THE SOCIAL AND ENVIRONMENTAL IMPACT OF RAPID RURAL INDUSTRIALISATION: LOCAL REGULATION IN ZHEJIANG PROVINCE

A Thesis

Presented to

The Faculty of Graduate Studies

of

The University of Guelph

by

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In partial fulfilment of requirements

for the degree of

Master of Arts

April, 2000

ABSTRACT

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Since 1978, the breadth and rapidity of rural industrialisation has been one of the distinguishing features of China's phenomenal economic growth. This rapid development has resulted in significant economic, social, and environmental change. However, relatively little research has been directed towards the relationship between the changing role of local governments, which has itself been subject to considerable restructuring, and the nature and extent of the social and environmental impacts of rapid economic growth.

This thesis investigates the manifestation of social and environmental change at the local level in Zhejiang Province. In particular, it considers the changing role of local government in the regulatory process, and features a case study of Huzhou Municipality. Through the synthesis of the factual knowledge and perceptions of 48 key-informants from government offices, public institutions, and rural industries with secondary data sources, the changing nature of local regulation with respect to health care and education, agricultural land protection, and water pollution prevention and control in Zhejiang Province is analysed critically. This reveals three emergent themes that characterise local regulation: the changing locus of regulation; the expansion of the private sector; and, of particular significance, the increasing role of local governments. The latter have become arguably the most important entities in the local regulatory process.

Kilgore Trout once wrote a short story which was a dialogue between two pieces of yeast. They were discussing the possible purposes of life as they ate sugar and suffocated in their own excrement. Because of their limited intelligence, they never came close to guessing that they were making champagne.

Kurt Vonnegut, Jr. *Breakfast of Champions*

ACKNOWLEDGEMENTS

Foremost, I would like to thank sincerely my advisor Dr. Alun Joseph and my co-advisor Dr. Richard Kuhn for their guidance and advice throughout my two years at the University of Guelph. Thank you both especially for the opportunity and encouragement to experience this paper chase as an adventure. I would also like to thank my external examiner Dr. Kok-Chiang Tan and Dr. Wei Xu for their valuable insight and, in particular, the humour with which they witnessed my initial experiences with China. Funding for this research was provided by the Canadian International Development Agency and the Arthur D. Latornell Scholarship Fund.

This research has benefited greatly from those whom contributed to and shared my experiences in Guelph and China. A special thank you is reserved for Qiong Tan, who gave me the privilege of exploring Zhejiang Province through her diligent interpretation and patient humour. I would also like to thank Sean Norton, Jennifer Porter-Gibson, Li Zhang, Dr. Longbao Wei, Sheng Qiang Su, Di Fei Shen, and Hui Hong Hu. I am grateful especially to Jiangping Shuai for his friendship and support throughout our time together in Hangzhou, Huzhou, Nanjing, and Guelph.

Finally, I would like to acknowledge my family and friends. Without your continuous support and inspiration I would not have made it this far through life. Thank you to a special few for making me feel like a superstar when I need it most. But most of all, thank you Harvey and Eunice for helping me realise that while I may not end up where I thought I would go, I will always end up where I am supposed to be.

For those who know I love you there will never be enough words.

This thesis is dedicated to Ana Skinner.

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LIST OF ABBREVIATIONS AND MEASURES

Abbreviations

CEHO	Culture, Education, and Health Care Office
CMS	Co-operative Medical System
CPC	Communist Party of China
EdB	Education Bureau
EdO	Education Office
EIA	Environmental Impact Assessment
EPA	Environmental Protection Agency
EPB	Environmental Protection Bureau
EPO	Environmental Protection Office
ERS	Environmental Responsibility System
GDP	Gross Domestic Product
GNP	Gross National Product
GVAO	Gross Value of Agricultural Output
GVIAO	Gross Value of Industrial and Agricultural Output
GVIO	Gross Value of Industrial Output
HRS	Household Responsibility System
LMB	Land Management Bureau
LMO	Land Management Office
MOE	Ministry of Education
MOPH	Ministry of Public Health
NATO	North Atlantic Treaty Organisation

NPC	National People's Congress
PHB	Public Health Bureau
PHO	Public Health Office
PRC	People's Republic of China
PSB	Public Security Bureau
RCLMO	Rural Construction and Land Management Office
SBLA	State Bureau of Land Administration
SEPA	State Environmental Protection Agency
SIA	Social Impact Assessment
TVE	Township and Village Enterprise
UG	University of Guelph
VTCB	Village and Township Construction Bureau
WHO	World Health Organization
ZAU	Zhejiang Agricultural University

Measures

cu. m	cubic meters
ha	hectare
mu	1 mu = 1/15 hectare
yuan (¥)	At the time of field research Cdn $ 1.00 = Rmb ¥ 5.60, U.S. $ 1.00 = Rmb ¥ 8.80.

Chapter One

CHANGING GEOGRAPHIES OF RURAL CHINA

1.1 Introduction

Social and environmental change is an intrinsic part of economic development. Economic development invariably has negative social and environmental consequences due to the unequal relationship amongst economic, social, and environmental goals. Specifically, negative social and environmental change can often be attributed to the prioritisation of economic interests within development strategies. The mediation of these conflicting interests is implicit in the development process and occurs through government regulation, whereby development priorities are determined and national policies are implemented (Pinch, 1997).

China provides a unique example of this challenge to balance conflicting interests within the development process. Since 1978, rapid economic development has resulted in significant economic, social, and environmental change. National policies promoting the transition from a planned to a market-oriented economy have led to dramatic increases in economic development, characterised in part by rapid rural industrialisation (Yabuki, 1995). Within this context of reform, the restructuring of local government regulation has facilitated the primacy of economic interests (Oi, 1999). The subsequent encouragement of industrial development in rural areas has been interpreted as the trade-off of national economic growth against local social and environmental costs (Whyte, 1992; Lin, 1997).

Understanding the relationships between the changing role of local governments and the nature and extent of the social and environmental impacts of rapid economic growth is an important component of any analysis of development processes in China. This is particularly important in the rural context because of the prominence of rural industries as the driving force behind rapid economic development over the last 20 years (Bradbury et al., 1996).

1.2 Context and Research Problem

China has experienced significant economic, social, and environmental change in recent years. Change is articulated through complex regulatory structures, which facilitate national development strategies through the actions of a highly centralised and hierarchical system of government (Lieberthal, 1995). Economic reforms fostering the transition from a centrally planned to a market-oriented economy (market-socialism) are occurring within the rigid framework of the Communist Party of China (CPC). Despite significant administrative restructuring, the CPC continues to prevail over all aspects of development (CIA, 1999).

Under the leadership of Deng Xiaoping, a new path of development was initiated in the early 1980s. The implementation of economic reforms emphasising domestic market revitalisation and foreign trade has resulted in extraordinary increases in economic development, especially in the provinces along the eastern coast. By the end of the 1980s the national per capita gross national product (GNP) had virtually doubled (Leeming, 1993).

Reform initiatives included the replacement of the communal system with a system of household responsibility (HRS) in agriculture, the diminution of centralised planning, and the opening of the economy to market principles and increased foreign trade and investment (Yabuki, 1995). The result has been the expansion of the private sector, increased urbanisation, and a distinctive pattern of rural industrialisation. It is the nature and rapidity of rural industrialisation that is the most distinguishing feature of China's economic growth and is the most significant source of change in rural areas (Bradbury et al., 1996).

By setting a strong foundation for local economic growth, the development of industries in the countryside has mitigated the transfer of capital, labour, and resources to urban areas that characterises development processes in most Southeast Asian countries (Yabuki, 1995). Although rural industrialisation is often considered a post-1980 phenomenon, the development of small-scale rural industry as a supplement to agricultural production was introduced during the Maoist Era (1949-1976) (Lin, 1997). Under the 'five small industries program,' the development of small-scale, state-run iron and steel furnaces, coal mines, hydroelectric projects, cement factories and farm implement and repair enterprises provided the social and economic foundation for China's contemporary rural industrialisation (Qu, 1989).

The shifting economic focus of the early 1980s brought with it the dismantling of the communal system of agricultural production, resulting in severe rural unemployment (Xie and Costa, 1995). The transfer of surplus rural labour from the agricultural to the non-agricultural sector was promoted through the relaxation of national restrictions on rural migration and commercial activities (Tan, 1993). By the mid-1980s, endemic

labour surplus in rural areas was alleviated; over 100 million people shifted away from agriculture to work in small-scale rural industries (Lieberthal, 1995). This transfer of labour facilitated the unprecedented development of the rural economy, led by the expansion of collectively-owned township and village enterprises (TVEs) (Tan, 1993). Relative to the national economy, rural industry would grow dramatically to account for 50% of all industrial production by 1993 (Zhou, 1996). Between 1980 and 1992 the proportion of the rural labour force engaged in non-agricultural production increased by approximately 17 percentage points. Simultaneously, the number of TVE establishments increased by 1,286%, from 1.5 million to 20.8 million, and their total production increased by 6,364%, from ¥ 49.5 billion to ¥ 3.2 trillion (Wong and Mu, 1995; Bradbury et al., 1996).

The nature and rapidity of rural industrialisation has led to significant improvements in the economic well-being of rural areas. Scholars and planners cite the increase of rural household incomes as symbolic of China's impressive economic growth (Islam and Jin, 1994; Hannan, 1995). However, significant social and environmental problems can also be directly attributed to rural industrialisation.

Major concerns have been raised regarding the impact of rapid rural industrialisation on rural communities and their environments. Changes in rural-urban migration, social dynamics, and social support structures can all be attributed to the restructuring of government policy and rapid economic growth. For example, as a result of rural unemployment and relaxed rural migration and commercial activity regulations, approximately 120 million people now live and work as temporary migrants in urban centres (Croll and Huang, 1997). At the same time, the increasing disparity of incomes

between permanent and temporary residents have led to social class divisions in rural towns (Guo et al., 1996), while the shifting dependency ratio associated with an aging population puts increasing pressure on public and private support structures (Joseph and Phillips, 1999). These trends have all combined to increase pressure on social stability as government support for welfare service declines and private investment remains low despite revenues from TVEs (Tan, 1991).

The cumulative effects of past and present rural industrialisation have led to significant changes to China's rural environment. Prior to the reform period, policies emphasising agricultural grain production and controlled industrialisation led to the widespread degradation of rural environments. Rural industries were developed with little regard for waste discharge and a lack of consideration for biological protection (Qu, 1989). Meanwhile, agricultural development strategies resulted in large-scale deforestation, desertification, and the reclamation of lakes and wetlands (Smil, 1993).

Despite the creation of a comprehensive legal framework for environmental protection in 1979, this legacy of degradation has been accentuated. Rapid rural industrialisation continues to impose tremendous pressure on rural environments, as air pollution, water contamination, and land degradation increase at an alarming rate. Long-term averages of sulphur dioxide and carbon monoxide released from industries have led to increasing frequency of acid deposition events (Smil, 1997). Approximately 25% of all fresh water in China has been polluted to some degree through industrial dumping and untreated sewage (Edmonds, 1994). The progressive decline of agricultural land since 1949 has been exacerbated by the rapid expansion of rural industrial and residential development onto cultivated lands (Bradbury et al., 1996).

The persistence of social pressure and environmental degradation at the local level can be directly linked to the changing role of government in China. Under Deng, the directed effort to decrease central control and expand the private sector has resulted in significant changes in the role of local governments. Reform policies have emphasised the empowerment of local government and the ascendancy of private sector interests. Simultaneously, economic growth has increased local capacity to implement change. However, the implementation of social and environmental remediation policies is hindered by a lack of economic incentive and the dispersed development patterns and small-scale production style of rural industries (Qu, 1989; Bradbury et al., 1996).

Fresh momentum for rural industrialisation, local government empowerment, and private sector interests was generated in the early 1990s by the promotion of a new series of market-oriented reforms (Lieberthal, 1995). This has further intensified social and environmental change as economic imperatives continue to influence local development priorities. However, the increased pace of rural industrialisation, specifically the development of TVEs, may in time serve to transform the social and environmental impacts of development into impediments for sustained economic growth. Although the connections between economic growth and social and environmental problems have often been overlooked, scholars and planners are becoming increasingly aware of a social and environmental crisis that threatens to limit national development (Smil, 1993; Marks, 1996). This transformation, from acceptable cost to unacceptable impediment, is a major challenge for restructured local governments.

This introduces a specific **research problem**. Relatively little research has focussed on the description and critical analysis of social and environmental impacts of

rural industrialisation at the local level in China. Even less attention has been directed towards the relationship between impacts and the regulatory role of local governments. The influence of changing local regulation on the economic, social, and environmental transformation of rural areas experiencing rapid rural industrialisation remains poorly understood (Lin, 1997).

1.3 Research Goal and Objectives

The goal of this research is to identify the social and environmental impacts of rapid rural industrialisation in Zhejiang Province, China; and to assess critically the regulatory role of local government in mediating impacts. The specific objectives of the research are:

(1) To identify the major social and environmental impacts of rapid rural industrialisation in Zhejiang Province;

(2) To describe the regulatory framework of local government with respect to specific social and environmental impacts of rapid rural industrialisation; and

(3) To assess critically the regulatory role of local government in the mediation of specific local social and environmental issues.

1.4 Broad Approach to the Research

The theoretical background for this research is derived from various perspectives on economic development, impact assessment, regulation theory, and discussions of 'real' regulation literature. Each perspective provides a specific framework or lens for

understanding the manifestation of social and environmental issues and the changing role of local government in China.

Through the recognition that development occurs within a broad social and political context, political economy forms the basis for understanding the scope of China's rapid economic development and subsequent social and environmental changes. Impact assessment, in particular environmental impact assessment (EIA) and social impact assessment (SIA), provides the means through which the complex and diverse relationships between economic development and social and environmental change can be explored (Jacobs and Sadler, 1990; Barrow, 1997). Regulation theory provides a framework through which the patterns of national and local development can be interpreted, emphasising the social and political context within which the form and functions of administrative practices evolve (Pinch, 1997). Real regulation provides a framework for understanding the role of local administrative practices in mediating the relationships between economic, social, and environmental interests and administrative structures (Clark, 1992). This theorisation provides the platform for the case study that constitutes the descriptive and analytical core of the research.

The case study design is based on a detailed analysis of regulatory practices with respect to local social and environmental issues at the municipal, town, and township levels of government in Zhejiang Province. Although the case study is not designed to provide statistically significant results, it facilitates the examination of causal relationships and is sensitive to the economic, social, and environmental factors that distinguish individual locales (Sinkule and Ortolano, 1995). These are necessary components of any analysis of local development processes.

The focus of the research is Huzhou Municipality, and two of its constituent administrative units, Zhili Town and Daochang Township (Figure 1.1). The multi-level approach employed in the case study is necessary to gain an understanding of the local regulatory framework within which the manifestation of social and environmental change is occurring. The focal issues of the case study are health care and education, agricultural land protection, and water pollution prevention and control. These issues represent a cross-section of the social and environmental transformations occurring in Zhejiang Province.

The primary data collection component consists of in-depth key informant interviews and field observations. Sources of secondary data included literature (theoretical, empirical, and media), a baseline survey, government documents (policy and program directives, land-use plans, and administrative reports), government policies, maps, statistical yearbooks, and industry-specific reports.

A review of literature concerning the social and environmental impacts of rural industrialisation, the regulatory structure of government in China, and the role of local government was initially undertaken to develop the contextual and conceptual frameworks necessary to fulfil each objective. This was followed by the analysis of a 1998 baseline survey of town and township administrators from rural areas in Zhejiang Province. The perceptions of the baseline survey respondents are used to link the broad trends of rapid economic development, social and environmental change, and administrative restructuring identified in the literature with their manifestation at the local level in Zhejiang Province.

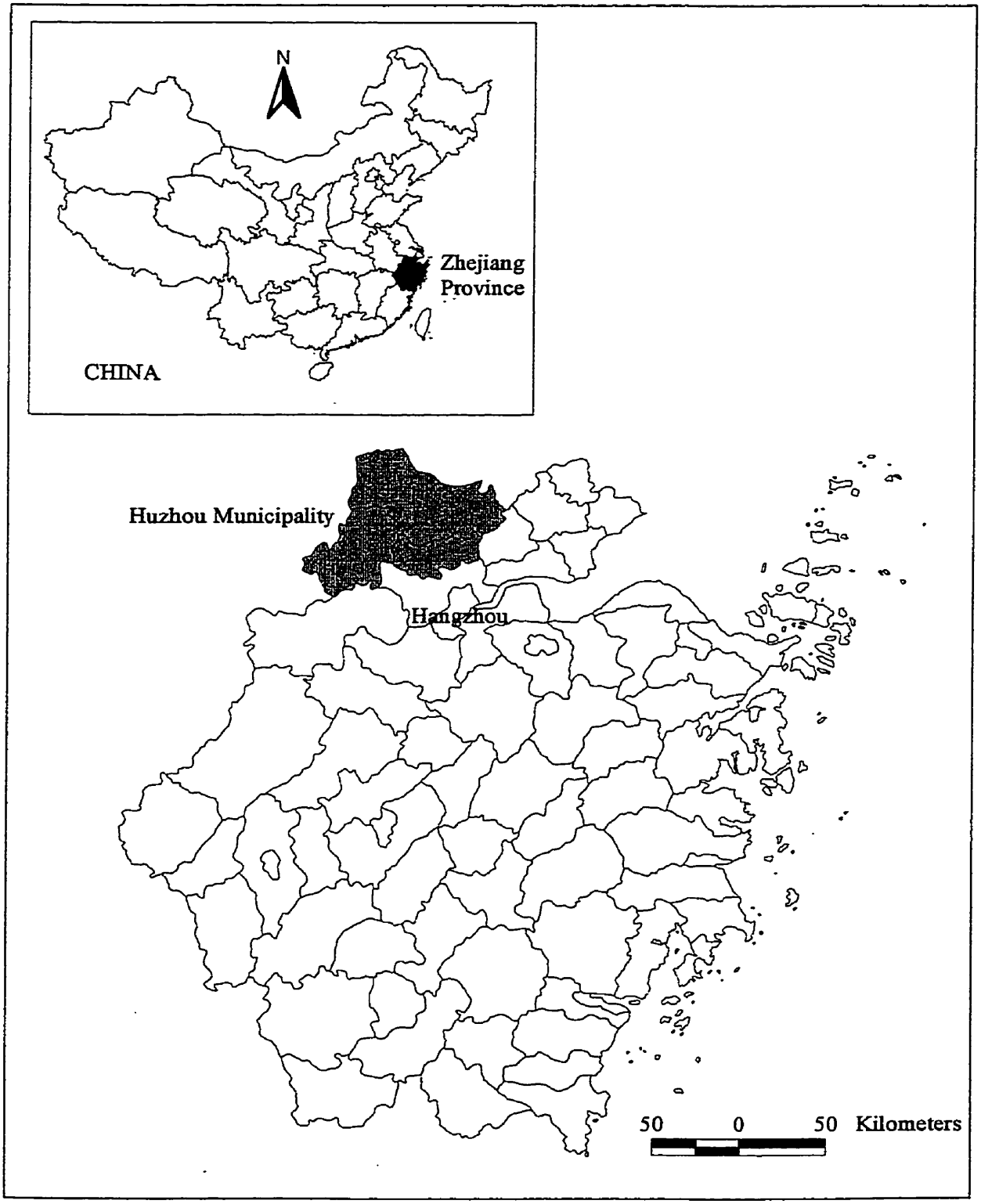

Figure 1.1 **Map of Zhejiang Province, China, indicating the location of Huzhou Municipality**
(CIESIN, 1999)

In-depth interviews were conducted with key informants from Zhejiang Province, Huzhou Municipality, Zhili Town, and Daochang Township. The interviews were conducted with the aid of an interpreter fluent in both Mandarin and English and included government officials and their institutional and private sector counterparts. The questionnaire combined structured and open-ended formats. Several broad topics were covered through the interviews including local economic, social, and environmental issues; the administrative framework within which development occurs; and administrative initiatives to implement development policy. The development of narratives through the synthesis of key-informant knowledge and interpretations of local social and environmental issues, and administrative structure, functions and practices is an integral component of the case study approach. The analysis of the narratives constitutes the descriptive and analytic foundation of the case study design.

1.5 Structure of Thesis

The remainder of this thesis is organised into six chapters. Chapter Two summarises the various perspectives on economic development, social and environmental change, and administrative restructuring, and develops the conceptual framework for the research. Chapter Three describes the study site and introduces the research methodology. Chapter Four describes the dimensions of economic development, social and environmental change, and administrative restructuring in Zhejiang Province and considers the specific local social and environmental issues. A description of the administrative structures, goals and responsibilities, and capacities in Chapter Five establishes the framework for local regulation in Zhejiang Province. Chapter Six

introduces and assesses the themes that characterise the nature of local regulation in Zhejiang Province. Chapter Seven provides a summary of results and advances conclusions regarding local regulation in Zhejiang Province. The final chapter also discusses the contributions and limitations of the research, and suggests opportunities for future research.

Chapter Two

EXPLORING THE LOCAL MANIFESTATION OF SOCIAL AND ENVIRONMENTAL CHANGE

This chapter introduces the three themes of (1) rapid economic development, (2) social and environmental change, and (3) administrative restructuring that encompass the subject matter of the research. Literature in these areas is reviewed critically to provide a theoretical and substantive context for the research problem. A simple conceptual framework is used to synthesise insights from the literature and to provide a methodological segue into the case study design in Chapter Three.

This chapter is organised into five sections. The first section considers rapid economic development, moving from a discussion of broad trends to a specific focus on the distinctive pattern of rural industrialisation that has characterised China's phenomenal economic growth since the early 1980s. Section 2.2 outlines the social and environmental changes inherent in rapid economic development and considers the specific social and environmental impacts of rapid rural industrialisation. Sections 2.3 and 2.4 consider respectively the nature of administrative restructuring in China and the theoretical perspectives of regulation and 'real' regulation through which its present and potential impacts with respect to social and environmental change can be explored. The final section crystallises the conceptual framework that is embedded throughout this chapter and forms the basis of the case study for the research.

2.1 Economic Development and Rapid Rural Industrialisation

Economic development is a diverse and complex process of change that is central to the spatial and organisational relationships between and within societies (Johnston, 1994). Intrinsic to this process is the relationship between economic, social, and environmental interests. The prioritisation of economic interests within prevailing development strategies often compromises social and environmental well-being during periods of rapid economic growth (Jacobs and Sadler, 1990). The unequal nature of the relationship between economic priorities on the one hand and social and environmental on the other is paramount to our understanding of how differing economic, social, and environmental conditions evolve.

Conventional perspectives on economic development emphasise the significance of economic change to the development process. Despite the establishment of social and environmental indicators, such as the Human Development Index (HDI) and environmental quality indexes, industrialisation almost invariably remains the metric through which differing levels of development are compared. Industrialisation is an uneven process that implies economic change through the spontaneous or planned dominance of industrial activity within a particular economy (Johnston, 1994). However, economic development can not be understood without a consideration of the social and political context within which it occurs (Peet and Thrift, 1989).

The perspective provided by political economy emphasises the irrevocable link between political and economic practices in the development process (Johnston, 1994). Change, whether economic, social, or environmental, can not be adequately understood if the constraints within which individuals make decisions are not taken into consideration

(Blaikie and Brookfield, 1987). The recognition that development occurs within economic, social, political, and institutional structures, forms the basis for understanding China's rapid economic development and subsequent social and environmental changes.

During the last 20 years, China has experienced dramatic improvements in economic development. Under the leadership of Deng, a new path of development was initiated in the early 1980s. The implementation of economic reforms emphasising domestic revitalisation and foreign trade has resulted in extraordinary increases in economic development, especially in the provinces along the eastern coast. International comparisons of GNP growth rates between 1985 and 1992 place China tenth at 6.0% (Yabuki, 1995). The national per capita GNP virtually doubled between 1979 and 1989, and continued to grow at a rapid pace throughout the 1990s (Leeming, 1993; Oi, 1999).

