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## Chapter

# 1

## Introduction

The book aims to explore the extent to which Shanghai has coped with freshwater demand with a focus on water quality control in the reform era since 1990. This study pays particular attention to major actors in Shanghai water policy who have contributed to the transformation of the political economy landscape in the water sector in the reform era. Water policy-making in Shanghai since the late 1990s has become complicated by the interaction of the Shanghai government with other newly emergent social actors, such as private companies, environmental NGOs, and the activities of Shanghai citizens. This complexity has been compounded by the presence of international development agencies. The emergence of these new social actors in water policy has played a key role in bringing about some of the unprecedented changes in water policy, such as private sector participation and the activities of environmental NGOs. The trajectory of policy shifts and changes in Shanghai water policy over the past decade reveals that the interactions between different actors have driven the Shanghai government to realize the need of mutual collaboration in ensuring the provision of high-quality water for Shanghai.

China has experienced a rapid modernization since the establishment of People's Republic of China in 1949, and this new mode

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of political economy has brought in new socio-economic, political and environmental challenges in Chinese society. Although environmental challenges have not been perceived as primary concerns in the central politics, the Chinese leaders have increasingly been alarmed by massive forces of natural disasters like floods and droughts, water shortage, deteriorating water quality, and out-of-dated water service facilities. The current major challenges in China's water are summarized in the three sectors: water supply; flood control; and water quality control. In terms of the total volume of water resources, China is water-rich, however, an availability of water resources per capita in China reaches only a quarter of the world average, about 2,600 m<sup>3</sup>. In addition, a myriad of causes prevent China from enjoying its substantive water resources, including over 1.3 billion population, the high seasonal variability of rainfall, and the uneven geographical distribution of water resources. Natural disasters such as floods have never left China untouched annually, and as of the early summer of 2005, more than 500 flood death tolls have been reported in the southern part of China. The rapid urbanization and industrialization in the reform era has triggered severe pollution in water bodies and has been adding another elusive task to the central government. This phenomenon has also generated a new pattern of water scarcity, namely 'pollution-driven water scarcity'. Shanghai is one of the many urban areas in China to suffer from this kind of water scarcity.

This research pays more attention to water quality control rather than water supply issues in Shanghai. Contrary to the experience in Beijing and Tianjin, which suffer water scarcity due to the semi-arid climate, overexploitation of the limited resources in North China, acute water pollution in Shanghai has overshadowed the natural advantage of the abundant surface water resources in the reform period since the 1980s. A number of large-scale water engineering projects have so far concentrated on water pollution amelioration rather than water supply. Numerous sewage treatment facilities have been constructed and new ones are planned or at the early stage of construction. These activities have facilitated the pace of private sector involvement in the water sector. In addition, poor living standards

due to water pollution near rivers in Shanghai have led citizens to be very concerned about water quality issues and to participate in environmental protection activities in the last few years.

There has been a new trend in the Shanghai water sector since 1990. Water policy-making in Shanghai has changed direction since the late 1990s. The political economy as a whole has been transforming. The water sector has been affected by the same forces that have impacted the political economy. A key feature under the new conditions is the interactions of the Shanghai government with other newly emergent social actors, such as private companies, environmental NGOs, international development agencies, and the activities of Shanghai citizens.

The Shanghai government has transformed itself from a single service provider into a regulatory entity overseeing the institutional evolution of a diverse water sector. International development agencies have contributed to the complexity through development projects in Shanghai. Environmental NGOs have begun to influence environmental protection coupled with a growing increase in public awareness. A rapid expansion of the private sector in the Shanghai water sector has also taken place since the late 1990s, primarily led by water trans-national corporations. The research shows that the Shanghai water sector has transformed itself from the state–society duality to a multi-faceted institutional system in which diverse social actors interact in adapting to dynamic new environments.

