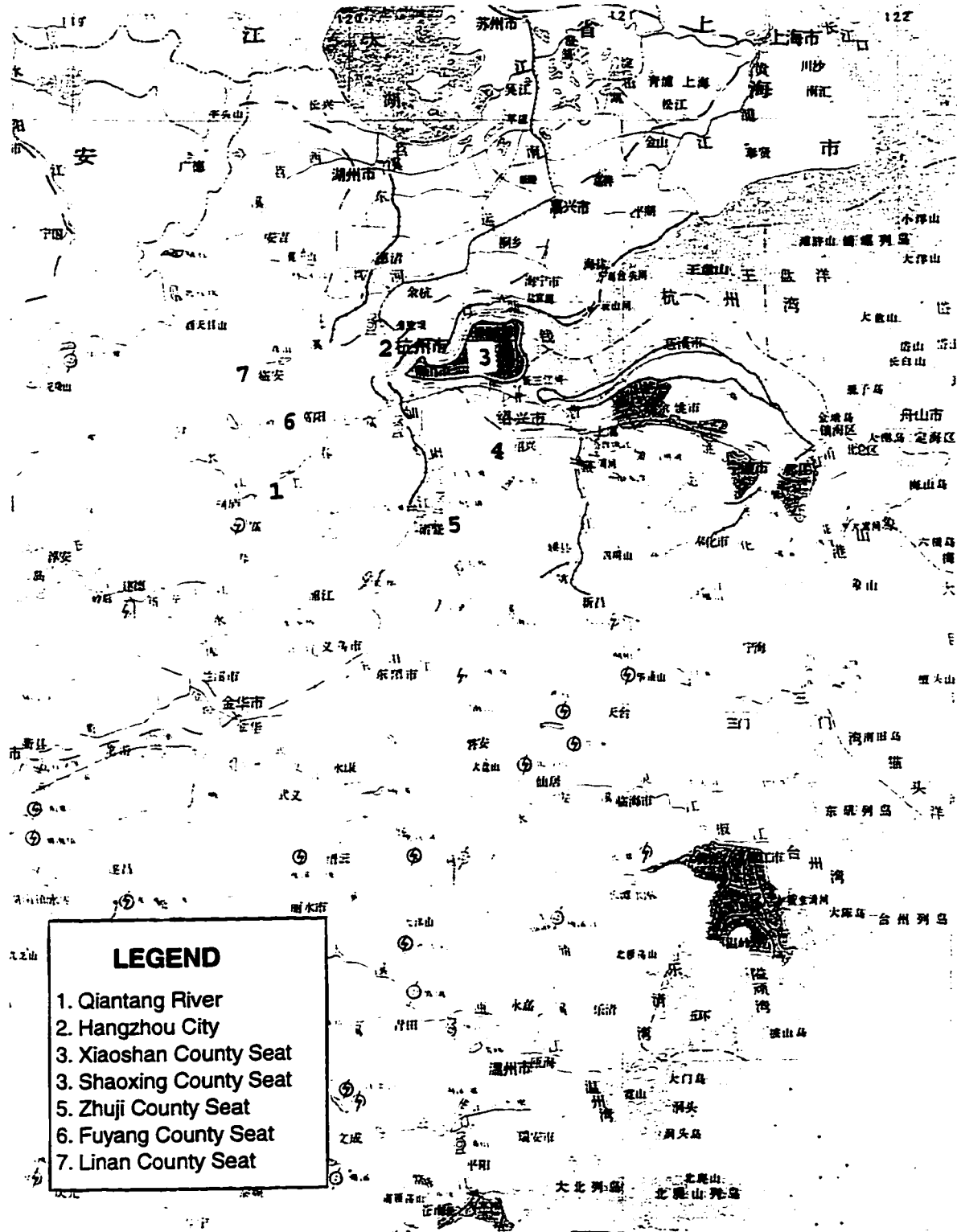
Management Office. At the subprovincial level I visited officials in two municipalities and five counties in northern Zhejiang province. The municipalities--Hangzhou and Shaoxing both lie within the Qiantang River basin in northern Zhejiang. The Qiantang river is the largest in the province with a length of 494 kilometers and a catchment area of 54,349 square kilometers (China Handbook Editorial Committee 1983). In terms of length it does not rival the largest Chinese rivers, nevertheless, the breadth of its catchment area and substantial flow lead it to be categorized as one of the major rivers in China. The province derives its name from the winding course of this river, for "Zhejiang" literally means "zigzag river." While Zhejiang is a province with plentiful rainfall, due to the dense population the per capita amount of water available within the province is only 2200 cubic meters per year, which is eight percent below China's national average of per capita water availability. The rainy season in the early summer can produce devastating floods which are then followed by a severe dry season. The drought period is often abruptly ended by late summer typhoons. The frequent changes in severe water disasters put great demands on water management bureaus to maintain highly efficient flood control facilities and water supply projects. As will become evident in the case study section, economic development in Zhejiang has often hindered the ability of water bureaus to effectively supply water and prevent water disasters.

The Qiantang River flows through or along three of the counties I visited. In Hangzhou, I visited three counties (Xiaoshan, Fuyang, and Linan), and in Shaoxing I visited two (Shaoxing and Zhuji). While the geographic and hydrological conditions

vary somewhat between the counties, water officials in each of these areas face similar challenges in establishing and maintaining water supply projects and promoting water conservation measures. In all of these counties the demand to increase water supply is needed for burgeoning towns and rural industries, as well as for agricultural activities. With the exception of Linan, all of the counties have extensive dike projects which demand yearly repair.

Below, I briefly sketch out the general geographic, hydrologic, and economic conditions of the five counties within Hangzhou and Shaoxing municipalities. Refer to the map on the following page to view the location of the counties in Zhejiang province. This is followed by an outline of the water bureau hierarchy within Zhejiang province and the extent of water law promulgation and funding. With this contextual information as the backdrop, I then turn to a discussion and comparison of the economic, political, and human resources that each county has available for implementing the water fee collection, the water withdrawal permit system and the sideline economic operations policy. In addition, I present evidence of how county water officials have evaluated the costs and benefits of implementing each of these policies. By examining the county water bureau resources and cost/benefit perceptions of local officials I will be completing the final component of the entrepreneurship framework, namely, the *conditions of implementation*.

FIGURE 4. MAP OF ZHEJIANG PROVINCE



LEGEND

- 1. Qiantang River
- 2. Hangzhou City
- 3. Xiaoshan County Seat
- 3. Shaoxing County Seat
- 5. Zhuji County Seat
- 6. Fuyang County Seat
- 7. Linan County Seat

Hydrologic and Geographic Conditions *Fuyang, Xiaoshan and Linan Counties*

These three counties all lie within the greater Hangzhou district, which is the most water abundant district in the province. Xiaoshan and Fuyang are part of the most agriculturally productive area of the province, but because the standards of drainage projects are low, water-logging problems in this region are severe. Linan, however, is the driest and most mountainous county among the three, for flowing through the county are only small tributaries of the Qiantang river. Not surprisingly, water supply projects are a priority for Linan. Fuyang is also a fairly mountainous county, but it lies directly on the Qiantang river and is subject to flooding, as is Xiaoshan county. Both Fuyang and Xiaoshan must therefore continually undertake extensive dike construction and maintenance work. Xiaoshan is located in Zhejiang's northern plains region, and the northern part of the county bordering the Qiantang river consists of sandy plains which have been created over hundreds of year of deposits from the river and ocean.

Shaoxing and Zhuji Counties

Shaoxing and Zhuji counties are both located within the jurisdiction of Shaoxing district, which is situated southeast of Hangzhou district. The northern parts of both counties are part of the great northern plain of Zhejiang and subject to flooding from the Qiantang river. Dikes in these counties demand yearly maintenance work. Hydrologically, both Zhuji and Shaoxing are characterized by a large network of rivers and many small lakes and ponds. These two counties are water abundant

areas, but because of increased pollution, water supply and demand management are particular priorities for these counties. Another challenge to water bureaus in the area is to construct more water drainage facilities to remedy the severe waterlogging problems. Shaoxing, like Xiaoshan above, has been expanding its boundaries through land reclamation projects, and this new land generally lacks sufficient irrigation facilities.

Economic Resources

Overall Economic Level

Xiaoshan has the fastest growing economy among the five counties under study, while the mountainous county of Linan is the poorest due to lack of transportation infrastructure and limited agricultural area, as well as a notably low level of provincial investment. Within Zhejiang province, Xiaoshan is the number one cotton producer, as well as one of the most productive in machinery, chemical, clothes and food processing. The other three counties (Fuyang, Zhuji, and Shaoxing) targeted investment to improve their road and communications infrastructure in the early 1980s which facilitated rapid economic growth in the latter half of the reform era. Shaoxing and Zhuji have profited mainly from construction material production, while Fuyang owes much of its recent economic strength to the rapid growth of small rural industries (machinery, chemical production, food processing and cloth-making), more commonly referred to as Township Village Enterprises (TVE). Approximately seventy percent of industrial activity in Fuyang is done by TVEs.

Three of the five counties under study have achieved what is called "county-level city" status. With provincial government approval, this status is granted to counties which have significantly improved their economic performance during the reform era and increased the population of rural townships and villages.¹ Xiaoshan county was raised to the status of "county-level city" in 1987, while Zhuji and Fuyang were granted the higher status in 1992. Shaoxing was granted "county-level city" status as early as 1981 but had this status removed in 1983 due to a change in the criteria by the provincial government.² Today Shaoxing county is a county-level city in practice, but not in name, for Shaoxing municipal authorities want to keep the title distinction between the greater municipality which is often called "Shaoxing City" and the smaller Shaoxing county clear.³ Besides its comparably high revenue, Shaoxing also contains many economically strong townships and villages. Based predominantly on economic performance criteria, Zhejiang provincial government compiles and honors one hundred townships and villages as being strong models (*bai qiang xiang zhen guangrong bang*). In 1993, fifteen townships and villages in Shaoxing county were designated "strong." Within Hangzhou Municipality, Fuyang County had one while Xiaoshan county contained fourteen economically high

¹Sometimes upper levels of government confer the status of county-level city to counties which have not met the specified development criteria. In such instances the name change is meant to help attract development investment to a relatively slow-growth area. The counties in this study, however, are some of the most economically advanced in the province, so their higher status does reflect strong economic growth.

²The criteria for raising a county to a city is somewhat flexible. In recent years, provinces have been criticized for upgrading too many counties too quickly in an effort to attract more investment to their provinces.

³Because the title "county-level city" is somewhat cumbersome, I will continue to refer to all five as counties throughout the paper.

performing townships and villages (See Appendix E for socio-economic data on the five counties under study).

Zhejiang Water Sector *Provincial Water Bureau and Laws*

As discussed in chapter three, the 1988 Water Law served as a catalyst of change for all provincial and subprovincial water bureaus in China, in that the mission of water bureaus was expanded beyond previous engineering and construction duties. The MWR called for provinces to create a new office of water administration to undertake new management and regulatory work. In Zhejiang, the provincial office of water administration and water resources existed under the title "water resource office" in the 1980s, but the office changed its name in 1991 to match how its mission had been expanded to include more administrative and management duties such as monitoring the water withdrawal permit system, and other related conservation and water management policies.

The Zhejiang water bureau began work on a provincial water law in 1988, but did not promulgate its own until 1991. As expected, the provincial water law is more detailed than the national law, particularly regarding water project management and protection, flood control and drought prevention. As will be discussed later, the provincial water law also elucidates the role of water SEOs in Zhejiang.

In the 1990 Provincial Water Development Ten Year Plan and the Eighth Five Year Plan, the provincial water bureau paints an excellent overview of the water sector in Zhejiang by delineating the major legal and project performance problems

facing the water bureaus throughout the province. In regards to water laws, although a large number of water resource management laws have been issued in Zhejiang, the province still lacks sufficient supplementary laws and regulations and those which exist are often ignored or enforcement is lax. The problems stemming from the underenforcement of water laws and regulations include continuation of water wastage, violations of the water fee system, inadequate protection of water projects, illegal river dredging, growing amounts of pollution, as well as increased difficulties with objects and structures blocking rivers (Zhejiang Provincial Water Bureau 1990).

In addressing shortcomings in water project performance the provincial water bureau was candid in its commentary. Most key water projects are unable to cover their operating costs, most often due to the fact that water fee systems are imperfect and difficult to implement. Without sufficient funds, both the number and quality of water supply and flood prevention facilities are insufficient. Between 1989 and 1994, the province suffered over twenty billion yuan of economic losses due to droughts and floods. Presently, over two million people lack drinking water and water supplies for industrial and domestic consumption are often short, particularly in larger cities and townships. The poor performance of water projects is also due to the fact that they do not possess the excess money to update their equipment and design or carry out hydrological surveys (Zhejiang Provincial Water Bureau 1990).

Through interviews with provincial water officials I was informed that besides needing better enforcement of water management laws and regulations, another major weakness in water law legislation is the lack of water pollution prevention laws and

regulations. Few cities and rural towns have water treatment facilities, which has meant considerable amounts of pollutants, particularly from paper mills and chemical plants, have been dumped into Zhejiang's rivers. Apparently, many of the rivers in Zhejiang are now classified as being undrinkable, which poses particularly difficult challenges for water bureaus attempting to increase water supplies. Water pollution work lies within the administrative jurisdiction of environmental protection bureaus and water bureaus are only allowed a supervisory role. Provincial water officials expressed a strong desire to take over water pollution work, for they are not satisfied with the performance of Environmental Protection Bureau (EPB) in this area.⁴ Nevertheless, water bureau efforts to usurp this responsibility have been repealed by the provincial government.

Although water bureaus cannot control the problem of pollutant emissions, according to Qiantang River Basin officials, water bureaus in Zhejiang have not been doing enough to prevent water quality degradation created by water supply projects and land reclamation. For example, by permitting excessive water withdrawals in the upper reaches of the Qiantang River, less water has been available downriver to prevent the intrusion of ocean saltwater into the water supply of Hangzhou, the capital of Zhejiang which is located near the estuary of the Qiantang River. Provincial water officials hope the water withdrawal permit system will circumscribe overdrafts on the

⁴As of 1995, the provincial EPB had not issued implementing measures for the 1984 national Water Pollution Law. In an interview (15) officials in the EPB office stated that they were waiting to act upon the new national Water Pollution Law to be promulgated in 1996. Neither the water bureaus nor the environmental protection bureaus are responsible for running water treatment plants. This work falls under the jurisdiction of urban construction bureaus. The lack of horizontal cooperation in water pollution work resembles the problems I discovered in water management.

Qiantang River as well as rivers throughout the province. The continuing overdrafts throughout the province has meant that the total water flow on many rivers in Zhejiang has decreased, which in turn has intensified siltation problems and has limited the natural cleansing process of the rivers.

Like most provinces in China, the agricultural sector in Zhejiang uses eighty percent of the water resources. Most of this water is directed to irrigating nearly eighty five percent of the arable land. The high level of irrigation has meant yearly battles with waterlogging and salinization of soils. Moreover, demands for water from the industrial sector and urban areas are increasing. Without diverting some surface water away from agriculture, there exists a danger that urban areas will revert to a strategy of mining groundwater.

Water Investment in Zhejiang

As discussed in chapter three, since the reform era began, the rate of central government investment has been dropping faster in Zhejiang than the national average (See table 5.1). Moreover, provincial contributions to the water sector have apparently also been decreasing. In the 1980s, water sector investment in Zhejiang made up only 20% of the provincial agricultural financial investment and in the 1990s this percentage fell to 13% (Jia 1995). The curtailment of upper level funding has led to a sharp decrease in water project construction and pushed the primary responsibility to fund water project construction and renovation to subprovincial governments, water bureaus and "the masses." Funding from "the masses" includes

water fee payments and investment in water project stock investment systems. In the 1990s, the Zhejiang provincial water bureau (hereafter ZJWB) began to allow stock investment systems to be used to build hydro-electric and water supply projects. By 1995, fifty percent of the rural residents received their drinking water from water supply companies in which they themselves have invested.

Table 5.1 Zhejiang Overall Water Capital Construction Investment 1989-1994

	Overall capital construction investment in Zhejiang's water sector (in millions of yuan)	Percentage of central government contribution in total water sector investment in Zhejiang	Average percent of central government water sector investment to provinces nationwide
1985	66.9 ^a	- ^b	-
1986	55.9 ^a	-	-
1988	61.2 ^a	77 ^a	-
1989	90.9 ^a	68	65
1990	101.3	64	57
1991	175.5	55	52
1992	292.4	34	40
1993	333.6	18	31
1994	563.4	8	25

^aInformation for 1985-1988 taken from Zhejiang Provincial Almanacs (Zhejiang Provincial Government Economic, Technology, and Social Development Research Center 1989).

^bDashes indicate data missing in almanacs.

^cInformation for 1989-1994 taken from ZGSLNJ 1990-1995.

In the Zhejiang Provincial Ten Year Plan, which was issued in the early 1990s, the provincial water bureau optimistically aimed for significant increases in water sector investment. Table 5.2 which displays Zhejiang's planned water investment indicates, ironically, that the provincial water bureau would embrace a considerable increase in both the percentage and absolute amount of central government investment for the last six years of the decade. While the numbers on this

table may represent an unrealistic wish list, the data are still valuable in providing insight into the types of locally generated investment the ZJWB would like to cultivate in the future. Three areas which are targeted to cover a majority of water project construction and renovation costs include funds generated from provincial agricultural support budgets, investment from "the masses," and funds generated by key water projects. This latter source is not clearly specified, but most likely it refers to a variety of fees water project units may collect. Central funding for Zhejiang's planned budget remains to be negotiated with the MWR, but the fact that the MWR only supplied eight percent of Zhejiang's capital construction investment in 1994 combined makes it doubtful that its investment will rise to the "planned" twenty five percent listed above.

One must exercise caution in evaluating plans and targets in China, for the numbers are often biased to highlight accomplishments and conceal failures. It is thus useful to compare briefly some of these planned numbers with actual accomplishments to check the direction of the biases in the plan. In 1993, the total amount of funds collected from "the masses" was 540 million, which was 100 million greater than that collected in 1992. Conspicuously, the targeted yearly collections for such funds in the ten year plan is only 260 million per year. There are two potential explanations for this underestimating investment from the masses. This targeted investment could be easily surpassed and thereby enable Zhejiang water bureaus to appear diligent in cultivating local funding channels. Another reason for low targets could be to show that the province is in great need of more upper level subsidies.

Table 5.2 Zhejiang Provincial Water Bureau Planned Investment for 1995-2000

	Total planned capital construction investment in Zhejiang (in millions yuan)	Percentage of central government contribution to planned investment	Percentage of local government contribution to total planned investment	Percentage of planned investment to be gathered from "the masses"	Percentage of planned investment from key water projects, and from provincial agricultural and reclamation funds	Percentage of planned investment from loans
1995	1404	29	6	19	34	12
Yearly average between 1996-2000	1742	25	7	15	40	13

Source: Zhejiang Provincial Water Bureau Ten Year Plan 1990

County Water Bureaus

Between the years 1988 and 1990 all five of the county water bureaus set up water administration management offices. The duties of officials working in these offices encompass writing and promulgating local water management documents, disseminating water law information and propaganda, issuing water withdrawal permits, levying the water resource fee, and mediating water conflicts. Much of the propaganda work is accomplished by running training classes for lower level water officials. In addition to implementing and monitoring water use and management laws and regulations, these offices are also responsible for surveying the water use levels in the county and making mid- and long-term planning for local water use. As mentioned in chapter three, since the promulgation of the 1988 National Water Law responsibilities for county water bureaus have increased considerably. County water bureaus must still report progress on policy implementation to the municipal and provincial water bureaus. It appears the plethora of laws and regulations implemented over the past few years has exceeded the monitoring ability of the provincial water

bureau. The discussion below of the water withdrawal permit system exemplifies this situation. In regards to project funding, counties are in more rigorous competition with each other than in the past, since upper level financing has decreased. Project construction proposals are passed up to the municipal level water bureau where officials choose one or two projects to send up to the provincial level.