Unlike the drastic and dislocative economic transformations in the Soviet Union and Eastern Europe following the fall of communist regimes, China has instituted economic reforms that have resulted in rapid and sustained economic growth without significant political change (Oi, 1999). Reform initiatives included the replacement of the communal system with the HRS, the diminution of centralised planning, and the opening of the economy to market principles and increased foreign trade. The thorough implementation of these reforms in the rural economy has been undertaken to mitigate the unequal development between urban and rural areas during the Maoist Era (Rozelle, 1994). This resulted in the expansion of the private sector, increased urbanisation, and a distinctive pattern of rural industrialisation. It is the breadth and rapidity of China's rural industrialisation that forms the core of its rapid economic development and is the most significant source of change in rural areas (Bradbury et al., 1996).

Rural industrialisation is characterised by the transformation of the rural economy from one where the population is engaged primarily in agricultural production to one where the population is engaged primarily in non-agricultural production (Hannan, 1995). It usually involves the development of rural industry as a supplement to agricultural production, its successive concentration around small towns, and eventual development within large centralised urban areas (Fuller, 1994). Rural industry refers to all non-agricultural activities in rural areas (Byrd and Lin, 1990). In China, this includes household firms, collective enterprises, private enterprises and partnership firms (Harvey, 1999).

The development of rural industry in China has served to mitigate the unilinear transfer of capital, labour, and resources from rural to urban areas that was characteristic of earlier development. Chinese rural industrialisation has been initiated directly within rural areas and has avoided the pattern of dispersion to, and relocation from, urban areas associated with development in most Southeast Asian countries. This has set a strong foundation for local economic growth (Tan, 1991; Yabuki, 1995).

Although it is often regarded as a post-1980 phenomenon, the development of small-scale rural industries as a supplement to agricultural production was first introduced during the Maoist Era under the 'five small industries program' (Lin, 1997). Small-scale, state-run iron and steel furnaces, coal mines, hydroelectric projects, cement factories, and farm implement and repair enterprises were developed throughout the countryside. This provided the social and economic foundations for the dramatic increase in rural industrialisation in the 1980s and 1990s (Qu, 1989).

The shifting economic focus of the early 1980s brought with it the dismantling of the communal system of agricultural production, thereby exposing high levels of rural unemployment (Xie and Costa, 1995). To alleviate this problem, the transfer of surplus rural labour from agriculture to the non-agricultural sector was promoted through policies encouraging rural residents to 'leave the soil but not the village, enter the factory but not the town' (Tan, 1993). By the mid-1980s, over 100 million people had shifted away from agriculture to work in small-scale rural industries (Lieberthal, 1995). Between 1978 and 1992, the proportion of the rural labour force engaged in non-agricultural production increased by approximately 17 percentage points (Wong and Mu, 1995).

The transfer of labour out of agriculture facilitated the unprecedented development of the rural economy, led by the expansion of collectively-, and more recently individually-owned TVEs (Tan, 1993; Oi, 1999). Through the creation of employment, the provision of various inputs to support agriculture, and a capacity to underwrite the costs of local governments, the TVEs were able to improve significantly the income of rural communities (Tan et al., 2000). By 1987, rural industry surpassed agriculture as the dominant source of rural income (Oi, 1999). Between 1978 and 1992, the number of TVE establishments increased from 1.5 million to 20.8 million, and their total production increased from ¥49.5 billion to ¥3.2 trillion (Wong and Mu, 1995; Bradbury et al., 1996). Relative to the national economy, rural industry as a whole would dramatically increase to account for 50% of all industrial production by 1993 (Zhou, 1996).

Despite the success of the TVEs in the 1980s, the international and local environments for rural industries changed in the early 1990s. The opening-up of the

export market and the nation-wide expansion of rural industries required local enterprises to become increasingly competitive and efficient (Oi, 1999). However, fresh momentum for rural industrialisation was generated in the early 1990s by the promotion of a new series of market-oriented reforms (Lieberthal, 1995). Reform initiatives emphasising increased foreign trade and the development of the private sector facilitated the further expansion of the rural economy. Estimates suggest that rural industry currently accounts for 75% of total industrial production in Zhejiang Province (Smyth, 1998).

Much attention has been given to the nature and rapidity of rural industrialisation and to its impact on rural areas. Scholars and planners cite the increase of rural household income and consumption as indicators of the increasing economic well-being in rural areas (Islam and Jin, 1994; Hannan, 1995). However, significant social and environmental changes can also be attributed to rural industrialisation.

2.2 Social and Environmental Change

Social and environmental change is an intrinsic part of economic development. The nature, magnitude, and scale of economic development have all led to significant social and environmental changes. These include demographic change and altered social dynamics, as well as widespread environmental degradation and resource scarcity (Jacobs and Sadler, 1990). The fact that economic development has almost invariably had negative social and environmental consequences is a function of the unequal relationship that often exists among economic, social, and environmental interests. Thus, development can be seen as a process of trade-offs between these interests at local, national, and international levels (Barbier, 1987).

In western countries, the recognition of the need to consider these implications of has resulted in the emergence of impact assessment processes. Environmental impact assessment (EIA) was formally introduced in the United States in 1969, requiring federal agencies to consider explicitly the environmental implications of proposed development projects (Woods, 1995). Social impact assessment (SIA) was developed out of criticisms that the biophysical focus of EIA ignored social impacts (Bowles, 1981). EIA and SIA are holistic processes, which incorporate environmental and social information into development planning. This provides the foundation for understanding the relationships between economic development and social and environmental change in China (Barrow, 1997).

The recognition of China's rapid economic development has raised questions concerning its social and environmental impacts. Although the connections between economic development and social and environmental problems have often been overlooked, scholars and planners are becoming increasingly aware of a social and environmental crisis which threatens to limit national development (Smil, 1993; Lin, 1997). Specific concerns have been raised regarding the impact of China's recent rapid rural industrialisation on rural communities and their environments.

The social sector in China is characterised by changes to rural-urban migration, social dynamics, and social support structures. These can all be directly attributed to the restructuring of government policy and rapid economic growth. With reforms came the relaxation of rural-urban migration controls to alleviate the endemic unemployment and underemployment found in rural areas (Xie and Costa, 1995). This resulted in the emergence of a 'floating' labour force of approximately 120 million people who now live

and work as temporary migrants in urban centres (Croll and Huang, 1997). Although this large, exploitable labour force has been regarded as a key factor in the rapid development of rural industries, this unprecedented magnitude of migration has affected local social dynamics.

Social dynamics are characterised by changing community demographics and family structures, and by the refinement of class divisions. Urban and rural demographics have been affected by the migration of young men and women out of agricultural areas in search of employment opportunities (Croll and Huang, 1997). At the same time, an aging population has altered local workforce and intergenerational structures (Leung, 1997). The nuclearisation of family structures is the result of the 'single-child policy' and the development of the HRS. Considered a parallel development to modernisation, this nuclearisation underlies the emergent 4-2-1 family structure, where each family unit has one child, two parents, and four grandparents (Guo et al., 1996). However, with the individualisation of household responsibilities, a contradiction has emerged between economically-suitable and actual family size (Joseph and Phillips, 1999). A further change to social dynamics is the increasing inequity of incomes between and within rural communities. Exacerbated by the differing pay structures for permanent and temporary TVE employees, this has led to increasing social class divisions (Guo et al., 1996).

Rural-urban migration and changing social dynamics have combined to increase pressure on social support services. The decline of state support for welfare services, the individualisation of household responsibility, and the shifting dependency ratio associated with population aging have resulted in increased pressure on the family and

the private sector to provide social care. However, decreasing family size and low private investment, despite revenues from TVEs, limits the ability of rural communities to deal with increasing pressure on social stability (Tan, 1991; Joseph and Phillips, 1999).

The cumulative environmental effects of past and present rural industrialisation are evident throughout the Chinese landscape. Prior to the reform period, policies emphasising agricultural grain production and controlled industrialisation led to widespread degradation of rural environments. Policies designed to industrialise the countryside, such as the 'five small industries program', were implemented with little regard for waste discharge or consideration for biological protection (Qu, 1989). Meanwhile, large-scale deforestation, reclamation of lakes and wetlands, and incompatible land use resulted from agricultural development strategies (Smil, 1993).

Although contemporary environmental degradation in China has reached unprecedented levels, it is a long-term process that first began with the demands of China's expanding population. For centuries, land reclamation strategies have been used to meet increasing agricultural demands. It was stated in 1196, that "tracts of reclaimed land cover hundreds of thousands of mu in Zhejiang (Province). Lakes, ponds, reservoirs, streams and creeks are all turned into farms" (Tuan, 1970: 128). By the Qing Dynasty (1644-1912), the long-term impacts that land reclamation would have on the biophysical environment were already evident. Serious environmental problems, including soil erosion, desertification, water shortages, and deforestation, were all well documented by the early 20th century (Qu and Li, 1994).

Despite the creation of a comprehensive legal framework for environmental protection in 1979, the legacy of environmental degradation has been accentuated by 20

years of rapid economic development. Rapid rural industrialisation continues to impose tremendous pressures on rural environments. Air pollution, water contamination, and land degradation have increased at an alarming rate. Long-term averages of sulphur dioxide and carbon monoxide are multiples of the maximum limits recommended by the World Health Organization (WHO) (Smil, 1997). Since 1985, approximately 25% of all fresh water has been polluted to some degree through industrial dumping and untreated sewage. Pollutants include organic wastes, oil products, chlorinated hydrocarbons, nitrates, sulphates, phenolic compounds, cyanides, arsenic acid, led chromium, cadmium, and mercury (Edmonds, 1994). The trend of progressive land loss since the 1950s has been further exacerbated by the rapid expansion of rural industrial and residential development onto agricultural land (Bradbury et al., 1996).

Characterised by dispersed and small-scale production, the emergence of TVEs presents the most significant problem for rural environments. Unlike traditional patterns of rural industrialisation, it is not uncommon to find small factories in China's village communities or in the middle of cultivated fields (Lin, 1997). The widespread expansion of non-agricultural production brought 'modern' technologies to what were previously labour-intensive agricultural communities (Li, 1997). However, most TVEs are limited to inefficient, obsolete, and low budget technology. The small-scale nature of TVE production often consists of household industries which employ an average of 7.8 workers and use outdated, discarded equipment and scrap materials from urban areas (Hannan, 1995; Lin, 1997). Environmental problems result from a lack of proper waste treatment facilities and techniques, inefficient use of energy, and the unregulated nature of small-scale entrepreneurship (Jahiel, 1997). This has led to the systematic destruction

of rural environments through resource exploitation and environmental pollution (Lin, 1997).

Although the impacts of rural industrialisation are most prevalent at the local level, significant diversity exists in the nature and scope of local social and environmental change. Patterns of inequality in the distribution of economic, social, and environmental changes among local governments have emerged with the uneven development of rural industry (Rozelle, 1994; Wei, 1999). This is due to the changing nature of the rural economy within a restructured system of government.

2.3 Administrative Restructuring

The mediation of conflicting economic, social, and environmental interests is implicit to the development process. Mediation requires a process of trade-offs through political choices at local, national, and global levels (Barbier, 1987). This occurs through government regulation, whereby development priorities are determined and policies are implemented (Pinch, 1997). Economic, social, and environmental changes can be directly linked to the system of government within which they occur.

In China, economic, social, and environmental changes are articulated through complex regulatory structures. These structures facilitate national development strategies through the actions of a highly centralised and hierarchical system of government (Lieberthal, 1995). Economic reforms fostering the transition towards market-socialism are occurring within the rigid framework of the CPC (CIA, 1999). However, rapid economic development, and rural industrialisation in particular, has been facilitated through significant administrative restructuring (Bradbury et al., 1996).

Notwithstanding the restructured system of government, administration in China is dominated by the duality of the political system. This consists of the parallel administrative organisations of the CPC and the civil administration that constitute the Chinese State. Although the organisational structures of the CPC and civil administration are analogous, the party remains a distinct and omnipotent political institution. It is within the centralised and hierarchical framework of the CPC that 'controlled' administrative restructuring is occurring (Lieberthal, 1995).

Adjustments to the system of government have been an important dimension of China's economic reform. Prior to the reform period, the central state manipulated local policy initiatives and required its local governments and private sectors to play passive and obedient roles in the development process (Gong and Chen, 1994). Although this highly centralised control was necessary to maintain national security and social stability, it limited the role of local initiative and individual creativity. Recognising the deficiencies of the Maoist political system, a more relaxed and flexible approach to decision-making was adopted by the pragmatic regime of Deng (Lin, 1999). The ensuing reform period has been characterised by the decentralisation of control and the localisation of administrative and fiscal responsibilities.

Similar to the process of restructuring experienced by western welfare states (Pinch, 1997), the most significant administrative change in China has been a decline in direct and active intervention by the state in the development process. Reform initiatives emphasised the decentralisation of decision-making as a means of stimulating local initiative and encouraging individual enthusiasm (Lin, 1999). In rural areas, the HRS restored the family as the primary unit responsible for agricultural production (Luo,

1994). A fiscal responsibility system was introduced to provide local governments and industries with a concrete incentive to become increasingly involved in local development initiatives (Lin, 1999). At the same time, the legislation of constitutionally defined authority for local governments provided the legal basis for the defence of local development interests (NPC, 1988; Gong and Chen, 1994). These changes have all combined to significantly erode the capacity of the central state and fragment its monopoly over local development affairs (Lin, 1999).

The decentralisation of decision-making and localisation of fiscal responsibility represents a transition towards a pluralistic regulatory system. This evokes a connections with the concept of welfare pluralism, which describes a conventional pattern of western welfare state restructuring. It is defined as a system in which welfare needs are met by a diverse set of agencies, rather than relying upon universal provision by state agencies (Pinch, 1997). Welfare pluralism involves the downloading of national development mandates and financial responsibilities from the central state to lower levels of government, and to the voluntary and private sectors. However, the shift towards pluralistic regulation is limited by the still highly centralised and hierarchical nature of administration in China.

The voluntary sector in China is extremely restricted. Despite the limited establishment of non-governmental organisations (NGOs), such as the Friends of Nature, an environmental group advocating sustainable development, the regulatory role of this sector is essentially non-existent. Deftly referred to as government organised non-governmental organisations (GONGOs) by the western media, most voluntary

organisations are established by and directly responsible to the CPC or civil administration (Toronto Star, 2000).

Privatisation has been a fundamental component of the reform process since the early 1990s. The private sector has become increasingly important as local economic incentives and individual household responsibilities have expanded (Lieberthal, 1995). Rural economic reforms and the opening up of China to the outside world have brought about the ascendancy of private interests in the development process (Bradbury et al., 1996). However, the regulatory role of the private sector remains limited by the emergence of a new central-local relationship in which local governments play an active and direct role in the development process (Lin, 1999).

The restructured central-local relationship is manifested in the form of increasing local autonomy and discretion in policy interpretation and implementation (Lin, 1999; Oi, 1999). Although the regulatory role of the central state remains significant, the development of horizontal organisational linkages between government sectors at the local level has rendered its vertical control less effective (Gong and Chen, 1999; Lin, 1999). As a result, the ability of local governments to interpret and mediate social and environmental issues has changed.

Despite comprehensive studies regarding social, environmental, and administrative change in China (Smil, 1993; Jia and Lin, 1994; Goldstein and Wang, 1996), their manifestation at the local level remains poorly understood. Furthermore, questions concerning the complex and diverse relationship between social and environmental change and the regulatory role of local governments have only recently come into focus (Clark, 1992; Cocklin and Blunden, 1997). The mediation of change can

not be understood without regard for the restructured administrative landscape within which it occurs. Thus, a consideration of perspectives surrounding the regulation of economic, social, and environmental change is required.

2.4 Perspectives on Regulation

The general trends of rapid economic development, social and environmental change, and administrative restructuring raise important theoretical concerns regarding the regulation of the Chinese state. As noted by Lin (1999), the conventional perspective of socialist development, which conceives a uniform and powerful socialist state capable of manipulating local development affairs, may need fundamental re-evaluation in light of the changing role played by the central state, local governments, and the private sector. Part of this re-evaluation includes a differentiation between the power of the central state and local governments to formulate, interpret, and implement development policies. Regulation theory provides a lens through which the patterns of national and local development with respect to local social and environmental change can be explored.

Regulation theory has its foundation in political economy analyses of on western capitalist development, and has been used primarily to explore the changing nature of western welfare states (Peck and Tickell, 1992; Moran, et al., 1996). However, it provides a useful framework for exploring the Chinese experience. Certain regularities and common traits exist in the processes of social and environmental change and administrative restructuring in different types of political economy. These include the interdependent nature of development issues and changing central-local relations, neither

of which can be properly understood without making connections with what has been taking place outside of China (Lin, 1999).

Regulation theory emphasises the paramount role that social and political relationships have in the development process of particular countries (Peet and Thrift, 1989). It recognises the manifestation of social and political relationships in the form and function of administrative practices, which sustain the economic and social organisations of the state. These relationships are assessed through the examination of state administrative structure and the analysis of macro policy design (Pinch, 1997). This provides a framework for understanding the social and political context within which the form and functions of state administrative practices evolve.

Regulation theory is an effective framework for identifying how development is brought about, and focuses on the regulatory processes of the state as manifested in laws and policies. However, it neglects the importance of administrative practices in the regulatory process at sub-national levels. This has led to discussions of 'real' regulation, which represents a shift in focus from the design of macro policy to its interpretation and implementation (Clark, 1992; Pinch, 1997).

Real regulation recognises the role of local administrative practices in the regulatory process and emphasises the importance of local agency and private sector interests and processes (Cocklin and Blunden, 1997). Local agency refers to the capacity of people to make choices and take actions to affect their destinies (Pinch, 1997). Real regulation provides a framework for understanding the role of local administrative practices in mediating the relationship between economic, social, and environmental

interests and administrative structures (Clark, 1992). This establishes the platform for the case study that constitutes the descriptive and analytic core of the research.

2.5 Conceptual Framework

The theoretical foundations for this research are derived from various perspectives on economic development, impact assessment and regulation theory (including real regulation) introduced in this chapter. Each perspective provides a specific framework for understanding the nature, scope, and interrelationships of social and environmental issues and the changing role of local government in China. This forms the contextual and conceptual foundation for the case study that constitutes the core of the research.

Through the recognition that development occurs within economic and political constraints, political economy forms the basis for understanding the scope of China's rapid economic development and subsequent social and environmental changes. The complex and diverse relationships between economic development and social and environmental change is explored with regards to EIA and SIA. The foundation for understanding the importance of administrative regulation with respect to social and environmental change is provided by regulation theory and ideas of real regulation.

Chapter Three

RESEARCH DESIGN AND METHODS

This chapter introduces the methodology employed in the research, and is organised into five sections that reflect the major components of the research design. The first section describes the study site that constitutes the specific context for the field research conducted in Zhejiang Province between May 5 and August 15, 1999. This is followed by a description of the theoretical approach and its relationship with the overall case study design. Sections 3.3 and 3.4 consider respectively the collection of data and interview protocols and procedures. The final section of the chapter describes the approach used to organise and analyse the data.

3.1 Study Site

Located on the coast of the East China Sea, Zhejiang is one of the most significant of China's 23 provinces. Acting as an important economic centre since the Tang Dynasty (618 - 907), Zhejiang has always been a relatively prosperous province. It currently supports a population of 44.2 million, of which more than two-thirds is registered as rural. Despite having one of the smallest total provincial land areas (101,800 km^2), it contains some of China's most productive farmland (Storey, et al., 1998; Zhejiang Statistical Bureau, 1998).

In the last two decades Zhejiang Province has experienced extraordinary economic development. Between 1978 and 1995, at 12.8%, Zhejiang had the largest average annual provincial per capita GDP growth rate in China. This is symptomatic of

the rapid development of the national economy, which experienced an annual growth rate of 9.8% during the same period (Lin, 1999). In recent decades, economic growth in Zhejiang Province has been driven primarily by extensive rural industrialisation, based upon the intense agricultural development around key urban centres such as Hangzhou, Jiaxing, and Huzhou (Joseph and Phillips, 1999).

This research was conducted as part of an international collaboration between the University of Guelph (UG) in Canada and the Zhejiang Agricultural University (ZAU) in China. The Huaxia Township Enterprise College at ZAU facilitated the field research in Zhejiang Province. It is located in the city of Hangzhou, approximately 180 km southwest of Shanghai. Hangzhou is the capital of Zhejiang Province and has a population of 1.5 million (Storey et al., 1998).

Zhejiang Province has eleven administrative districts, one of which is Huzhou Municipality, the study site for the research (Figure 3.1). Huzhou Municipality is located in the Hangzhou-Jiaxing-Huzhou Plain, on the south shore of Tai Lake (Taihu), approximately 40 km northwest of Hangzhou. The first urban settlement was established on the site of the urban core of Huzhou Municipality in 330 BC. It currently has a population of 2.55 million and has a total land area of 5,817 km^2 (Huzhou Statistical Bureau, 1999).

Several factors contributed to the selection of Huzhou Municipality as the study site. First, it exemplifies the economic, social, and environmental transformation occurring in the rural areas of Zhejiang Province. Huzhou Municipality is undergoing extensive rural industrialisation and experiencing significant economic, social, and environmental changes. As part of the provincial grain base, strong agricultural

development has occurred around Huzhou Municipality. This has been complemented by the rapid development of rural industry, based largely on food and silk production and garment manufacturing (Joseph and Phillips, 1999).

Second, the proximity of Huzhou Municipality to Hangzhou and ZAU was an important factor in the selection of the study site. Huzhou Municipality is connected to Hangzhou by the national railway and provincial highway networks, specifically the Xuancheng-Hangzhou railway line and State Highway 104 respectively. This allowed access to resources at ZAU to be maintained while in the field and limited the travel time required between ZAU and the study site. Furthermore, it was an important factor for safety during the course of the field research. This was of specific concern amid the increasing tensions between China and Canada following the NATO bombing of the Chinese embassy in Belgrade, Yugoslavia on May 7, 1999.

Third, favourable information access in Huzhou Municipality was a crucial factor in site selection. Foreign contact with key-informants is strictly controlled in China. As discussed by Sinkule and Ortolano (1995), the availability of networking in Chinese social, commercial, and political affairs is constrained within the boundaries set by political interests and the social principles of 'guanxi'. The presence of guanxi between the faculty at ZAU and contacts in Huzhou Municipality established the networking necessary to carry out the research. Contact with municipal level officials in Huzhou Municipality facilitated arrangements with administrative sectors in the municipality and at lower levels of government.