This study focuses on the reform period from the late 1970s to the present, particularly the past decade since 1990. The reason this research focuses on the recent decade is that since the launch of the Pudong New Development Policy in 1990, Shanghai has begun to implement its own social infrastructure projects to improve the environment, including its water resources, on the basis of economic achievement and political independence from the central government. Some of the distinctive policy and political economy changes in the water sector have occurred since the late 1990s, such as the growing expansion of private sector involvement, the activities of environmental NGOs, and the implementation of institutional change including the establishment of the Shanghai Water Authority.

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The geographical scope of the research is Shanghai, the economic capital of China. In the course of the modernization of contemporary China, Shanghai has provided an important case of socio-political and economic development since the early part of the last century. The Mao period from 1949 to the late 1970s had negative impacts on the environment because of his stance against the nature.

Shanghai was one of the worst affected regions through ecological degradation due to the concentration of heavy and manufacturing industries as economic center. The situation became even worse in the reform era due to the acceleration of economic development in China. Shanghai has been the epicentre of ecological degradation, particularly of freshwater resources. The Chinese leadership came to realize the need to reverse environmental degradation and began to implement a number of institutional and engineering methods to remedy environmental pollution issues. They believe that Shanghai, as a model city in China, should take a leading role in environmental protection. Shanghai has become a testing ground for implementation of innovative ideas and institutional reforms.

A range of social theory will be used to analyze developments in Shanghai's water policy in the 1990s, such as the grid/group theory of Mary Douglas, the political ecology theory of Hajer, and the co-evolutionary approach of complex adaptive theory. Grid/group theory is useful in identifying different social actors to influence Shanghai water policy including newly emergent actors, such as environmental NGOs, private companies, and international development agencies together with the Shanghai government and citizens. The political ecology theory of Hajer provides an analytical framework to understand how water quality control has become a main discourse in the Shanghai government since the 1980s whereas most of the governmental bureaux were busy promoting economic development over the past two decades. The co-evolutionary approach of complex adaptive theory helps explain the way private sector participation in the Shanghai water sector has developed and transformed the political economy landscape of Shanghai. The approach is also useful in addressing the influence of international development agencies on the Shanghai water policy.

Fieldwork, mainly in Shanghai, with a short period in Beijing, has provided an in-depth understanding and analysis of the past and current issues relevant to Shanghai water policy. The first fieldwork was conducted in Shanghai from March to April 2001 and the second major fieldwork was undertaken from February to July 2002 including a trip to Beijing. The fieldwork aimed to conceptualize current issues and problems in Shanghai water policy through interviews, site visits, and data search in various libraries and research institutes.

Interviewees consisted of a variety of groups: professors, environmental NGO leaders, government officials, senior engineers, and business leaders. Interviewees were contacted through snowball sampling. All the interviewees were asked to introduce new relevant experts. German environmental consultants based in Shanghai and Beijing introduced a number of environmental NGO leaders, and Chinese professors helped contact government officials. Sixteen interviews were conducted in Shanghai (three in 2001 and eight in 2002) and in Beijing (five in 2002). For instance, interviews with environmental NGO activists in Shanghai redressed the assumption that there would be almost no environmental NGOs in Shanghai. Interviews in Beijing provided me with opportunities to understand national environmental issues and a hierarchical but contentious relationship between the central government and the Shanghai government in policy-making and implementation. The interviews in Shanghai enabled me to comprehend how policies for water have an impact on society in Shanghai based on the perceptions of the citizens' own experience. The interviews illustrated the stark contrast in views between environmental NGOs and foreign environmental experts, and professors and governmental officials in their understanding of social change and the value of environmental resources.

This book consists of eight chapters including introduction and conclusion. Chapter 2 explores the environment, politics, economy, and society in Shanghai for the provision of useful information in analyzing the challenges of water supply and water quality control in Shanghai. A range of information and data on the environment, politics, economy, and society in Shanghai will be reviewed.

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The purpose of the chapter is to explain the linkage between water policy and socio-political and economic development over the past two decades. It will be shown that the dual development goals of economic gain and environmental protection in Shanghai have not been successfully addressed. Economic development has unambiguously been prioritized. Water bodies in Shanghai have seriously degenerated due to the anarchic discharge of industrial and domestic sewage caused by pro-growth policies and plans for decades.