The increase in responsibilities for county water bureaus not only originated from upper level devolution of authority, but also from the disintegration of the collective system in the agricultural sector. Previously, work collectives were responsible for supervising irrigation management, small water project construction and repairs were done by collective members, and local water conflicts were mediated by collective leaders. With the reintroduction of independent family farming in 1979 the collective system of water project management and conflict mediation fell apart. Such duties were thus transferred up to county water bureaus.

To raise funds for local project construction and repairs county water bureaus utilize the "Three Pay a Little" (*sange yidian*) policy. For example, for a project to raise dike heights the county government or water bureau will provide the materials, and the township water bureau and local people must find the funding and labor to complete the work. One will find the "Three Pays a Little" policy used at every level, for example, funding for county projects may entail funds contributed by provincial and county governments as well as from "the masses." One provincial official commented that lower level water bureaus are coming to accept that they can no longer "eat the emperor's rice" (*chi huangdi de fan*).

Most projects were finished before 1980, but the quality of many of these projects was not high and many needed supplementary facilities built onto them. Dikes, obviously, need constant up grading after the yearly floods. Since funds for new projects are ostensibly non-existent, efforts have been shifted to repair the many dams and projects with leaks. In Fuyang, the water bureau has overseen the repair and upgrading of 66 "sick and dangerous" projects since 1986 (Fuyang County Hydro-Electric Gazette Editing Committee 1994, hereafter Fuyang Water Gazette).

Before analyzing the three water policies, I will more clearly specify the criteria used to determine whether the implementation of a policy was an act of evasion, minimal compliance, modification, or innovation. Evasion is clearly a result, when no action has been taken on the part of the county water bureau to implement the policy in question. Notably, evading a policy may enable county water bureaus to reach other goals. Minimal compliance captures situations where little effort has been made to implement the requirements of the policy. This category encompasses more the process of footdragging and delay. The final result is not necessarily clear, for it is possible that at some future time the water bureau might completely implement the policy.

Modification addresses cases in which the county water bureau makes changes on a policy, but the Ministry of Water Resources does not change upper level policy accordingly. As will be apparent in the analysis below, modification tends to focus on the process or procedures of implementation. For example, in the area of water fee policy two counties in this study use different means to work towards the policy's

goal of raising funds for repair work. These three types of policy implementation or entrepreneurship are subject to central government criticism.

When the Ministry of Water Resources or State Council changes the goals or permitted procedures for carrying out the policy to match the reality of county water bureau implementation, this is a case of innovation. This form of policy entrepreneurship captures the dynamics of bottom-up policy making. Note, when instances of evasion, minimal compliance, or modification trigger clear upper level sanctions (e.g., do not result simply because the upper levels are unaware of the water bureau's actions) they are categorized as policy innovation.

The Three Water Policies

Water Fee Collection

Provincial Perspective--Documents, Goals, and Support

Echoing the national water fee implementation measures, the Zhejiang provincial water bureau issued its own water fee document in 1985. According to provincial water officials, the lower level water bureaus are required to collect water fees according to the principle "those who benefit must take on the burden" [to pay] (*shui shouyi, shui fudan*). While lower water bureaus are supposed to charge fees to all users, the level of fee rates is subject to being adjusted "to suit local conditions" (*shiying dikuang*). For example, in areas where farmers are particularly poor, lower fee rates may be assessed. It is this ability to adjust fees to fit local conditions that affords subprovincial water bureaus some discretion in setting water fee levels. The other development which grants water bureaus slightly more control over water fees

than in pre-reform years is the practice of allowing water fees to be used where collected rather than be remitted to the upper levels or local finance bureaus (Svendson 1992). In cases of arbitrary water use in excess of what was planned, a progressive increase in the water fee is to be imposed. Water bureaus also possess the power to halt water service for users negligent in paying their water fees.

Although lower level water officials have some discretion in setting water fee rates, they are limited in how they use the fees. Both the 1985 document and the 1991 Zhejiang Water Law mandate that water fees should be collected and used only for operations management, major repairs, and renovations.

Although 90 million yuan were collected in water fees province-wide in 1990 --an amount nearly equal to total provincial capital construction investment for the same year--this sum is considered grossly inadequate to meet the repair, maintenance and depreciation costs of the extant water projects in Zhejiang. Most of the 3000+ dams and the extensive dike networks in Zhejiang were constructed in the 1950s and 1960s. Due to hasty construction or poor design, many of these projects are of low quality and lack auxiliary water facilities. The yearly floods necessitate yearly repair of dikes and smaller dams. Like most older water projects in China, many of the dams in Zhejiang leak and have been dubbed "sick" (*bing*). Due to land scarcity and costs of relocating people, it has become prohibitively expensive to build new dams, therefore, the only option is to cure the sick dams through extensive repair.

ZJWB states in the 10 Year plan that water supply projects are to increase water fee collection by setting water fees according to the value of the fixed assets of

the water project. The provincial bureau aspires to nearly double the water fees every five years. The targeted goals are to raise fee collection to 170 and 300 million yuan by the years 1995 and 2000, respectively. Information on water fee collection is sketchy for other provinces, but in 1993 and 1994 the average of the ten provinces which reported their fee rates in the national water almanacs was 115 million yuan per year. This average is most likely higher than the actual national average, for provinces which perform poorly generally do not report results. Even if fee collection rates have not increased over 90 million per year in Zhejiang, this would still place the province close to the highest performing provinces. Most likely Zhejiang would be ranked within the top half of all provinces nationwide for water fee collection.

Since the mid-1980s the State Council and Zhejiang provincial water bureau have continued to issue communiques admonishing lower level water bureaus to improve fee collection. Exact information on provincial water fees in Zhejiang is incomplete, but interviews with water officials at all levels reveal an overall dissatisfaction with the rate of fee collection, particularly from agricultural users. In light of the difficulty in increasing or even successfully collecting water fees from agricultural users, the provincial water bureau is now stressing fee assessment directed at industrial users, as well as expanding the types of fees collected.

During my interviews within the provincial water administration office, officials explained that in order to meet the acute need for project repair funding, the ZJWB was in the process of issuing a document which would raise the water fees for industrial water users. These fees would be levied and used locally. Another approach

to increase water fee collection without directly levying fees on agricultural users was contained in a 1993 provincial communique concerning accelerating water sector reform (Zhejiang Provincial Government Economic, Technical and Social Development Research Center 1994, hereafter ZJNJ). In this communique the Zhejiang provincial government stressed the need to reform water pricing and hydroelectric fees, as well as encourage the use of stock systems for developing small water projects.⁵ Following the strategy set forth in the communique in July of 1994, the price of electricity was increased in Zhejiang and for every kilowatt of electricity produced .5 fen (half a cent) was to be given to fund water bureau projects. All of this money is to be paid to the provincial water bureau where officials will use their discretion to disperse funds to lower level water bureaus. Provincial officials claimed the reason such funds are passed upwards first is due to the fact that some counties which collect water fees from hydroelectric generation do not use the money for water work (Interview 26). Allowing the provincial water bureau to manage the fees contradicts the supposedly decentralized nature of water fee collection. Provincial water officials believe, however, that some recentralization to the provincial level is necessary to guarantee fees are used to improve water projects.

Yet another large scale fee scheme was initiated in 1994, in which finance bureaus at all levels were required to establish and collect a "Water Construction Special Fee." This fee is directed at factories, businesses, restaurants and other non-

⁵The increased accent on more market-oriented solutions to water management problems, could have been partially influenced by the general liberalizing atmosphere which had been created in 1992 after Deng's trip through southern China.

agricultural users of water and is based not on water use, but on 1-3% of the sales revenue or transaction volume of the industrial or financial enterprise. Thirty percent of these water construction fees (WCF) collected at the county level by the finance bureaus are passed up to the provincial water bureau and the rest will be used for water construction funding within the county. Local water bureaus must apply to the county finance bureaus to receive funds for major repairs or renovation work. By 1995, the collection rates for the water construction fee had already begun to surpass water fee collection rates in some areas, but it is not yet known how much of the collected fees were actually been dispersed to water bureaus for construction or major repair work.

Although the results of these policy changes are not yet known, it is clear that they enable water bureaus at all levels to follow a policy strategy which refrains from confronting the onerous task of levying fees to lower agricultural water usage. The division of water usage in Zhejiang, however, already excessively favors agriculture, and allowing continued wastage and overuse of water in the agricultural sector will likely lead to water shortages in urban areas in the not too distant future. Moreover, by neglecting fee collection from agricultural users the water bureaus in Zhejiang are blatantly contradicting the requirements of the 1985 water fee measures.

Besides the low collection rate, the price of water in Zhejiang and other provinces remains very low, particularly in agriculture. Provincial officials attribute the low water fee rates in the province to the price of grain. Despite reforms in the agricultural sector which have permitted profit making crops, the state has kept the

price of grain artificially low, so grain remains inexpensive for the public. Because grain and water prices are linked together water prices are also pushed low. The underpricing of water and the low rate of collection are, however, not simply due to low grain prices. As will be detailed in the case studies, a variety of policies, particularly those aimed at "protecting" agriculture have decreased the incentives for farmers to pay fees. One such policy has been the yearly winter repair campaign in which peasants are "encouraged" to contribute labor to repair local water projects. In addition to linkages to other policies, low fee rate collection rates are also due to the water bureau competing with other government bureaus to collect fees.

Despite the introduction of new fees collected by the provincial water bureau or finance bureaus, upper level water bureaus still view county and township water bureaus as responsible for collecting water fees based on water consumption. Water fee collection is considered one of the mainstays of financial self-sufficiency for small water projects and water units. To encourage this, provincial funding for lower levels is limited to the construction of new projects. Insights into the provincial water bureau perspective on water fees and strategies to expand fee collection furnish the background necessary to examine the county water bureau resources vis-a-vis water fee collection and evaluate how officials at the county level have implemented this policy.

The Five Counties

Economic Resources

As was discussed above, both central and provincial contributions to lower level water investment have decreased in the reform era. It can therefore be concluded that any increases in local level water project funding stems from growth in generating capital at the subprovincial level. As the table in Appendix E indicates, the success of county water bureaus in raising funds for their budgets for project construction and maintenance work varies considerably.

Linan had by far the lowest water budget, which is not surprising since the county is the least developed in northern Zhejiang, and it is not an area targeted by the provincial water bureau for major water project development. Xiaoshan had a significantly higher water budget than the other three counties--its budget was over three times as large as those in Zhuji, Shaoxing, and Fuyang prior to 1993. Zhuji's water investment was second highest throughout the 1980s, and then in 1994, due to reasons discussed below, Zhuji's budget expanded phenomenally. The water budgets in Shaoxing, and Fuyang appear fairly comparable (See Appendix F).

Xiaoshan's sizeable water budget throughout the 1980s and 1990s may be attributed to the fairly high status the Xiaoshan water bureau enjoys within the county, as well as the province.⁶ During the reform era the Xiaoshan county government has been expanding its territory through rapid land reclamation and initially, the county government ignored calls by the local water bureau for increased dike reinforcement

⁶Xiaoshan county water bureau was given a provincial award in 1994 for being a progressive county regarding irrigation capital construction work (Interview 6). This implies that the county water bureau has been highly successful in raising its capital construction investment from local sources.

to protect the new land from flooding. After serious flooding in the late 1980s produced severe economic costs to industries and agriculture on the newly reclaimed land, the county water bureau began to receive more funding and respect from county government officials. Now, the Xiaoshan water bureau is more actively consulted in county development activities and officials proudly related how water investment from the county has risen significantly (Interview 6). Unfortunately, officials were not forthcoming regarding exact sum of investment in 1993 and 1994, but because total capital construction investment in the county is the highest among the five counties (See table in Appendix E for county socio-economic data), I am confident that the water investment in the county is nearly as high as that of Zhuji county.

In 1994, Zhuji county was honored with the status of having the highest water investment in the province. A large boost of investment in the 1990s evidently stemmed from a unique cooperative development strategy between the county government, the urban construction bureau, the water bureau, and, of course, the masses. Since 1949, Zhuji has been hit by over 10 major floods and in the largest flood during the 1980s the county suffered economic losses of 41.7 million yuan. Floods have also submerged the main railway line running through Zhuji seven times in recent years and disrupted the economy (Interview 18). Such large economic losses led the county government to devise several strategies which produced more funding for water bureau investment and improved flood protection measures (He and Zhou 1995 and Interview 18). The first strategy was a 1991 land sale transaction in which the county government sold the water bureau and the urban construction bureau an 80

mu (one *mu* equals 0.0667 hectares) area of land along the Puyang river to construct dikes and develop together.⁷ The contract of sale required that these two government bureaus construct an 800 meter long and 25 meter wide dike along the Puyang river which could withstand a once in 50 year flood (He 1995).⁸ The two bureaus were allowed to develop the land which was left over after the dike construction. Hence, in addition to building the dikes, the two bureaus also constructed housing units and planted trees along the river. Housing needs for the county were thus somewhat eased. The county government also conducted a similar "land for construction" transaction with the water bureau, which will be discussed in the sideline economic operations section below.

The severity of floods led the Zhuji county party and government leaders to agree to strongly promote efforts to build and reinforce the dikes by using the "three give a little" strategy (He and Zhou 1995). The county government subsidies, township and village governments matched these subsidies and the masses were required to do the construction. This strategy led to 150 million yuan in investment in 1994 and a total contribution of 4+ million work days from the county denizens. Among all the counties I visited, Zhuji county government has received by far the most benefit from its contribution to the three give a little policy strategy for water project development. Moreover, no other county devised an investment strategy which

⁷The 66 kilometer Puyang river runs the entire length of the county and floods often during typhoon season. It has been dubbed the "Yellow River" of Zhejiang because of its heavy siltation and serious flooding problems.

⁸During Interview 18 one official did not describe the land deal as a sale, rather a situation in which the county government *gave* the water bureau the land.

linked the fortunes of the urban construction bureau and the water bureau together. I discuss the significance of this inter-bureau financial dependence in discussions of policy implementation in chapter six.

Fuyang and Shaoxing have both experienced gradual increases in their water investment, but neither has grown nearly as rapidly as Xiaoshan and Zhuji water bureaus. County water officials in Fuyang, Shaoxing, and Linan informed me that the slow growth in investment stems from the marked decrease in water project construction (Interviews 27, 11, and 20, respectively). Not all funding is given in the form of upper level capital construction investment, for example, Fuyang county is receiving two-thirds of the funding needed to build a water supply company from a Swedish government loan. The economic trade committee (*jingmao wai*) in Beijing orchestrated the loan agreement, but no funds from the central coffers will be furnished (Interview 27). Linan officials commented that they had been receiving more cooperation from other bureaus, but they had not undertaken any cooperative investment projects with other bureaus (Interview 20).

The above information on individual water budgets enabled me to rank the five counties according to their level of economic resources as either being high, medium-high, or low. Note that across the three policies the rate of financial resources remains the same as we move across policies, but the level of political and human resources varies. In regards to water fee collection, table 5.3 below presents the how I ordered each county water bureau's economic, political and human resources. In the

next two sections I elaborate on how I determined the resource levels for the latter two categories.

Human Resources

A handful of county water officials are responsible for spreading the propaganda on the importance of water fees, as well as other water management policies, such as the water withdrawal permit system, throughout the county. These officials lead classes for county, township and village level water project personnel as well as travel throughout the county promoting water fee collection. The magnitude of the education work is quite extensive, for example, in Fuyang county water project employees number 2365, of which 497 are full time specialists (i.e., have some amount of hydrological or engineering training). The remaining 2121 are part-time personnel, who may or may not have technical training (Zhuji County Water Gazette Editing Standing Committee 1993, hereafter Zhuji Gazette). The travel time involved in reaching the scattered water personnel can also be considerable due to poorly maintained rural roads. Water project units are informed that they must collect fees for water use in order to fund their work activities. The main leverage county water bureaus can exercise over water project units to collect water fees is to deny them funding for repair needs (Interview 13).

As mentioned above, the water resource offices were all opened between 1988 and 1990. The officials working in these offices all had backgrounds in engineering and hydrology and they found their new management duties very challenging. Within

a short amount of time they needed to devise strategies to encourage county, township, and village water projects to increase fee collection, survey local water usage, issue water permits, establish safe zones around projects, prevent construction of illegal dams and diversions.

As the central and provincial governments has promulgated new water law implementation measures and regulations the workload of county officials in water resource offices has increased. Besides difficulties in logistically monitoring all of the implementation of water fee collection, these officials have also faced challenges to their authority from other government bureaus and from water users (Interview 26). These issues will be addressed in the following section.

Political Resources

While economic and human resources address questions of financial support and logistical capability to carry out the water fee policy, political resources move the analysis to issues of empowerment and incentives for county water bureaus to collect water fees. Subprovincial water bureaus have clearly been granted the authority from the upper levels to levy fees, assess fines for excess water use and even halt water delivery for delinquent fee payment. To improve collection rates the fees are now required to be used where collected instead of being passed to upper levels or local finance bureaus. Upper level subsidies are, supposedly, no longer forthcoming, which is meant to "encourage" self-sufficiency and ameliorate fee collection. It would appear that the incentives for water units to collect fees would be great, but some policies

both within and without the water sector have been promulgated which have unintentionally discouraged water units from collecting or water users from paying fees. Moreover, opposition from peasants and other subprovincial government bureaus has also exerted pressure on water units to refrain from assessing fees.

One of the main hindrances water bureaus have been experiencing in carrying out this water fee policy has been strong resistance from farmers. One water policy which has inadvertently dampened the peasants' enthusiasm for paying water fees is the winter repair month campaign which was reintroduced in 1990 by the provincial water bureau. Newspaper reports have heralded the success of the winter repair campaign in Zhejiang (ZJRB 1995), and in light of the positive results, the 1994 repair campaign was begun earlier in the fall in order to rapidly repair a large number of irrigation facilities. Over several months in the winter of 1994 peasants contributed the equivalent of 170 million work days to complete renovations on 40,000 irrigation projects.⁹ Increasingly, peasants opt to pay a fee instead of contributing labor. During the 1994 campaign, 540 million yuan was collected from "the masses." In the previous year, the peasants gave approximately 450 million yuan to use for water project repair (Zhejiang Almanac 1994). Peasants feel that by donating their labor or paying a labor fee they have adequately paid the water bureaus for their water use and additional water fees are unnecessary. It could be argued that since the winter repair month labor campaign alleviates the problem of "sick" water projects throughout the

⁹Male members of peasant households contribute their labor for such water project labor campaigns, which means that the women and children of the households are burdened with extra work during that same time period. The monetary loss peasants experience when contributing labor can thus be quite significant.

province, water fee collection may be superfluous. While the campaign approach may address repair needs, it does not promote water conservation, which is one of the central goals of the water fee policy.

In addition to simply refusing to pay fees, peasants have also turned to protesting and complaining to the provincial government that water bureaus are imposing excessive fees which overburden them. In light of recent campaigns to protect agriculture and central communiques ordering lower levels to avoid "chaotic fee collection" (*luan shoufei*) from agricultural producers, provincial governments appear to often heed the complaints from farmers and discourage the water bureaus from carrying out their work.