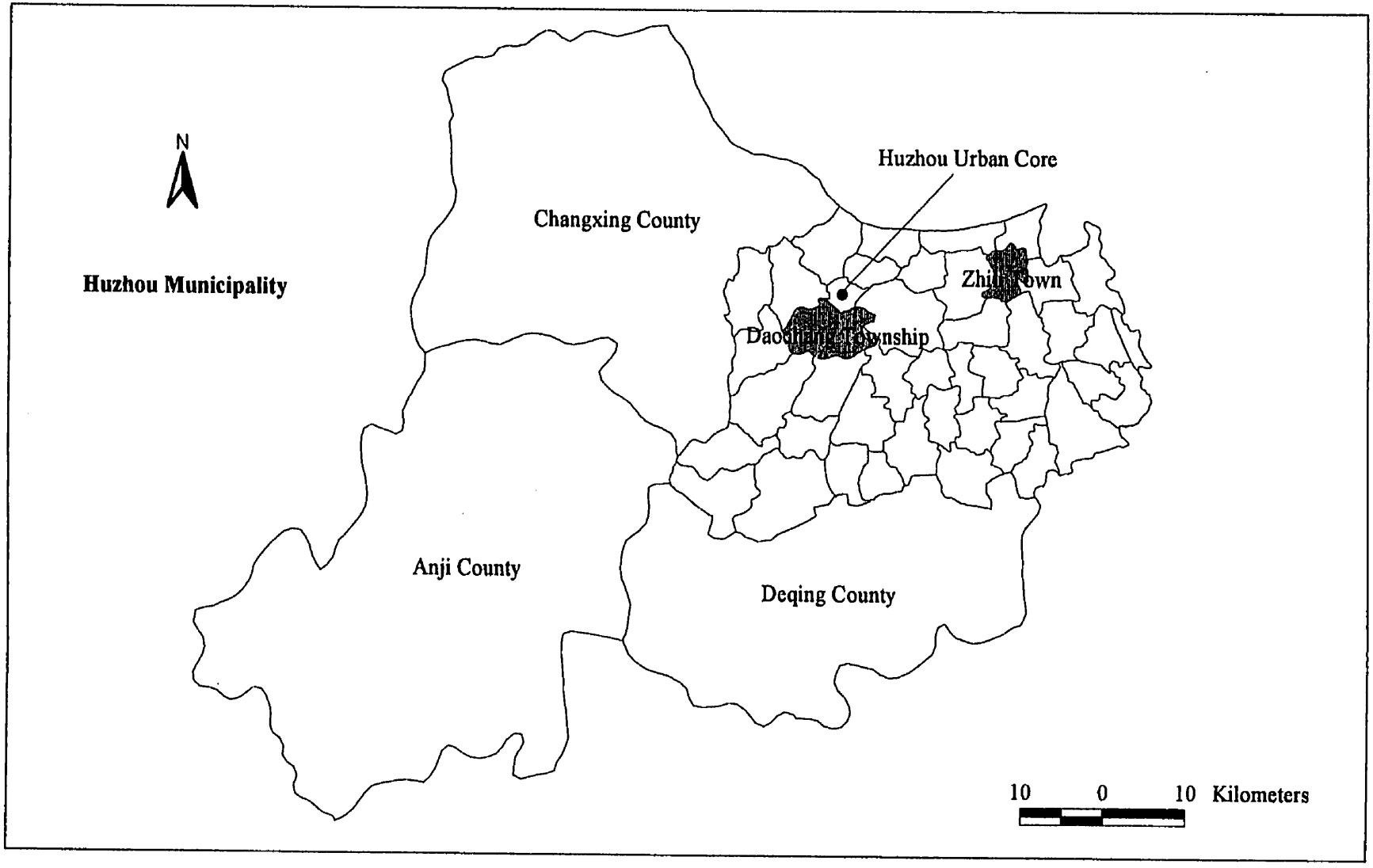

Figure 3.1 **Map of Huzhou Municipality, indicating the location of Zhili Town and Daochang Township** (CIESIN, 1999)

Accessibility to various levels of administration in Huzhou Municipality was necessary to fulfil the objectives of the research. In order to gain an understanding of the regulatory processes and practices of local government below the municipal level, one town (Zhili Town) and one township (Daochang Township) within Huzhou were selected for study (Figure 3.1). The constituent administrative units of Huzhou Municipality include three counties, three districts, 61 towns and 63 townships (Huzhou Statistical Bureau, 1999). Within this hierarchy, Zhili Town and Daochang Township represent the lowest levels of local administrative organisation.

Zhili Town has a population of 38,200 and a total land area of 46 km^2 (Huzhou Statistical Bureau, 1999). It consists of 30 villages and the town built-up area. It is located in the Huzhou Urban District, east of the urban core, on the main highway between Huzhou Municipality and Shanghai (State Highway 318). Originally a township, Zhili was designated a town in 1984 and was amalgamated with Rengshe Township in 1993. Zhili Town is an important component of the rural economy of Huzhou Municipality and has been the focus of economic development projects at the municipal, provincial, and national levels. Considered a 'key' town, it is the centre of regional social infrastructure and public facilities which serve neighbouring towns and townships. Based on the development of a specialised commodity market, in particular the China-Zhili Market City, Zhili Town has experienced extensive economic and social development (Zhili Town Mayor's Office, 1999).

Daochang Township is also located in the Huzhou Urban District, directly south of the urban core, on the main highway between Huzhou Municipality and Hangzhou (State Highway 104). It has a population of 21,398 and consists of 23 villages and the

township built-up area. It has a total land area of 60 km^2. As an adjacent township of the expanding urban core of Huzhou Municipality, Daochang is currently undergoing a rural-urban transformation. With the township built-up area progressively merging into the municipal urban core over the next 10 years, Daochang Township is considered to be one of the more advanced townships in Huzhou with respect to economic and social development (Daochang Township Leader's Office, 1999).

3.2 Approach to the Research

The perspectives on economic development, impact assessment, and regulation theory (including 'real' regulation) considered in Chapter Two form the theoretical background for this research. As noted in Section 2.1, economic development is a process of change that is characterised by the unequal relationship between economic, social, and environmental interests. This relationship occurs within a broad social and political context, which forms the foundation for understanding economic development and manifestation of social and environmental change (Blaikie and Brookfield, 1987; Peet and Thrift, 1989). As noted in Section 2.2, the diverse and complex relationship between economic, social, and environmental change is a function of competing interests at local, national, and international levels (Barbier, 1987). The holistic processes considered in EIA and SIA provide the foundation for examining the social and environmental impacts of economic development and constitutes the conceptual platform for Objective (1) (See Section 1.3) (Barrow, 1997). However, the manifestation of social and environmental change can not be understood without a consideration of the importance of administrative regulation.

As noted in Section 2.4, regulation theory provides a lens through which the patterns of national and local development can be explored, emphasising the paramount role of the regulatory processes manifested in the form and functions of administrative practices (Peet and Thrift, 1989; Pinch, 1997). This provides the foundation for understanding the broad regulatory framework within which development occurs, thereby constituting the conceptual platform for Objective (2). The conceptual platform for Objective (3) is derived from discussions of real regulation. By focussing on the interpretation and implementation of macro-policies at sub-national levels real regulation establishes a framework for understanding the local manifestation of social and environmental change (Pinch, 1997). Furthermore, real regulation provides the foundation for understanding the role of local administrative practices, and in particular the importance of local agency and the private sector, in mediating the relationship between economic, social, and environmental interests (Clark, 1992; Cocklin and Blunden, 1997).

A case study is the most appropriate approach for the research because it entails an investigation of individuals, households, or areas, selected not on the basis of statistical representativeness, but to provide a typical or otherwise revealing account of the pattern of social life (Johnston, 1991). Though limited in their capacity to provide statistical generalisations applicable to larger samples, case studies are sensitive to the economic, social, and environmental factors that complicate and distinguish individual locales. They facilitate the examination of causal relationships and organisational motivations, strategies and interactions, thereby providing the foundation for subsequent research (Sinkule and Ortolano, 1995).

The case study for the research involves three local governments and three sets of social and environmental issues. For the purposes of the research, the term local government refers to governments at and below the municipal level. In Zhejiang Province this includes the government levels of municipalities, cities, counties, districts, towns and townships. The case study design is based on a detailed analysis of regulatory practices with respect to health care and education, agricultural land protection, and water pollution prevention and control at the municipal, town, and township levels of government (Figure 3.2). Since the case study is not designed to produce statistically significant results, an integral part of this approach is the development of narratives through the synthesis of interpretations of the local manifestation of social and environmental change.

The focal issues considered in the case study represent the cross-sector social and environmental transformations occurring in Zhejiang Province. Understanding the development of health care and education, agricultural land protection, and water pollution prevention and control is an integral part of Objective (1). Health care and education are fundamental elements of social development. Issues surrounding health care and education are representative of broader changes in the social dynamics of local populations. The social and environmental issues surrounding agricultural land protection characterise the complex nature of resource scarcity in Zhejiang Province. This represents an emerging issue for development, reflecting changing social dynamics and increasing environmental pressures. Water pollution prevention and control represents a pressing area of concern for local development. This issue reflects the

significance of environmental pressures as an impediment to development in Zhejiang Province.

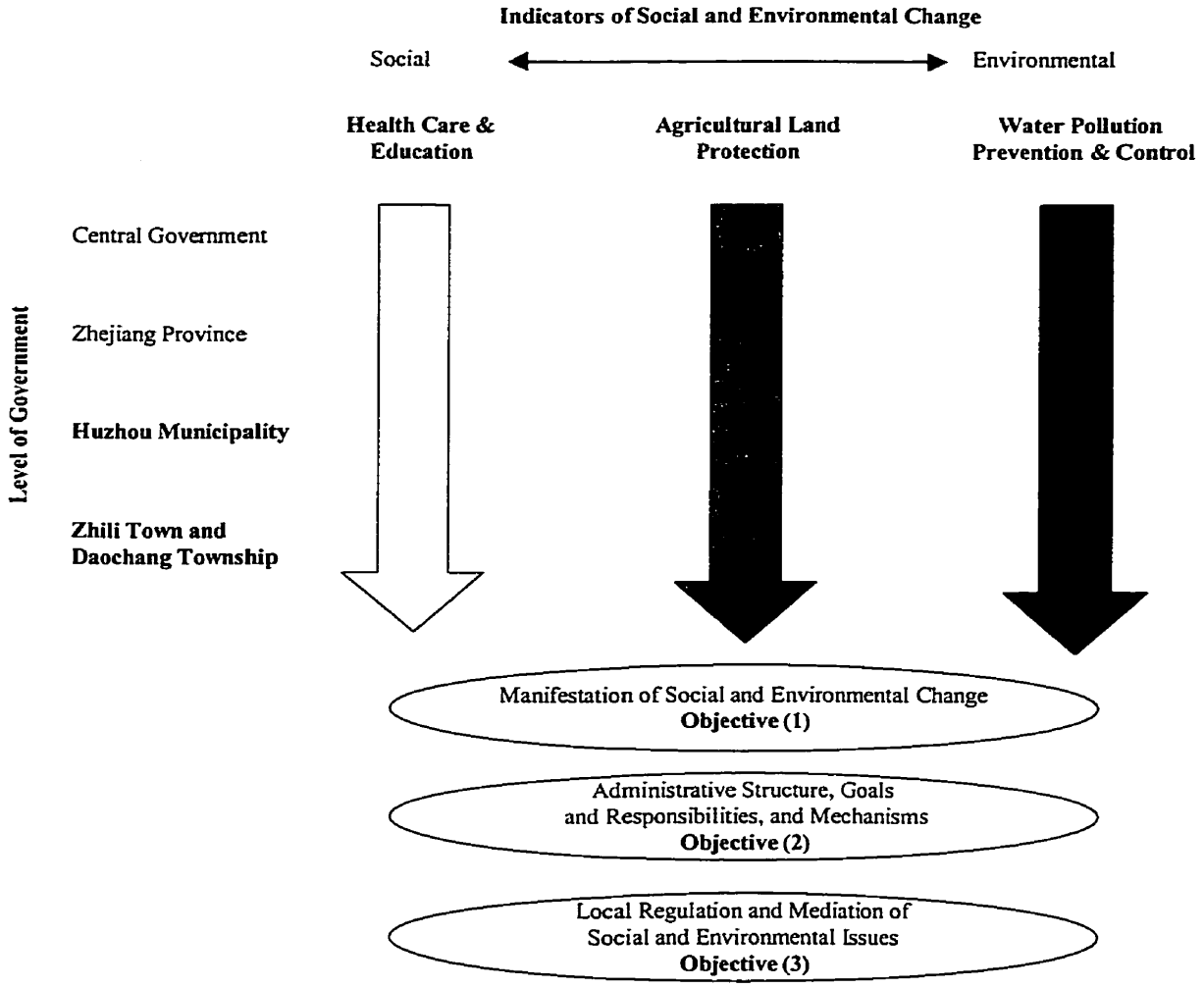

Figure 3.2 Framework for the Case Study

The administrative focus of the case study is on Huzhou Municipality, Zhili Town, and Daochang Township. Municipalities are the major unit of administrative organisation subordinate to the province, and represent the highest level of local

government. Towns and townships represent the major units of administrative organisation at the lowest level of local government.

The multi-level approach of the case study is necessary to gain an understanding of the regulatory framework within which social and environmental change is occurring. Understanding the administrative structures, goals and responsibilities, and regulatory mechanisms at different levels of local government is an integral part of Objective (2). Furthermore, the development of narratives concerning the regulation and mediation of social and environmental issues will provide an understanding of the regulatory role of local government at different levels in Zhejiang Province, which is an integral part of Objective (3).

3.3 Data Collection

Data collection for the research was composed of four components. The primary data collection component consisted of in-depth key-informant interviews and field observations. Interviews with key-informants from Zhejiang Province, Huzhou Municipality, Zhili Town, and Daochang Township constitute the descriptive core of the case study and are the foundation for the narratives presented in Chapters Four, Five, and Six. This first component is discussed further in the following section. The three remaining components of data collection consist of secondary sources, namely literature, aggregate data, and a baseline survey.

A review of literature was undertaken to develop the conceptual and contextual foundations for fulfilling each objective. As introduced in Section 3.2, the conceptual platforms necessary to fulfil each objective were developed through the identification of

the major factors considered in the theoretical literature. The concepts for identifying the social and environmental impacts of rapid rural industrialisation (Objective 1) are derived from EIA and SIA literature. This provides the holistic foundation necessary to understand the relationships between economic development and subsequent social and environmental impacts that constitute the dimensions of change described in Chapter Four. The conceptual platform for examining the regulatory framework within which social and environmental change occurs (Objective 2) is drawn from regulation theory, which provides the necessary foundation to examine administrative structure and functions, as described in Chapter Five. The conceptual platform for examining the role of local government in the regulatory process (Objective 3) is derived from ideas of real regulation, which provides the necessary foundation for understanding the role of local administrative practices, as assessed in Chapter Six.

The specific context of economic, social, and environmental change and administrative restructuring in Zhejiang Province was identified through a review of the relevant and largely descriptive literature. Consisting of western and Chinese academic literature, this review forms the contextual basis for the general trends described in Chapters Four and Five. This was supplemented by a review of Chinese media coverage. An extensive review of the national newspaper published in English (The China Daily) provided broad insights into the development of local social and environmental issues and the design of government policy.

The collection of aggregate data provided specific information regarding economic development, social and environmental issues, and regulatory policies and procedures in Zhejiang Province and Huzhou Municipality. Sources of aggregate data

were government documents (policy and program directives, land-use plans, and administrative reports), government policies, maps, statistical yearbooks, and industry-specific reports. This forms the contextual basis for the specific issues and development initiatives described in Chapters Four and Five, and assessed in Chapter Six.

The Canada – China Research and Training Centre on Rural Development Baseline Survey of Small Town Administrators (the baseline survey) provided general perceptions of local social and environmental issues and the role of local governments in Zhejiang Province (UG-ZAU Collaborative Project, 1998). The baseline survey was conducted as part of the UG – ZAU collaborative project in May 1998. A total of 24 administrators from rural areas throughout Zhejiang Province completed the questionnaire. The 23 male respondents and one female respondent were responsible for, or highly involved in, town and township development planning. Each respondent represented an area with its own specific economic, social, and environmental conditions. The populations represented by each administrator ranged from 5,000 to 660,000 in 1997, while their total economic output (GVIAO) ranged from ¥ 1.45 million to ¥ 7.8 billion in the same year.

The baseline survey was designed to provide an understanding of the major issues, problems, and challenges facing local governments over the previous five years. The perceptions of the rural administrators were documented through the use of structured and open-ended questions. The questionnaire covered the four broad themes of changing economic, social, environmental, and administrative conditions, thus, providing a general profile of trends in Zhejiang Province. The perceptions of the baseline survey respondents link the broad trends of rapid economic development, social

and environmental change, and administrative restructuring identified in the literature, with their manifestation at the local level in Zhejiang Province. This forms an integral part of Objective (1) and the descriptive foundation for rapid economic development, administrative restructuring, and social and environmental change in Chapter Four.

3.4 Interview Protocols and Procedures

The primary data for the research consists of the factual knowledge and perceptions of local administrators and their institutional and private sector counterparts. The development of narratives through the synthesis of key-informant knowledge and perceptions forms the descriptive and analytical foundation of Chapters Four, Five, and Six. Narratives were developed after in-depth interviews with key-informants from Zhejiang Province, Huzhou Municipality, Zhili Town, and Daochang Township. The interviews were conducted with the aid of an interpreter fluent in both Mandarin and English and in conjunction with a larger research team from the UG-ZAU collaborative project. The interviews were conducted between May 9 and July 1, 1999.

Key-informants were selected according to their occupations and their involvement in, or knowledge of, social and environmental issues, policies, and programs. A total of 28 interviews were completed with 48 respondents. Interviews were conducted in 21 government offices, 3 institutions, and 4 rural industries. The respondents included 37 government officials, 6 institutional officials, and 5 representatives from rural industries. A timeline of the interviews and a list of respondents is presented in Appendix (1).

Interviews were initially conducted with the administrative leaders or top level representatives from the governments of Huzhou Municipality, Zhili Town, and Daochang Township. This facilitated the identification of, and establishment of contact with, the administrative sectors concerned with local social and environmental issues. A subsequent series of interviews was conducted with representatives from these administrative sectors at each level of government. The administrative sectors interviewed in Huzhou Municipality, Zhili Town, and Daochang Township included agricultural development, education, environmental protection, industrial development, health care, land management, planning, public security, urban and rural construction, and water conservancy. Interviews were also conducted with representatives of health care and educational institutions and local rural industries in Zhili Town and Daochang Township in order to provide specific information on local development policies and programs. Similarly, interviews with representatives from the environmental protection and land management sectors of the provincial government were conducted in order to provide specific information on provincial development policies and programs.

Prior to each interview, a specific schedule of questions was designed according to the administrative sector, institution, or industry being investigated. The questionnaire combined structured and open-ended formats. For the most part, each interview began with a general introduction by the respondent(s) and was followed by a set of questions previously determined to suit the relevant focus of the investigation at hand. The interpreter conducted the interviews exclusively in Mandarin, and translated and transcribed the responses into English at the conclusion of each day of interviews. A

discussion with the interpreter regarding key points and the effectiveness of the interview process was conducted immediately after transcription.

Drawing upon the knowledge of local administrators, the survey of local conditions focussed on indicators of economic, social, and environmental development (Table 3.1). These indicators were selected on the basis of the major factors considered in the literature. They also reflected the need to contextualise specific issues, such as the decline of agricultural land, through the collection of baseline data.

Table 3.1 Indicators of Local Economic, Social, and Environmental Conditions

Economic	• Gross Domestic Product (GDP) • Gross Value of Industrial and Agricultural Output (GVIAO) • Household Income
Social	• Population Growth and Migration • Number of Health Care Facilities and Medical Personnel • School Enrolment and Number of Educational Facilities • Number of Cultural Facilities
Environmental	• Available Cultivated Land • Levels of Waste Water Discharge, Waste Gas Discharge, and the Production of Solid Waste

The development of social and environmental issues was approached initially through general inquires about the major development problems and challenges currently facing each government. This established the prevalence of the social and environmental issues particular to this research in Huzhou Municipality. Subsequent questions addressed the details of each issue, along the lines of health care and water pollution prevention and control shown in Table 3.2.

Table 3.2 Questions Regarding Social and Environmental Issues

• What are the major issues of concern for your government? • What challenges does your government currently face? • What are the health care issues of concern for your government? Bureau? Institution? • What are the water pollution issues of concern for your government? Bureau? Industry?

The accumulation of information on the regulatory framework relied on questions concerning administrative structures, objectives, responsibilities, and capacities. Specific questions were centred on administrative bureaucracies and their organisation, policy goals, hierarchical duties, resources and regulatory mechanisms. These are summarised with reference to health care and water pollution prevention and control in Table 3.3.

Table 3.3 Questions Regarding Regulatory Frameworks

Administrative Structures	• Please describe the administrative organisation of your government? Bureau? Institution? • Who does your government report to? Bureau? Institution?
Administrative Objectives	• Please describe the health care policy of your government? Bureau? Institution? • Please describe the water pollution prevention and control policy of your Government? Bureau? Industry?
Administrative Responsibilities	• What are the responsibilities of your government? Bureau? Institution? • What type of local regulations is your government responsible for designing? Bureau? Institution?
Administrative Capacities	• How many staff does you government have? Bureau? Institution? • What is the budget for your government? Bureau? Institution? • How are resources raised for your government? Bureau? Institution? • Please describe any facilities in place for health care? Water Pollution Prevention and Control?

The fundamental component of the interview process was the investigation of the local regulatory process. This focussed on the interpretation of social and environmental policies and the subsequent implementation of development initiatives by administrative sectors, institutions, and rural industries. Specific questions addressed the implementation of local development polices, the constraints limiting development initiatives, and the solutions implemented to facilitate mediation. These are summarised with reference to health care and water pollution prevention and control in Table 3.4.

Table 3.4 Questions Regarding Local Regulatory Processes

- What initiatives have been made to implement health care policies? Water pollution prevention and control policies?
- What role do you and your bureau, institution, or industry play in providing health care? Water pollution prevention and control?
- What constraints do you face when implementing health care initiatives? Water pollution prevention and control initiatives?
- What solutions do you have regarding these constraints?

3.5 Data Organisation and Analysis

The analysis of the data is divided into three parts. First, the results of the literature review and aggregate data analysis are organised according to the themes that make up the general context of change and describe the regulatory framework in Zhejiang Province. Rapid economic development, administrative restructuring, social dynamics, and environmental pressure characterise the context of change in Zhejiang Province, while administrative structure, goals and responsibilities, and mechanisms reflect its regulatory framework. The analyses of these themes and the description of the regulatory framework are presented in Chapters Four and Five respectively.

The second component of data analysis involved the organisation of the baseline survey data. The perceptions of the rural administrators were grouped according to the four themes of changing economic, social, environmental, and administrative conditions. Within each theme the levels of change, major type of change, and major challenges to current development are documented. This process links the broad trends of rapid economic development, social and environmental change, and administrative restructuring identified in the literature with their manifestation at the local level in Zhejiang Province. The analyses of these themes are presented in the first three sections of Chapter Four.

The framework for the analysis of key-informant data has its foundation in grounded theory and is the final component of data organisation and analysis. Since the case study is not designed to produce statistical significance, an integral part of this approach is the development of narratives through the synthesis of key-informant knowledge and perceptions with respect to the local manifestation of social and environmental change. This was facilitated through the translation and transcription of the interview data before returning from China. The results presented by the key-informants were subsequently organised according to information on general development conditions, administrative structures and functions, heath care, education, agricultural land protection, and water pollution prevention and control.

The interview data were organised using two templates. The first template grouped the data according to administrative structure and function with respect to Zhejiang Province, Huzhou Municipality, Zhili Town, and Daochang Township, and the government sectors concerned with health care and education, agricultural land

protection, and water pollution prevention and control. It focussed on administrative organisation, policies, and resources. This process synthesised the data into comprehensive descriptions of regulatory frameworks in Zhejiang Province. These descriptions are presented in Chapter Five.

The second template grouped the data according to the development of each of the specific social and environmental issues. It focussed on local development conditions and local development initiatives with respect to health care, education, agricultural land protection, and water pollution prevention and control. Particular attention was paid to the constraints facing local development initiatives and local mediation strategies were identified. This process produced two sets of comprehensive narratives. The analyses of the narratives of the local development of health care, education, agricultural land protection, and water pollution prevention and control are presented in Chapter Four, while the analyses of the narratives of their local regulation and mediation are presented in Chapter Six.