Chapter 3 provides a theoretical framework to examine the social and political relations based on social theory. The selected theory is first, the grid/group theory of Mary Douglas, second, the political ecology theory of Hajer, and third, the co-evolutionary approach of complexity theory. The grid/group theory is useful for the identification of social actors, such as the Shanghai government, environmental NGOs, private companies, Shanghai citizens, and international development agencies. An analysis of political ecology by Hajer examines the way the Shanghai government has reformed its institutions and organizations faced with water pollution through discourse analysis. The co-evolutionary approach of complexity theory helps explain the development of private sector and the nature of the participation in the Shanghai water sector by new social actors.

Chapter 4 aims to evaluate the extent to which institutional reorganization in the Shanghai government has been effective in ameliorating water pollution from the 1990s to the present. The primary focus of the chapter is that the Shanghai government has been reforming its institutions and has reinforced regulatory regimes over the past two decades. Alongside grid/group theory, the political ecology theory of Hajer is deployed. Discourse analysis of Hajer provides a framework to understand the way water pollution has been emphasized and prioritized in Shanghai water politics. The Shanghai government has realized the need for intergovernmental cooperation and the balance of achieving both economic development and environmental protection for effective water quality control in Shanghai. Also the policy reform will be implemented insofar as the Shanghai government embraces the involvement of other social actors in civil society, environmental NGOs and Shanghai citizens.

Chapter 5 analyzes the development of the civil realm of environmental politics in Shanghai. The study reveals how the civil realm in Shanghai has developed with a self-capacity to redress environmentally unfriendly policies over the last decade based on the grid/group theory. A number of environmental NGOs and other social groups have been identified through fieldwork in Shanghai in 2002. These environmental groups now commit themselves to various environmental issues although there is no particular NGO dedicated to freshwater issues in Shanghai. A collaboration of various environmental social groups in Shanghai has led to the formation of a civil force that influences Shanghai's environmental policy-making.

Chapter 6 explores the extent to which private sector participation has had an impact on Shanghai's water policy. The emergence of private companies in the Shanghai water sector will be identified through grid/group theory. In addition, the co-evolutionary approach of complexity theory is used to identify and highlight the conflicts between a company's approach and the socio-political landscape in Shanghai in the expansion of the private sector since the late 1990s. This study pays attention to the way private companies in the Shanghai water sector have adapted to new changes resulting from political economic circumstances. The current picture provides evidence only of the interaction of government and private water companies, such as Veolia, Suez, Thames Water, and some Chinese companies. However, such a simple picture can change and turn into a more complicated one when environmental NGOs and Shanghai citizens participate actively in water projects in which private companies and the Shanghai government have already been involved.

Chapter 7 discusses the impact of international development agencies on Shanghai water policy over the past two decades. An adaptation of the grid/group concept is used to highlight the relationship between the local and the international hierarchists, namely the Shanghai government and the international development agencies. The co-evolutionary approach of complexity theory is also useful explaining the extent to which Shanghai's water policy has

evolved by the interactions between the two hierarchists in the Shanghai's political economy and the way international development agencies have pressured the government to introduce institutional reforms. The experience of the Shanghai government's involvement with international development agencies has been marked by some significant achievements, for instance, in securing finance and the import of advanced technology and management expertise. However, socio-political tensions have been generated between the two actors because of the different visions and perspectives on water policy-making. The way the new political economy landscape has been developed results from the complex relations between the Shanghai government and the international development agencies.

In Chapter 8, the book concludes that the state–society duality in Shanghai water policy has been transformed into a multi-faceted institutional system since the 1990s through the contributions of new social actors. The activities of newly emergent social actors, such as environmental NGOs, private companies, Shanghai citizens, and international development agencies, have proven to infuse new energy in the Shanghai water sector. The mutual cooperation between different actors has just begun and has provided an adequate path to the provision of high-quality water for Shanghai.