The other main obstacle for water bureau fee collection work has been resistance from other county government offices, particularly the urban construction bureaus (UCBs). Nearly all water officials I interviewed lamented the fact that the urban construction bureaus do not want water bureaus collecting fees inside urban or suburban areas, for the UCBs wish to assess their own fees on urban water users. Other bureaus, such as those supervising industrial production, also oppose water fee collection, for paying such fees diverts money away from profits. As discussed in chapter four, despite communiques from in Beijing supporting water bureau authority in issuing permits, upper level governments have not interfered in this horizontal conflict over control of water at the county level.

Finally, I believe that water fee collection may also be constrained by the advent of additional fee collection programs such as the water construction fee which

was discussed above and water resource fee which began being collected in the early 1990s. In addition, there are often short-term fees, such as the fee presently being collected by irrigation pump stations to raise funds for financing the installation of new electric pumps throughout the province (Zhejiang Provincial Water Bureau 1990).

Table 5.3 County Water Bureau Resources for Water Fee Collection

	Xiaoshan	Zhuji	Shaoxing	Fuyang	Linan
Economic Resources	High	High	Medium/High	Medium/High	Low
Political Resources	Low	Medium/Low	Low	Low	Low
Human Resources	Low 1990* 3, (6%)	Low 1988 4 (7%)	Low 1990 3 (6%)	Low 1990 5 (10%)	Low 1989 3 (6%)

*This year denotes when the county established a water administration office.

†This number indicates total number of water employees working in the county water administration office. The percentages in parentheses indicates the percentage of total county water bureau employees working in water administration offices.

I believe that the political limitations stemming from linkages with other policies, horizontal governmental conflicts and pressure from above and below have served to give the water bureaus a low level of political resources vis-a-vis the water fee policy (See table 5.3). I did, however, rank Zhuji for having a medium/low level of resources due to the good working relationship it has with the urban construction bureau, although officials stated that peasants in the county were not cooperative in paying fees (Interview 18).

Implementation of the Water Fee Policy

Below, I present a succinct comparison of how all five counties have implemented the water fee policy. Overall, results have been very dismal with low fee rates and small amounts collected. This "poor" performance has not, however, been simply due to a lack of concern on the part of county and township water officials for water conservation or project repair. They all face similar political obstacles, and two counties devised some modification in their approach to raising repair funds. Table 5.4 provides a display of the progress these five counties have been making in collecting water fees, and I have included information on the water construction fee for comparative purposes.

Minimal Compliance (Borderline Evasion) Fuyang and Zhuji

As early as 1965, Zhuji county had issued its own water fee document, but the rates were low and collection irregular. The rates ranged from .01 to .06 yuan (1-6 mao) for every *mu* irrigated. It was not until 1985 that water units began collecting higher water fees more consistently. In 1986 the Zhuji water bureau issued county water fee regulations mandating agricultural users to pay 3-5 yuan per *mu* and industrial users to pay 1.5 Fen per cubic meter¹⁰ (Zhuji County Water Gazette Editing Standing Committee 1993, hereafter Zhuji Water Gazette). Even with the advent of the new county document, collecting water fees has been difficult (Interview

¹⁰If one takes inflation into account, the present water fees of 3 to 5 Yuan per *mu* actually mean that water users today are paying *less* for their water than they did in 1949.

18). No official would quote even an approximate collection rate. The county gazette also remained tacit on the amount of water fees collected since the mid 1980s. The low rate of fee collection is alluded to in the Zhuji Gazette which reported that between 1965 and 1987 the total amount of water fees the Zhuji water units *should* have collected, but did not, totaled 737,400 yuan (Zhuji Water Gazette Editing Standing Committee 1993).

Fees were evidently collected in Fuyang before the county government issued the 1986 "Fuyang County Water Project Water Fee Collection Temporary Measures." Nevertheless, Fuyang water units have apparently never succeeded in collecting sufficient fees for water project repairs. In compliance with this document, beginning in 1987, the management units of both small and large reservoirs instituted compensation water supply systems in which fees were collected either based on the amount used, on time used or on the field size of those benefitting from the use. When fees are assessed on amount used the rate for irrigating crops range from 3.5-5 yuan per cubic *mu*. The variance in rate most likely depended on type of crop being grown. The rates charged at the six main reservoirs, however, were quite low ranging from 1.5-5 yuan per cubic *mu*. Water for livestock was the most costly in Fuyang at a rate of 6 yuan per cubic *mu*.

In the interview, Fuyang water officials told me that not much money is really collected, and they therefore lack sufficient funds for repairing the projects and paying for management expenses (Interview 27). Because of the dearth in funds, the county finance department must give subsidies to many projects, but these subsidies

are not necessarily given each year. The county water officials were hopeful, however, about receiving repair funds from the money raised by the increased cost of electricity (Interview 27). Recall the 1994 ruling by the provincial government to raise electricity rates and allow the provincial water bureau to aggregate and disperse these funds to lower level water units. In 1990, 215,200 yuan was collected in water fees throughout the county, which was nearly 75,000 less than planned collection (Fuyang Water Gazette 1994).

Linan water units have, ostensibly, not been implementing the water fee policy at all. Water supply companies, which are usually run by urban construction bureaus, have a water fee built into the water price as well as the water resource fee. After assessing an administrative fee, the urban construction bureau passes both of these fees onto the Linan county water bureau. With the exception of a few villages, water fees are not collected from agricultural water users (Interview 20).

The water construction fee began being collected by Linan's finance bureau in 1994, but as of mid-1995 the county finance bureau had not allowed any of this money to be used for water project construction in Linan (Interview 23). As will be detailed in the discussion of the water permit system, Linan has been considerably more successful in collecting water resource fees than it has been in soliciting water fees from users.

In all three of the above counties, water fees are not being collected from agriculture, or are being collected at a very low rate. The MWR has been very

critical of lower levels neglecting to collect water fees or charging too little for water use. Therefore, I categorized their implementation as minimal compliance.

Modification
Xiaoshan and Shaoxing Counties

During the first interview (6), Xiaoshan officials were relatively tacit regarding a discussion of water fee collection, but on a second interview (22) I was informed that the county had been collecting approximately 4 million yuan annually for the past several years (Interview 22). Due to the fact that agricultural and industrial sectors are large in Xiaoshan and production in these sectors is higher than the other counties, one would expect that water units there should be able to collect more water fees. Four million yuan is a small sum, however, when compared to the over 40 million yuan in yearly county water investment (See Appendix F for table on water investment in the five counties). Water investment, however, is predominately meant to fund new project construction, while water fees are targeted to cover project repairs. Among all the counties under study, the water units in Xiaoshan appeared to depend more on labor investment from "the masses," than on water fee collection to promote water project repair. Every rural inhabitant is required to donate 10 days of labor per year towards water project repair. People are also given the option of donating a fee instead of their labor. This policy strategy is used in other counties as well, but the use of citizen labor is decreasing in all of the other four counties. In Xiaoshan, however, it is growing each year and in my opinion represents a

modification of the strategy to collect fees based on water consumption (See Appendix G).

In Shaoxing, the initial response to my queries regarding water fees produced a historical presentation of how water fees have been collected in some form or another in the county since ancient times (Interview 10).¹¹ Water fee rates were usually determined by local leaders and carved into huge obelisks which stood along rivers. These stones also informed users about timing of water use and water rights rules during droughts. In 1949, the cost for one *mu* of irrigated land was 1 mao (one-tenth of a yuan) and no fees were collected from industries. In 1987, two years after the promulgation of the national water fee measures the rate of fees was raised only to 1 yuan per *mu*, which is significantly less than the cost of supplying the water (Interview 13). Following this fee increase water project units began collecting fees from industries for the first time. As is shown in the chart, since 1987 they have collected approximately 1 million yuan per year in water fees. Officials informed me that they need approximately 1.5 million yuan to cover expenditures for salaries and repairs (Interview 13). When personnel in township and county water project units solicit funds for repairs from the county water bureau they are usually told to turn to the masses for support, for the county bureau has no resources to help them (Interview 13).

¹¹In Shaoxing, I was treated to many stories of ancient water management ranging from brutal means to resolve water conflicts to heroic stories of Da Yu, who was the first great water manager in China.

The strategy Shaoxing county water bureau has adopted to generate funds for repairs is one which is not officially permitted by upper levels.¹² Water fees are supposed to be used for water project repair in the area where they were collected. Shaoxing water bureau, however, requires that 100,000 yuan from water fee collection be devoted to sideline economic operation investment, which is not only a way to provide salaries and funds for water project units, but could also furnish local people with jobs (Interview 11). The strategy is thus to use *some* water fees as seed money for stimulating water project investment and local employment. Both results, if successful, would mean multiplying the benefits from a small amount of water fees, thereby lessening the burden on water users, particularly those in rural areas.

Xiaoshan and Shaoxing county water bureaus face the same political constraints as the three county bureaus discussed above. Nevertheless, instead of simply relying on collecting water fees, officials in the Shaoxing and Xiaoshan have devised two strategies to replace water fee collection as the main method of restoring "sick" water projects back to health. Their strategies are not officially sanctioned by upper levels, so I have deemed these fund-raising strategies as modifications of the water fee policy.

Concluding Reflection on Water Fee Implementation

Despite the overall poor rate of water fee collection nationwide, the central government is evidently no longer willing to supply subsidies to help failing water

¹²All water fee regulations stipulate clearly that water fees are to be used for water project repair or renovation.

projects. As one water official stated, "water fees should cover the costs of running and repairing projects as well as the depreciation costs, but they don't. The government *should* subsidize these projects, but they cannot afford to" (Interview 10). This official's statement captures the major frustration experienced by lower level water bureaus--repair needs far outstrip financial resources.

Although the provincial water officials express dissatisfaction with local fee collection rates, the only sign of increased provincial involvement to remedy the situation has been the introduction of other fees which are collected by the provincial water bureau or the finance bureaus. In propaganda, the provincial government remains sensitive to the needs of agriculture.¹³ During the year I was conducting fieldwork daily articles featured on the front pages of the ZJRB often announced that agriculture should be protected and supported. This upper level concern for peasant welfare enables peasants to refuse fee payment. In all of the counties I visited, water bureaus officials lamented the opposition they face from peasants regarding water fees. Peasants evidently view water as free and have been refusing to pay the fees. County officials echoed central government documents with talk of a need to "change the way of thinking" (*gai sixiang*) of peasants (Interviews 10 and 17). Nevertheless, no county water official I visited ever suggested turning off water supplies to delinquent water fee users. Legally, water units may do this, but in light of the political constraints forcing water users to pay is apparently not an option. The fact

¹³The Zhejiang provincial government appears only willing to step in and subsidize water project repair work in the poorest area, namely, Lishui district in the southwestern corner of the province (Interview 3).

that the State Council still has not issued implementation measures for the 1985 collection fee measures document has sent a message to lower levels that upper levels are not that concerned with fee collection (Interview 20). The message being sent to lower levels is perhaps contradictory, for in central government documents and speeches officials declare that not only are the peasants culpable of hindering water fee collection, but the thinking and attitudes of lower level leaders are also to blame for poor fee collection rates.

As mentioned above, none of the counties performed well in collecting fees, but two of the counties were somewhat successful in turning to other policy strategies for raising repair funds (See table 5.4 below for a summary of county implementation). I believe the other counties will also be forced to look elsewhere for repair funds, for the political obstacles to collecting water fees are too great. One likely alternative will be the water construction fee which is embedded in the taxes industries and companies pay to finance bureaus. Industry is being targeted because it is the fastest growing sector. The money collected from WCF is generally only used for new project construction not for small repairs. The initiation of the WCF evidently led to a 3000 million yuan increase in national water work investment, which partially explains the increase in water capital construction investment in 1994 and 1995.

Table 5.4 Progress on Collecting Water Fees (WF) and Water Construction Fees (WCF)

	Xiaoshan	Zhuji	Fuyang	Shaoxing	Linan
1965-1985	Began collecting WF after 1984	1965 issued WF collection measures 1985 began collecting WF more broadly			
1986		Issued new document on WF collection Ag'l use: 3-5 yuan per <i>mu</i> Industrial use 1.5 Fen per cubic meter			
1987			Reservoirs began WF based on amount, time used or field size	Began to collect WF from industrial users. Approx. 1 million yuan	
1988	172,650 (approx) ¹			Approximately 1+ million yuan in WF	
1989	690,600 yuan WF ²			1+ million yuan in WF	
1990			215,200 yuan collected in WF	1+ million yuan in WF	
1991	Approximately 4 million in WF			1+ million yuan in WF	
1992	Approximately 4 million in WF			1+ million yuan in WF	
1993	Approximately 4 million in WF			1+ million yuan in WF	
1994			9 million yuan collected in WCF	1+ million yuan in WF Began collecting WCF from industries and financial establishments	Began collecting WCF: between 1-2 million collected
1995	No WCF	WF collection rates low. Use 3 pay a little method for repairs 10 million in WCF collected	WF collection very low & does not meet repair needs, finance bureau gives subsidies. Subsidies not consistent	1+ million yuan in WF	No WF collected from agricultural users Water supply companies collect fees and WRF is also in-built into their rates

Source: County water bureau interviews

Source: Chen 1992

I believe examining the rate of water construction fee collection provides some insights into the declining incentives of non-agricultural water users to pay other water fees directly to the water bureaus. Water construction fees are collected by the finance bureaus, which are fairly powerful government bureaus at the local level. The collection rates for WCF are relatively high, while water fees collected directly by water bureaus remain fairly low. I assert this is because after paying the high-priced WCF, industrial water users will be more likely to disregard paying water fees to the water bureaus. Fuyang county provides an ideal example. In Fuyang the finance departments began collecting the water construction fee in 1994 and a total of 9 million yuan was collected. The water bureau must then apply to use the money for new projects or major repair ventures, although the funds do not have to be used in the year they were collected. In 1994 some of the WCF money in Zhejiang was used to reinforce flood control pools and facilities. Nine million yuan in WCF for one county represents quite a large sum of money in comparison to water fee collection rates, particularly when compared to the 90 million yuan in water fees collected province-wide in 1990.

Water Withdrawal Permit System *Provincial Perspective--Documents, Goals, and Support*

As outlined in chapter four, the 1988 Water Law was the first central document which introduced the water withdrawal permit system (WWPS), but it was not until 1993 that the State Council and MWR issued implementation measures. In 1990, the Zhejiang provincial water bureau issued regulations on how water units

were to carry out water withdrawal registration and survey work (Fuyang Gazette 1994). In the same year a provincial communique was issued to encourage experimentation with issuing water withdrawal permits. Prior to the circulation of the provincial implementation measures for the WWPS in 1993 some experiments on registering water users were undertaken in some counties. Provincial officials commented that it was not until 1994 that the system truly began to be implemented province wide. By the summer of 1995, the measures were still pending final approval from the provincial government (Interview 1). Ironically, in the fall of 1994 Zhejiang Provincial newspapers had already proclaimed the water withdrawal permit system as being "completely carried out" (*quanmian guanche*). When I made inquiries regarding newspaper reports, provincial water officials told me frankly that this was not true. The water withdrawal system was not complete, but many areas had finished water withdrawal registration, and they were confident that over time the policy would be fully in place (Interview 1). The State Council, however, set a deadline for all permits to be issued by June of 1995, which only one of the counties I visited claims to have met.

The water resource fee policy, which was introduced in chapter four, is intimately linked with the water withdrawal permit system, for once permits are issued, the fee can be accurately assessed. Thus, I believe the water resource fee policy provides water bureaus a greater incentive to get the permits out. The WRF policy has been jointly created and sanctioned by three ministry bureaus: the Finance Ministry, the Commerce Ministry, and the Ministry of Water Resources. The three

bureaus at every level of government together oversee the collection of this fee. I believe that the WRF should be somewhat easier to collect than the water fee discussed above, for it is supervised by two powerful bureaus instead of water bureaus alone.

In 1992, the Zhejiang provincial water bureau issued temporary measures on collecting the water resource fee, which was a year before the WWPS measures were tentatively promulgated! The most profound difference between Zhejiang's provincial water resource fee document and the national level document is that in Zhejiang irrigation use is exempt from paying this fee. The level of water resource fees depends on use. Mineral water extraction is the most costly at 20 Fen per cubic meter consumed. Groundwater use is the next most expensive at 8 Fen per cubic meter. Industrial and domestic water use ranges between 1-2 Fen per cubic meter used. In the document it is stipulated that the unit which collects the fee should retain 60% of the total and the remaining 40% is to be evenly split between the municipal and provincial water bureaus. During interviews I learned, however, that the provincial water bureau in practice is to receive 30% of the total fees collected, but lower level water bureaus do not always report the total amount they collected (Interview 1). Therefore, too little is evidently passed up to the provincial office, demonstrating a problem with information asymmetry. The water bureau also does not retain the full amount of the fees passed up, for the provincial government mandated that the provincial water bureau must give 50% of what they earn in WRF to the bureau of

education. The remainder of the money is used to help pay for the management of provincially-run water projects (Interview 1).

Economic Resources

As discussed in the water fee section above, Linan, with its low water budget, has been categorized as possessing a low amount of economic resources. Shaoxing and Fuyang have obtained slightly higher budgets and hence are deemed to have a medium/high level of economic resources. The economic resources in the final two county water bureaus--Xiaoshan and Zhuji--are categorized as being high. This ranking is due to the fact that both of these water bureaus possess a higher status than the other three in the study, have been either granted or have been empowered to raise a large amount of money for their budgets.

Human Resources

The water withdrawal permit system is considered one of the major new responsibilities for the county water administration offices. As discussed above, the number of water personnel in this office is quite small and they face an immense challenge in carrying out this policy. According to a 1990 survey, there is a total of 40,000 water using units in Zhejiang province. This sum is most likely an underestimate, for rural industries are spreading at a rapid rate. Moreover, this figure does not include water abstraction activities by individual peasants for private farms. Most of the water administrative offices stated they were directing their initial efforts

at industries in urban areas, for issuing permits to rural industries would be a time-consuming and arduous task. It would also be demanding to locate many of the new wells drilled by private agricultural workers. In light of the magnitude of this work and the limited personnel, I categorized all of the counties as having a low level of human resources to carry out this policy (see table 5.5). As touched upon in chapter three, in the era of reform, many county water bureaus are overburdened with work due to a rapid increase in central government unfunded mandates. Moreover, fewer people are entering into this level of government work, for the large amounts of money one can earn in the private sector far eclipse what most county government officials can earn, and the perks and security in government work have gradually been decreasing.

Political Resources

In order to implement the water withdrawal permit system, the county water bureaus need to determine current water use of all agricultural and industrial water users, as well as the water consumption by municipal water supply facilities. Those issued permits are subject to a water resource fee. The goal of this policy is to promote water conservation and create clear usufruct rights for water. The main hindrance water bureaus have been experiencing in carrying out this policy has been strong resistance of other county level government offices, particularly the urban construction bureaus. The urban construction bureaus do not want water bureaus issuing permits inside urban or suburban areas, for they wish to issue their own

permits and collect the subsequent fees for their own use. Other bureaus, such as those supervising industrial production, also oppose the permit system, for installing water conservation equipment is be costly. County governments also may not support the issuing of water permits and water resource fee assessment, for such regulations limit the economic profits of county industries. Despite communiques from Beijing supporting water bureau authority in issuing permits, upper level governments have not interfered in this horizontal conflict over control of water at the county level. It is possible that at some future date the central government may organize a small leadership group from various ministries to devise a power-sharing agreement for bureaus at all levels to follow.

The water withdrawal permit system is also subject to protests and complaints of peasants over having their water use measured and limited. Many of the water officials I interviewed echoed the view expressed in MWR speeches, namely, that peasants need to revise their thinking (*sixiang*) and stop regarding water as a free resource. Some officials, however, did not subscribe to the "dumb peasant" theory and commented that the people in rural areas felt appropriately threatened by the WWPS, for accurate appraisal of water use could mean higher assessment of water fees and requirements to install water saving devices. Similar to the water fee policy discussed above, peasants also possess the power to complain to the provincial government that water bureaus are placing too many burdens on them.