Chapter Four

DIMENSIONS OF CHANGE IN ZHEJIANG PROVINCE

This chapter considers the major social and environmental impacts of rapid rural industrialisation. It introduces three sets of issues faced by local governments in Zhejiang Province, and sets them within the contexts of rapid economic development and administrative restructuring. The first two sections of the chapter consider these contexts in turn, moving in each case from a consideration of broad trends in Zhejiang Province to an examination of specific developments in Huzhou Municipality. In each case, the perceptions of a sample of rural administrators are used to link the discussion of broad trends with the examination of developments in specific municipalities.

Section 4.3 outlines the impacts of rapid economic development with reference to the themes of social dynamics and environmental pressure. As in the case of the contextual analysis in Sections 4.1 and 4.2, this discussion of impacts draws on the survey of rural administrators as a means of linking general trends and local developments. The final section of the chapter introduces three sets of issues, in health care and education, agricultural land protection, and water pollution prevention and control, which are indicative both of the breadth and rapidity of change and of the challenges faced by a restructured system of local government. As a segue to Chapter Five and as a substantive context for Chapter Six, emphasis is placed on conditions in Huzhou Municipality.

4.1 Rapid Economic Development

During the last decade, Zhejiang Province has experienced substantial economic growth, rural industrialisation, and urbanisation. These trends constitute the driving force behind the extraordinary economic, social, and environmental transformations occurring in Zhejiang Province. Information from the Zhejiang Statistical Bureau (1998; 1999) for the period 1990 to 1997 is indicative of the rapid economic development in the province. Over the seven-year period, the provincial gross domestic product (GDP) increased by 416%, from ¥ 89.8 billion to ¥ 463.8 billion. This economic growth was supported by a dramatic increase in total economic output. Over the same period, the gross value of industrial and agricultural output (GVIAO) increased from ¥ 177.1 billion to ¥ 1.1 trillion.

The expansion of the rural economy is the foundation for economic growth. The total output of the rural economy includes the gross output value of agriculture and of non-agricultural sectors in rural areas. The latter includes rural industry, construction, transportation, wholesale, retail and catering services. Rural economic output increased by 703% between 1990 (¥ 113.8 billion) and 1997 (¥ 914.5 billion), which is well above the 543% increase in total economic output (GVIAO) in the province.

Evidence of industrialisation can be found in the increasing contribution of secondary industry to the total output of the economy. In the rural economy this includes the gross output of township, village, and sub-village industries. The proportion of total rural economic output attributed to secondary industry increased from 58% in 1990 (¥ 66.2 billion) to 79% in 1997 (¥ 725.5 billion). The rapidity of industrialisation in the rural economy undoubtedly underlay the increasing importance of secondary industry in

the provincial economy. The percentage of total GDP originating from secondary industry increased from 45% in 1990 (¥ 40.8 billion) to 54% in 1997 (¥ 250.9 billion).

Urbanisation is the process of becoming urban, and is characterised by the relative concentration of a region's population in towns and cities (Johnston, 1994). However, in China the distinction between urban and rural is problematic. The conventional measure of urbanisation is based on the residence registration system, which provides consistent census data and classifies population as either agricultural or non-agricultural. Non-agricultural population refers to people who are eligible for government subsidies reserved for 'urban' populations, such as employment, housing, and food, and live either in urban or rural areas. Although this system does not necessarily define the population living exclusively in urban areas, the proportion of non-agricultural population to the total population in a locale can be used to infer the level of urbanisation. While the total population in Zhejiang Province increased by 4.5% between 1990 (42.3 million) and 1997 (44.2 million), the proportion of non-agricultural population increased approximately 26%, from 6.9 million to 8.7 million. In 1997, urbanisation in Zhejiang Province had reached 19.6%.

The towns and townships represented in the 1998 survey of rural administrators experienced similar development trends. All of the towns and townships represented in the survey experienced economic growth. The 24 towns and townships had an average (mean) GVIAO of ¥ 2.1 billion in 1997 and had experienced an average GVIAO growth rate of 16% during the previous five years. The average GVIAO growth rate that the 24 administrators expected their towns and townships to experience over the next five years

was 20%. Furthermore, of the 24 administrators, 21 stated that their community had experienced an improvement in economic conditions over the previous five years

Rural industry is an important component of the local economy of the towns and townships represented in the survey. In the 24 towns and townships, the average proportion of GVIAO attributed to the industrial sector in 1997 was 61% and the average proportion of the labour force engaged in the industrial sector in 1997 was 44%. Furthermore, the respondents indicated that the development of TVEs was one of the major development trends experienced in their communities over the previous five years. The survey respondents also reported a range of development trends associated with rapid urbanisation, namely the construction of transportation infrastructure, the expansion of industrial and residential areas, and increased town and township size.

Huzhou Municipality and even the smaller Zhili Town and Daochang Township replicate the general trends of rapid economic development in Zhejiang, although municipal information for the period 1992 to 1997 does not replicate perfectly the (1990-1997) time frame for the province. Nevertheless, the trends of economic growth, rural industrialisation, and urbanisation identified at the provincial level are evident. As components of the larger rural economy of Huzhou Municipality, Zhili Town and Daochang Township exhibit similar trends. Between 1992 and 1997, the GDP of Huzhou Municipality increased by 325%, from ¥ 6.9 billion to ¥ 29.6 billion. This represents a larger growth rate than the province, which increased by 240% over the same five-year period. Zhili Town experienced a similar growth pattern. Information for the period between 1993 and 1997 indicates that its GDP increased by 247%, from ¥ 141 million to ¥ 488 million. Although no information was available on rates of change in Daochang

Township, it is considered to be one of the more developed townships in Huzhou Municipality, with a GDP in 1998 of ¥ 217 million (Daochang Township Leader's Office, 1999; Huzhou Statistical Bureau, 1994; 1999; Zhili Statistical Office, 1996; 1999).

Although the contribution of secondary industry to total GDP decreased marginally between 1992 and 1997, from 57% to 56%, rural industrialisation in Huzhou Municipality remains above the provincial average of 54%. Within the rural economy of Huzhou Municipality, 78% of the total 1998 output (¥ 65.4 billion) was attributed to rural industry. This is indicative of the proportion of rural economic output attributed to industry at the provincial level, which was 79% in 1997. Furthermore, the importance of rural industry is considerably greater in towns and townships than in the overall municipal economy. In 1997, 95% of the total economic output of Zhili Town (¥ 1.7 billion) was attributed to industry, while in 1998, 93% of the total economic output in Daochang Township was attributed to industry (¥ 708 million) (Daochang Township Leader's Office, 1999; Zhili Statistical Office, 1999).

Between 1992 and 1997, the total population of Huzhou Municipality increased by 2.6%, to a total of 2.55 million. Urbanisation reached 21.3%, an increase from 19.2% in 1992. During the same period, the population of Zhili Town grew from 22,300 to 38,200. This 71% increase is partly attributed to the amalgamation of the neighbouring Chenshe Township within the administrative jurisdiction of Zhili Town in 1993. As a result, the urbanisation level of Zhili Town increased by 89%, to a level of 21.1% in 1997. Although specific information is not available, a representative from the Daochang Township Leader's Office (1999) indicated that despite a small decrease in population

from 21,793 in 1992 to 21,398 in 1997, the urbanisation level of the township increased due to its proximity to the expanding urban core of Huzhou Municipality (Daochang Township Leader's Office, 1999; Huzhou Statistical Bureau, 1998; 1999; Zhili Statistical Office, 1998).

4.2 Administrative Restructuring

Rapid economic development in Zhejiang Province has been accompanied by extensive administrative restructuring. Indeed, it has been argued (Bradbury et al., 1996) that the decentralisation of national control and the ascendancy of local incentives has facilitated rapid economic development in general and rural industrialisation in particular. This restructuring has been characterised by the downloading of national development mandates and financial responsibilities to lower levels of local government. These national trends are reflected in the changing nature of administration in Zhejiang Province.

As noted in Section 2.3, administration in Zhejiang Province, as elsewhere in China, is dominated by the duality of the political system. This consists of the parallel administrative organisations of the CPC and the civil administration that constitute the Chinese State. As will be described in detail in Chapter Five, all aspects of development are regulated through a framework of complex and highly centralised CPC and civil administration bureaucracies.

The organisational structures of the CPC and the civil administration are analogous. However, the party remains a distinct and omnipotent political institution. At every level of government, CPC officials exercise ultimate authority over their civil counterparts

(Lieberthal, 1995). The party permeates the state through membership in all committees and representation in all departments and in branches of government agencies. As stated by a representative from the Zhili Town Mayor's Office, "*the Party is represented at every level of organisation, including schools and hospitals*" (Zhili Town Mayor's Office, 1999). It is within the close embrace of the centralised and hierarchical framework of the CPC that administrative restructuring has occurred.

It is within this environment of 'controlled' restructuring that the administrative landscape in Huzhou Municipality, Zhili Town and Daochang Township is developing. Spatially, this has been characterised by the restructuring of administrative boundaries. Under policies designed to shift control of the rural economy from the provincial to the municipal level, Huzhou grew from a small city comprising five townships and an urban core into a municipality comprising three counties and three districts previously under the jurisdiction of the province. Policies such as the 'city controlling the county' were implemented in the early 1980s and established significant municipal administrative control over local social and economic development in Zhejiang Province (Tan, 1990; Huzhou VTCB, 1999).

Returning to the survey of administrators, it appears that the nature of administration at the town and township level is changing rapidly. Of the 24 administrators surveyed, 18 indicated that their job had become more difficult over the previous five years. The survey respondents reported a number of administrative changes affecting the towns and townships over the five-year period, namely the increased responsibility for the design and implementation of policy, and increased supervisory and legal responsibilities. Accompanying the overall increase in administrative responsibility has been the

empowerment of local governments. This is the result of reform policies encouraging local initiatives and the availability of increased government revenue from households and rural industries. This is revealed by the large majority (21) of survey respondents, who indicated that they had sufficient institutional support and capacity to meet their administrative challenges. However, increasing financial burdens have also occurred with the increase of local administrative responsibilities. The survey respondents identified raising funds and securing investment for the implementation of plans as two of the major challenges currently facing their towns and townships.

With significant discretion to interpret and implement national and provincial policies, Huzhou Municipality now exists as the most significant level of bureaucratic representation with respect to local development. This administrative empowerment has been complemented by significant economic growth underwritten by local economic incentives. Reform policies, such as the replacement of the communal system with the HRS in agriculture, have increased local economic viability and enhanced the overall role of Huzhou Municipality in the rural economy (Yabuki, 1995; Huzhou Planning Committee, 1999). Although administrative restructuring has occurred in Zhili Town and Daochang Township too, they remain within the jurisdiction of Huzhou Municipality. Social and economic development in Zhili Town and Daochang Township is conditional on the interpretation and implementation of national and provincial policies by Huzhou Municipality (Huzhou Planning Committee, 1999).

Despite increasing administrative responsibility and local empowerment, the accompanying financial burden of social and economic development represents a significant issue for local development. The successful take-up of downloaded

responsibilities demands local resources. However, as indicated by respondents from the governments of Huzhou Municipality, Zhili Town, and Daochang Township, financial constraints are the most prominent challenge to local development. This is an important development issue for local governments and will be discussed further in Chapter Six (Daochang Township Leader's Office, 1999; Huzhou Planning Committee, 1999; Zhili Town Mayor's Office, 1999).

4.3 Social Dynamics and Environmental Pressure

Significant social and environmental change can be attributed to rapid economic development. In Zhejiang Province, rapid economic growth and rural industrialisation have led to increases in standards of living on the one hand, and to resource scarcity and pollution on the other. The impact of this duality is characterised by changes to local social dynamics and increasing environmental pressure.

4.3.1 Social Dynamics

Indicators of increased standards of living in Zhejiang Province include higher household incomes and improved health care and education facilities and services. The rapid economic growth that occurred between 1990 and 1997 is reflected in the increase of provincial GDP per capita from ¥ 1,063 to ¥ 10,515. Increases in the per capita household incomes of both urban and rural populations have occurred. The per capita disposable income of urban households, which includes the income available for daily expenses minus income tax, increased from ¥ 1,769 to ¥ 7,359. At the same time, the per capita net income of rural households, which includes the total household income minus

production and income tax expenses, increased from ¥ 1,099 to ¥ 3,684 (Zhejiang Statistical Bureau, 1998; 1999).

The development of health care and education are non-economic indications of the increasing living standards in Zhejiang Province. In terms of health care, the total number of medical personnel, including doctors, nurses, medical technicians, pharmacists, paramedics and midwives, increased from 160,927 in 1990 to 191,356 in 1997. This growth exceeded that of population. For example, the number of doctors per 1000 population increased from 1.39 to 1.63. Over the same period, the total enrolment of students in universities, colleges, and professional schools increased from 60,327 to 102,302. Since the development of post-secondary education is directly related to economic growth, this is the best indication of improving education opportunities in Zhejiang Province. At the same time, the total enrolment of students in secondary schools, which includes high schools and middle schools, increased from 16.9 million to 22.3 million. Although the total enrolment of students in primary schools decreased from 37.2 million to 36.9 million, presumably the effect of the 'single-child policy', the enrolment rate of school-age children remained high, increasing from 99.3% to 99.8% (Zhejiang Statistical Bureau, 1998; 1999).

Of the 24 administrators surveyed in 1998, 22 indicated that social conditions had improved in their towns and townships over the previous five years. Increasing standards of living were identified as a major change affecting their jurisdictions. The importance of this increasing period of wealth for social development is reflected in reports of increased construction and investment in residential development and social infrastructure (culture, health care, and education) by the majority of respondents.

The standards of living in Huzhou Municipality rose in tandem with those of the province as a whole. The GDP per capita in Huzhou Municipality increased from ¥ 2,815 in 1992 to ¥ 11,634 in 1997, a level approximately 10% higher than that of the province. Since Huzhou Municipality is predominantly rural, the per capita net income of rural households provides the best indication of local incomes. This increased from ¥ 1,406 in 1992 to ¥ 3,648 in 1997, a level approximately 1% lower than that of the province (Huzhou Statistical Bureau, 1994; Zhejiang Statistical Bureau, 1998; 1999).

Zhili Town and Daochang Township exhibit relatively higher standards of living than the municipality as a whole. Between 1993 and 1997, the GDP per capita in Zhili Town increased from ¥ 4,169 to ¥ 12,771, and per capita net income of rural households increased from ¥ 2,780 to ¥ 5,832. In 1998, the GDP per capita in Daochang Township was ¥ 10,380, and per capita net income of rural households was ¥ 4,900 (Daochang Township Leader's Office, 1999; Huzhou Statistical Bureau, 1994; Zhili Statistical Office, 1996).

Rural industrialisation has underwritten the improvements in the livelihood of local populations. As noted by an official representing the Huzhou Public Security Bureau (PSB) (1999), "*increasing incomes have made employment, food, health care, and education more accessible.*" Increasing livelihood is evident in the expansion of suburb-like developments (Personal Observation, 1999). At the same time, economic growth has enabled local governments to invest in the development of social infrastructure. Improved social development was identified as a key characteristic of the overall economic development in Huzhou Municipality, and also in Zhili Town and Daochang Township. Representatives from each government highlighted the development of culture, health care,

and education (Daochang Township Leader's Office, 1999; Huzhou Planning Committee, 1999; Zhili Town Mayor's Office, 1999).

Cultural development includes increased investment in television broadcasting, and the development of public parks, public entertainment facilities (such as outdoor karoke), and cinemas. Development in health care includes investment in the training of health care workers, local health clinics, seniors' homes, piped household water supply, and the number of doctors, which at 1.8 per 1000 population in Huzhou Municipality is higher than the provincial average. Development in education includes increased investment in teacher training, the construction of primary and secondary school facilities (dormitories, sports fields, playgrounds, as well as classrooms), and the expansion of adult education opportunities (Daochang Township Leader's Office, 1999; Huzhou Planning Committee, 1999; Zhili Town Mayor's Office, 1999).

Despite increasing standards of living, pressure on social infrastructure still exists. This is the result of increasing population numbers, growing expectations created by higher incomes, and unequal access to social resources. In addition to the natural increase in population, economic development in Huzhou Municipality has attracted 'temporary' migrants from surrounding rural areas. Key-informants from the Huzhou PSB (1999) and the Zhili Town Mayor's Office (1999) referred to the increasing prominence of this population group. Although the information available is limited to 1997 and 1998, it was reported that temporary migrants constitute significant proportions of the populations of both Huzhou Municipality and Zhili Town (Huzhou PSB, 1999; Zhili Town Mayor's Office, 1999). The number of temporary migrants in Huzhou Municipality in 1998 was 136,500, an increase of 33% over 1997. In Zhili Town, the

number of temporary migrants in 1998 was 33,865. As part of the urban fringe of Huzhou Municipality's urban core, Daochang Township is experiencing rural-to-urban out-migration, and has very few temporary migrants (Daochang Township Leader's Office, 1999).

Temporary migrants have lower income levels and restricted access to housing, health care and education. Access to education is typical. As noted by an official representing the Huzhou PSB (1999), "*migrants can only attend school if there is enough room, otherwise they will have to return to rural areas for mandatory education.*" This and other issues relating to access and equity will be revisited in Section 4.4.1.

4.3.2 Environmental Pressure

Increasing environmental pressures have accompanied changing social development. Scarcity of land for development and pollution are the result of the increasing pressures on the environment associated with rural industrialisation. The encroachment of residential and industrial development on agricultural land and increasing air, water, soil and noise pollution have seriously affected local environments in Zhejiang Province.

Rural industrialisation and urbanisation have placed immense pressure on already limited agricultural land resources. Between 1990 and 1997, the total area of available cultivated land in Zhejiang Province decreased from 17.2 million ha to 16.1 million ha. Available cultivated land refers to farmland which is ploughed constantly for growing crops, including currently cultivated land, farmland left without cultivation for less than three years and fallow land in the current year, rotation land, and farmland with some fruit trees, mulberry trees, and cultivated seashore and lake fronts. At the same time the

per capita cultivated land decreased from 0.041ha to 0.036 ha. This remains well below the 1997 national per capita average of 0.078 ha. The increasing scarcity of agricultural land has been further complicated by declines in quality. The contamination of agricultural land and water has increased with the development of rural industry (Zhejiang Statistical Bureau, 1999).

Official sources report increases in the overall provincial discharge of industrial waste water and waste gas and in the production of industrial solid waste (Zhejiang Statistical Bureau, 1999). Industrial waste water refers to the total volume of industrial and domestic waste water discharged from industrial enterprises. Waste gas refers to the total emissions from the burning of fuels and from industrial production processes. Industrial solid waste refers to the total volume of solid, semi-solid, or high concentration liquid residue produced by industrial enterprises.

Between 1990 and 1997, the total discharge of industrial waste water in Zhejiang Province increased from 1.43 billion tons to 1.86 billion tons. The total discharge of waste gas increased from 259.5 billion cu. m to 488.4 billion cu. m. The total production of industrial solid waste increased from 8.47 million tons to 13.26 million tons (Zhejiang Statistical Bureau, 1999). These figures are conservative and refer to the waste discharge of all industry in Zhejiang Province. However, given the increasing share of industrial production in rural areas noted in Section 4.1, the figures are indicative of the increasing levels of pollution found in rural areas.

Increasing environmental pollution and land resource scarcity were identified as major changes by the rural administrators surveyed in 1998. The subsequent pressure on local environments and implementation of environmental protection were identified as

challenges to further social and economic development. As stated by one of the respondents, "*the masses want to increase their standards of living, however, environmental pollution is bad...and since the economy is given priority, economic development conflicts with environmental protection.*"

Environmental pressure also characterises development in Huzhou Municipality. The total area of agricultural land in Huzhou Municipality, Zhili Town, and Daochang Township is decreasing. This was identified as a serious concern by the Huzhou Planning Committee (1999), the Zhili Industrial Development Office (1999), and the Daochang Urban Construction Office (1999), with implications for local development projects being noted.

The total available cultivated land in Huzhou Municipality decreased from 134,330 ha in 1992 to 129,948 ha in 1997. The total available cultivated land in Zhili Town decreased from 2,500 ha in 1992 to 2,160 ha in 1997 (information for 1992 includes Zhili Town and Chenshe Township). Meanwhile, the total available cultivated land in Daochang Township decreased from 1,149 ha in 1992 to 1,066 ha in 1997. In 1997, there was 0.051 ha of cultivated land per capita in Huzhou Municipality, in Zhili Town it was 0.056 ha, and in Daochang Township it was 0.047 ha (Daochang Township Leader's Office, 1999; Huzhou Statistical Bureau, 1994; Zhejiang Statistical Bureau, 1998; 1999; Zhili Statistical Office, 1994).

The Huzhou Planning Committee (1999), Zhili Town Mayor's Office (1999) and Daochang Township Leader's Office (1999) all identified increasing environmental pollution as a major issue for local development. Air quality issues, agricultural land contamination, and high noise levels were noted as pressing long-term environmental

problems. However, industrial and domestic waste water discharges were identified as the most serious immediate problems affecting local environments (Daochang Township Leader's Office, 1999; Huzhou EPB, 1999; Zhili EPO, 1999).

4.4 Specific Social and Environmental Issues

4.4.1 Health Care and Education

Despite spectacular gains in the general standard of living, improvements in the provision of health care and education remain fundamental challenges in Zhejiang Province, and resonate with implications for the continuation of rapid economic development. National policies emphasising rural health care and compulsory education have expanded the mandates of the health care and education systems. Meanwhile, administrative restructuring has downloaded the responsibility for provision and financing to the local level. This is a significant issue for local governments. Increasing demands for health care and education must compete for limited financial resources with direct investment in local economic development, or perhaps, in the mitigation of environmental impacts.

Health care has traditionally been a main focus of national development in China. Following the first national conference on health care in 1950, a three-tiered network for health care delivery, based on community-oriented primary care was established (Shi, 1993). As evident in Huzhou Municipality, this remains the basis of health care in Zhejiang Province. In Huzhou Municipality, the three levels of health care are: (1) village and community health stations and clinics; (2) town, township and district

health centres; and (3) county, district, and municipal hospitals (Huzhou Planning Committee, 1999).

Since 1979, the introduction of economic incentives, decentralisation, and promotion of rural health care has changed the nature of health care in Zhejiang Province. With economic growth and increasing standards of living, the overall condition of health care has improved. However, the continued growth and aging of the predominantly rural population has put increased demand on health care resources. At the same time, rising medical costs and the decline of centrally-allocated resources have increased the financial burden on local governments (Shi, 1993; Huzhou Planning Committee, 1999).

Fiscal constraints have led to health care reforms emphasising the provision of treatment on a fee-for-service basis, the development of the co-operative medical system (CMS) of rural medical insurance, and the encouragement of financial autonomy among public health care institutions (Ho, 1995; State Council, 1997a). Despite these market-oriented measures, the provision and financing of health care at the local level remains a significant issue for local development. This is the result of a lack of economic incentive to provide health care amid increasing imperatives for investment in more 'profitable' sectors, such as industrial and residential development.

Basic **education** in China is compulsory and free. This was established through a constitutional amendment in 1982 that guarantees the right of every citizen to five to six years of primary education and three to four years of lower secondary education (middle school). Basic education in Zhejiang Province consists of compulsory education plus three years of upper secondary education (high school) (NPC, 1995; Wei, et al., 1999). The promulgation of the Compulsory Education Law of the PRC (1986) established the

responsibility for education at the local level placing significant demands on local resources.

Compulsory education began in 1985 with the release of a CPC document outlining decisions for educational reform that led to the promulgation of the Education Law of the PRC in 1995. Reform initiatives included the comprehensive development of the education system, which comprises kindergartens, primary schools, secondary schools (middle and high schools), and institutions of higher education (Information Center of the Legislative Affairs Office of the State Council, 1999).