Akin to the assessment of the water fee policy, most of the counties possess a relatively low amount of political resources due to horizontal governmental conflicts

and pressure from above and below the water withdrawal permit policy (See table 5.5). Zhuji and Xiaoshan may differ slightly from the other three counties due to special working relationships they have with their urban construction bureaus. Recall the above discussion on the land development partnership between the Zhuji water bureau and the urban construction bureau.

In 1991, the water administration office in Xiaoshan issued a document titled "Dealing with Inter-departmental Relations" which dealt with the working relationship among the water bureau and the urban construction and land management departments. This document was followed by the promulgation of a joint document which stressed cooperation among the three bureaus on water resource management and use (Interview 6). The urban construction and land management bureaus agreed to check with the water bureau when their work impinges on water resource management. The water bureau reciprocates by allowing the urban construction bureau to informally check any new water development and water use documents before they are sent to the People's Government for approval (Interview 6). This reciprocity, which one official referred to as "waving a greeting to each other" (*da yige zhaohu*) illustrates that the inter-ministerial conflicts prevalent at the upper levels are not always mirrored at the lower levels. Notably, Zhuji was the only other county in which horizontal cooperation among county bureaus appeared prominent. Another parallel between Zhuji and Xiaoshan counties was that both water bureaus appeared to enjoy a good working relationship with their county government. I believe this cooperation between water bureaus and their county governments represents an

important political resource to water officials as they maneuver their way through horizontal power struggles and other challenges brought about by recent increases in water management responsibilities.¹⁴ As we will see below, Xiaoshan and Zhuji performed the best of all five counties and it is likely the cooperation of other bureaus was integral in this success.

Table 5.5 County Water Bureau Resources for Water Withdrawal Permit System

	Xiaoshan	Zhuji	Shaoxing	Fuyang	Linan
Economic Resources	High	High	Medium/High	Medium/High	Low
Political Resources	Medium/Low	Medium/Low	Low	Low	Low
Human Resources	Low 1990* 3 (6%)*	Low 1988 4 (7%)	Low 1990 3 (6%)	Low 1990 5 (10%)	Low 1989 3 (6%)

*This year denotes when the county established a water administration office.

*This number indicates total number of water employees working in the county water administration office. The percentages in parentheses signify the percentage of total county water bureau employees working in water administration offices.

Implementation of the WWPS Compliance/Innovation—Zhuji and Linan

Zhuji county water officials informed me that as of June 1995, they had "more or less" finished issuing water permits. Their reported total was significantly higher than in any other county I visited. They stated that a total of 160 were issued to industrial users and water supply facilities, while over fifty permits were issued to

¹⁴While there has been some progress in individual counties on improving horizontal relationships between bureaus, the vertical system of authority has generally limited the ability and desire of lower level bureaus to make such cooperative agreements across government jurisdictions. As power and financial authority has been devolved downward, however, I believe bureaus within one county have been drawn together out of necessity? Ironically, the ability for bureaus *within* Xiaoshan county to cooperate has not extended to cooperation between water bureaus *across* the county borders. For example, every year during the dry season, Xiaoshan county has refused to release sufficient water from the river they share which leads Shaoxing county rivers and lakes to dry up. This conflict has had to be mediated each year by provincial level officials (Interview 10).

hydroelectric stations. Most significantly, in rural areas two irrigation districts had been granted permits. Zhuji and Xiaoshan are the only counties which have taken tentative action to issue permits to agricultural users, albeit indirectly through the irrigation district. Issuing a permit to an irrigation district committee or to a reservoir management unit relieves county water bureaus from the task of monitoring and enforcing water conservation for countless individual family farms and small industries drawing from the reservoir or river (Interview 13).

In 1993 after adopting the provincial water resource fee document, the Zhuji water bureau collected 200,000 yuan in 1994. They were not willing to report their progress on WRF collection in 1995, but in an interview with the Shaoxing City Water Bureau officials, I learned that Zhuji may have collected as much as 10 million in water resource fees in 1994 and 1995 (Interview 13). I believe the recent land deals with the urban construction bureau have afforded the water bureau a good relationship with the urban construction bureau and thus the water bureau has faced less opposition. This could explain why Zhuji has issued the most permits of the five counties. Table 5.6 presents a summary of the county performance on issuing permits and collecting the water resource fee, which is a policy intimately linked with the WWPS.

Like Xiaoshan and Fuyang, which will be discussed below, the Linan county water bureau began issuing permits in 1994. It was surprising to discover that the Linan water bureau issued 165 permits to industrial and TVE water users, which was nearly as many as Zhuji—a significantly richer county. Similar to Zhuji, the Linan

water office was very slow to issue permits to agriculture. Linan water bureau began collecting the WRF in 1993, which was notably a year before the bureau launched water permit work! Water resource fees were thus based on estimates (e.g., how much water the industry should be using according to its production rates) (Interview 20). Many industries in China still lack water meters, so most water fees are based on estimates of production which do not take into account wasteful water use practices. Water resource fee collection has grown considerably in Linan from 100,000 yuan in 1993 to 1.3 million yuan in 1995 (Interview 23), which for Linan is significant, for this is the first time the county water bureau has initiated any kind of water fee collection (Interview 23). It is unclear why Linan initially has been out-performing Xiaoshan in the collection of WRF. Perhaps the inability to collect WF and low water budget have inspired the Linan water bureau to pursue WRF collection from industry more vigorously.

The reason I coded these two counties as being innovative, is due to the fact that their footdragging on issuing agricultural permits was officially sanctioned by the State Council in 1995. A State Council communique stated that water bureaus could wait up to two years to issue permits to agricultural water users.

Minimal Compliance--Xiaoshan

Minimal Compliance and Innovation--Fuyang, and Shaoxing

In Xiaoshan county the water administration office began issuing permits in November of 1994, and in this first wave of permits they gave out 35 to area factories

and mining industries. Seven to eight permits had also been issued to the local water supply companies. In May of 1995 they began to issue permits to agricultural users. I left China mid-July, but found out later that in Xiaoshan they did succeed in issuing permits to one-third of agricultural users by end of June, which was rapid progress in comparison to other counties I visited.

For large water users the county water bureau "gives a wave to" the provincial level water bureau. It was not clear to me if they were following the prescribed rules of sending up larger water user permits to higher levels. Provincial officials commented they are generally letting county water bureaus approve all the water withdrawals, regardless of size, because the provincial office was overwhelmed with work already (Interview 1). This confirmed the overall impression I had that during county interviews that lower levels were granting nearly all permits regardless of size of withdrawal. "Waving" to the provincial level appears to be enough.

While implementation of the permit system was fairly rapid, albeit late, in Xiaoshan, these water officials do not appear to be strongly advocating conservation of water as they issue the permits, for according to county water bureau officials, water resources are considered very plentiful in the city. I was also informed that they viewed the permit system as a means to confirm that water use was "appropriate" (*he shi*) (Interview 6). Similar comments were made to me in Fuyang county as well.

Table 5.6 Progress on Issuing Water Permits and Levying Water Resource Fee

	Xiaoshan	Zhuji	Fuyang	Shaoxing	Linan
1990					Began a survey of water resource use
1991			County issued a communique promoting water withdrawal registration work Hangzhou City Water Bureau began registering city water users		
1992					
1993	Adopted provincial WWPS document		Hangzhou City Water Bureau finished issuing permits. City WRF document issued in June		Began collecting WRF. 100,000 yuan in WRF collected
1994	In November began issuing permits: 35 to factories 7 to water supply facilities.	WRF collection 200,000 yuan	In July county began permit work. 40 permits issued only to industries and the one water supply company. Will wait to issue to agriculture and TVE. Goal is to issue 26 permits to TVE and irrigation districts. In April issued county WRF measures and began collecting. Total WRF collected 750,000 No WRF collected from TVE or agriculture	Shaoxing City Water Bureau began issuing permits and collecting WRF City issued 30+ permits to industries and 1 to water supply company, but none to agriculture Shaoxing City Water Bureau collects 10 million in WRF All Shaoxing counties collect 60 million	In April county issued own WF document Initiated issuing permits based on information gathered in 1990 Issued 165 permits to factories (both state owned and TVE) and none to agriculture Collected 200,000 yuan in WRF
1995	In June reported 1/3 of permits issued to agriculture 1 million collected in WRF since 1993	Have "more or less" finished issuing water permits: 160 to industrial users and water supply facilities. 50+ to hydroelectric stations 2 to irrigation districts		Shaoxing County issues own WWPS & WRF documents in March and began issuing permits in June. WWPS trials in 2 townships Began collecting WRF in April, but agriculture and fisheries do not pay, for burden would be too great.	In June circulated a document to encourage issuing permits to agricultural users Goal to complete permit work in rural areas by end of June. 1.3 million yuan in WRF, but WRF not collected from agriculture

Source: County interviews and gazettes

Water Resource Fees are supposed to be collected from both agricultural and industrial sectors, but in Xiaoshan and in most other counties it is only collected from industrial users. To understand the incomplete implementation of the water withdrawal permit system one needs to examine how it interacts with the water resource fee and water fee. In obtaining a water permit users are opening themselves up to closer supervision of current and future water consumption. Users are required to install meters and remain within certain levels of water consumption. In theory, the water withdrawal permit system will enable a more accurate assessment of fees. Some officials hinted it was the connection between the water withdrawal permit system and the new water resource fee in particular which slowed down farmer's cooperation in issuing permits. Between 1993 and 1995 Xiaoshan collected 1 million yuan in water resource fees from the industrial sector.

In Fuyang, the county water bureau began doing water withdrawal registration work in June of 1991 and initiated permit issuance in July 1994. In their first wave of issuing permits they focused only on industry and the one water supply company and they issued a total of 40 permits. They will wait to issue to agriculture and TVE. Their eventual goal is to issue 26 permits to TVE and irrigation districts (Interview 27). When I asked Fuyang officials about the significance of the water permit system they gave the normal response that it was to protect the domestic and agricultural use of water, but then laughed when I asked whether they were telling any industries that used too much water to cut back. Evidently the county has not suffered from a drought in decades (only some mountain areas have a few drought problems). The

amount of water permitted to be used is checked against meters which have been installed (used more for groundwater use) or according to estimations of the amount of electricity used to pump up water. These same officials later commented that water pollution problems were growing severe in the area, which clearly indicates that water resources for consumption are, indeed, in short supply. Like the other counties allowing excess withdrawals, I believe the water bureaus lack sufficient authority to force industries to limit water consumption. I will explore this issue in greater length in the concluding remarks below.

The county water officials in Fuyang were proud of their accomplishments thus far in carrying out the permit and WRF policies. They began collecting WRF in 1994 based on the provincial document, but in early 1994 they issued their own document. Their strategy for collection is to be carried out in stages, with the first stage focusing on county level industries and the water supply plants. They collected 75 Wan last year from these water users. The second step will be to collect WRFs from township village enterprise, which are small rural industries. Although such industries may be small in size, they make up a over 70% of the industry in Fuyang county. Officials did not specify when collection from rural industrial users would begin nor whether agricultural users would be targeted. The WRF is based on how much is allowed to be drawn out on the unit's water withdrawal permit.

The Shaoxing county water bureau had been conducting trials on implementing water permits in two townships in 1994, and in March of 1995, they issued their own water withdrawal permit system regulations. In June of 1995 they began implementing

the permit system county-wide, but, as was mandated in the provincial document, small irrigation withdrawals and domestic water use were exempt. Their goal was to finish issuing permits by the end of 1995. But permits were not going to be issued to agricultural users (Interview 10). To accompany the implementation of the WWPS, in March of 1995 the Shaoxing water bureau also issued water resource fee collection measures. They began collecting water resource fees two months before beginning to issue permits and officials explained to me that agricultural and fishery uses for water would be exempt from paying the WRF, for "the burden would be too great" (*fudan tai zhong*) (Interview 10).

In setting water withdrawal rates, water bureaus are not permitted to allow rates above the amount the water user presently needs. I found that it was a common practice for water bureaus such as Linan, Fuyang, and Shaoxing (Interviews 23, 27, and 10, respectively) to permit withdrawals above need, and the reason I was given was that "water resources were plentiful" in their area. In the case of Shaoxing, the water administration officials maintained they will adjust the amount of water withdrawals permitted after observing a unit's use for a period of time. Withdrawals will be limited if a unit's use impairs that of another water using unit (Interview 10).

Concluding Remarks on the WWPS

Across all of the counties there was a clear reluctance on the part of the water bureaus to use water permits to limit the actual amount of water withdrawn. In light of opposition to water permits from other government offices, perhaps the water

bureaus only choice in implementing the permits was to allow excessive withdrawals. This clearly goes against the central goal of the water withdrawal permit system. Although central communiques maintained that conserving water would promote long-term economic development, water bureaus faced concerns that regulating water use would hinder local economic growth. Water bureau officials in Linan and Fuyang commented how they needed to move with small steps in this policy (Interview 23 and 27). The delay by all counties to initiate this policy and the small number of permits issued communicate a cautionary attitude of water officials to limit local water users.

One official in Linan noted that by collecting the water resource fee, the water administration office was put under pressure to show that they were actually doing something with the money (Interview 23). For example, providing efficient mediation services, penalizing project construction, fining illegal structures built on water projects, and regulating the mining of sand. The water administration office found it "very challenging" to become more service oriented in so many areas simultaneously.

The provincial water bureau officials state that, in their opinion, no result is yet apparent with the water withdrawal permit system, in other words it is not clear whether the permit system has improved water conservation efforts (Interview 1). This result is not surprising in light of the fact that some counties are issuing permits which do not limit water withdrawals except in times of drought. While delay and evasion in implementing this policy have been the norm, I would argue that, analogous to the Taoist phrase "inaction is action" (*wuwei*), the footdragging by the counties to implement the water withdrawal permit system to agricultural users has

led the central government to act. The State Council issued a communique in 1995 which officially gave lower levels a two year postponement in issuing permits to agricultural users. This is an example of delay and evasion at the lower level producing change in upper level policy, which represents a form of policy innovation, or bottom-up policy making.

Sideline Economic Operations *Provincial Perspective—Goals, Resources, and Support*

In an interview within the provincial water sideline economic operations office I was informed that in 1994, Zhejiang province ranked fourth nationwide in terms of water units SEO production output. In descending order, Jiangsu, Shandong, and Guangdong held the top three positions. Specific data are somewhat incomplete for 1993 and 1994, but from available numbers, it is notable that Jiangsu province far outstrips all the other provinces in production and profits. The provinces which did not report SEO data are most likely not performing well in production or profits. Although Zhejiang is one of the relatively more successful provinces in generating SEO profits, evidently very little of the money earned was used for water project construction, renovation, or repair. Most of the revenue was reinvested into the economic enterprise and used to pay the salaries of employees. The amount of profits earned by its water units in 1993 and 1994 were 116 and 139 million yuan, respectively. These profits represent a fairly large sum for water bureaus considering total provincial capital construction investment was only 333.6 million in 1993 and

563.4 million in 1994. In countless documents and speeches by ministry officials, the SEO policy is meant to be one of the policies which promotes local self sufficiency and enables the central government to decrease subsidies. It would thus be reasonable to assume that in provinces with significant increases in SEO profits the decrease in central investment would be significant. Examination of provinces with a rapid growth in water bureau-run SEOs does indicate central investment decreasing at a rate faster than the national average (See Appendix D).

In the Provincial Ten Year water plan, it was stated that the provincial water bureau encourages lower level water units to fully utilize and develop the land and water resources under the jurisdiction of their water project. Numbers are then provided listing the specific production goals for the fisheries, timber, and orchard activities, but conspicuously missing is any discussion of goals for industrial, commerce, and service SEOs. By the end of the eighth Five Year Plan the stated goal is for the Zhejiang water SEOs to reach 1400 million yuan in production and generate 150 million yuan in profits and taxes. What is puzzling about these numbers, is that they are goals which are *less* than the 1994 SEO production and profits attained by SEOs in Zhejiang. It would appear that these numbers are again only focusing on the production growth and earnings of fishery, forest and orchard SEOs. Such SEO activities are notably the lowest profit earners among all water SEOs nationwide.¹⁵ It

¹⁵Most reservoir management units in China are raising small amounts of money or providing food for themselves through fisheries or small agricultural activities. Such subsistence work does not generate large revenues. An overwhelming majority of SEO revenue is being raised through industrial and service activities. The following break down of revenue from the 1992 water SEO activities illustrates this point: Processing Industry 36.4%, Construction Industry 23.6%, Commerce and Tourist Industry 16.7%, Agriculture (includes forestry and fishing) 6.3%.

would not have been diplomatic to ask officials directly *why* SEO growth was being underestimated. It has been a common practice for governments in China to underestimate targets, so as to easily surpass them later. This is how a department or government office sometimes achieves "model" status. Another feasible reason for modest predictions on SEO profits is to portray the province as needing more subsidies from the center (Wong 1992).¹⁶

It is possible that in the ten year plan provincial water planners neglected to mention industrial SEOs in a way to discourage such finance generating activities and instead advance the development of fishery and agricultural activities, which keep water units "closer" to their work both spatially and in spirit. Industrial SEO work is considered by some water officials as diverting lower level project units too much from their main water management responsibilities (Interview 1). I believe deceptive reporting on SEO production and profits has been prevalent in all provinces and among the lower levels of government. In the conclusion of this section I will move this discussion to the level of county water bureaus and discuss how and why the lower level water units have potentially been veiling the success of their SEO activities.

Although Zhejiang has been considered one of the stronger provinces in the implementation of the SEO policy, it is worthy noting that the living conditions of most water sector personnel are considered very unsatisfactory (ZJNJ 1991). County

¹⁶Other instances of underestimating provincial SEO profits can be found in both the 1994 and 1992 Zhejiang provincial almanacs. The data in these almanacs were lower than the data given to me by provincial officials.

water officials I met periodically commented that their salaries were very low and as the economy has boomed, their salaries have remained stagnant. In general, government workers have economically been left behind as the salaries of private sector individuals have grown remarkably over the past decade. The appeal among some water sector employees to develop sideline economic activities and raise their standard of living is thus not surprising.

Departments within the provincial water bureau have also made moves to open sideline economic activities to enhance the salaries of personnel, but they have met with evidently mixed success. For example, the Qiantang River Basin Management Bureau (QTJMB) has a development department (now called a company) which is responsible for water project construction work. The QTJMB has required that this department/company become financially independent, but the bureau evidently still pays some salaries to these water employees, for their SEO work has not been very successful (Interviews 7 and 9). They have opened some shops, factories, a hotel, and a travel agency, but none have been very profitable. In fact, they most likely suffered financial losses from the factories.

The more profitable provincial SEO work has been undertaken by the Provincial Comprehensive Management Company, which is actually the provincial office in charge of overseeing water SEO work throughout Zhejiang. This office has focused its investment on hotels and manufacturing. In 1985, Zhejiang water bureau construction teams abandoned the standard practice of only "serving" the water sector and began to pursue and successfully bid for work outside of water project

construction (ZJNJ 1986). Evidently many of the Zhejiang teams found considerable work outside of the water sector, even in other provinces. In 1985 the total investments earned from outside construction contracts totalled 36 million yuan, which, according to the Zhejiang Yearly Almanac (1986) covered 96% of the province's contribution to capital construction investment that year. What is worthy of discussion is that this reported sum is higher than that related to me by provincial water officials for Zhejiang's SEO work. The article reporting such contracting did not depict the work specifically as Sideline Economic Activities, which underlines that not all SEO is admitted as taking place. In this case it was portrayed as a workers within a construction unit exercising their newfound right to enter into outside contracts. I bring up this case not to belabor the reader with anecdotes, rather to stress the point that the area of sideline economic operations encompasses *more* than is immediately apparent. This example shows that some highly lucrative sideline activities are wearing a different mask. In the discussion of county level SEOs we will cover some instances of SEOs wearing a different mask and/or treading the water between legal and illegal activities.

Regulations and Policy Pronouncements

While national level regulations on sideline economic operations were issued in 1988, Zhejiang province does not have its own regulations. However, in the 1991 provincial water law there is one article which addresses SEO work.

Article 41. Every level of the People's Government and related departments should support water project management units in developing sideline economic operations. These operations should be developed according to local conditions with the goal of increasing profits and self-development potential. The profits which a water management unit earns from SEO work should be used for water project construction, maintenance, and management. Individuals and units are not allowed to violate state and provincial regulations regarding seizure and embezzlement. Following state and provincial regulations, industries and fixed assets which belong to water project management units are not allowed to be seized or redistributed.

Aside from this statement meant to encourage SEO activity and in principle to protect SEO profits from local government seizure or forced redistribution, throughout the 1980s the Zhejiang provincial water bureau and government appear to have adopted a rather non-interventionist attitude regarding county SEO activities. Between 1979 and 1984 the provincial water bureau evidently gave subsidies to reservoirs to raise fish, but in 1985 these subsidies changed to interest free loans. In 1986, however, the ZJWB began requesting reservoirs pay back the loans with a 2.4% interest. This interest rate rose to 3.8% and 7.8% in 1987 and 1988, respectively (Interview 19). Following national regulations, Zhejiang allowed water sideline economic undertakings to be tax free from 1985 until 1990.

This "hands off" attitude is also reflected in much of the central government documents as well. For example, no provincial or central document exists on how water bureaus are to allocate their profits or revenues (Interview 19). The responsibility to set the profit allocation standards falls to the water bureau which allows its water management units to undertake water sideline economic work. Sometimes county water bureaus devolve this authority to the management units. No specific ratios exist for how much profits are to be allotted to repairing water

projects. The provincial water SEO office encourages, but does not mandate, that county water bureaus allocate more profits towards project repair and expansion. As will be shown below in the case study data, almost no SEO profits are used for water project investment.

County water bureau officials informed me that SEO work has been developing with considerable freedom. They do not receive much pressure, guidance, or funding from above. As will be detailed below, the lack of upper level guidance produced uneasiness in some counties while others appeared to thrive under such conditions. In 1992, after Deng Xiao-ping's "famous" trip to the south, the provincial water bureau in Zhejiang issued a communique stating that all water bureaus must undertake sideline economic work in order to promote self-sufficiency. Moreover, in 1994 the provincial water bureau began to "check" the financial records of lower level SEO activities, particularly the more successful ones. This implies some concern about tax evasion or perhaps the water bureau wishes to investigate how much revenue is being used for salaries and welfare payments. Most likely the province will establish some kind of ratios for the profits and revenue division.

Although funding has not been forthcoming, I would argue that the overall political environment in Zhejiang has permitted water-sector SEOs well before the reform era. This tolerance for water bureau SEOs can be seen in the instance of highly successful sideline economic work undertaken by a privately built and managed reservoir in the 1960s (Interviews 17 and 19). In 1965, a group of peasants in Zhuji county used their own funds and a small provincial loan to build the Zhengtian dam.

They then took the initiative to create fisheries and open private factories around the reservoir in order to repay the loan, raise money to maintain the dam, and feed the local community. Beginning in the 1970s, many reservoir management units throughout Zhejiang also ran fisheries to provide food for their employees. Allowing such economic activity before the reform era indicates that provincial government and water officials took a very pragmatic view towards funding water management units. The lack of provincial investment and fines for non-action on SEO work indicate that the political atmosphere and actions taken by in Zhejiang ranges from being ambivalent to somewhat encouraging on the issue of developing water SEOs. Table 5.7 presents overall SEO performance in Zhejiang. In 1992 the provincial water bureau issued a document that stated all water units in Zhejiang must begin developing SEOs, but the provincial SEO office does not charge county water bureaus "idle resource fine" (*xianzhi fei*) if they neglect SEO work. What we will see below is that within the five counties there were several different implementation strategies taken in regards to the SEO policy.

Although data on profits and tax payments are fragmentary at the national level, it appears that generally SEO profits and taxes are increasing, except in 1994. Countless speeches and policy communiques stress the need to increase water management unit performance in developing SEOs. Several factors lead me to maintain that some of the reported "poor" performance of water management units in running SEOS is actually due to intentionally underestimating revenues and profits. Removing the tax free status on water sideline economic ventures is one policy

change which may have influenced lower reporting of revenue and profits in some areas. One policy development which potentially encourages county water units to underestimate their revenue and profits has been the practice of linking water subsidies to SEO performance. For example, while all of the county governments in this study either encouraged or ignored sideline economic activities in the water sector, some county governments in Zhejiang are attempting to force their water bureaus to undertake SEO work. For example, in Quzhou, which is located southwest of Fuyang, the county government issued a joint document with the finance and water bureau in which it was stated that subsidies to the water bureau would be decreasing 20% every year in order to "encourage" the growth of SEO work in the water sector. The provincial SEO office commented that in some counties where water bureaus are fairly successful with SEO work the county governments have begun to decrease the subsidies they give for water project work (Interview 19). With such developments I believe some water bureau SEOs are not revealing all of their profits. The easiest way to "hide" profits is simply to pay higher salaries to those involved or invest more money back into their economic ventures.

While the provincial level water bureau is fairly non-interventionist in county SEO work, there are signs that county level governments are beginning to pressure or more closely supervise their water bureau's SEO work. For example, some counties are mandating that fairly successful industrial SEOs run by water units must be pulled into the county production plans and be required to meet certain production and profit targets. This development clearly contradicts the spirit of "free market" which is

supposed to be the basis of the SEO policy. This policy could lead a water SEO industry to split itself up into several smaller enterprises. Remaining small in size increasingly appears to be a way for a water SEO to keep more of its profits and freedom in developing and dividing their productive activities.

Table 5.7
Output Value and Profits of All Sideline Economic Operations Within Zhejiang Province
 (in millions of yuan)

	Output Value	Profits and Tax
1980	33	9.6
1981	43	13
1982	46	13
1983	56	16
1984	118	29
1985	173	29*
1986	136	25*
1987	267	39*
1988	358	49*
1989	530	62*
1990	590	60
1991	757	81*
1992	1068	114
1993	1903	169
1994	2360	193
1995	2600	n.a.

Source: Interview with officials at Zhejiang Multiple Operations Management Office (Interview 19).

*Indicates the sideline economic operations were tax-free for this year.

*ZGSLNJ 1992 reports the profits and taxes in Zhejiang for 1991 as being 60+ million yuan.

Sideline Economic Operations--County Level Resources

Economic Resources

The material on economic resources introduced in the water fee section still applies for this policy. In Linan the water bureau is fairly poor, Shaoxing and Fuyang have been able to increase their budgets somewhat, and finally, Xiaoshan and Zhuji have been granted or have earned very large water budgets.

Table 5.9 County Water Bureau Resources for Sideline Economic Operations

	Xiaoshan	Zhuji	Shaoxing	Fuyang County	Linan County
Economic Resources	High	High	Medium/High	Medium/High	Low
Political Resources	High	High	Medium/Low	Low	Low
Human Resources	High 1985 ^a 6 (12%) ^b	High 1990 8 (14%)	Medium 1990 2 (4%)	Low 1990 ^c ½ (4%)	Low 1988 1½ (3%)

^aThe years indicated in the Human Resources category denote the year each county water bureau formally established a Sideline Economic Operations Office.

^bThe percentages in parentheses indicate the percentage of county water bureau employees working in the county seat office who work full-time on sideline economic operation activities. Approximately fifty people work in the main offices of each county water bureau. Zhuji is somewhat larger with fifty-six county water personnel.

^cWithin the Fuyang water bureau there is no formal Sideline Economic Operations Office. Instead one employee devotes half of her time to sideline economic operation work. This year is an estimate as to when the water bureau began assigning an employee to do such supervisory work.

Human Resources

Four out of five county water bureaus created special Sideline Economic Operations (SEO) Offices as early as 1985 and as late as 1990. Within the Fuyang water bureau there is formally no such office. Instead, beginning in 1990, one employee now devotes half of her time to sideline economic operation work. The number of full time employees the other county water bureaus allocated to promoting sideline economic activities ranged from one and a half to eight. I calculated the

percentage of full time employees doing this work based on the fact that within each county water bureau there are approximately 50 people working directly within the county water bureau. In the final calculation to rank each county as having high, medium, or low level of human resources vis-a-vis the SEO policy, I also included an evaluation of the qualifications of these water employees to effectively supervise and promote economic development activities within their water bureau. Xiaoshan and Zhuji both included some employees who possessed some economic and business expertise. The employees in the other water bureaus lacked any such background. I subsequently ranked Xiaoshan and Zhuji as possessing a high level of human resources, Shaoxing, on the other hand, was at a medium level and the other two counties low (See table 5.9).

The number and quality of employees who were assigned to undertake SEO development and supervisory work was determined in great part by how each county water bureau prioritized this policy. Ultimately, this ability and motivation of each county water bureau to develop SEOs rested more on the amount and nature of political resources possessed by the county water bureau more than its economic resources.

Political Resources

In regards to the sideline economic operations policy, it appears that two of the county governments--Xiaoshan and Zhuji--granted their water bureaus preferential treatment so as to encourage the development of sideline economic activities. For

example, the Zhuji county government gave the water bureau a piece of property near the center of the county seat to develop as the wished. The water bureau has subsequently contracted construction firms to build numerous high-rise apartment complexes. Some of the profits from renting these apartments were used to construct a new, well-equipped water bureau building.

The Zhuji county water bureau SEO office provides seed money and loans for new SEOs. It has helped its county SEOs through successfully negotiating with its provincial level counterpart bureau to obtain loans or other forms of preferential treatment for new SEO development. One notable preferential policy granted to the county was tax free status for any economic operation affiliated with a reservoir. At the national level tax free status for water SEOs should have stopped in 1991. The Zhuji water bureau enjoys a fairly high status at the provincial level after winning a provincial award in 1995 for progressive and efficient management. Similarly, the Xiaoshan water bureau has gained provincial recognition for its water work and has received the Zhejiang Water Conservancy Construction Progressive County Award from 1989 to 1992. The water bureau which I categorize as having the third highest in political resources--Shaoxing--also won several water management awards in the late 1980s. These awards raise the status of these three counties and could explain why all have at some point received more favorable treatment from the provincial level SEO water bureau.

Shaoxing county water bureau has received some SEO assistance from upper levels in the form of intergovernmental investment in one large-scale seafood and

pearl farm which was established in 1986. Shaoxing county water bureau must repay the central and provincial loans when it can, but thus far the farm has not produced much profit. Since this major SEO failure, Shaoxing, like Linan and Fuyang county water bureaus, has not been receiving any preferential policies from either the county or provincial level governments to promote the development of sideline economic operations. This inadequacy of support is understandable for Linan, for it is a poor county which lacks adequate transportation infrastructure, but Fuyang and Shaoxing lie near the capital of Hangzhou and industrial growth there has been very rapid since the late 1980s in both counties. The hindrance for Fuyang and Shaoxing in the development of SEO appears to be a lack of political will. One example from Shaoxing will illustrate this problem. The official at the head of the district water office in Shaoxing has evidently been somewhat opposed to the development of SEO in Shaoxing county. He feels that such economic activities are financially risky and detract from the mission of water bureaus. The poor performance of most of Shaoxing's SEOs seems to underline this official's concern about the economic risks. The other risk which concerns the Shaoxing water district leader and most likely those officials in Fuyang is *political risk*. Namely, if the "policy winds" which presently allow such economic activities change, then district and even county water leaders could be the subjected to criticism or other "trouble" (Interview 19).

To summarize, Xiaoshan and Zhuji both enjoy strong support from their county governments for SEO activities, therefore, I ranked these two counties as having a high level of political resources. I believe in Linan the hesitancy in

developing SEOs was due more to the poverty in the county and poor infrastructure, but in Shaoxing and Fuyang counties, the hindrance appeared to be more political in nature. Because Shaoxing has received some upper level support for its SEO activities, I ranked it slightly higher than Linan and Fuyang in terms of political resources (See table 5.9 above).

Among the five counties, two innovated on this policy, one modified it, while two other counties minimally developed sideline economic operations. Most notable in this last pair of counties, was one fairly wealthy county (Fuyang) in which conditions for economic investment and development were ideal, but the water bureau was apparently disinclined to carry out sideline economic work. Appendix H provides an overview of how the five counties have implemented the SEO policy. Let us now turn to the data from the five counties to integrate information on the level of county water bureau resources with the central government policy perspective.

Implementation of the Sideline Economic Operations Policy Innovation in Xiaoshan and Zhuji Water Bureaus

In Xiaoshan, fifty county water bureau employees who belong to county-run reservoirs, sluices, and flood control units, etc., manage 46 sideline economic operation industries, which include production of cement, chemicals, oil pumps, and machinery. As is the case in all the other five counties, the water bureau employees managing the SEO industries will make yearly contracts with the county water bureau concerning output value, employee salaries, and welfare payments to be made to all county water bureau employees. This is a way for the water employees turned SEO

managers to "pay back" the county water employees who took on extra work to allow them to go out to manage the SEOs. All the counties had similar pay back arrangements, so the profits from the SEO activities enhanced the salaries of both the contractors and the other county water bureau employees. In Xiaoshan all of the profits remaining after wages are paid must be reinvested back into the SEO, and no money is given for water project construction or repair. In each of the counties the ratio of wages and reinvestment varied slightly, but, with the exception of Zhuji county, no profits were used for water project expenditures.

In Xiaoshan, forty-six sideline economic operations were managed by 50 water bureau employees and they employed a total of 4000 predominantly rural inhabitants, who were not government employees in water bureaus. The profits from the sideline economic operations in this and other counties have conspicuously not been used for water project repair. Instead, the profits have been utilized to increase the wages and welfare assistance of all the employees in the county water bureau.

In 1980, Zhuji evidently already had a basic policy for sideline economic operations in the water sector. This basic policy was based on the pioneering activities of a single farmer in a township within Zhuji county who organized local farmers in 1958 to privately build a dam with a hydroelectric plant and open a fishery. This construction was done evidently with minimal government assistance in the form of a small loan. By 1969, this private cooperative had raised sufficient capital from hydroelectric generation and fish sales to repay the loan and then to begin opening some small industries, which operated outside of the government economic plans.

Developing and maintaining a well-functioning reservoir, farming, and industrial community independent of government plans could have only been possible with local government tacit approval (as well as a fair amount of payoffs!).

I relate this story because it reveals how the county government in Zhuji has been open to the concept of free market economic development well before the economic reforms were initiated by Deng Xiao-ping in 1979. In fact, water employees at reservoirs in Zhuji were raising fish in the 1960s. I believe the county government in Zhuji has provided a very "enabling" environment for all kinds of economic activities and the county water bureau has benefitted in this environment as it has pursued sideline economic operations.

Today the water bureau in Zhuji is ranked number one in the province for productive sideline economic operations. Ninety percent of the water units and facilities undertake some form of SEO within Zhuji county. Besides the numerous SEOs at reservoirs, which include fisheries, hotels, restaurants, and orchards, the county water bureau has five major economic operations which it views as key in promoting county economic health: a factory which makes refrigerators, a construction company, a real estate company, a business company, and a barbershop. Another case which has been categorized as SEO activity was when in the early 1990s the county government allowed Zhuji water bureau sell the land around the old sluice on the Pujiang river and the monies generated from the sale were used to help build a new sluice.

In Zhuji, contracts between the county water bureau SEO office may vary slightly for each operation. A typical arrangement at a reservoir is that 50% of the profits are reinvested into the sideline economic activity, 20% are to reward the contractor, and 30% are distributed to all of the people who work within the reservoir management unit. The main contribution to the water sector in Zhuji has been to "enliven" the economic production power of water bureaus and raise the standard of living for many water sector employees. Since 1987, 296 water management units have been carrying out fishery, agricultural and industrial SEO work and have employed 1300 people. By the end of 1987, production was 32 million yuan and taxes and profits totalled 4.2 million yuan.

Both Xiaoshan and Zhuji represent counties which were leading the development of the sideline economic operations policy in that their water officials were successfully undertaking industrial SEOs well before such activities were permitted by upper level water bureaus. These two water bureaus took advantage of both the high level of discretion afforded by this new and selective policy and the high level of power their own county governments granted them to push the policy beyond the original boundaries. Moreover, they disregarded the goal of using SEO profits to fund water projects. I have categorized their implementation of the SEO policy as innovation due to the fact that the upper levels have come to sanction their expansion of economic activities into industrial sectors as well as shifted the main goal of the policy to be providing wages and welfare for water workers.

Modification With Some Innovation--Shaoxing County Water Bureau

Shaoxing established its SEO office in 1986, although like the other counties fishery activity had been taking place since 1981. The county water bureau does not force county water units to undertake SEO, but those who employees who wish to may make a contract with the county water bureau. In Shaoxing, the range of SEO activities is not as broad as in the above two counties. Most SEOs in Shaoxing are limited to farming and fishery work. There are approximately 15 SEOs at the county level in Shaoxing. Like the other five county SEO offices, besides making contracts, the Shaoxing SEO office also provides information concerning SEO policy changes, market surveys and the experiences of other units in conducting SEOs.

In 1994, the Shaoxing water bureau together with the county finance office issued a joint document stipulating that 30% of the profits go to those running the SEO and 70% must be reinvested in the economic activity. The goal of this arrangement is to promote long-term maintenance of the economic operations. Shaoxing differs from the other counties in that the SEO office not only assists and advises county level SEOs, but also those at the township level. The result has been that a majority of the township water stations are succeeding in supplementing their salaries through SEO activities. An even more notable policy modification in Shaoxing has been the requirement that 100,000 yuan from yearly water fees must be used to increase SEO investment in the county. I also categorized Shaoxing as somewhat innovative, because the water bureau SEOs devote all revenue to wages and reinvestment and not to water project work.

Minimal Compliance--Fuyang and Linan Water Bureaus

In Linan, the SEO office was formed in 1988 and by 1995 it was monitoring the activities of only eight companies. In Linan, it appears most of the companies which the water bureau dubbed sideline economic operations are actually just water construction units which have signed responsibility contracts with the county water bureau to fulfill their required water management work. It wasn't until 1985 that some reservoir management units began to open some factories to raise extra funds for increasing their wages and welfare benefits (Interview 21).

Like Xiaoshan, Zhuji, and Fuyang counties, the Linan water bureau SEO office does not consider fishery work or any township level water station economic activities as being their concern. Profits at the Linan SEO are very low, and there did not appear to be any concrete development plans for new SEOs, for evidently finding new investments is proving extremely difficult (Interview 21).

In Fuyang county, the reported *revenue* for water sideline economic operations in 1994 was 100,000 yuan, which is *less* than the profits earned in the sideline economic operations in the significantly poorer county of Linan. The fact that only one employee works half time on coordinating sideline economic activities provides part of the answer to Fuyang's meager results in developing water bureau SEOs. Fuyang county water bureau established a sideline economic operations company in 1984, which was meant to organize and develop various economic activities within the county water bureau sector. Evidently, the lack of investment funds and lack of training of employees led the water bureau to abolish this company in 1986 (Fuyang

County Water Gazette 1994). The eight existing sideline economic operations have apparently been organizing their activities with little or no assistance or guidance from the county water bureau. The eight SEOs include six fisheries at reservoirs, one small hydro-electric station and one large irrigation district.