As noted in Section 4.3.1, the condition of education in Zhejiang Province has improved with the increasing standards of living. However, economic constraints limit the development of education. The increasing cost of tuition (high school and post secondary), and shortages of facilities and teachers, alongside the variable capacity of local governments to underwrite improvement, has resulted in inequalities of provision (Tsang, 1994). This has led to the encouragement of non-government investment in education by communities, organisations and individuals through a national mandate in 1997 (State Council, 1997b). As summarised by a representative of the Huzhou Planning Committee (1999), "*it is difficult for the government to maintain the responsibility for education expenses, therefore, it is encouraging society to invest in education.*" In spite of this recent reform, the national mandate for education remains a significant issue for local development. Similar to health care, local governments face conflicting interests between macro-economic imperatives and the lack of a direct economic incentive to invest in education.

4.4.2 Agricultural Land Protection

The protection of limited land resources has become an important issue in Zhejiang Province, as pressure from economic growth has built up through the 1990s. The encroachment of rural industrial and residential development onto agricultural land has accentuated an existing trend of agricultural land loss and degradation. This is a significant issue for local governments because land scarcity has become a limitation on sustained social and economic development (SEPA, 1998).

Prior to the reform period, development policies emphasising agricultural grain production and controlled industrialisation amid population growth caused a significant decline in the quantity and quality of agricultural land. Rural industrial and residential development encroached onto flat and easily accessible agricultural land. At the same time, agricultural modernisation practices reduced soil quality through heavy reliance on synthetic fertilisers. Despite land reclamation campaigns aimed at increasing grain production, the national per capita decline of arable land between 1949 and 1978 was approximately 50%. Zhejiang Province alone lost 13% of its total arable land between 1957 and 1978 (Smil, 1984; Bradbury et al., 1996).

Agricultural land protection was first initiated in 1979 with the release of a document on agricultural development by the Central Committee of the CPC. This document acknowledged the dramatic decline in quantity and quality of arable land since 1949 (Smil, 1984). However, agricultural land loss and degradation continued at an accelerated pace after 1979. The national per capita decline of cultivated land between 1979 and 1995 was approximately 20% (Bradbury et al., 1996).

The accelerated decline of both the quantity and quality of agricultural land prompted the development of land management legislation and regulations on the protection of agricultural land. Agricultural land protection in Zhejiang Province preceded the adoption of the national land management law in 1986, and national regulations on the protection of agricultural land in 1994 (Zhejiang LMB, 1999). However, the further accentuation of agricultural land loss and degradation in recent years has made land resource scarcity an increasing concern for local governments charged with promoting local development.

By the 1990s, physical constraints limited land reclamation campaigns and attempts to increase the productivity of existing cultivated land. As evident in Huzhou Municipality, intensive agricultural production practices and the phenomenal increase in rural industrial and residential development continues to encroach on agricultural land and degrade air, water, and soil quality (Huzhou Planning Committee, 1999). Furthermore, as limitations on the reclamation of waste land (idle and barren land), forests, river beds, channels, lake fronts, and sea shores are being reached, new efforts to reorganise the use of existing land have been initiated. This includes the concentration of dispersed rural settlements and the subsequent conversion of residential land into farmland (Zhejiang LMB, 1999). Issues surrounding the relocation of rural residents and their compensation have also become important issues for local governments (Daochang Township Leader's Office, 1999).

Within the atmosphere of administrative restructuring described in Section 4.2, revisions to the national land management law and regulations on the protection of prime agricultural land in 1998 effectively downloaded the responsibility for agricultural land

protection to the local level. A mandate to maintain a balance of agricultural land was given to all levels of government (State Council, 1998). As a result, initiatives for land reclamation and dispersed rural settlement concentration have become an important part of social and economic development planning in Huzhou Municipality (Huzhou Planning Committee, 1999). However, similar to health care and education, efforts at this level remain hindered by a lack of direct economic incentives to act, despite increasing local financial responsibilities.

4.4.3 Water Pollution Prevention and Control

Water pollution is an important environmental issue for local development in Zhejiang Province. The rapid and extensive development of rural industry has led to increasing levels of water contamination, resulting in escalating threats to industrial and agricultural production, and to domestic water supply. The prevention and control of water pollution has become necessary as it increasingly limits social and economic development.

Increasing levels of water pollution in Zhejiang Province can be directly attributed to industrial waste water discharges. Of the 1.8 billion tons of waste water discharged in 1997, only 52.7% met water pollution control standards (Zhejiang Statistical Yearbook, 1998). This is a pressing issue for Huzhou, where industrial and domestic waste water discharges have been identified as the most important pollution issues facing the municipality (Huzhou EPB, 1999).

The cumulative effects of population growth, rural industrialisation, and urbanisation have led to increasing levels of industrial discharge and untreated domestic sewage. In 1972, severe incidents of coastal pollution led to decreased shellfish harvests and contaminated fish (Qu, 1989). By 1985, 25% of all fresh water in China had been

polluted to some degree (Edmonds, 1994), while increasing levels of nitrogen and phosphorous in the 1990s have led to the nutrient overloading (eutrophication) of lakes in Zhejiang Province (China Daily, 1998).

Water pollution prevention and control began with the development of environmental protection legislation in 1979. The prevention and control of pollution of surface water bodies and ground water became a national mandate with the adoption of the Law of the PRC on the Prevention and Control of Water Pollution in 1984 (State Council, 1996). However, continued rural industrialisation is serving to increase the severity of water pollution.

Despite the existence of a comprehensive framework for water pollution prevention and control, the development of small-scale TVEs has served to proliferate contamination sources of surface and ground water in Zhejiang Province. TVEs are characterised by a dispersed development pattern and the use of inefficient, low budget and obsolete technology. The significance of this was raised by a representative of the Huzhou EPB (1999) who stated that, "*the majority of TVEs in Huzhou Municipality are too small even to afford waste water treatment facilities.*" As noted in Section 2.2, TVEs are systematically destroying the rural environment.

The increasing importance of water pollution as an issue has led to the development of regional prevention and control measures. Following revisions to the National Water Pollution Prevention and Control Law in 1996, a directive for point source water pollution prevention and control in the Taihu Basin was issued (State Council, 1996). This incorporates a three-phase program to ensure that all industries meet national standards for

quantity and quality of waste water, the protection of domestic drinking water sources, and the elimination of eutrophication (Zhejiang EPA, 1998).

The new mandate for water pollution prevention and control has been accompanied by the downloading of responsibility for the quality and quantity of surface and ground water to the local level. This includes responsibility for the development of domestic and industrial waste water treatment facilities and for the implementation of environmental protection programs in the Taihu Basin, which includes Huzhou Municipality (Huzhou EPB, 1999). However, measures to implement water pollution standards and regulations are hindered by a lack of economic incentive for compliance in the industrial sector and limited government resources (Swanson, 1999). Despite the expanding mandate, economic constraints continue to limit water pollution prevention and control, making it a significant yet problematic issue for local development.

Chapter Five

FRAMEWORK FOR REGULATION IN ZHEJIANG PROVINCE

This chapter considers the regulatory framework within which the local regulation mediation of social and environmental change occurs. It is organised into three major sections that consider in turn the regulatory structure, goals and responsibilities, and capacity of local governments with respect to health care and education, agricultural land protection, and water pollution prevention and control in Zhejiang Province. This provides a necessary part of the background for understanding the local regulation and mediation of social and environmental change discussed in Chapter Six.

Each major section draws on information presented by key-informants and also on aggregate data with respect to Huzhou Municipality and the four administrative sectors concerned with the specific social and environmental issues introduced in Chapter Four. Section 5.1 describes the structure of government and, in particular, the administrative structure of health care and education, land management, and environmental protection. This constitutes the bureaucratic context within which the regulation and mediation of social and environmental change occurs.

Section 5.2 considers the regulatory goals and responsibilities of the Chinese government with respect to social and environmental change. An understanding of the local framework for policy implementation is gained through the description of the specific objectives and programs established by government policy and through an understanding of the distribution of regulatory responsibilities with respect to health care and education, agricultural land protection, and water pollution prevention and control.

Section 5.3 considers capacity for the local regulation and mediation of social and environmental change. It describes the mechanisms in place and resources available for health care and education, agricultural land protection, and water pollution prevention and control.

5.1 Administrative Structures

This section is organised into five sub-sections, which consider the structure of government with specific reference to Huzhou Municipality, and then the structure of the four administrative bureaucracies concerned with health care and education, agricultural land protection, and water pollution prevention and control. These are the Ministry of Public Health (MOPH), the Ministry of Education (MOE), the State Bureau of Land Administration (SBLA), and the State Environmental Protection Agency (SEPA) respectively.

5.1.1 Government

Governance in China is characterised by complex and highly centralised bureaucracies. As noted in Section 4.2, a dual framework of CPC and civil administration dominates the Chinese political system and government organisation. The CPC and the civil administration exist as parallel organisations, the formal structures of which consist of analogous bureaucratic hierarchies. The CPC and the civil administration are organised into three tiers: (1) the central national government, (2) provincial governments, and (3) local governments. The latter includes municipal governments, city governments, county governments, district governments, town and township governments, and village committees (Shi, 1993). Bureaucratic hierarchies,

which make up the different government sectors in China, are embedded in this administrative system. As the executive branch, the State Council has direct jurisdiction over cabinet level bureaucracies. Representing the first tier of the administrative system, these include commissions, ministries, bureaux and agencies. It is at this level that the formulation of national policies and regulatory programs occurs. Each administrative bureaucracy maintains a vertical hierarchy, within which tier (2) and tier (3) level governments have subordinate committees, bureaux, and agencies. The organisation of local governments is a function of the bureaucratic representation of administrative hierarchies.

As a province, Zhejiang is an important component of the political system. Mirroring the organisational structure of the central government, second tier committees, bureaux, and agencies of the national bureaucracies are manifested in the provincial administration, which is headed by a governor (Royal Netherlands Embassy, 1999). The provincial governor is subordinate to the provincial party secretary. This illustrates the hierarchical relationship between the CPC and the civil administration. Although authority exercised at this level is delegated from the central government, significant administrative tasks remain at the discretion of the province. These include the implementation of economic, social, and environmental development policies (Lieberthal, 1995).

As noted in Section 3.1, Zhejiang Province has eleven administrative districts, one of which is Huzhou Municipality. Municipalities in Zhejiang Province are comprised of cities, counties, districts, towns and townships. Figure 5.1 displays the administrative organisation of government in Huzhou Municipality. Third tier committees, bureaux, and

agencies of national hierarchies are organised within the municipal administration, which is led by a mayor. Mirroring the provincial government, the Mayor of Huzhou Municipality is subordinate to the municipal party secretary. Although planning at the municipal level is shared between Zhejiang Province and Huzhou, significant discretion exists at this level to interpret and implement national and provincial policies (Huzhou Planning Committee, 1999).

Huzhou Municipality is currently organised into three counties and three districts. The large part of its rural area lies within the counties of Anji, Changxing, and Deqing, which supervise the town and township governments within their jurisdictions. County governments are the major unit of rural administrative organisation and the lowest level of bureaucratic representation. As such, they have considerable influence over development through the interpretation of policies adopted at higher levels of government (Huzhou Planning Committee, 1999).

The three jurisdictions of Linghu District, Nanxun District, and Huzhou Urban District comprise the 'urban city' of Huzhou Municipality. The municipal government is located in the 'urban core' of the Huzhou Urban District. Unlike county governments, Linghu District, Nanxun District, and Huzhou Urban District have limited bureaucratic representation and are direct extensions of the Huzhou municipal government. Branches of the administrative bureaucracies in Huzhou Municipality make up administrative departments in towns and townships. Thus, towns and townships within Linghu District, Nanxun District and Huzhou Urban District report directly to Huzhou Municipality. Since the municipality is the major unit of local administrative organisation, development

in Huzhou, especially in the district areas, is conditional on the interpretation of national and provincial policies by Huzhou Municipality (Huzhou Planning Committee, 1999).

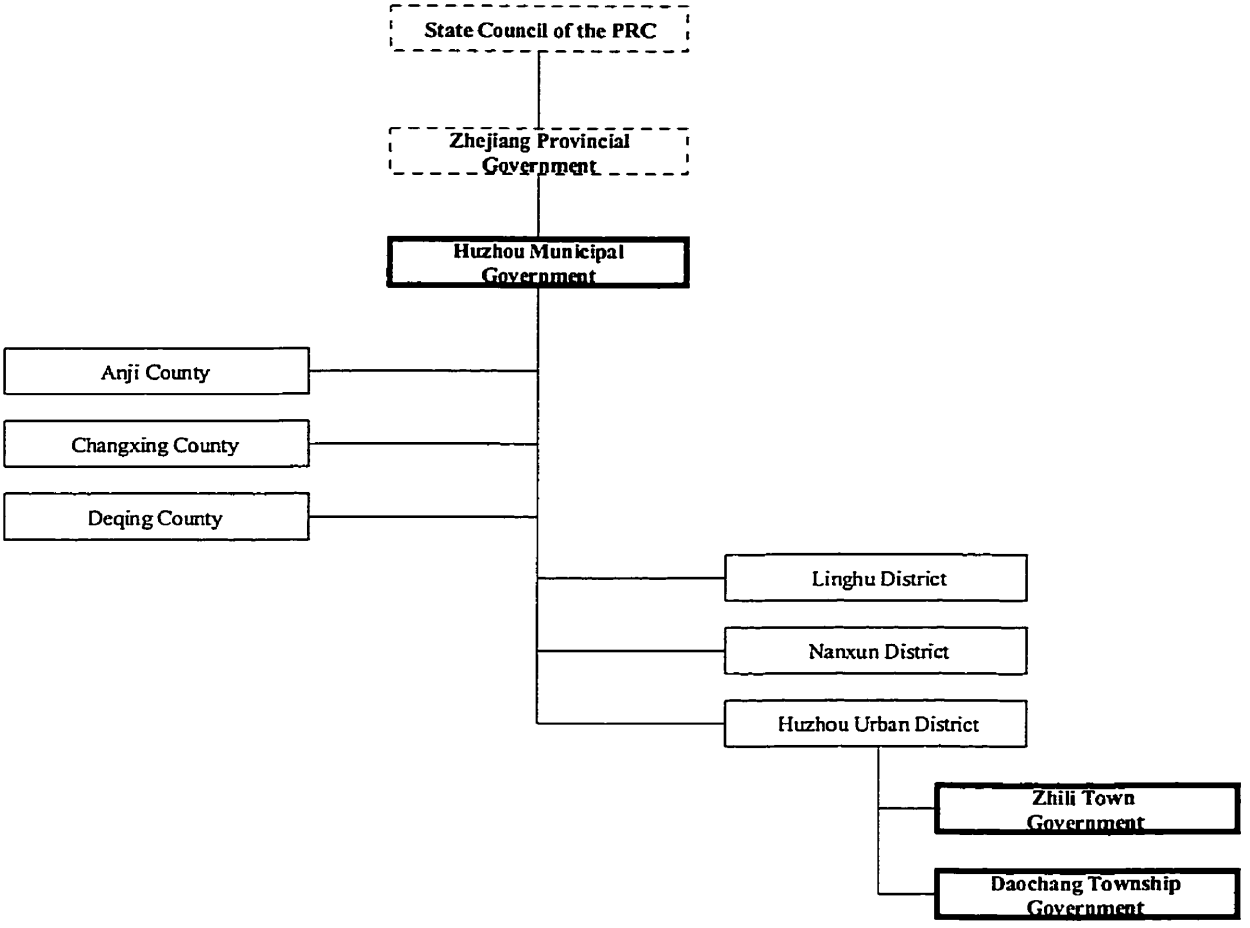

Figure 5.1 Administrative Organisation of Government, with specific reference to Huzhou Municipality

Zhili Town is located in the Huzhou Urban District and consists of 30 administrative villages and the town built-up area. Town governments are comprised of departments and committees which are direct branches of the administrative sectors of

municipal governments. A mayor, who is subordinate to the town party secretary leads the Zhili Town government. Zhili Town reports directly to Huzhou Municipality for most administrative functions, except where local planning issues involve other administrative entities, such as the Urban District government. The lowest level of administrative organisation is comprised of the village committees, which are under the direct supervision of Zhili Town. Planning at the town level is shared between Zhejiang Province, Huzhou Municipality, and Zhili Town (Zhili Town Mayor's Office, 1999).

Daochang Township is also located in the Huzhou Urban District, on the fringe of the urban core. It consists of 23 administrative villages and the township built-up area. The Daochang Township leader heads a government that is comprised of departments administering cross-sector functions of municipal bureaucratic departments. Unlike Zhili Town, township level governments often amalgamate several bureaucratic functions into single departments, such as the Culture, Education and Health Care Office (CEHO) or the Rural Construction and Land Management Office (RCLMO). As in Zhili Town, Daochang Township supervises the village committees operating within its boundaries, and reports to Huzhou Municipality. However, township planning is shared primarily between Huzhou Municipality and Daochang Township, and for certain issues the Huzhou Urban District (Daochang Township Leader's Office, 1999).

5.1.2 Administrative Sectors

Each administrative sector exists simultaneously within the administrative system of government described above and the respective vertical bureaucracies of the MOPH, the MOE, the SBLA, and the SEPA. The division of administrative responsibility between local governments and administrative bureaucracies has resulted in the

development of horizontal linkages between local administrative sectors and corresponding governments.

- **Health Care**

For over 50 years, the Ministry of Public Health (MOPH) has been the executive body for health care in China. Under the direction of the State Council, the MOPH formulates national health care policies and programs. It also directly administers national academic institutions, medical universities, hospitals, and drug control institutions. At the local level health care is organised into a three-tier system under the dual control of the local government and MOPH. Health care is facilitated through functional public health bureaux (PHB) at the provincial and municipal levels and public health offices (PHO) at the town and township levels. Health care institutions are operated by local governments and supervised by the corresponding PHB or PHO. However, this occurs under the administrative control of and with financial support from, governments and PHB at higher levels (Shi, 1993). Figure 5.2 displays the organisation of health care and health care institutions, with specific reference to Huzhou Municipality.

The Zhejiang PHB reports to the MOPH and the provincial government. In accordance with national health care policies and regulations, it supervises provincial hospitals, anti-epidemic stations, sanatoria, and drug control institutions. Combined with the municipal and county hospitals, centres for disease control and health centres for women and children run by the Huzhou PHB, these provincial institutions constitute tertiary health care (Shi, 1993; Zhang, et al., 1996). Secondary and primary health care in urban areas, such as that available in Huzhou Municipality, consists of district hospitals

and health centres, and community health stations and clinics. In Huzhou, these institutions are supervised by the municipal PHB. The Huzhou PHB reports to the municipal government and the Zhejiang PHB (Huzhou Planning Committee, 1999).

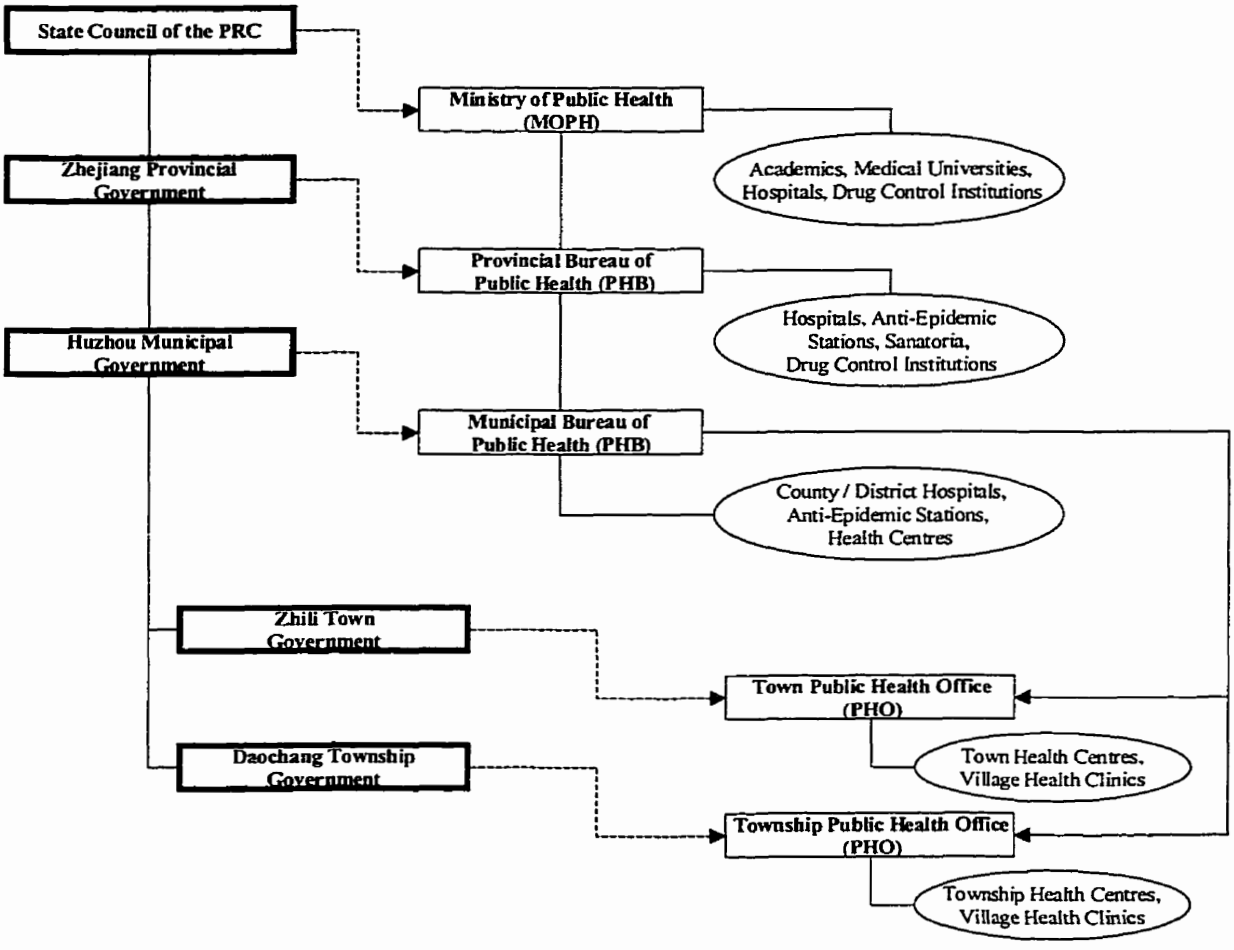

Figure 5.2 **Administrative Organisation of Health Care, with specific reference to Huzhou Municipality**
(Adopted from Shi, 1993: 725)

The Zhili PHO and Daochang PHO, which supervise town and township health centres, act as a link between county and district level health institutions and village health clinics. Working under the supervision of the PHOs, village health clinics represent the primary source of health care for rural residents. Both the Zhili PHO and the Daochang PHO report to the Huzhou PHB and to their respective local governments. However, as is the case with other administrative sectors in the township, the Daochang PHO is organised under the larger Culture, Education, and Health Care Office (CEHO) (Daochang PHO, 1999; Zhili PHO, 1999).

- **Education**

The Ministry of Education (MOE) was created in 1997 replacing the abolished State Education Commission and includes representation from other ministries and commissions with overlapping jurisdictions. The MOE co-ordinates education through the approval of national policies and programs. Education is organised into three levels, with the MOE directly responsible for the tertiary level, which consists of higher education in the form of national universities and colleges (Lieberthal and Lampton, 1992). Primary and secondary education is facilitated through education bureaux (EdB) at the provincial and municipal levels and education offices (EdO) at the town and township levels. Primary education occurs in elementary (primary) schools. Secondary education occurs in middle schools and high schools. Primary and secondary educational institutions are operated and supervised by local governments and their EdB or EdO. As with health care, this occurs under the administrative and financial umbrella of higher level governments and EdB. The organisation of education and educational institutions, with specific reference to Huzhou Municipality, is displayed in Figure 5.3.