Most reservoirs in Fuyang do not receive any regular finance department subsidies, which means these management units must rely on collecting fees and opening SEOs to raise money for running the reservoir and providing for employee livelihood. Their SEO work usually encompasses fisheries and raising chickens and pigs. Even the largest reservoir, Huang Tian Fan, is not guaranteed regular subsidies from the county. Therefore, management units at Huang Tian Fan which oversee irrigation districts run both fisheries and some small industries to raise money. The water administrative officials were very hesitant to discuss Fuyang's water SEOs, for they said such work was not being done very successfully. I was informed that no real future plans are being made for water SEO work in Fuyang. Fuyang county water officials stated that all of the money raised by the SEO activities were devoted to covering employee salaries and welfare costs. This information was contradicted by an entry in the county government gazette in which it was reported that over twenty percent of the one million yuan revenue was used to protect or repair supplementary facilities of water projects.

Conclusion

The level of local resources necessary for implementing the sideline economic operations policy, particularly political resources, differed among the five counties in this study. While the policy design allowed for a high level of discretion, it was the varying level of resources which strongly shaped the type and extent of policy entrepreneurship each county pursued. Within the nearly 2000 counties throughout China it is quite likely that are many other county water bureaus with similar political and economic resources. It is thus reasonable to assume that such bureaus also followed innovative paths akin to Xiaoshan and Zhuji.

An official in Xiaoshan stated that the lack of clarity from the upper levels concerning sideline economic operations had forced county water bureaus to translate vague policy phrases into concrete local action (Interview 22). In Xiaoshan, the water bureau officials appeared to feel the lack of pressure from the upper levels to develop the sideline economic operations gave them the freedom they needed to be economically successful and experiment with the SEO policy. Moreover, the encouragement that Xiaoshan and Zhuji county governments granted their water bureaus ensured political support for SEO development. The fact that the counties were successful in carrying out some form of policy entrepreneurship does not mean that their actions are going to remain completely unchecked by upper levels. The same officials in Xiaoshan lamented the fact that in 1994, the MWR and the provincial water bureau began to more closely check into the lower level SEO activities, particularly those which had been relatively successful economically. Based

on the ubiquitous phenomena of tax evasion in China, I have speculated that since water SEOs are no longer entitled to tax free status, upper levels are suspicious that lower levels are not passing up sufficient tax payments. Previously, the SEO activities were viewed as by MWR officials as "independent activities," but slowly the upper level water bureaus and governments are linking SEO work with performance of water conservancy work. Articles in the MWR monthly journal have included criticism that many counties are neglecting to use their SEO profits for water project construction and maintenance. This hints that upper levels are making another attempt to push the policy back towards its original goal. The need for project repair was clear in all of the counties I visited, where numerous water projects, particularly dikes, which were in poor condition. Another concern for upper level governments is that water bureaus are evading their taxes.

Nevertheless, formally, the upper level SEO policy has evolved throughout the reform era to more closely match how some counties had expanded and changed the scope and goals. Policy announcements and articles in the MWR journal now stress that sideline economic operations are meant to enhance the wages and welfare of lower level water workers. I believe changing the policy goals to raise wages was not simply a self-serving action by water bureaus, for water employee salaries are the lowest within the government hierarchy. Because of increased job mobility, county water bureaus have been losing some of their best employees and have been unable to attract other highly trained employees.

Table 5.10 Local Discretion and Resources: Potential for Policy Entrepreneurship

	Sideline Economic Operations Selective-New Policy (High Discretion)	Water Withdrawal Permit System Encompassing-New Policy (Medium Discretion)	Water Fee Collection Encompassing-Routinized Policy (Low Discretion)
High Level of Resources	Xiaoshan & Zhuji (Innovation)		
Medium Level of Resources	Shaoxing (Modification and some Innovation) Fuyang (Minimal Compliance)	Zhuji (Compliance and Innovation) Fuyang, Shaoxing (Minimal Compliance and Innovation) Xiaoshan (Minimal Compliance)	Xiaoshan and Shaoxing (Modification) Zhuji and Fuyang (Minimal Compliance)
Low Level of Resources	Linan (Minimal Compliance)	Linan (Compliance and Innovation)	Linan (Minimal Compliance)

This analytical framework enabled me to explore how local government discretion is shaped by central policy and how the types and amount of local government resources motivate and enable county water bureaus to either comply with, evade, modify, or innovate on a policy. I believe this policy entrepreneurship framework with its three components was useful in capturing the qualities of local discretion and the dynamics of bottom-up policy making. How and why lower level governments comply with or change policies are questions of interest both to policy makers and policy analysts alike. This intergovernmental analysis could also provide an answer to the question why increasing the level of local discretion has not always lead to more innovation or compliance of policies. This study has stressed the need for awareness of intergovernmental dynamics in policy implementation and indicated how policy design may contribute to encouraging or discouraging policy implementation. Table 5.10 presents a summary of the above resource rankings of the

five counties according to policy type. The rankings were determined by evaluating the level of economic, human, and political resources. For example, for the SEO policy I classified Fuyang as possessing a medium-high level of economic resources and low levels of political and human resources. Taken together I judged Fuyang as having an overall medium-level of resources vis-a-vis the SEO policy. In the next chapter I will delve into a more thorough comparison of the implementation of these three policies across the five counties (See table 5.10) and discuss some of the broader issues this analysis raises for intergovernmental relations in China specifically, and local government entrepreneurship generally.

Chapter Six

Policy Entrepreneurship, Water Resources, and Reform

In chapter five, I presented the three policies independently and compared county water bureau implementation for each policy. Now, the focus will expand to a comparison and discussion of county implementation *across* the three policies. First, I will summarize the implementation of the three policies and then offer an interpretation on the varying patterns of entrepreneurship which exist not only across counties for an individual policy, but also across policies for an individual county. An example in the latter case would be questioning why Xiaoshan innovated on the goals of the sideline economic operations policy, but modified the process of water fee collection and only minimally complied with issuing water withdrawal permits. Also, what explains how the Linan water bureau, which is low on all three resource types, was able to innovate on the WWPS policy while only minimally complying with the other two policies? The discussion below attempts to answer these questions by outlining the shortcomings in the institutional structure that have shaped county water bureau incentives to implement these policies. How poor monitoring and enforcement capabilities and unclear water rights have lowered the willingness for peasant compliance is also a key issue I will address. Following this analysis, I will explicate how policy entrepreneurship in the Chinese water sector is producing policy outcomes which have potentially deleterious effects on water resource management. I should note here, it has clearly *not* been the intention of either lower or upper level water

bureaus to mismanage water. The central government's push for decentralization in the water sector as well as the priorities given to industrial development are two factors which have clearly limited the ability of lower level water bureaus to implement some policies as required. The lack of sufficient financial resources and credible authority over water resources are the greatest hindrances the county water bureaus face in pursuing their bureaucratic mission. The considerable devolution of financial and administrative authority to lower level water bureaus has also circumscribed the ability of upper levels to monitor and punish county water bureaus for poor policy performance.

This final exploration and conclusions regarding policy entrepreneurship in the water sector would not be complete without some brief reflection on authoritarianism and China's political transition. After considering how local government policy entrepreneurship reveals insights into the softening of authoritarianism in China, I will conclude with observations on future research directions using the policy entrepreneurship framework.

Comparing the Implementation Within and Across Policies

In predicting potential types of entrepreneurship, the range of options local governments possess regarding implementation will be the greatest when the level of local resources *and* discretion are high or medium. Table 6.1 reflects the *options* available for local governments if they do not wish or cannot comply with the requirements for implementing a policy. Compliance to policies is not ruled out,

except perhaps in cases when local governments lack sufficient economic, political and human resources, as was often the case in Linan county. Table 6.2 shows the types of entrepreneurial strategies undertaken by the five water bureaus and table 6.3 simplifies the presentation by illustrating the types of policy entrepreneurship without ranking water bureaus according to level of resources. What is clear from the latter two tables is that policy entrepreneurship varied across policies and within each county.

As was discussed in chapter three, the moves to devolve more authority and responsibility in the water sector were meant to empower water bureaus with the necessary resources and incentives to implement a wide range of new water policies and regulations. To belabor the obvious, the Ministry of Water Resources would have wanted all of these counties complying with the policies. However, the low level of resources, particularly political resources, have led some water bureaus to evade or minimally comply with some policies. Conversely, the high level of political resources possessed by some county water bureaus succeeded in empowering them to change policy goals and/or procedures to satisfy local needs. Although economic and administrative authority has been fairly decentralized in the water sector, this variance in entrepreneurship by the water bureaus cannot be explained by decentralization alone. As was demonstrated in the case studies of the five counties, the design of the three water policies and the level of local resources together interacted to determine what type of entrepreneurship occurred.

Table 6.1 Local Discretion and Resources: Options for Implementation

	Selective-New Policy (High Discretion)	Encompassing-New Policy (Medium Discretion)	Encompassing-Routinized Policy (Low Discretion)
High Level of Resources	Innovation Modification Evasion	Potentially Some Innovation Modification Evasion	Modification Evasion Delay Minimal Compliance
Medium Level of Resources	Potentially Some Innovation Modification Evasion	Potentially Some Innovation Modification Evasion	Evasion Delay Minimal Compliance
Low Level of Resources	Modification Evasion Delay Minimal Compliance	Evasion, Delay Minimal Compliance	Evasion Delay

Table 6.2 Local Discretion and Resources: Potential for Policy Entrepreneurship

	Sideline Economic Operations	Water Withdrawal Permit System	Water Fee Collection
	Selective-New Policy (High Discretion)	Encompassing-New Policy (Medium Discretion)	Encompassing- Routinized Policy (Low Discretion)
High Level of Resources	Xiaoshan & Zhuji (Innovation)		
Medium Level of Resources	Shaoxing (Modification and some Innovation) Fuyang (Minimal Compliance)	Zhuji (Compliance and Innovation) Fuyang, Shaoxing (Minimal Compliance and Innovation) Xiaoshan (Minimal Compliance)	Xiaoshan and Shaoxing (Modification) Zhuji and Fuyang (Minimal Compliance)
Low Level of Resources	Linan (Minimal Compliance)	Linan (Compliance and Innovation)	Linan (Minimal Compliance)

Table 6.3 Types of Policy Entrepreneurship Across Three Water Policies

	Sideline Economic Operations	Water Withdrawal Permits	Water Fees
Xiaoshan	Innovation	Minimal Compliance	Modification
Zhuji	Innovation	Compliance and Innovation	Minimal Compliance
Shaoxing	Some Innovation and Modification	Minimal Compliance and Innovation	Modification
Fuyang	Minimal Compliance	Minimal Compliance and Innovation	Minimal Compliance
Linan	Minimal Compliance	Compliance and Innovation	Minimal Compliance

In examining the results in table 6.2 it appears that the actual implementation in the five counties generally stays within the predictions presented in table 6.1 for the Selective-New policy (SEO) and the Encompassing-New policy (WWPS) with the exception of Linan's innovation of the WWPS. This can be explained, however, by expanding the notion of innovation beyond modifications or improvements on policies which filter upwards. Bottom-up policy making stemming from modifications or experiments which "improve" or change the goals of a policy can generally only be carried out by counties with high or medium resources for policies which grant a high or medium level of discretion. Another type of innovation, however, is made up of acts of evasion and delay, which also can motivate the central government to alter policy. In regards to the WWPS policy, county water bureaus, such as Linan, can only innovate by evading or delaying a policy. Linan also was "empowered" to neglect issuing permits to agricultural users because most other counties were also ignoring this duty. There is less risk involved in group procrastination.

The implementation of the water fee policy, however, does not exactly match the predictions posited in table 6.1 for an Encompassing-Routinized policy. For example, Xiaoshan and Shaoxing water bureaus modified the water fee policy which, for a policy allowing low discretion, should have only been possible had the two county water bureaus possessed a high level of resources. Linan minimally complied with the water fee policy, which also does not match the predictions of table 6.1 for a water bureau with low resources implementing an Encompassing-Routinized policy. I believe these discrepancies between prediction and reality are due to the water fee

policy being placed in the incorrect policy design category. In other words, after reflecting on the low level of incentives water users have to pay and the apparent reluctance water bureau officials have to even collect water fees it became clear that water fee collection was *not* the routinized policy I initially assumed it to be. I adopted the assumption that water fee collection was a routinized policy because upper level mandates promoting water fees began in 1965 and were further clarified in 1985. Although *officially* water fees have been required for over thirty years, they have rarely been collected. Consequently, how can a policy tool be categorized as routinized if it has never been successfully used? Therefore, I have decided the water fee policy should be categorized as an Encompassing-New policy, which means its design allows a medium level of discretion. The water fee policy design therefore permits county water bureaus more leeway in choosing an implementation strategy than I had originally assumed.

Water Fee Collection

All water supply units are required by law to collect water fees in order to cover the costs of supplying water and covering project repair. In the five counties under study the overall implementation of the water fee policy has been minimal. This laxness in assessing fees is due to the lack of institutional arrangements which would ensure peasant cooperation and county water bureau support and enforcement of the water fee policy. For example, peasants have not been given the incentives to pay water fees, for they not only have helped construct and maintain many of the water

facilities, but the lack of clear water rights has turned water into an open access resource which is officially "owned" by the masses. Why should peasants wish to pay for water supplied by facilities they are required to maintain through winter repair campaigns? Factors outside the water sector also limit the desire and ability of peasants to pay the fees, for example, the price of grain continues to be held artificially low while the costs of fertilizer and seeds have risen. Moreover, rural areas have been burdened with a considerable number of new government fees during the reform era, which peasants are increasingly unable to afford.

The low level of political resources possessed by the county water bureaus has also prevented water units from collecting fees. For example, the urban construction bureaus do not permit water bureaus to assess water fees and numerous communiques from the central government condoning chaotic fee collection discourage water bureaus from collecting fees or punishing evasion. Moreover, the dearth of sufficient metering equipment and water enforcement personnel are also factors which hinder the ability of water units to monitor water use. In light of such a poor institutional foundation for motivating payment, monitoring use, and sanctioning evasion, the water fee policy mandated by the upper levels would appear to be an impossible mission for the water bureaus to accomplish.

Two neighboring counties--Xiaoshan and Shaoxing--have each adopted a different process for reaching the intended goal of the water fee policy. Xiaoshan has been successful in stimulating peasants to contribute labor for repairs, which is a legal policy, but is not meant to replace water fee collection. The contribution of labor does

not promote water conservation, which is the other major goal of the water fee policy. Shaoxing's strategy is clearly not permitted, in that the county water bureau diverts 10,000 yuan of water fees for SEO investment. Using water fees to cross-subsidize SEO work is a logical and potentially fruitful strategy for the Shaoxing water bureau, for by "investing" some of the money collected in SEO work the county water bureau may possibly be able to generate more revenue for project repairs.

Water Withdrawal Permit System

Despite the initial requirements that water permits were to be issued to all water users, the State Council issued a communique in 1995 which allowed lower levels to postpone issuing agricultural permits for two years. With the exception of Xiaoshan, all of the county water bureaus refrained from implementing permits to agricultural users. In this policy the inaction represents a form of innovation. Their inaction was due in great part to resistance from peasants and other government bureaus. Rather than burden peasants, most county water bureaus openly delayed implementing permits in rural areas, where 80% of water resources are consumed. Without issuing permits to agriculture the permit policy has ostensibly failed. The ultimate goal of this policy is to create and regulate a new system of water rights, so the considerable obstacles—one of the most notable being the Communist Party's insistence that water resources are still state-owned—faced in implementing this policy are not surprising. The tension between the ideology of state-owned water and the

new policy to establish a legally-based water use system has created an environment of uncertainty. This uncertain environment decreases water bureau incentives to implement the policy and empowers water users to disregard the permit system. As in the water fee policy, water bureaus could be more effective in implementing the water permit system if they were truly granted the primary authority to manage water. Nevertheless, even with more authority, water bureaus would still face challenges in issuing permits, for this permit-based water right system is most likely viewed as a threat by peasants in that it will enable the government to more accurately measure and charge for use of water resources. Moreover, it is probable that many agricultural communities already possess a customary water right system which local users have designed themselves. The lack of peasant cooperation in paying fees and accepting permits indicates that they do not believe that they will reap long-term benefits from complying with these policies.

Sideline Economic Operations

I will close this section with some final comments on the sideline economic operations policy. The fact that some of the counties were successful in expanding the goals and scope of this policy does not mean that their actions were completely unchecked by upper levels. Although economic liberalization has been the official mantra in China since 1979, several times during the reform era conservatives in the Communist Party have temporarily scaled back the reforms in an attempt to return to a more planned economy. Lower level government bureaus in China remain very

sensitive to these struggles in Beijing over the development course of the nation. For example, after severe inflation in the late 1980s and the Tiananmen Square incident in 1989, it was unclear whether China would continue to expand free market reforms. Not surprisingly, county water bureaus with leaders fearful of economic and political risks scaled back their development of sideline economic operations between 1989 and 1992. However, some counties with a high level of political resources to protect them, such as Xiaoshan and Zhuji, continued quietly to develop their sideline economic operations. The magnitude of this hushed development was apparent when officials in the provincial SEO office informed me that the output value and profits of sideline economic operations within Zhejiang's water sector continued to increase, albeit slowly, between 1989 and 1992 (See table 5.7 in previous chapter). The growth of SEOs within Zhejiang's water bureaus increased significantly, however, after 1992, when the paramount leader Deng Xiao-ping took a trip to southern China and gave speeches encouraging the people in China to continue the reforms and *fuqilai* (get rich quick). The Zhejiang provincial water bureau evidently adopted a very flexible policy line regarding SEO development after Deng's speeches (Interviews 19 and 22). The openness of the provincial government and water bureau to county level SEO development has not, however, eased the concerns of some lower level officials. Shaoxing and Fuyang illustrate how county or city officials wary of shifting policy winds can hinder the development of county water bureau SEOs. While Shaoxing, Fuyang, and Linan water bureaus have been more timid in developing SEOs than Xiaoshan, all are similar in that none of these water bureaus used profits for water

project repair and construction investment. The Zhuji water bureau is exceptional, not just among these five counties, but province-wide for actually diverting some of its SEO profits to water project construction. It merits mention, however, that the Zhuji SEO office does not require a specific amount of profits to be invested in water work. Moreover, the Zhuji water bureau used significantly more of its SEO revenue for employee wages and SEO reinvestment than it diverted to water project repair.

County Water Bureau Innovation

It is clear from table 6.3 that each county used varying implementation strategies across the policies. For example, as discussed above, Zhuji and Xiaoshan innovated on the SEO policy, but only Zhuji innovated on another policy. In regards to the other two policies, Zhuji innovated somewhat on the water withdrawal permit policy, but only complied minimally with the water fee collection, while Xiaoshan minimally complied with the WWPS and modified in the implementation of the water fee collection. I would argue that the lack of major innovations on the other two policies in Xiaoshan was due to the lower policy discretion and a lower level of resources, particularly the political resources each possessed for the other the WF and WWPS policies.

As mentioned above, all but Xiaoshan refrained from implementing the water permit policy in rural areas. When most county water bureaus possess a low level of political resources one of the only options remaining to them is to evade implementation. Moreover, in China it is common for local governments to observe

how neighboring jurisdictions are implementing policy, and, in the case of neglecting permit issuance in rural areas, it appears that there was strength in numbers. It more difficult for upper levels to criticize lower level implementation when nearly all evade the policy.

Water Resource Protection and Management in China

The solution to water wastage, unequal distribution, and water conflicts obviously does not lie in a single water policy. In order to promote efficient and equitable use of water resources a large set of policies needs to be carried out.

Winpenny (1994) recommends three layers of policies to promote better water management. The categories specified by Winpenny (1994:29) include:

1. enabling conditions--action to change the institutional, legal and economic framework within which water is supplied and used (the "rules of the game");
2. incentives--policies to influence the behaviour of users directly by providing them with an incentive to use the resource more carefully; these actions include both market-based and non-market devices;
3. direct interventions--through investment, spending programmes, or targeted programmes to encourage the use of water-efficient and water-saving implements.

These categories are presented on table 6.4 along with corresponding actions and instruments as well as an evaluation of how the Chinese water sector has performed in each area. This table clearly adopts an economic perspective for promoting demand management of water uses. To incorporate one important supply management activity, I have added state investment for constructing water supply

Table 6.4 Policy Categories for Promoting Efficient Water Use and Management

<i>Category</i>	<i>Actions and Instruments</i>	<i>Chinese Water Sector Performance</i>
1. Enabling Conditions	Institutional & legal changes	-Plethora of water laws has created many regulations needed to promote water conservation. -Since late 1980s, lower level water bureaus have created water administrative offices, water enforcement and monitoring bureaus, but ability to enforce laws such as water fees (WF) and water withdrawal permit system (WWPS) is often circumscribed by other powerful bureaus such as the urban construction bureau. -Lower level water bureaus also often lack financial resources to carry out duties. While funds raised by the SEO policy are generally not directly used to build or repair projects, SEO revenue has increased the wages in water units.
	Reforms and privatization of utilities	-Water utility enterprises are placed under contract to deliver water efficiently, but prices still kept low.
	Macroeconomic and sectoral policy	-Promotion of industrial development, especially TVEs, limits water bureaus' ability to assess WF on industry. -State keeps grain prices low and thereby forces water fees to remain low. -Water bureaus are not sufficiently empowered to efficiently implement many water policies, e.g., WF & WWPS.
	Water Project Construction	-The SEO policy was meant to help support local water project construction as to fill gap from decrease in central subsidies and investment.
2a. Incentives (Market-based)	Active use of water tariffs and fees	-WF rates in China are low and collection rates poor. Controlling for inflation, present water fee rates are lower than forty years ago. -Lower level water bureaus unable or unwilling to enforce WF regulations.
	Pollution charges	-Responsibility of EPB, but are rarely levied. Water bureaus have no jurisdiction over water pollution issues.
	Water markets	-None. Complete implementation and enforcement of WWPS could provide the necessary foundation for water markets.
	Auctions and water banking	-Lower level water bureaus occasionally auction off usufruct rights of small river basins. No water banks exist.

Source: Adapted from Wimpenny (1994).

Table 6.4 (Continued) Policy Categories for Promoting Efficient Water Use and Management

<i>Category</i>	<i>Actions and Instruments</i>	<i>Chinese Water Sector Performance</i>
2b. Incentives (Non-market)	Restrictions	-Water Law and other regulations stipulate which users have priority water use in times of drought.
	Quotas, norms, licenses	-Goal of WWPS is to limit water use. -Water use is also meant to be controlled by a nested hierarchy of distribution and consumption plans.
	Exhortations, public information	-Water Law propaganda fairly well disseminated through newspapers and water bureau training & campaigns.
3. Direct interventions by government: public projects and programmes to promote efficient water use	Canal lining and leak detection	-Goal of WF to fund such repairs. Overall this goal has not been met. -Financing from SEO could help in this area, but little SEO profits are diverted to water project repair. -Also promoted through winter repair campaigns and contracting of irrigation facilities to individuals.
	Water efficient user appliances	-A small number of drip irrigation and high-tech projects have been initiated by the MWR. Such technology is prohibitively expensive for most lower level water bureaus. Few water users use meters.
	Industrial recycling and reuse	-Goal of WWPS and WCF. Under present implementation these goals have not yet been attained.

Source: Adapted from Winpenny (1994)

water projects into the actions and instruments category. Policies in these three categories mutually reinforce each other to improve water conservation.

In reviewing the table the reader should note that the three policies included in this study cross over into all three policy categories. The three policies--water fee collection, the water withdrawal permit system and the sideline economic operations policy--are integral parts of the water reform strategy. It should be apparent from table 6.4, however, that the Chinese water sector reforms have not yet succeeded in creating the needed policy mix, in great part due to the failure of the three policies which were the focus of this study. In regards to an enabling environment, numerous laws advancing demand management for water resources have been passed. Nevertheless, as was illustrated in the case studies, prioritizing economic growth has

often limited the water bureau's ability to assess water fees or issue water permits. The lack of clear water use rights combined with the financial and political obstacles facing water bureaus prevents many of the new laws from being efficiently carried out.

The overly rapid decentralization of financial and administrative authority has overloaded lower level water bureaus with responsibilities and thereby decreased their capacity to implement many of the new policies. Lower level water bureaus have been required to adopt countless unfunded mandates while investment from central and provincial governments has been decreasing. It is true that the central government has given water bureaus permission to open many new funding channels such as loans, stock cooperatives, several types of water fees, and sideline economic operations. However, the ability of water bureaus to actually tap into some of these potential funding sources, particularly water fees, is often constrained by other government bureaus such as the urban construction bureau. Loans are seldom granted, for many types of water projects do not generate income to repay such debts. Stock cooperatives hold promise for stimulating peasants to initiate small income generating projects such as mini-hydroelectric plants and irrigation pumping stations, but are not practical for funding major water supply or flood control projects. Since decentralization has not yet strengthened water bureaus, the conflicts in the uneven institutional environment remain unchanged. Moreover, devolution of authority has not changed the perverse incentives which lead water users to disobey water policies and water bureaus to shirk their duties.

Sideline economic operations could potentially ameliorate some of the funding problems in the water sector by improving the livelihood of water workers. It appears doubtful that SEO profits would ever suffice for funding large construction or repair projects as was the original policy goal. Although SEO work could help raise workers wages it merits speculation whether such commercial activity is appropriate for government agencies such as water bureaus. Below, I will reflect on how commercialization of water bureaus may shape intergovernmental relations in the water sector and then close with a discussion on the utility of examining policy entrepreneurship.

Sideline economic operations do not simply exist in the water sector. Nearly every state-run institution has too many employees and too little funds. Therefore, many non-economic state government units ranging from universities to hospitals to water bureaus have been opening up sideline economic operations. The hope is that such "non-productive" agencies can benefit from the economic boom as much as private and state industries have. By forcing public service agencies such as water bureaus into establishing commercial money-making activities, it is possible that these public servants will move away from their service mission and neglect their water work (Interview 2). In the water sector the sideline economic operation policy was designed to be a cross-subsidy strategy. Commercial activities opened by water bureaus were meant to fund local construction and repair expenses. By advocating the SEO strategy, the Communist Party and the central government are lowering pressures on the state's coffers, but also potentially decreasing lower level agency

responsiveness to upper level demands. In light of the high level of discretion granted to lower levels, it is perhaps not surprising that lower level water bureaus pushed the boundaries of this policy and changed the goal to raising money for employee salaries.

Blurring the boundary between private enterprise and public service also opens up the potential of corruption. The Ministry of Water Resources has taken several steps in recent years to limit improprieties in SEO work. Notably, after first allowing all water units to undertake SEO activity, rules were later passed which banned the upper water administrative offices from undertaking such work. It is also likely that water units have lost their tax-free status for SEO work due to instances of illegal activities. For example, some water units had used their name to cloak some non-water sector economic enterprises as their own. Now, in the mid-1990s water SEOs are no longer granted tax-free status and new rules have been introduced to draw water SEO activities into local plans and place them under regular upper level supervision.

Utility of Examining Entrepreneurship

Examining the implementation of several water policies has highlighted the differences between what was intended by water reforms on one hand and the often convoluted offshoots of those intentions on the other. Water reforms are part of a larger, not necessarily coordinated, set of reforms aimed at increasing local government efficiency. Breaking iron rice pots or iron pitchers has entailed weakening

the traditional vertical relationships between ministries and their bureaus in which lower levels are dependent on upper levels for subsidies, material supplies, and guidance. Instead of being ruled by haphazard policy announcements and campaigns, China's leaders have turned to depend on the rule of law and strictly enforced contracts are seen as a method of guaranteeing lower level performance. In order for lower level water bureaus to carry out all of their new responsibilities well, they need clear authority over water resource management and sufficient funds. As is apparent from this study, most county water bureaus lack both of these foundations.

One of the overarching goals of Chinese reform, has been to eliminate some of the inefficient, artificial divisions of authority over resources and trade. For example, previously, the economic linkages and trade between urban centers were not permitted (Solinger 1993). Similarly, before the reform era, management linkages between urban and rural water resources were cut asunder by rigidly demarcated bureaucratic boundaries. Water reforms initiated in the 1980s were meant to correct this situation and unify water under the control of water bureaus. The water bureaus are supposed to possess "unified management authority" (*tongyi guanli*) over water resources. This means that all planning and water use activities must be approved by water bureaus. Water bureaus may distribute some water management authority to other bureaus (*fenji guanli*), but ultimately the water bureau should still supervise all water resource use. In a contradictory move, in 1988 the State Council officially granted urban construction bureaus supreme control of water resources within cities. This could be a sign that in inter-ministerial conflicts over water at the center, the Ministry of Water

Resources was perhaps too weak to "win" full backing from the Communist Party. Struggles over the control of water are contentious at all levels of government, so it is possible that the State Council division of authority over water resources was a compromise agreement. Nevertheless, by artificially dividing water in this manner, the State Council has undermined the authority of the water bureaus. One could even question whether the State Council/Communist Party is adequately concerned about water management.¹ It is possible that officials at the central level are neglecting water resources as a part of a conscious strategy, similar to the one being undertaken regarding pollution, namely, to develop the economy first and clean up the mess later. The obvious problem, however, is that unlike polluted water which could be cleaned or deforested area which could be replanted, water resources such as groundwater aquifers cannot be so easily replaced. Regardless of the intent of upper level officials, the case studies in this study show that this lack of authority over water resources clearly limited the power needed by water bureaus to implement policies. With limited leeway to execute policies, the county water bureaus were often left to modify, evade, or minimally comply with policies.

The contentiousness of water management is summed up in a quote attributed to Mark Twain: "Whisky is for drinkin' and water is for fightin'." While whisky is not the libation of choice in China, water is certainly a resource over which government bureaus, as well as individuals fight. Since the reform era has begun,

¹Since the Prime Minister, Li Peng, is a hydrological engineer it cannot be argued that top Party officials are uninformed of water resource issues!

water conflicts have increased in number and in severity throughout China (Interview 2). Moreover, the Ministry of Water Resources is often brought in to mediate the larger, inter-provincial or inter-county water conflicts. But this study points to a more subtle, more serious conflict over water which does not make the headlines in Chinese newspapers, namely the bureaucratic battle to assess water fees and issue water permits. As the central government has devolved more authority to nearly *all* government sectors, lower level bureaus have been pushed to foster horizontal cooperative relations. In regards to water resources such cooperative relationships have not yet been well developed. Only in two counties--Xiaoshan and Zhuji--did there appear to be a modicum of cooperation and peace between the many bureaucratic "dragon heads" competing for control of the water. As was mentioned above, without actual "unified management" authority over water resources, water bureaus cannot elicit cooperation from other bureaus. Central government officials are clearly aware of the poor policy performance of the water fee and water withdrawal permit system. The MWR exhorts lower levels to cooperate but without much success, for it does not possess the leverage to elicit cooperation from other bureaus. Lower level water bureaus increasingly must fight their own battles.

Suggestions for Further Research

This study did confirm an initial hypothesis that political resources would be as, or even more, important in empowering county water bureaus to evade or modify a policy than economic resources. I did discover, however, that political resources

were not simply granted or limited by upper level bureaus or the Communist Party, but were also influenced by other bureaus at the county level and non-state actors, particularly peasants. The capacity of Chinese peasants to influence policy cannot be overlooked. Numerous recent studies on China are revealing that peasants have been powerful actors in initiating new policies or pushing reforms further and faster than central policy makers intended (Kelliher 1992, Oi 1989). Peasant "power" has not simply been in the agricultural sphere, but has also been pivotal in altering family planning policies and rural industrial development (Zhao 1996). In the reform era, Chinese peasants are more willing and capable of expressing their needs to local government officials (Jennings 1997).

In this study I have described how county water bureau modification and evasion of policies have prompted the central government to alter policies. The majority of the analysis in this study centered on the county water bureaus resources, incentives, and actions. Moreover, I have mapped out the various county water bureau implementation strategies, but did not provide specific information on how lower level policy innovations moved up to influence central government decision-makers. Future research focusing on vertical networking within the water sector could trace exactly how lower level innovations moved upwards to change policy. It is possible that some changes were introduced to central officials through provincial lobbying or were sparked by reformers within the MWR have encouraged experimentation of lower level water bureaus.

I believe that this analysis of policy entrepreneurship in the Chinese water sector could be enhanced by expanding the analysis to non-state actors in the polity. By interviewing peasant and industrial water users one could identify not only their views on water policies and incentives to comply, but also the types of leverage they exercise over local water bureaus and higher levels of government. The most important direction for a future study on Chinese water policy entrepreneurship would be to undertake a cross-provincial. By examining the intergovernmental dynamics surrounding the implementation of these water policies in several provinces one could investigate whether differing natural resource base alters the type and/or intensity of county water bureau entrepreneurial activities. It is possible that in drier provinces that the conflicts over water would be more intense than they presently are in water-rich provinces such as Zhejiang. I would hypothesize that in dry areas the competing county bureaus and water users would be forced to cooperate with each other and pushed to devise better local incentives to make conservation policies work. In other words, I believe that a water crisis could prompt swifter action in carrying out the water withdrawal permit system. Recall, that in Fuyang the water officials stated that the county had access to sufficient water resources, which in effect means that they did not need to limit water withdrawals. Moreover, when water is apparently plentiful other government bureaus and water users are not compelled to cooperate with water bureau conservation policies. Ironically, water shortages could be crucial in facilitating reforms in the water sector. This argument is supported by observations of

other researchers that many of the reforms in China have been driven by crisis (Lieberthal and Oksenberg 1988).

This study adopted a new angle for analyzing policy entrepreneurs by expanding the analysis beyond individuals who initiate dynamic policy changes (King 1988; Kingdon 1984; Polsby 1984). Policy entrepreneurship encompasses more than cases of individuals initiating innovations and new experiments which diffuse upwards. Instances of evasion, delay, or minimal compliance during implementation which lead the upper level government to change policy should also be considered innovations and acts of entrepreneurship. For as this study demonstrated in China, when lower level government officials lack the resources or authority to comply with policies or make inputs on how to improve policies, footdragging and evasion are the only choices they have to express their views or needs. This policy entrepreneurship framework could be utilized to examine policy implementation in other countries besides China, particularly--but not limited to--formerly communist countries presently undergoing significant decentralization. Finally, this study has provided insights into how the amount of county water bureau resources and the level of centrally-granted discretion together shaped the power county water officials possessed to change policies to fit local needs and abilities. As stated at the beginning of this study, in order to understand local government discretion and policy entrepreneurship it is not sufficient to examine decentralization alone. One must also incorporate an intergovernmental perspective into the analysis to capture the strategies, preferences and power resources of local and central government actors.

APPENDIX A

List of Interviews

1. All assistant administrators (2 people) in Water Resource and Water Administration Office, Zhejiang Provincial Water Bureau, Hangzhou, February 1, 1995.
2. Assistant Deputy, Water Administration Bureau, Ministry of Water Resources, Beijing, March 14-16.
3. Entire Water Administration Office (4 people), Lishui District Hydro-electric Bureau, Lishui, May 11, 1995.
4. Head of Agricultural Economic Committee, Yunhe Agricultural Bureau, Yunhe County, May 11, 1995.
5. Assistant Director, Yunhe County Water Bureau, Yunhe, May 13, 1995.
6. Department head of Water Administration Office and chairman of the administrative office, Xiaoshan County Water Bureau, Xiaoshan, May 16, 1995.
7. Head of Water Administration Department, Qiantang River Basin Commission, Zhejiang Provincial Water Bureau, Hangzhou, May 22, 1995 and May 31, 1995.
8. Bureau Chief, Qiantang River Basin Commission, Zhejiang Provincial Water Bureau, Hangzhou, May 22, 1995.
9. Head of Comprehensive Management Office, Qiantang River Basin Commission, Zhejiang Provincial Water Bureau, Hangzhou, May 22, 1995.
10. Entire Water Administration Office (3 people), Shaoxing County Water Bureau, Shaoxing county seat, April 26, 1995 and May 24, 1995.
11. Head of Shaoxing County Sideline Economic Office, Shaoxing County Water Bureau, Shaoxing county seat, April 26, 1995 and May 24, 1995.
12. Bureau head and head of the Water Administration Management Office, Hangzhou Forestry and Water Resources Bureau, Hangzhou, May 4, 1995.
13. Head of Shaoxing City Water Bureau, Shaoxing City Water Bureau, Shaoxing, May 23, 1995.
14. Director of County Water Bureau, Shaoxing County Water Bureau, Shaoxing county seat, May 24, 1995

15. Deputy of Zhejiang Provincial Environmental Protection Bureau, May 25, 1995.
16. Assistant director of Jiande Hydro-electric Office and two officials from Water Administration and Water Resources Department and two officials from Water Construction Management Office, Jiande County, June 1, 1995.
17. Assistant director and head of Sideline Economic Operations Office, Zhuji Hydro-electric Bureau, Zhuji, June 8, 1995.
18. Water Administration Office personnel, Zhuji Hydro-electric Bureau, Zhuji, June 9, 1995.
19. Chief of Zhejiang Water Resource Multiple Management Company, Zhejiang Provincial Water Bureau, Hangzhou, June 14, 1995.
20. Head and two assistants from Water Administration and Natural Resources Management Office, Linan County Water Bureau, Linan, June 15, 1995.
21. Head of Sideline Economic Operations Office, Linan County Water Bureau, Linan, June 15, 1995.
22. Head of Sideline Economic Operations Office, Xiaoshan County Water Bureau, Xiaoshan, June 21, 1995.
23. Head of Water Administration and Natural Resources Management Office, Linan County Water Bureau, Linan, July 14, 1995.
24. Chief of Zhejiang Water Resource Multiple Management Company, Zhejiang Provincial Water Bureau, Hangzhou, June 22, 1995.
25. Head of Sideline Economics Office, Zhuji Hydro-electric Bureau, Zhuji, June 30, 1995.
26. Leaders of Water Resource and Water Administration Office, Zhejiang Provincial Water Bureau, Hangzhou, July 5, 1995.
27. Head of Water Administration Office, Engineer, and Communist Party Representative, Fuyang County Water Bureau, Fuyang, July 7, 1995.
28. Assistant Administrators in Water Resource and Water Administration Office, Zhejiang Provincial Water Bureau, Hangzhou, July 17, 1995.