Although the Zhejiang EdB is responsible for the secondary education system, local governments provide the majority of funds for secondary schools. Policies regarding admissions systems, bureaucratic structures, rules and standards of evaluation, and education reform are established at this level, however, the MOE remains the primary source of education policy. The Zhejiang EdB reports to the MOE and to the provincial government (Lieberthal and Lampton, 1992; Huzhou Planning Committee, 1999).

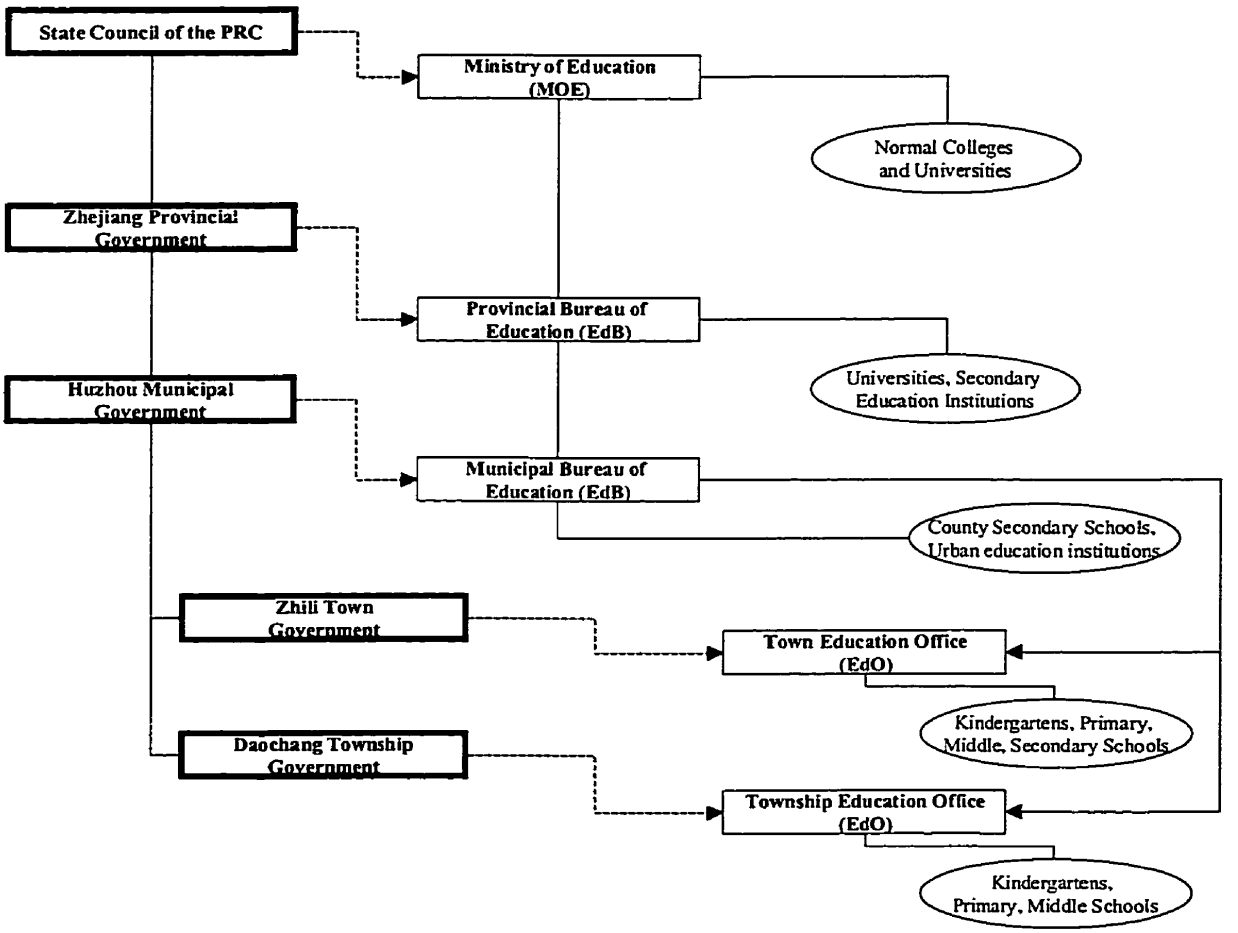

Figure 5.3 Administrative Organisation of Education, with specific reference to Huzhou Municipality

The Huzhou EdB reports to the municipal government and to the Zhejiang EdB. It administers county level high schools, middle schools, elementary schools, and urban kindergartens within its jurisdiction. The Zhili EdO and the Daochang EdO are sections of the Huzhou EdB. The Zhili EdO is a distinct department of the town government, while the Daochang EdO is part of the larger township CEHO. Kindergartens, primary schools and middle schools are supervised by the EdOs, which report to the Huzhou EdB and their respective local governments (Daochang EdO, 1999; Huzhou Planning Committee, 1999; Zhili EdO, 1999).

- **Land Management**

As a cabinet level bureau, the State Bureau of Land Administration (SBLA) is in charge of urban and rural land management. This is facilitated through the formulation of land administration policies and programs. Similar to the organisation of health care and education, the SBLA is a vertical hierarchy, with subordinate land management bureaux (LMB) at the provincial and municipal levels of government and subordinate land management offices (LMOs) at the town and township levels of government. LMB and LMOs are charged with the implementation and enforcement of national land management policies, programs and regulations (Hannan, 1995; Zhejiang LMB, 1999). The organisation of land management, with specific reference to Huzhou Municipality, is displayed in Figure 5.4.

The Zhejiang LMB was established in 1986 and reports to the provincial government and the SBLA. It facilitates the implementation of national land management policies and programs through the formulation of provincial guidelines within which local LMB and governments must operate. The Huzhou LMB reports to

the municipal government and the Zhejiang LMB. Personnel from the Huzhou LMB are assigned to the Zhili and Daochang LMOs to facilitate local land management. Similar to the organisation of health care and education, the Zhili LMO is an independent department of the town government while the Daochang LMO is part of the larger Rural Construction and Land Management Office (RCLMO) (Huzhou LMB, 1999).

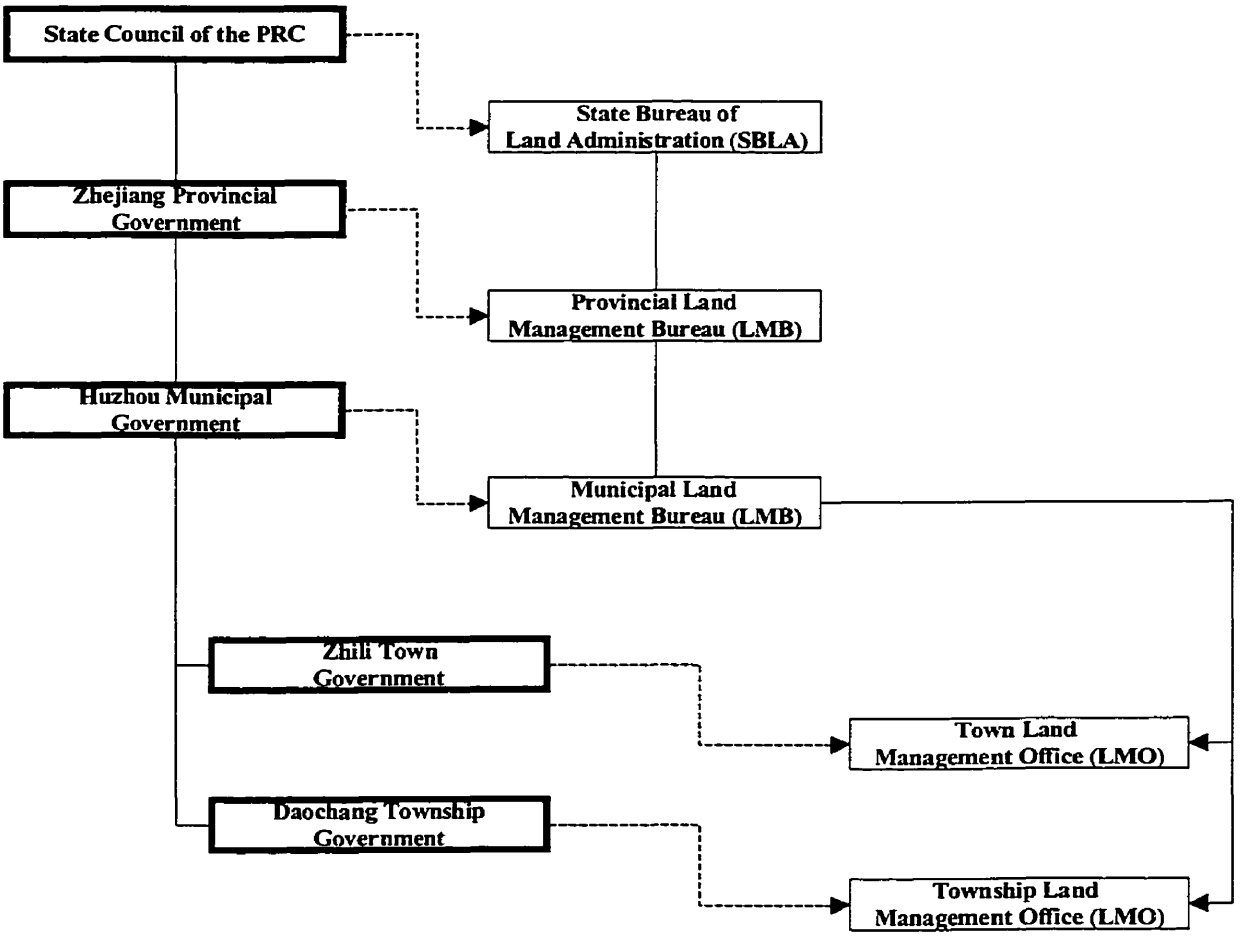

Figure 5.4 Administrative Organisation of Land Management, with specific reference to Huzhou Municipality

- **Environmental Protection**

The State Environmental Protection Agency (SEPA) is the executive body for environmental protection in China, receiving leadership and policy direction from the State Council. Established as a cabinet level agency in 1987, SEPA is responsible for the formulation of all environmental protection policies and programs. Policy implementation and the enforcement of regulations is facilitated through subordinate environmental protection agencies (EPA), environmental protection bureaux (EPB), and environmental protection offices (EPO), located respectively at the provincial, municipal, and town and township levels. Each subordinate EPA, EPB, and EPO receives environmental policy and program mandates from the SEPA, and administrative leadership and financial support from their respective local governments (Sinkule and Ortolano, 1995). The organisation of environmental protection, with specific reference to Huzhou Municipality is displayed in Figure 5.5.

Directly under the SEPA, the provincial EPA is the highest environmental protection institution in Zhejiang. It reports to both the SEPA and the provincial government. As a department of the provincial government, the Zhejiang EPA is charged with implementing national environmental mandates within the context of provincial development goals (Zhejiang EPA, 1999). Within the same dual system, the Huzhou EPB receives environmental policy mandates and program direction from the SEPA, via the Zhejiang EPA, while relying on the municipal government for administrative and financial support. The Huzhou EPB is able to establish local environmental regulations and programs within guidelines set by the province. The director of the Huzhou EPB is

appointed by, and reports to, the municipality, but also reports to the Zhejiang EPA (Huzhou EPB, 1999).

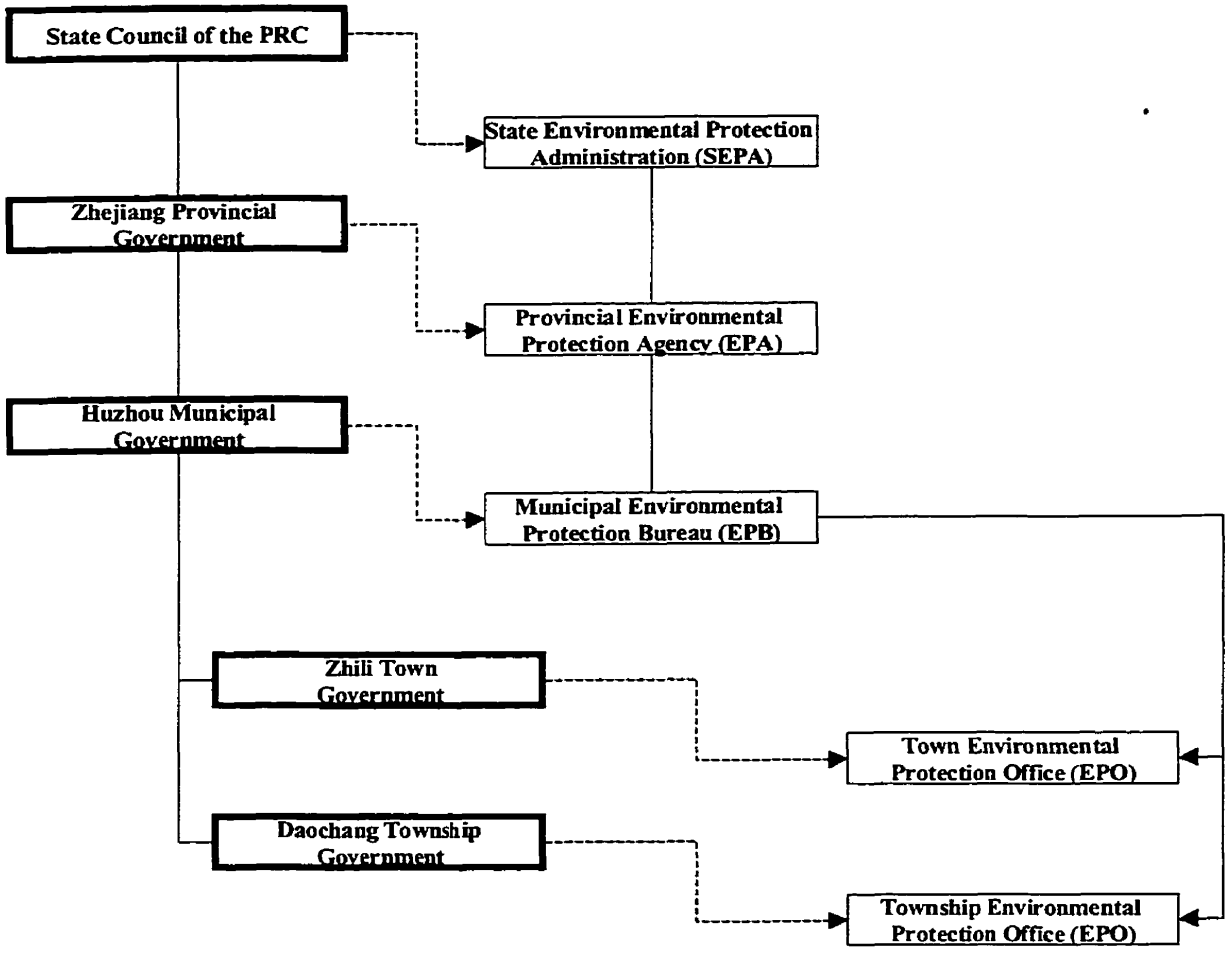

Figure 5.5 Administrative Organisation of Environmental Protection, with specific reference to Huzhou Municipality

The Zhili EPO is a direct extension of the Huzhou EPB. Since the official working for the Zhili EPO is a member of the Huzhou EPB, it receives policy and program mandates without the authority to adopt local changes. The Daochang EPO is a

separate extension of the Huzhou EPB. It is combined with other government functions under the RCLMO. Both EPOs receive funding from Zhili Town and Daochang Township respectively, while fulfilling Huzhou EPB mandates (Zhili EPO, 1999; Daochang EPO, 1999).

5.2 Administrative Goals and Responsibilities

The overall social and environmental goals of the Chinese government are expressed as the specific objectives and programs of bureaucratic organisations, themselves formulated on the basis of national policies. Although policy outcomes are often different from initial government goals, policy implementation is based on the definition of the overall aim of government and the establishment of regulatory standards and responsibilities (Sinkule and Ortolano, 1995).

Policy design in China starts with the definition of broad goals and regulatory functions at the national level. Standards and regulations are set to facilitate the overall aim of government within the broad range of local circumstances found at and below the provincial level. Provincial policies are designed as guidelines for local level implementation and are facilitated through specific standards and regulations that are often more stringent than those specified by national policy. Local policy is then designed within these guidelines, to account for variations in local characteristics (Huzhou EPB, 1999).

China's health care and education, agricultural land protection, and water pollution prevention and control are characterised by specific regulatory responsibilities designed to service particular policy goals. The description of these goals and

responsibilities will provide a further understanding of the local framework for policy implementation.

5.2.1 Health Care

The official goal of China's health care system is derived from the WHO Alma-Alta Declaration (1978) of "health care for all by the year 2000." The three principal objectives of the MOPH are: to improve urban and rural primary health care services; to promote preventive health care and reinforce disease prevention and control; and to develop and promote traditional Chinese medicine and its integration with western medicine. A traditional emphasis on primary rural health care has remained the basic criteria for fulfilling the WHO objective and has been reiterated in successive National Five-Year Health Plans during the reform period (Shi, 1993; Zhang, et al., 1996; State Council, 1997a).

Beginning in the 1990s, reforms to the health care system focussed on the further development of rural health care and on increasing the role of local governments, institutions, and individual households in health care provision. It was the Decision of the Central CPC and the State Council Concerning Public Health Reform and Development that formally promulgated health care reform in 1997. Objectives for rural health care reform include the development of CMS, the further development of three-tier health networks, increasing the income of rural health workers and educational requirements of rural doctors, and the transfer of technology and experience from urban to rural health systems (State Council, 1997a).

The mandate for health care in Huzhou Municipality flows directly from national policy objectives and regulations. A brief synopsis of the policy objectives and regulatory standards set by the MOPH reveals the emphasis on rural health care:

- At least 85% of the rural population must use safe drinking-water, and 60% of the latrines must meet MOPH standards;
- There must be 15 doctors and 10 health workers for every 10,000 rural residents;
- To strengthen health services in county hospitals and increase the total number of hospital beds by 400,000;
- To establish one multiform clinic in each village, with at least 70% of the staff meeting the MOPH qualifications for village doctors; and
- Government health care expenditure must account for at least 8% of total budget, and county and village health services must contribute 25% of the cost of their health care (Shi, 1993; Zhang et al., 1996; State Council, 1997a; Huzhou Planning Committee, 1999).

The distribution of responsibility for health care is based on the administrative structure displayed in Figure 5.2. Responsibility is greatest at the national level and declines through the provincial, municipal, and town and township levels. Through the formation of health care regulations, policies and programs, the MOPH oversees the overall development of rural health care, preventative health care, and traditional Chinese medicine. Specific responsibilities of the MOPH include the formation of measures for the control of drugs, institutional administration, regulations on the production and sale of medicine, and laws concerning medical practitioners (Information Center of the Legislative Affairs Office of the State Council, 1999).

Table 5.1 **Responsibilities for Health Care, by Administrative Level**
(State Council, 1997a; Daochang PHO, 1999; Huzhou Planning Committee, 1999; Zhili PHO, 1999)

Level	Responsibilities
Zhejiang PHB	• Establish and organise the implementation of provincial health care plan, in accordance with the guiding policies and standards set by MOPH. • Implement national regulations and standards for the provision and allocation of health care resources. • Provide tertiary health care through the management and financing of provincial level hospitals, epidemic prevention stations, sanatoriums, and drug control institutions. • Set guidelines for the supervision and inspection of health care standards and regulations. • Set guidelines for public education on health care policies and programmes.
Huzhou PHB	• Co-ordinate health care in accordance with the policies and standards set by the MOPH and the provincial health care plan. • Implement national regulations and standards for the provision and allocation of health care resources. • Provide tertiary health care through the management and financing of municipal and county level hospitals, epidemic prevention stations, maternal and infant health care institutions, and rural health centres. • Supervise and inspect health care standards and regulations via branch PHOs. • Organise public education on health care policies and programmes.
Zhili and Daochang PHOs	• Co-ordinate health care in accordance with the municipal PHB. • Implement national regulations and standards for the provision and allocation of health care resources. • Provide secondary and primary health care through the management and financing of town and township hospitals and health centres and village health clinics. • Supervise and inspect of health care standards and regulations. • Provide public education on health care policies and programmes.

In accordance with the guiding policies and standards set by the MOPH, the Zhejiang PHB is responsible for developing and organising the implementation of regional health care policies and programs. It is at this level that the supervision and management of health care occurs. The regional health care plan for Zhejiang Province is facilitated through the distribution of specific responsibilities to the provincial PHB, municipal PHB, and town and township PHOs. Responsibilities include health care planning and monitoring, the implementation of national standards and regulations, the provision of primary, secondary and tertiary health care, and public education. This is illustrated in Table 5.1, which summarises the regulatory responsibilities of the Zhejiang PHB, the Huzhou PHB, and its branch PHOs in Zhili Town and Daochang Township.

5.2.2 Education

The goal of education in China is to promote economic prosperity while remaining consistent with the idea of establishing an equitable society. The principal objectives of educational policies include the development of a comprehensive educational system, the universalisation of compulsory education, and the development of non-government sponsored schools. Zhejiang Province and Huzhou Municipality facilitate these objectives through the direct implementation of national policies, however, significant financial responsibility exists at each level (NPC, 1995; Hannum, 1999).

The comprehensive educational system has two basic objectives: the development of infant school education (kindergartens), primary education, secondary education and higher education; and the development of scientific, vocational and adult education systems. These objectives were formalised through the CPC Central Committee Decision

on Reform of the Educational System in 1985, and the promulgation of the Education Law of the PRC in 1995 (Information Center of the Legislative Affairs Office of the State Council, 1999).

Compulsory education is set within the Chinese constitution, and guarantees the right of every citizen to five to six years of primary education and three to four years of lower secondary education. There is no cost for basic education, which consists of compulsory education and three years of upper secondary education. This was formalised through the promulgation of the Compulsory Education Law of the PRC in 1986 (NPC, 1995; Wei et al., 1999).

The development of non-government sponsored schools became a national objective in 1997, as the national education policy encountered serious financial constraints. Although such initiatives have yet to be taken in Huzhou Municipality, Regulations on Education Sponsored by Social Resources (1997) were promulgated by the State Council to encourage the development of educational facilities financed by communities, organisations and individuals (State Council, 1997b; Fan, 1998; Huzhou Planning Committee, 1999).

Similar to health care, the distribution of responsibility for education is centred on the national level, where the State Council approves the education policies and programs of the MOE (See Figure 5.3). This includes national requirements on the provision of compulsory education (NPC, 1995). The Zhejiang EdB facilitates national requirements through the regional supervision of primary, secondary and tertiary education. In accordance with national regulations, the Zhejiang EdB sets admission and evaluation standards, however, the management and financing of education the responsibility of

local governments. Municipal, town and township governments set regulations on educational investment according to local development planning (Daochang EdO, 1999; Huzhou Planning Committee, 1999; Zhili EdO, 1999). The distribution of responsibility for education in Zhejiang Province, with particular reference to Huzhou Municipality is summarised in Table 5.2.

Table 5.2 **Responsibility for Education, by Administrative Level**
(Daochang EdO, 1999; Huzhou Planning Committee, 1999; Zhili EdO, 1999)

Level	Responsibilities
Zhejiang EdB	• Establish and organise the implementation of provincial education, in accordance with the guiding policies and standards set by the MOE. • Implement national policies and standards on the provision of compulsory education. • Provide tertiary education through the management and financing of provincial level universities, colleges, and post-secondary institutions. • Supervise and manage the provincial secondary education system, through the establishment of admission systems and evaluation standards.
Huzhou EdB	• Implement national policies and standards on the provision of compulsory education. • Provide primary and secondary education through the management and financing of the municipal education system and urban educational institutions, which include district and county secondary schools, primary schools. • Establish local curricula in accordance with national guidelines. • Supervise and manage the municipal education system, through the establishment of local investment regulations and collection of municipal education surcharges and fees.
Zhili and Daochang EdOs	• Implement national education policies and standards on the provision of compulsory education. • Provide primary education through the management and financing of the respective town and township primary education systems, including middle schools and primary schools in village and built-up areas. • Establish respective town and township education planning and local investment regulations. • Collect local education surcharges and fees.

5.2.3 Agricultural Land Protection

The goals of land management in China embrace the protection, development and rational utilisation of land resources for sustainable socio-economic development. First adopted in 1986, the Land Administration Law of the PRC (1998) formalised the basic objectives of land management, which includes the strict administration, protection and development of land resources. This established the legal basis for land ownership and use rights, land use planning and agricultural land protection (Standing Committee of the NPC, 1998).

The objective of agricultural land protection has been strengthened by the recent revision of land management policies and regulations. The revision of the Land Administration Law in 1998 provided a comprehensive legal basis for agricultural land protection based on individual responsibility and a system of compensation for the occupation and use of agricultural land (Article 31). The specific objectives of agricultural land protection are found in the Regulations on the Protection of Basic Farmland, revised most recently in 1998. These include the protection of 80% of the total agricultural land area; restrictions on the occupation of agricultural land for non-agricultural construction purposes; and the required replacement, in quantity and quality, of protected agricultural land that is used for non-agricultural purposes (State Council, 1998).

The policies and regulations that guide agricultural land protection in Zhejiang are found in the provincial policies for the Implementation of the Administration Law of the PRC, and for the Protection of Basic Farmland. These were formalised in 1999 and include a mandate to protect 86% of the total agricultural land, the downloading of

responsibility for agricultural land protection to the leader of each level of administration, and regulations for land reclamation (Zhejiang LMB, 1999). These provide the administrative guidelines that constitute the framework for the local regulation for agricultural land protection in Huzhou Municipality.

The distribution of responsibility for agricultural land protection is based on the administrative structure of land management displayed in Figure 5.4. The main responsibilities of the SBLA are to administer state law and policies concerning land management. National responsibilities specific to agricultural land protection include land use planning, land classification, the reclamation and allocation of prime agricultural land, and the investigation of violations of land administration laws and agricultural land protection regulations (Hannan, 1995; Zhejiang LMB, 1999). In accordance with national requirements, the Zhejiang LMB establishes guidelines for the regulation of agricultural land protection and the distribution of responsibility in the province. The distribution of responsibility for agricultural land protection, with specific reference to Huzhou Municipality is summarised in Table 5.3.

Table 5.3 **Responsibilities for Agricultural Land Protection, by Administrative Level**
(Daochang LMO, 1999; Huzhou LMB, 1999; Zhejiang LMB, 1999; Zhili LMO, 1999).

Level	Responsibilities
Zhejiang LMB	• Protect agricultural land through the formulation of provincial guidelines, which require the maintenance of the balance of agricultural land in the province • Implement national regulations and standards for agricultural land protection. • Regulate land use planning and manage the use of agricultural land for construction projects. • Manage land records, regulate property rights, and monitor actions in violations of land use rights. • Set standards for land classification (3 classes) and approve land use planning for municipalities and designated 'key' towns. • Certify the quality and quantity of reclaimed land and set regulations for its use. • Collection of land reclamation fees from local LMB.
Huzhou LMB	• Maintain the balance of agricultural land in the municipality. • Implement national and provincial regulations and standards for agricultural land protection. • Manage all land reclamation in the municipality and collect land reclamation fees from local industries and branch LMOs. • Approve land use planning for counties and townships. • Co-ordinate land reclamation through a municipal quota system of land use.
Zhili and Daochang LMOs	• Implement national and provincial regulations and standards for agricultural land protection. • Manage respective town and township land reclamation, and collect land reclamation fees from local industries and village committees. • Provide indicators of land use and agricultural land protection. • Enforce land use regulations according to the Huzhou LMB. • Set regulations for village planning.

5.2.4 Water Pollution Prevention and Control

The official goal for environmental protection in China was established in 1978 by Article II of the Constitution of the PRC. It declares that "the State protects the environment and natural resources and prevents and eliminates pollution and other hazards to the public" (NPC, 1988: Article II). This is embodied in the development of environmental policies and regulations aimed at achieving a balance between economic development and the protection of the environment (Sinkule and Ortolano, 1995). This stance was formalised with the adoption of the Environmental Protection Law of the PRC (1989), which establishes the authority and responsibility of the SEPA; makes environmental protection an explicit responsibility of each level of government; provides the statutory basis for environmental protection mechanisms; and improves the ability of the SEPA to enforce environmental requirements (Hannan, 1995; Sinkule and Ortolano, 1995).

Within this broad national goal, water pollution prevention and control is established as a key objective. The Law of the PRC on the Prevention and Control of Water Pollution (1996) was first promulgated in 1984, and mandates "the prevention and control of pollution of rivers, lakes, canals, irrigation channels, reservoirs and other surface water bodies and of groundwater" (Article 2). This objective was prioritised in 1996, with the issue of the State Council Decision on Several Issues Concerning Environmental Protection. It requires that governments at all levels strengthen the prevention and control of water pollution so as to ensure safety in industrial and agricultural production and people's daily use of water. Regional prevention and control

based on treatment at pollution sources was initiated for rivers, lakes, reservoirs and coastal waters (State Council, 1996).

As part of this policy goal, a directive was issued for point source water treatment in the Huaihe, Haihe and Liaohe rivers, and in the Taihu, Dianchi, and Chaohu lakes. The SEPA, State Planning Commission, and Ministry of Water Resources established a 15-year program for water pollution control in the Taihu Basin (Zhejiang EPA, 1998; Zhu, 1998). The 'Taihu Directive' establishes the guidelines under which Zhejiang Province sets the specific objectives and standards for water pollution control and prevention in Huzhou Municipality (Huzhou EPB, 1999).

In general, the SEPA is responsible for environmental policy and programme formulation, while the provincial and municipal EPB implement environmental protection programs and enforce regulations. National environmental quality standards are set by the SEPA and include wastewater discharge standards and water quality classifications (Zhejiang EPB, 1999). In accordance with national standards and the objectives set by the Taihu Directive, the Zhejiang EPA establishes provincial guidelines for water pollution prevention and control. The implementation, monitoring and enforcement of national and provincial standards and regulations are the responsibilities of the provincial, municipal, and town and township levels of administration (See Figure 5.5). The distribution of responsibilities for water pollution prevention and control in Zhejiang Province, with specific reference to Huzhou Municipality are summarised in Table 5.4.

Table 5.4 **Responsibilities for Water Pollution Prevention and Control, by Administrative Level**
(Edmonds, 1994; Sinkule and Ortolano, 1995; Daochang EPO, 1999; Huzhou EPB, 1999; Zhejiang, 1999; Zhili EPO, 1999).

Level	Responsibilities
Zhejiang EPA	• Implement national water quality standards and regulations and co-ordinate water pollution prevention and control in the Taihu Basin. • Establish water quality standards and regulations that are not specified at the national level, or are more stringent. This includes provincial wastewater discharge standards and fees; water quality classifications; and limited time treatment requirements. • Negotiate provincial ERS contracts, approve EIAs, and the collect waste water discharge fees from industries and EPB. • Monitor water pollution control policies, through the formal and informal inspection of industries and water treatment facilities. • Enforce environmental policies, including shutting down violators of national and provincial standards. • Provide technical support for local governments and industries. • Supervise the environmental work of local EPB and government administrations.
Huzhou EPB	• Implement national and provincial water quality standards and regulations. For example, the total volume of municipal wastewater discharge in 2000 must be the same as in 1995. • Supervise and monitor public and private environmental protection facilities, through formal and informal inspections of industries and water treatment facilities. • Negotiate local ERS contracts, approve EIAs, collect waste water discharge fees from industries and EPOs, and enforce national and provincial time period limitations. • Provide expertise to local industries and governments regarding environmental protection. • Provide environmental education to the public and private industries regarding environmental policy and programs.

Table 5.4 (cont'd.)

Zhili and Daochang EPOs	• Implement national and provincial water quality standards and regulations. • Facilitate ERS, EIA, waste water discharge fee collection, and limited time treatment in accordance with the Huzhou EPB. • Perform formal and informal monitoring of industrial water treatment facilities, specifically the daily inspection of industrial pollutant discharges. • Inspect waste water discharge records of water treatment facilities and collect information and discharge fees from industries. • Provide expertise to local industries and government regarding environmental protection. • Provide environmental education to the public and private industries regarding environmental policy and programs.

5.3 Administrative Capacities

Capacities for health care and education, agricultural land protection, and water pollution prevention and control are determined by the mechanisms in place and resources available at different levels of the MOPH, MOE, SBLA and SEPA organisations. The description of administrative capacity further broadens the base for the analysis of local regulation in Chapter Six.

5.3.1 Health Care

Mechanisms for implementing health care policy include regional health care planning, CMS, and publicly funded health care institutions. Regional health care planning provides a means of satisfying the health service requirements of a specific region, such as a province, within national planning, and guides the allocation of health care resources such as medical institutions, hospital beds, personnel, equipment, and funds (State Council, 1997a). The CMS plays an important role ensuring that rural populations receive basic medical services and preventative health care. The principal components of the CMS include local administration, limited state subsidisation, and

voluntary participation. This system is represented physically by facilities at the town, township and village level (State Council, 1997a; Daochang PHO, 1999).

Publicly funded health care institutions are the primary mechanism for health care service delivery. These range from national level medical universities, hospitals and drug control institutions, through provincial level hospitals, anti-epidemic stations, sanatoriums and drug control institutions, to municipal and county level hospitals, anti-epidemic stations, and seniors' homes, to town and township health centres and seniors' homes, and finally village health clinics (State Council, 1997a). The resources available for health care at the different MOPH administrative levels in Huzhou Municipality are summarised in Table 5.5.

Table 5.5 **Resources for Health Care, by Administrative Level**
(Huzhou Statistical Yearbook, 1998; Daochang PHO, 1999; Huzhou Planning Committee, 1999; Zhili PHO, 1999)

Level	Resources
Huzhou PHB	• 54 health care institutions, including municipal and district hospitals and health centres. • 6 seniors' homes in the urban 'city'. • Annual budget provided by the provincial and municipal government. • Funding for health care provided by the national government to the PHB and its branch PHOs via the MOPH.
Zhili PHO	• 1 county level hospital (100 beds, 10 doctors, 150 staff), with three branches in the town built-up area. • 10 village health clinics and 1 town seniors' home. • Annual budget provided by the municipal government, excluding the PHO administrative costs provided by the town government.
Daochang PHO	• 1 county level hospital (104 beds, 72 doctors) • 20 village health clinics and 1 township seniors' home. • Annual budget provided by the municipal government (approximately ¥ 50,000 - 60,000 in 1998), excluding the PHO administrative costs provided by the township government.

5.3.2 Education

Compulsory education is the principal mechanism for regulating education. The right of every citizen to receive basic education demands the development of educational institutions by every government. The foundation of the education system is the establishment of primary and secondary schools (NPC, 1995). Similar to health care, regional planning facilitates the implementation of national education policies and programmes. Provincial and municipal governments develop educational resources and institutions to fulfil national requirements and satisfy local interests. Development that exceeds national educational requirements is dependent on local economic conditions (Huzhou Planning Committee, 1999). The primary resource for education planning is public, private, and collective investment. The collection of education surcharges and fees from industries and individuals occurs at local levels of government. The resources available to the Huzhou EdB and its branch EdOs in Zhili Town and Daochang Township are summarised in Table 5.6.

Table 5.6 Resources for Education, by Administrative Level
(Huzhou Statistical Yearbook, 1998; Daochang EdO, 1999; Huzhou Planning Committee, 1999; Zhili EdO, 1999)

Level	Resources
Huzhou EdB	• 31 high schools, 146 middle schools, 1526 primary schools, and 146 kindergartens. • Annual budget provided by the municipal government. • Funding for education comes from surtax (1.5% of municipal taxes).
Zhili EdO	• 1 county high school, 2 middle schools, 14 primary schools, 3 kindergartens. • Annual budget provided by the municipal government, the town government, and village committees. • Funding for education from the collection of surcharges and fees.
Daochang EdO	• 1 middle school, 13 primary schools, 23 kindergartens. • Annual budget provided by the municipal government, township government, and village committees. • Funding for education from the collection of surcharges and fees

5.3.3 Agricultural Land Protection

The mechanisms for regulating agricultural land protection include the land compensation system, land classification system, and administrative responsibility system. The land compensation system emphasises the legal responsibility of local governments and individuals for maintaining the balance of agricultural land through a process of replacing agricultural land that is taken out of cultivation with reclaimed land of equal quantity and quality. Land reclamation fees are collected if standards for land compensation are not met (Standing Committee of the NPC, 1998; Huzhou LMB, 1999). The Zhejiang LMB classifies land into three categories: (1) prime agricultural land; (2) construction land; and (3) general use land. This land classification system facilitates agricultural land protection through the control of land use. Class (1) land receives stringent protection and requires State Council approval to be used for non-agricultural

purposes. Class (2) land requires designation by the Zhejiang LMB and consists of land for the development of built-up areas. Class (3) land can be used for any purpose once approved by the Zhejiang LMB (Zhejiang LMB, 1999). Agricultural land protection is further facilitated through an administrative responsibility system, which requires the leader of each level of administration to ensure that the balance of agricultural land is maintained during the duration of their time in office (Zhejiang LMB, 1999). The resources available to the Huzhou LMB and its branch LMOs in Zhili Town and Daochang Township are summarised in Table 5.7.

Table 5.7 **Resources for Agricultural Land Protection, by Administrative Level** (Daochang LMO, 1999; Huzhou LMB, 1999; Zhejiang LMB, 1999; Zhili LMO, 1999)

Level	Resources
Huzhou LMB	• Annual budget provided by the municipal government. • Funding for land use planning provided by the municipal government. • Funding for administrative costs provided by the collection of land use tax and service charges for public and private land use management. • Funding for land management programs provided by the collection of land use fees.
Zhili and Daochang LMOs	• Annual budget provided by the municipal government and respective town and township governments. • Funding for respective town and township land use planning provide by the Huzhou LMB. • Funding for administrative costs provided by collection of land use tax. • Funding for land management programs provided by collection of land reclamation fees. • The respective town and township governments provide funding for public land reclamation projects.

5.3.4 Water Pollution Prevention and Control

Mechanisms to regulate water pollution prevention and control policies and environmental protection flow from the Environmental Protection Law (1989) and include the environmental responsibility system (ERS), environmental impact assessment (EIA), pollutant discharge fees, limited time treatment (Sinkule and Ortolano, 1995). The ERS delegates responsibility for environmental protection to local governments. Contracts between differing levels of government and between local governments and local industries stipulate environmental targets for specific time periods (Sinkule and Ortolano, 1995; Huzhou EPB, 1999).

EIAs are used to analyse and evaluate the environmental effects of construction projects. The Environmental Protection Law (1989) requires that the planning of construction projects must include the submission of an EIA to the environmental protection department of the local government concerned (Standing Committee of the NPC, 1989). Industries that release pollutants above water, air, solid waste, and noise standards are levied discharge fees. These are intended to be an economic incentive to undertake environmental protection initiatives. At the same time, the fees represent revenues for local EPBs and are used to subsidise public and private water pollution projects (Sinkule and Ortolano, 1995; Huzhou EPB, 1999; Zhejiang EPA, 1999; Zhili EPB, 1999).

Limited time treatment programs stipulate that industries must meet environmental protection mandates within set time periods. The SEPA and lower level EPBs set time periods for compliance according to the spatial focus of environmental policies and programs. Limited time treatment stipulations can range from broad regions,

such as the Taihu Basin, to individual industries, such as those interviewed in Zhili Town and Daochang Township (Sinkule and Ortolano, 1995; Zhejiang EPA, 1999).

Although ERS, EIA, discharge fees and limited time treatment facilitate the implementation and enforcement of environmental policies, it is the availability of resources for local EPBs that determines the effectiveness of environmental protection. The resources available to the Huzhou EPB and its branch EPOs in Zhili Town and Daochang Township are summarised in Table 5.8.

To summarise, the regulatory framework in Zhejiang Province is characterised by highly centralised and hierarchical administrative bureaucracies. However, the downloading of regulatory responsibilities has affected the vertical and horizontal relationships between governmental and sectoral bureaucracies, creating a central-local relationship in which local governments play an active and direct role. This is manifested in the administrative structures and functions with respect to health care and education, agricultural land protection, and water pollution prevention and control. This provides the bureaucratic context within which social and environmental change occurs, and in particular the framework for the local regulation and mediation assessed in the next chapter.

Table 5.8 **Resources for Water Pollution Prevention and Control, by Administrative Level**
(Daochang EPO, 1999; Huzhou EPB, 1999; Zhejiang EPA, 1999; Zhili EPO, 1999)

Level	Resources
Huzhou EPB	• 30 staff available for environmental protection inspections. • 1 water treatment facility (with a capacity of 30,000 tonnes per day), 7 water transfer facilities (pumping stations). • Annual budget provided by the provincial government (according to local involvement in regional policies, such as the Taihu Directive) and the municipal government. • The municipal government provides funding for administrative costs of EPB and its branch EPOs, this includes bureau salaries, expenditures and staff vehicles. • Funding is provided by the collection of discharge fees and service charges for technical support and inspection of facilities • Funding for domestic water pollution control projects is provided by the municipality (construction costs) and the collection of public water use fees (operational costs). • Funding for industrial pollution control is provided by individual industries.
Zhili EPO	• The Zhili EPO has one person responsible for environmental protection. • The municipal government and the town government provide funding for the annual budget. • The town government and the collection of a public surtax will provide funding for a treatment facility (capacity of 30,000 tonnes).
Daochang EPO	• The Daochang EPO is part of a larger department, thus, has no specific staff. • The municipal government and the township government provide funding for the annual budget.

Chapter Six

LOCAL REGULATION AND MEDIATION OF SOCIAL AND ENVIRONMENTAL CHANGE IN ZHEJIANG PROVINCE

This chapter considers the changing nature of regulation at the local level in Zhejiang Province, and is organised in four major sections. The first section considers the regulatory context within which local governments are mediating social and environmental changes. It outlines broad trends in the regulatory process, highlighting in particular a lack of transparency in regulation at the local level of government. Three emergent themes of local regulation in Zhejiang Province are then introduced. These themes provide the foci for the remaining sections of this chapter. In each case, a discussion of specific developments in Huzhou Municipality, Zhili Town, and Daochang Township, with respect to health care and education, agricultural land protection, and water pollution prevention and control, is used to provide an interpretation of local regulatory practices.

Section 6.2 considers the changing locus of regulation, which is identified as the first emergent theme of local regulation. It outlines the interrelationships between the regulatory processes at different levels and the corresponding administrative systems in Huzhou Municipality. Section 6.3 considers the increasing role of local government and the opportunity for local agency with respect to the regulation and mediation of social and environmental changes, which is identified as the second emergent theme of local regulation. Through a discussion of health care and education, insights into the increasing role of local government in the regulatory process are obtained. A discussion of agricultural land protection is particularly revealing in terms of the growing opportunity for local government agency with respect to the mediation of social and environmental issues.

The final section of this chapter considers the emerging role of the private sector in the mediation and regulation of local social and environmental issues, which is identified as the third emergent theme of local regulation. It outlines the expansion of the private sector in the regulatory process, and considers the subsequent shifting of regulatory practices away from the state. It is argued that the increasing opportunity for local agency and the ascendancy of private interests in local regulatory processes may be indicative of the emergence of private regulation. This section concludes with a discussion of the manifestation of 'real' regulation in the local regulatory processes of Zhejiang Province.

6.1 Complexion of Local Regulation

The regulatory process through which the local impacts of social and environmental change in Zhejiang Province are mediated is changing. This is the direct result of the breadth and rapidity of economic, social and environmental transformations bound up in the process of modernisation and the restructuring of local government. As noted in Section 2.3, the decentralisation of decision-making and the localisation of fiscal responsibility has shifted the regulatory process away from one of active and direct national and provincial involvement in local regulatory practices. Instead, local regulation has become characterised by increasing local autonomy and discretion in policy interpretation and implementation.

As described in Chapter Four, health care and education, agricultural land protection, and water pollution control and prevention have become important local development issues in Zhejiang Province. Changes to local social dynamics and

environmental pressures are increasing amid the downloading of administrative and fiscal responsibility. However, as noted in Section 4.4, increasing demands for health care and education, agricultural land protection, and water pollution prevention and control must compete for limited financial resources with the pressure for direct investment in local economic growth encouraged by national development strategies. As evident in Huzhou Municipality, the contradiction between macro-economic imperatives and local financial responsibilities hinders the effective mediation of social and environmental pressures.

The restructured administrative landscape described in Chapter Five has further complicated this situation. Local governments at and below the municipal level have been empowered through the downloading of regulatory responsibilities. A new central-local relationship exists in which local governments no longer play a passive and obedient role. As stated by a representative from the Zhili Town Mayor's Office (1999), "*local solutions and resources have to be found to deal with social and environmental issues.*"

The mediation of social and environmental change through government intervention remains a transparent process from the national level, down through the provincial level to the municipal level. However, with the downloading of responsibilities, the complexion of regulatory practices at and below the municipal level has become unclear. This is a function of the changing locus of local regulation, the increasing complexity of local government roles and responsibilities, and the expanding role of the private sector in the regulatory process.

6.2 Changing Locus of Regulation

The actual or potential impacts of social and environmental issues on local development are intertwined with local government restructuring. As noted in Chapter Five, this is by no means a simple relationship because of the sectoral divisions in Chinese governance. The locus of local regulation is becoming influenced by the restructured relationship between the regulatory process and respective sector-specific administrative bureaucracies at different levels. An analysis of health care and education, agricultural land protection, and water pollution prevention and control in Huzhou Municipality reveals a significant and complex shift in the hierarchical emphasis of regulation.

Prior to the reform period, the agencies, bureaux, and ministries of the highly centralised central government manipulated local policy initiatives. However, despite legislative power over all development issues, the direct and active intervention of central authorities in local development has proved incapable of balancing economic reform and social and environmental change (Gong and Chen, 1994; Luo, 1994). Economic liberalisation and increasing social and environmental pressures have made the reform and revitalisation of regulatory processes at the local scale paramount to China's continued economic development.

The regulation and mediation of social and environmental issues in Huzhou Municipality is not uniform, either in extent or nature. Health care and education, agricultural land protection, and water pollution prevention and control are facilitated at different administrative levels. The specific nature of each issue and its positioning

within the restructured administrative landscape necessitate different loci of regulation. These can be divided into three levels, as indicated by the involvement of different levels of government and their administrative sectors in the design and planning of local development policies and initiatives. In general, the lower the level of government involved in the regulatory process, the more flexibility exists for local interpretation and implementation of development policy.

Within this hierarchy, the levels of local regulation are based on the administrative structures described in Chapter Five. To summarise, the first level includes health care and education, which involve the provincial and municipal government. Situated at the second level is water pollution control and prevention, which involves the provincial, municipal, and town and township governments. At the third and final level, agricultural land protection involves the provincial, municipal, town and township governments, and village committees.

Variability in the regulation of social and environmental issues flows from the differing loci of regulation in Huzhou Municipality. As fundamental components of social development, health care and education are highly regulated. Health care policies in Huzhou Municipality flow directly from national regulations, with limited flexibility for interpretation and implementation at or below the municipal level (Huzhou PSB, 1999). Through the municipal PHB and its branch PHO, Huzhou Municipality, Zhili Town, and Daochang Township implement regulations set at the national level. These include local budget expenditures, the availability of safe drinking water, the development of hospitals and health clinics, qualifications for medical staff, and drug

quality control (Daochang PHO, 1999; Huzhou Planning Committee, 1999; Zhili PHO, 1999).