APPENDIX B

Yearly Capital Construction Investment In Chinese Water Sector 1952-1994 (In million yuan)

Year	Capital Construction Investment (Current Spending)	Year	Capital Construction Investment (Current Spending)	Capital Construction Investment (Real Spending in 1979 yuan)
1952	411	1978	3468	n.a.
1953	484	1979	3496	3496
1954	224	1980	2653	2601
1955	407	1981	1313	1208
1956	706	1982	1774	1041
1957	730	1983	2109	1796
1958	1960	1984	1982	1639
1959	2436	1985	1802	1275
1960	3199	1986	1736	1141
1961	1023	1987	2118	1191
1962	827	1988	2365	1034
1963	1220	1989	2953	1165
1964	1500	1990	4065	1665
1965	1515	1991	5016	2079
1966-1974	n.a.*	1992	9717	3939
1975	2566	1993	12,493	4518
1976	2817	1994	16,874	5445
1977	2847			

Source: 1952-1991 data: Gitomer 1992. 1992-1994 data: ZGSLNJ 1993-1995

*Data for 1966-1974 unavailable due to Cultural Revolution

APPENDIX C

Important Documents in Water Law, Policy, and Management (* indicates that document relates to SEO policy)

- *1978** State Council approved a Ministry of Water Resources (MWR) concerning reorganizing and strengthening water conservancy management to promote a new leap forward in water conservancy. SEO work an integral part of this communique.
- *6/5/80** State Council approved the communique jointly issued by the MWR, the Financial Ministry, and National Aquaculture Central Bureau concerning reservoir fish industries and developing multiple operations/sideline economic operations.
- *1980** MWR, Finance Ministry issued a document called "Water Conservancy Project Management Unit Financial Contract Temporary Measures" (*shuili gongcheng guanli danwei caiwu baogan shixing banfa*).
- 1980** River Dike Project Management General Rules issued by MWR.
- 6/30/82** Water and Soil Protection Work Regulations issued by MWR.
- *1984** MWR put forward a proposal to reform the water conservancy management sector by reforming fee collection and developing sideline economic operations (SEO). MWR also began promoting economic contract responsibility system in the water sector (*jingying chengbao zerenzhi*).
- 5/18/84** Ministry of Urban and Rural Construction and Environmental Protection issue Water Pollution and Prevention and Control Law.
- 7/13/84** Ministry of Water Resources Provisional Regulations on Rural Livestock and Domestic Water Works.
- 7/13/84** State Council circular report on solving problems with rural domestic water.
- *5/8/85** Water and Electric Power Ministry Circular concerned with problems in the reform of water conservancy project management system and the development of sideline economic operations.

- *1985** Finance Ministry communique concerning tax free problems for water conservancy project management units developing comprehensive management (Three months later another supplementary communique was released).
- *1985** Water and Hydro-electric Ministry issued "Opinions on Structural Reform of State Managed Irrigation Districts."
- 6/25/85** National Water and Soil Protection Working Cooperative Group circular on conditions and opinions towards development of water and soil protection work.
- 26/25/85** Water and Electric Power Ministry major flood prevention plans for the Yellow, Yangtze, Huai, and Yong Ding rivers.
- 7/22/85** Measures for the appraisal, collection and management of water fees for water projects issued by State Council.
- 8/8/85** National Water and Soil Protection Working Cooperative Group Emergency Report concerning mining, road repair, factory construction, and other capital construction work that needs to do water and soil protection work well.
- 10/7/85** State Council Circular reply to the Water and Electric Power Ministry concerned with strengthening irrigation and water conservancy facility management and work.
- 10/31/85** State Council Circular on halting indiscriminate fee collection (*luan shoufei*) from farmers.
- 1985** MWR issues Water Conservancy Project Water Fee Appraisal and Collection and Management Measures.
- 1/22/86** Fisheries Law
- 1987** State Planning Council, Financial Ministry and Ministry of Water Resources joint document demanding solutions for solving existing problems in water project construction and enterprise fee collection.
- *1987** Ministry of Water Resources and Hydro-electricity issued "Water Conservancy Project Management Unit Financial Management Measures."

- *1987** MWR and State Business Administration Management Bureau
Communique concerning policies related to water conservancy system
development of sideline economic operations.
- 1/21/88** National Water Law
- 5/3/88** Ministry of Water Resources Accountability Policy Plan (*sanding
fangan*).
- 6/10/88** PRC Water Canal Management Regulations.
- 9/15/88** Ministry of Water Resources Directive outlining safety and construction
of flood storage and detention areas.
- 1988** Agricultural Bank circular concerning rural water conservancy loan
work.
- 1988** Ministry of Water Resources promulgated measures for comprehensive
utilization of the contract responsibility system for water units (trial
implementation).
- 10/15/88** State Council decisions concerning the vigorous development of water
irrigation and capital construction on farmland.
- *12/21/88** Provisional Regulations on water sector SEO management.
- *1988** State Tax Bureau Communique concerning problems with the tax free
measures granted to water conservancy project management units for
developing sideline economic activities.
- *1988** MWR issues a development plan for setting up SEOs in all water sector
enterprise and administrative units.
- *1988** Water Ministry Communique Concerning the Establishment of Water
Conservancy Sideline Economic Operations Award Funds.
- 1988** Financial Ministry and Ministry of Water Resources management rules
on small scale irrigation and water conservancy and water, soil
protection subsidies.
- 1/5/89** State Council Document concerning the administrative problems in the
Yangtze upper river water protection key flood protection districts.

- 9/1/89** National Environmental Protection Agency Implementing Rules for the PRC Water Pollution Law.
- 1989** Water Withdrawal Permit System Management Measures issued by State Council and MWR.
- *1989** A water conservancy industrial association (*shuili qiyejia xiehui*) was created at the national level to development of SEO work nationwide.
- 1989** MWR survey showed that in 5 provinces and 94 cities water shortages were mainly caused by lack of investment in water facility projects and management and not simply due to natural shortages in rainfall or drought.
- 10/15/1989** State Council issued a decision concerning vigorously developing irrigation capital construction (*dali kaizhan nongtian shili jiben jianshe de jue ding*). This document recognized that water conservancy is the pulse of agriculture proposed that management work on mountains, water, forests, agriculture and roads should be better coordinated.
- 1990** Party, State, and State Council decision concerning the control of chaotic fee collection, chaotic fining and other expenses.
- 3/1/1990** State Council Administrative Office Communique concerning the implementation of the Water Conservancy Project Water Fee levels, Collection and Management Measures.
- 5/5/90** PRC Ministry of Water Resources Party Organization decision concerned with learning from the "*Lei Feng* style" of Wen Qing Cheng.
- 6/15/90** Decision concerning the prevention of sudden pollution accidents in the Huai river basin--for trial implementation. (Issued simultaneously by NEPA, Ministry of Water Resources, People's Government of Henan, Anhui, Jiangsu, and Shandong provinces).
- 6/20/90** Management measures for collecting fees on sand mining in river canals.(Simultaneously issued by Ministry of Water Resources, Finance Ministry, and National Commodity Bureau).
- 8/10/90** MWR issues Guiding regulation (*daoze*) on the formulation of long term supply and demand plans for water.
- 8/15/90** Water administration supervisory organization and work rules (*shuili jiancha zhuzhi ji gongzou zhangcheng*) (for trial implementation).

- 8/15/90** Temporary provisions concerning the administration of punishments for violating water law regulations.
- 8/15/90** Temporary provisions concerning the procedures for administering punishment for violations of water law regulations.
- *8/1990** "Eighth Five Year Water Conservancy Economic Structural Reform Plan" was issued by a small leadership group in Beijing.
- 11/24/90** State Planning Committee, Ministry of Water Resources, Chinese Water and Electric Power work meeting committee decision concerned with commending village electrification experimental construction units (*shidian jianshe*) and progressive workers.
- 12/15/90** PRC Ministry of Water Resources Party Organization decision concerned with learning from the activities of comrade Zhou Jing Wen.
- *1991** State Council Tax Bureau issues a communique concerning water conservancy project management unit tax-free problems.
- 3/22/91** Water reservoir and large dam safety management rules (*tiaoli*) issued by MWR.
- 6/28/91** PRC flood prevention regulations (*tiaoli*).
- 6/29/91** PRC Water and Soil Protection Special Law.
- 1991** By the end of 1991, twelve provinces and autonomous regions and directly administered cities had promulgated water law measures and water resource management regulations and measures.
- 1992** Commodity Bureau and Finance Ministry document at concerning water conservancy system of administering fees and setting standards (Based on 1990 "chaotic fee decision").
- *1992** MWR drafted a document on "Central Issues in Water Conservancy Economic Structural Reform" (often mentioned that water bureaus should carry out certain reforms in the spirit of this document).
- *1992** MWR established a water conservancy reform small leadership group, which in turn created a water conservancy reform liaison personnel system and began setting up a water conservancy reform information network as a way to help promote the exchange of information.

- *1992** **Water Resource Ministry, Finance Ministry, and the Labor Ministry jointly issued "Opinions Concerning Strengthening Water Conservancy System's Local Electric Industries Economic Management.**
- *1992** **State Council issued Regulations of State-Owned Industry and Enterprise Transformation of Management System.**
- 1992** **Document issued by China Agricultural Bank concerning the strengthening of irrigation loan management.**
- 1/19/1993** **State Council communique concerning strengthening water and soil protection work.**
- 5/1994** **Ministry of Urban Construction issued a "Urban Drainage Water Permit Management Measures." Includes regulations about paying city drainage facility user fees and forbids dumping polluted water into city facilities.**

Sources: ZGSLNJ 1990, 1991, 1992, 1993, 1994, and 1995

APPENDIX D

Overview of Water Policy Implementation in Twelve Provinces

	1993 Water Budget (% subnational government contribution)	Water Permits 1993 or 1994 Registered (R) Issued Permit (IP)	WRF	Water Fees amount Collected	SEO Production Output (PO) Profits (P) Tax (T) (in millions of yuan)
Fujian	50,567 (99%)	91% of 6841 users R & 13 out of 41 counties finished IP work (1994)	23 counties out of 41 are collecting and are above collection targets (1994)	121 million yuan (1993)	PO: 1100 P: 44.6 (1993)
Gansu	44,422 (99%)	25,000 R 10,000 IP (1994)	-	In 1994 new standards & 90 million yuan	PO: 209 P: 18.3 (1993)
Guangxi	30,920 (99%)	10,000 R (95% R in cities) 9,800 IP (1993)	Are being collected		P: 53 (1994)
Guizhou	19,137 (95%)	21,910 R 18,100 IP (1994)	6 million yuan (1994)	23.4 million yuan (1994)	-
Heilongjiang	33,854 (86%)	14,000 IP (reissued 1994)	20 million yuan (1994)	-	P: 65.1
Hubei	47,128 (55%)	-	5 million yuan (1993)	16 million yuan (1993)	PO: 126 P & T: .82 (1993)
Jiangsu	46,680 (39%)	40,000 units R (1993)	13 million yuan (1994)	138 million yuan (1994)	P: 43.9 (1993)
Jiangxi	29,448 (88%)	90% of counties finished R work (1993)	4+ million yuan (1994)	130 million yuan (1994)	PO: 490 P & T: 43.7 (1993)
Liaoning	5,111 (100%)	18.6 million R (90%) (1994)		55 million must be given to provincial government	P: 150
Shaanxi	19475 (90%)	42,800 R 24,900 IP (1994)	10.5 million yuan (80% of province collecting) (1994)	9 million yuan (1993)	PO: 880 P & T: 47.3
Shandong	61,595 (71%)	500 million factories R 200 million IP	130 million yuan (1993)	250 million yuan (1993)	PO: 2800 P & T: 300
Zhejiang	33,361 (66%)	Being implemented in 40+ counties (1994)	n.a.	90 million yuan (1991)	P & T 193 (1994)

APPENDIX E

1993 Socio-Economic Data for Five Counties in Zhejiang Province
(Unless otherwise indicated financial data in millions of yuan)

	Xiaoshan	Zhuji	Shaoxing	Fuyang	Linan
County Government Revenue*	613	171	534	156	137
County Government Expenditures	330	122	194	115	87
Agricultural Production	1286	1048	1121	780	623
Industrial Production	19,015	9235	14,887	7229	6605
Total Capital Construction Investment	677	173	168	114	88
Status	County-Level City: 1987	County-Level City: 1992	Nearly County-Level City	County-Level City: 1992 Dubbed Open Coastal County in 1988 by State Council	County
Arable land (in 1000 hectares)	57.14	44.89	38.34	22.22	19.74
Per capita GNP (in single yuan)	5,646	4,225	5,907	4,303	4,981
Population	1.18	1.03	.95	.59	.50

Source: Zhejiang Provincial Government Economic, Technology, and Social Development Research Center 1994

*Represents within-budget revenue

APPENDIX F

Water Investment in Five Counties and Provincial Water Bureaus in Zhejiang Province (in millions of yuan)

	Xiaoshan	Zhuji (central government share)	Fuyang	Shaoxing	Linan	Zhejiang Province
1974	9.5	1.63 (1.23)	Approx ^e 1.98	2	.93	-
1975	4.8	1.45 (1.13)	.72	2	.25	-
1976	4.4	2.5 (2.06)	Approx 2.79	2	1.28	-
1977	5.1	3.3 (2.8)	Approx 2.79	2	1.55	-
1978	9.3	7.7 (5.7)	Approx 2.79	Pre-reform annually 2	1.52	-
1979	7.3	7.06 (5.1)	Approx 2.79	After 1979 gradually increased	1.84	-
1980	5.2	7.9 (6.4)	2.97	-	1.39	-
1981	3.7	5.2 (4.7)	Approx 4	-	1.97	-
1982	3.8	4.9 (4.6)	Approx 4	-	1.79	-
1983	4.5	5.3 (4.8)	Approx 4	-	1.64	-
1984	5.0	9.9 (9.3)	Approx 4	-	1.75	-
1985	Has continued to rise	8.3 (5.9)	4.34	-	1.97	67
1986	- ^a	4.2 (3.7)	Approx 7.24	-	.51	55.9
1987	-	8.9 (5.9)	Approx 7.24	-	.82	-
1988	32.7 ^b	Has been increasing through 1994	Approx 7.24	-	1.21	61.2
1989	42.7 ^b	-	Approx 7.24	-	-	90.9
1990	-	10 ^c	10.6 ^d	-	-	101.3
1991	34.1 ^e	-	-	-	-	175.5
1992	40 ^e	-	-	Approx 10	-	292.4
1993	Rose significantly	-	-	Approx 10	-	333.6 (273.1)
1994	Rose significantly	150 ^f	9	10+ (increased 6-7% over previous year)	-	563.4 (518.8)

Source: County gazettes, 1989-1993 Zhejiang Provincial Almanacs, and interviews

^aDash indicates no data available

^bXiaoshan County Gazette 1990

^c"Approx" means that data has been estimated by officials or as in the case of Fuyang, I have calculated average investment based on reported five year totals

^dFuyang County Gazette 1993

^eXiaoshan County Gazette 1993

^fHe 1995

APPENDIX G

Labor Contribution Provided by "the Masses" for Water Project Construction
(Number indicates number of days people worked in 10,000 workdays)

	Xiaoshan ^a	Zhuji ^b
1973	603.70	543
1974	1,004	592
1975	710.88	327
1976	849	1052
1977	567	1073
1978	1,914	1049
1979	1,151	368
1980	890.61	483
1981	439	500
1982	338	108
1983	277	114.5
1984	275	147.3
1985	-	149.4
1986	-	126.2
1987	-	156
1988	406	-
1989	625	-
1990	822	-
1991	1,145	-
1992	1,153	-
1993	-	-
1994	-	400 ^c

^a1973-1984 Xiaoshan data from Xiaoshan Gazette 1990. 1988-1992 data from interview 22

^b1973-1987 Zhuji data from Zhuji County Water Gazette Editing Standing Committee 1993

^cDash indicates unavailable data

^dSource: He and Zhou 1995

APPENDIX H

**Table 1. Implementation of Sideline Economic Operations Policy
Xiaoshan and Zhuji Counties**

	Xiaoshan	Zhuji
1979	Began SEO work with fishery ponds	1969 Zhengtian started SEOs
1980	10 SEO companies	-
1981	-	-
1982	-	-
1983	-	-
1984	-	-
1985	Production Output (PO) 10 million	Production Output 10 million Used 1.18 million yuan in industrial profits from 79-85 for project repair and retirement funds. Most from Zhengtian. Some money used to increased wages and welfare of water workers
1986	-	-
1987	-	37 industrial SEOs: PO 28.2 million, T: 2.45 million yuan All SEOs PO: 32 million yuan & P & T: 4.2 million yuan
1988	Profits and Taxes .8 million ^a	-
1989	Taxes 4.3 million Profits 7.2 million ^b	-
1990	Profits 11.4 million	-
1991	-	-
1992	Production Output 50+ million	-
1993	Profits (approx.) 12.5 million Taxes 15 million	In 1990s, SEO revenue and profits rose approximately 20-30% each year
1994	PO: 319.7 million yuan P: 17.8 million yuan (of which fisheries 2 million) T: 13.1 million yuan Profits up 30% from 1993	-
1995	46 industries employ 50 county water workers & 4000 part-time workers P: 18.6 million yuan	Large SEOs are now added to county construction plans. Large and/or successful SEO projects are subject to upper level checking

^aSource: Zhejiang Almanac 1986

^bSource: Xiaoshan County Gazette 1990

^cSource: Zhuji Water Gazette 1993

Table 2. Implementation of Sideline Economics Policy--Fuyang, Shaoxing, and Linan Counties

	Fuyang	Shaoxing	Linan
1981	-	Began SEO farm P: 11,620 yuan	Initiated SEO work
1982	PO: .43 million yuan P: .03 million yuan	Ken Farm P: 2,490 yuan	Began using contract responsibility system for SEOs. Unified 3 county work units into a hydro-electric construction team
1983	PO: .60 million yuan P: .14 million yuan	Ken Farm P: 3,790 yuan	Above team undertook SEOs, fishery and hydro-electricity. Employs 86 workers
1984	Created a county SEO co. PO: .7 million yuan P: .13 million yuan	Ken Farm P: 9,900 yuan	-
1985	Above co. abolished 1/85 Founded Hydro-elec. Equipment Installation Service co., but was abolished 4/85 PO: 1 million yuan P: .31 million yuan	Ken Farm P: 10,000 yuan	Change name to Water Conservancy Comprehensive Management Co. & expand into "true" SEO. Establish second construction company works only for county water bureau
1986	PO: 1.30 million yuan P: .09 million yuan	SEO office established 20% of SEO profits diverted to county water bureau for developing other SEOs. No water project investment	-
1987	PO: 1.19 million yuan P: .26 million yuan	-	-
1988	PO: 2.47 & P: .95 million yuan	-	SEO office founded--staffed by 2
1989	PO: 4.96 million yuan P: .95 million yuan	-	Join above 2 companies to form the Construction Installation Project Co.
1990	PO: 4.84 million yuan P: .85 million yuan	-	-
1991	-	-	PO: 2.24 million yuan & no profits
1992	-	Ken Farm P: .2 million yuan	P: .767 million yuan T: .347 million yuan
1993	Basic water management units develop small SEO industries fisheries, crops, but profits low	SEO begun at TV level Ken Farm P: .23 million yuan Total SEOs P: 3.12 million T: 1.43 million yuan	PO: 10.7 million yuan T & P: .98 million yuan Add second Water Conservancy Hydro-electric enterprise
1994	-	County SEO document states 70% SEO must be reinvested in SEO	PO: 22.6 million yuan T & P: 1.71 million yuan
1995	-	Lower SEO contribution to county water bureau to 15% (1.5% management fee)	Total number of SEOs: 8 factories, one construction co., few TVE SEOs

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PUBLICATIONS

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“*Trickle Down? Administrative and Financial Decentralization in the Water Sector in the PRC.*” in Groundwater Law: The Growing Debate. Marcus Moench, ed. Gujarat, India: VIKSAT-Pacific Institute Collaborative Groundwater Project: 1995.

TEACHING EXPERIENCE

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Introduction to Comparative Politics, Indiana University, Department of Political Science, Summer 1996
English Teacher, American Language Center, Tainan, Taiwan, 1988-1990
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RESEARCH EXPERIENCE

Dissertation fieldwork in Zhejiang Province, People's Republic of China, 1994-5.

- interviewed national, provincial, and county water officials and collected archival materials

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- Gathered and analyzed Chinese materials on water resource policy and management which led to one co-authored article (a second is forthcoming) with Dr. James Nickum.
- Conducted phone interviews and archival research for a project concerning China's implementation of international environmental treaties.

AWARDS

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