Education policies in Huzhou Municipality also flow directly from national and provincial regulations. National standards for the development of schools and educational facilities are implemented through the Huzhou EdB and its branch EdOs in Zhili Town and Daochang Township. Since basic education is compulsory, Huzhou Municipality, Zhili Town, and Daochang Township are each responsible for the implementation of primary education policies. However, flexibility in the interpretation of policy exists only at the municipal level where the Huzhou EdB sets local curricula (Daochang EdO, 1999; Huzhou Planning Committee, 1999; Zhili EdO, 1999).

The regulation of water pollution prevention and control occurs at a lower administrative level than is the case for health care and education. In Huzhou Municipality, town and township EPOs regulate water pollution under the supervision of the Huzhou EPB. The design of local water pollution prevention and control policies in Huzhou Municipality flow from the national mandate for regional prevention and control based on treatment at pollution point sources (State Council, 1996). The basis of local policy in Huzhou Municipality is the Taihu Directive, which establishes the guidelines under which the Zhejiang EPA sets the specific objectives and standards for water pollution prevention and control. Within these guidelines, the Huzhou EPB designs local measures for water pollution prevention and control according to local circumstances. These include the development of domestic and industrial waste water treatment facilities, limited time treatment programs for local industries, and the imposition of

pollutant discharge fees by Huzhou Municipality, Zhili Town, and Daochang Township (Daochang EPO, 1999; Huzhou EPB, 1999; Zhili EPO, 1999).

The most localised of the three social and environmental issues is agricultural land protection. Agricultural land protection is the responsibility of each level of government and comprises an integral component of land use planning in Huzhou Municipality, Zhili Town, and Daochang Township. In line with the national mandate for agricultural land protection, the Zhejiang LMB sets guidelines on the required protection of the available cultivatable land, the quantity and quality of land to be reclaimed for agricultural use, the land reclamation fees to be collected, and controls to be imposed on construction on agricultural land (Zhejiang LMB, 1999). Within these guidelines, the Huzhou LMB designs local regulations for agricultural land protection. Through the Huzhou LMB, town and township land use plans are approved, and quotas for land reclamation and agricultural land use are established (Huzhou LMB, 1999). Significant flexibility exists at the town and township level with respect to land use planning. Under the co-ordination of the Zhili and Daochang LMOs, local village committees implement initiatives to reclaim land, collect land reclamation fees, and concentrate dispersed rural settlements (Daochang LMO, 1999; Zhili LMO, 1999).

6.3 Increasing Role of Local Government

Within the context of the changing locus of regulation, local governments in Huzhou Municipality now play an active and direct role in the regulation and mediation of social and environmental issues. This has been accompanied by increasing opportunities for local agency. Narratives of development initiatives for health care and

education, and agricultural land protection in Huzhou Municipality, Zhili Town, and Daochang Township support this contention.

Located at the top of the hierarchy of local regulation, health care and education are representative of the growing importance of local development initiatives in Huzhou Municipality. These include initiatives taken by Zhili Town and Daochang Township with respect to health care and education institutions.

Under the administrative supervision of the Huzhou PHB, standards of health care in Huzhou Municipality are required to meet national regulations. This involves significant fiscal responsibility at the municipal, town and township level. Although health care institutions are expected to be financially self-sufficient, local government initiatives are required in order to maintain or increase revenues for health care provision (Daochang PHO, 1999; Huzhou Planning Committee, 1999; Zhili PHO, 1999). This includes the development of income generating initiatives for the Zhili Town Hospital and the Daochang Township Seniors' Home.

The Zhili Town Hospital was constructed in 1952 and serves as a county level hospital for the town and the neighbouring townships. The primary source of income for the hospital is derived from service charges and the sale of medicines. However, development plans to expand the hospital and to improve the quality and training of medical staff have required additional income. This has been secured through indirect investment from the Zhili Town government. According to the Zhili PHO (1999) and the Zhili Town Hospital (1999), the hospital was able to purchase land use rights at a reduced price from the town and sell them at a higher price for profit. Through service charges,

the sale of medicine, and the transfer of land use rights the hospital made a profit of ¥ 1 million in 1998 (Zhili Town Hospital, 1999).

The Daochang Township Seniors' Home was constructed in 1992. In principle, the requirement for entry into the home remains 'the three no's': those elderly who have no family, no means of living, and no one to care for them. Prior to the construction of the home, care for the elderly was primarily the responsibility of each village committee. However, differing economic conditions at the village level resulted in unequal provision. The seniors' home was given as an example of Daochang Township's commitment to improving social security by ensuring equal care for the elderly population (Daochang PHO, 1999).

Although responsibility for the seniors' home lies with the township Civil Affairs Office, it receives funding from the township health care budget. The primary source of income for the seniors' home is derived from the township PHO budget, contributions from the residents' national pensions, and profit from the management of a residential complex. The latter source is a local initiative of the township government. The home was permitted to construct a residential complex, within which it rents rooms to permanent and temporary residents in Daochang Township. Profit from the residential complex is used to pay for care for the residents of the seniors' home (Daochang PHO, 1999).

Unlike health care facilities, educational institutions are not permitted to earn additional income. Despite the promulgation of national regulations encouraging the development of educational facilities financed by non-government sectors, initiatives in Huzhou Municipality have revolved around school consolidation to reduce costs and the

collection of resources to increase revenues (State Council, 1997b). With the localisation of fiscal responsibilities, Zhili Town and Daochang Township have both developed initiatives to centralise schools and increase revenue through taxation (Daochang EdO, 1999; Huzhou Planning Committee, 1999; Zhili EdO, 1999).

Initiatives to concentrate schools in Zhili Town and Daochang Township have involved the closure of primary schools. As noted by the Zhili Town EdO (1999) and the Daochang Township EdO (1999), primary schools that were too small and lacked good conditions for education were merged together. Since 1992, Zhili Town has closed 13 primary schools and plans to close two middle schools in the near future (Zhili EdO, 1999). During the same period, Daochang Township merged five of its primary schools into one 'central urban school' (Daochang EdO, 1999). With the increasing development of built-up areas in Zhili Town and Daochang Township, the number of school-age children in dispersed villages is decreasing. In both cases, the closures resulted in the concentration of educational facilities in the town and township built-up areas (Daochang EdO, 1999; Zhili EdO, 1999).

In order to increase revenue for education, local governments in Huzhou Municipality have been permitted to increase the education fees collected from individuals and enterprises. Each local government is allocated 40% of the total education fees collected in their jurisdiction (Zhili EdO, 1999). According to the Daochang EdO (1999), the education fee increases annually in proportion to the incomes of local residents and enterprises. In 1998, both Zhili Town and Daochang Township collected 5% of the annual income of individuals and 3% of the annual income of enterprises in education fees (Daochang EdO, 1999; Zhili EdO, 1999).

Health care and education provide examples of the role that local governments in Huzhou Municipality have in the regulatory process. It is important to note that differences exist between the regulatory responsibilities for health care and education in Huzhou Municipality, and these will be further discussed in Chapter Seven. Although the trends of centralisation and increasing financial support have been noted with specific reference to the social issues of health care and education provision, they convey the idea that local governments have significant manoeuvrability in implementing development initiatives. However, it is the increasing opportunity for local agency that has the most significance to the local regulatory process.

Agricultural land protection provides an excellent illustration of the increasing opportunity for local agency in Huzhou Municipality. Located at the bottom of the hierarchy of local regulation, initiatives for agricultural land protection reflect the increasing ability of local governments to interpret and implement development policies.

The basis of agricultural land protection in Huzhou Municipality is the national mandate for each level of government to maintain the area of land in cultivation. Through legislation, local governments and their administrative leaders have been delegated legal responsibility for maintaining the quantity and quality of agricultural land (Standing Committee of the NPC, 1998; Zhejiang LMB, 1999). Under the supervision of the Huzhou LMB, and its branch LMOs in Zhili Town and Daochang Township, the municipal, town and township governments are required to maintain the balance of agricultural land in their respective jurisdictions. It is in the interpretation of this mandate and the implementation of initiatives to fulfil its requirements that significant opportunity for local agency emerges.

Agricultural land protection is an important component of social and economic development in Huzhou Municipality. The Huzhou land management policy requires the municipality to maintain a quantity and quality of agricultural land equal to that in 1996. However, local governments have been afforded significant flexibility in facilitating this mandate (Huzhou LMB, 1999; Huzhou Planning Committee, 1999). According to the Huzhou LMB (1999), Zhili LMO (1999), and Daochang LMO (1999), two initiatives have been fundamental to agricultural land protection in Huzhou Municipality: land reclamation and the re-organisation of the use of existing land.

By law, local governments and enterprises are responsible for replacing agricultural land that is taken out of cultivation with reclaimed land of equal quantity and quality (Standing Committee of the NPC, 1998). In Zhili Town and Daochang Township land has been reclaimed from idle and barren land (waste land), ponds, the beds of small rivers, obsolete irrigation channels, and illegal homes constructed on cultivated land. Land reclamation is co-ordinated by the Zhili and Daochang LMOs, which develop land use plans for the town and township respectively. Land reclamation outside of a designated built-up area is the responsibility of village committees and individual enterprises (Zhili LMO, 1999; Daochang LMO, 1999).

Land management is regulated through the collection of land reclamation fees, which are levied if provincial quantity and quality standards are not met. However, opportunities exist for Zhili Town and Daochang Township to determine local land management (Huzhou LMB, 1999). The Zhili Town Mayor's Office (1999) indicated that the payment of land reclamation fees is a necessary trade-off in order to accommodate industrial and residential development. Meanwhile, agricultural land has

been taken out of cultivation in Daochang Township through the designation of built-up areas to facilitate the township's merger with the urban core of Huzhou Municipality (Daochang Township Leader's Office, 1999).

The ability of Zhili Town and Daochang Township to interpret the mandate set by Huzhou Municipality and implement development policies that suit their local development interests is further revealed through the re-organisation of the use of existing land. As the availability of land reclamation sources for local governments declines, the relocation and concentration of dispersed rural settlements has been implemented throughout Huzhou Municipality. The Huzhou LMB (1999) indicated that of the existing 4,576 villages in the municipality, 1,249 are being relocated or merged together into 'key' central villages.

It is at the town and township level that relocation and concentration initiatives are developed and implemented. According to the Huzhou LMB (1999), it is preferable to decrease the total area used in a particular rural settlement than to relocate an entire village. However, the right of rural residents to remain in place until they desire a new home hinders both initiatives. To mediate this situation, local policies to restrict the expansion of existing homes and provide incentives for rural residents to move have been developed. In Zhili Town and Daochang Township, displaced rural residents receive compensation in the form of reparations for the lost value of agricultural production and the subsidisation of moving costs. Furthermore, the construction of new homes and provision of infrastructure and public services is provided as an incentive to move (Zhili LMO, 1999; Daochang LMO, 1999).

Local economic conditions are important factors limiting the implementation of dispersed settlement relocation and concentration initiatives. While town and township governments are responsible for the construction of infrastructure, village committees have to purchase the new homes provided by the town and township governments (Zhili LMO, 1999). As noted by a representative from the Daochang Township Leader's Office (1999), since the cost of moving villages is high, only villages with adequate income can move off agricultural land. However, favourable economic development in parts of Zhili Town and Daochang Township has allowed significant relocation and concentration to occur (Zhili Town Mayor's Office, 1999; Daochang Township Leader's Office, 1999).

Although national and provincial policies require a balance to be maintained at the municipal level, the protection of agricultural land is not consistent throughout Huzhou. Despite concerted efforts to implement land reclamation and re-organisation initiatives, agricultural land protection in Zhili Town and Daochang Township is hindered by industrial and residential development (Daochang LMO, 1999; Zhili LMO, 1999). The Huzhou LMB mediates this conflict through the co-ordination of land management initiatives. This includes setting quotas for the distribution of land available for non-agricultural purposes. Land available for non-agricultural purposes includes surplus land reclaimed by local governments and enterprises (Huzhou LMB, 1999; Zhili LMO, 1999). According to the Huzhou LMB (1999), the distribution of land for non-agricultural purposes facilitates residential and industrial development in the urban core of Huzhou Municipality, and in key towns and township built-up areas. Quotas for land use are set for each town and township. Zhili Town receives a higher quota than most towns due to its levels of economic development. To compensate for land use in Zhili

Town, less developed townships in Huzhou Municipality are required to reclaim land beyond their needs (Zhili Town Mayor's Office, 1999). This process facilitates economic development in Huzhou Municipality, while maintaining the balance of agricultural land.

6.4 Expansion of the Private Sector

The increasing role of local governments in the regulatory process has been complemented by the expansion of private sector responsibilities. With economic reforms emphasising private interests and the withdrawal of state intervention, the private sector has become an important part of the regulatory process. Alongside the decentralisation of administrative and fiscal responsibility has been a shift of regulatory practices away from the state sector. The development of water pollution prevention and control initiatives in Huzhou Municipality reveals how some regulatory practices at the local level exist outside the administrative framework described in Chapter Five.

According to the Taihu Directive, local governments and industries in Huzhou Municipality must meet national standards for wastewater discharge. Within the directive, a 15-year program for water pollution prevention and control (1995-2010) stipulates the timeframe within which specific local governments and types of industries must meet national and provincial regulations (Zhejiang EPA, 1999). This forms the basis of water pollution prevention and control in Huzhou Municipality.

Flowing directly from the national mandate established by the Taihu Directive, Huzhou Municipality is required to develop public and private sector initiatives for water pollution prevention and control. As stated by the Zhejiang EPA (1999), the Taihu Directive mandate includes:

- The development of central wastewater treatment facilities by each government at or above the county level;
- Limited time treatment programs for all industries, hotels, and animal farms to meet national standards for quality and quantity of wastewater discharge; and
- The mediation by local governments, industries, and communities of the environmental damage done by chemicals, pesticides, and pollutants.

The primary public sector initiative is the development of a domestic and industrial wastewater treatment facility in the urban core of Huzhou Municipality. According to the Huzhou EPB (1999), this secondary level treatment facility has a capacity of 30,000 m^3/day and was to be in operation by the end of 1999. Further public initiatives include the development of secondary level domestic sewage in the urban core of Huzhou Municipality and the planned development of combined sewage for industrial waste, domestic waste, and rain water in Zhili Town. The Huzhou EPB and its branch EPOs regulate public water pollution prevention and control initiatives through the establishment of ERS contracts with local governments to develop treatment facilities and sewage infrastructure and to support the analysis and evaluation of EIA requirements (Huzhou EPB, 1999; Zhili EPO, 1999).

The expanding role of the private sector with respect to the regulatory process is evident in the development of industrial water pollution prevention and control initiatives. This involves the development of primary level wastewater treatment projects for major industries, such as those interviewed in Zhili Town and Daochang Township. Within the guidelines of the Taihu Directive, regulatory requirements for industries in

Huzhou Municipality are set by the Zhejiang EPA. This includes the establishment of successive limited time treatment programs for different industry types.

The first limited time treatment program was completed in 1998. It focussed on the industries in Zhejiang Province that were considered to be the most environmentally hazardous operations. These included printing, dyeing, and other textile related activities that produced over 100 tons of wastewater a day or having chemical oxygen demand levels over 30 kilograms a day (Zhejiang EPA, 1998). As noted by a representative of the Huzhou Hengfeng Printing and Dyeing Company (1999), many textile and dyeing industries in Huzhou Municipality were required to meet the first grade national standard for wastewater discharge. Industries that fail to meet national standards on the quality and quantity of wastewater discharge are regulated through the levying of discharge fees, the imposition of required up-grades, and even closure by the Zhejiang EPA and Huzhou EPB (Huzhou EPB, 1999; Zhejiang EPA, 1999).

Although water pollution prevention and control is accomplished under the supervision of the Huzhou EPB and its branch EPOs, industries in Huzhou Municipality are held individually responsible for meeting national standards on wastewater discharge (Huzhou EPB, 1999). Each industry is required to deal with water pollution prevention and control through its own resources (Zhejiang EPA, 1999). According to the Huzhou EPB (1999) and representatives from the four industries interviewed in Zhili Town and Daochang Township, significant discretion exists in how the requirements are met by individual industries. It is this discretion that represents a transfer of regulatory practice from local government to the private sector.

Representatives from the four industries interviewed in Zhili Town and Daochang Township stated that water pollution prevention and control was an important component of doing business in Huzhou Municipality. One example is the development of a primary level treatment facility in the Huzhou Hengfeng Printing and Dyeing Company. Funding was provided by the industry and low-interest bank loans subsidised by the Zhili Town and Huzhou Municipal governments (Huzhou Hengfeng Printing and Dyeing Company, 1999). However, despite technical support from the Huzhou EPB and financial incentives from local governments, many industries fail to meet their limited time treatment programs (Huzhou EPB, 1999).

Industries in Huzhou Municipality have three fundamental options for facilitating water pollution prevention and control (Huzhou EPB, 1999). First, private sector decision-makers often favour the payment of discharge fees over efforts to meet national and provincial regulations. According to a representative of the Zhejiang Jiang Nan Industry (1999), the payment of discharge fees is simply considered as part of operating costs. However, this is changing with the mandate set by the Taihu Directive. The increased number of EPA and EPB inspections and the subsequent closure of several industries in 1999 have made the payment of discharge fees less viable as an option (Huzhou EPB, 1999).

The transformation of environmental protection mandates from a factor of, into a barrier against, production has led to initiatives that attempt to meet national and provincial standards. The second option involves raising resources for the development of treatment facilities through the sale of assets and increased investment from shareholders, local governments in the case of government-owned enterprises, and

'donations' from employees (Huzhou EPB, 1999). As noted by the Huzhou EPB (1999), employees are sometimes asked to make donations for the development of treatment facilities as part of job security. Without the development of the treatment facility the industry could be shut down and the employees would be out of work. A third option involves the adaptation of production methods to meet national and provincial regulations. The Huzhou EPB (1999) gave the example of pulp and paper industries in Changxing County, which were progressively substituting recycled waste paper for the use of lumber.

Despite private sector initiatives, the regulation and mediation of water pollution prevention and control remains primarily the administrative domain of local governments. An example is the continued involvement of Huzhou Municipality and Zhili Town in generating funds to lend to industries for the development of waste water treatment facilities (Huzhou Hengfeng Printing and Dyeing Company, 1999). However, with the increasing opportunity for local agency and the ascendancy of private interests, an increasing role of the private sector appears certain. This may be indicative of the emergence of private regulation, where private sector initiatives to regulate and mediate social and environmental change occur without pressure from local governments.

The three emergent themes of local regulation in Huzhou Municipality suggest the emergence of 'real' regulation. As discussed in Section 2.4, real regulation is the ascendancy of local agency and non-governmental interests in the interpretation and implementation of development policies at sub-national levels. This is evident in the increasing role that Huzhou Municipality, Zhili Town, and Daochang Township play in the regulatory process with respect to health care and education, agricultural land

protection, and water pollution prevention and control. However, it is the development of local agency and the expansion of the private sector that suggests most strongly the emergence of real regulation in Zhejiang Province. The relevance of real regulation in describing the local manifestation of social and environmental change in Zhejiang Province will be further discussed in Chapter Seven.

Chapter Seven

DISCUSSION

This chapter discusses the research results, and is organised in three major sections that consider in turn specific findings, broad conclusions, and reflections on the research process. Section 7.1 summarises the research findings with respect to each objective, and re-iterates the three emergent themes that characterise trends in local regulation in Zhejiang Province. Section 7.2 offers broad conclusions regarding local regulation in Zhejiang Province, commenting in particular on the manifestation of 'real' regulation. The final section of the chapter considers the limitations and contributions of the research, and suggests opportunities for future research.

7.1 Summary of Results

The research has provided insights into the manifestation and mediation of social and environmental change at the local level in Zhejiang Province. In particular, it has focussed on the changing role of government in the local regulatory process at the municipal, town and township levels. Summarising the findings of the research with respect to each objective (see Section 1.3) highlights the three specific themes that characterise local regulation in Zhejiang Province. These are the changing locus of local regulation, the increasing role of local government, and the expansion of the private sector.

The dimensions of change in Zhejiang Province are characterised by increasing social dynamics and environmental pressure as a result of rapid rural industrialisation,

which is itself occurring alongside administrative restructuring. The examination of health care and education provision, agricultural land protection, and water pollution prevention and control within the dual contexts of rapid rural industrialisation and administrative restructuring facilitated the identification of the major social and environmental impacts of rapid rural industrialisation (Objective 1). As described in Chapter Four, health care and education, agricultural land protection, and water pollution prevention and control represent a cross-section of the social and environmental transformations occurring in Zhejiang Province.

Rural areas in Zhejiang Province are experiencing rapid economic development. This is represented by the development of rural industries, specifically TVEs, increasing urbanisation, and improving levels of household incomes in Huzhou Municipality. This economic growth has been facilitated in part by the decentralisation of political control and the ascendancy of local incentives. Local governments have been empowered through the downloading of administrative responsibilities and the availability of increasing revenues from local household taxes and profits from rural industries. However, as evident in Huzhou Municipality, the subsequent localisation of the financial burden of implementing social and environmental policies can also represent a significant constraint on local development.

The extent and incidence of social changes and environmental pressures resulting from economic growth are mediated by the downloading of administrative and fiscal responsibility that lies at the core of administrative restructuring. In Huzhou Municipality, expanding population numbers, unequal access to resources, and the increasing expectations created by higher incomes have combined to place pressure on

social infrastructures. Meanwhile, scarcity of land for development and increasing pollution are two results of the environmental pressure associated with rural industrialisation. This has led to increasing demand for agricultural land protection, and for water pollution prevention and control. However, these priorities must compete for limited financial resources with the direct investment in local economic growth encouraged by national imperatives and with expenditures on health care and education and other aspects of social infrastructure. As evident in Huzhou Municipality, the contradiction between macro-economic imperatives and local financial responsibilities hinders systematically the effective mediation of social and environmental issues.

The regulatory framework within which the local mediation of social and environmental change occurs is characterised by highly centralised and hierarchical administrative bureaucracies. The examination of administrative structures and functions with respect to health care and education, agricultural land protection, and water pollution prevention and control facilitated the description of the regulatory framework for local government in Zhejiang Province (Objective 2). As described in Chapter Five, the downloading of regulatory responsibilities has affected the vertical and horizontal relationships between governmental and administrative bureaucracies, creating a central-local relationship in which local governments no longer play a passive and obedient role.

The regulatory structures for health care and education, agricultural land protection, and water pollution prevention and control are based on the administrative organisation of the Chinese political system. Within this system, Huzhou Municipality exists as the major unit of local bureaucratic representation and has significant discretion to interpret national and provincial policies and implement local development plans

(Figure 5.1). The administrative bureaucracies of the MOPH, MOE, SBLA, and SEPA exist within the dual contexts of the system of government and their respective sectoral administrative organisations (Figures 5.2, 5.3, 5.4, and 5.5). However, decentralisation and local empowerment have led to the development of horizontal linkages at the local level. This is evident in Huzhou Municipality where the sharing of responsibility for the local implementation of health care and education, agricultural land protection, and water pollution prevention and control policies and regulations is divided between the representative bureaux and offices of the MOPH, MOE, SBLA, and SEPA and the corresponding local government.

The regulatory functions and capacities for health care and education, agricultural land protection, and water pollution prevention and control are derived from the respective administrative goals, responsibilities, mechanisms, and resources of the MOPH, MOE, SBLA, and SEPA at the different levels of local government. While administrative goals are derived from national and provincial policies, responsibility for the implementation and financing of local programs in Huzhou Municipality is shared between the provincial, municipal, town and township governments. The nature of each issue and its prioritisation within the restructured administrative landscape necessitates different responsibility systems, regulatory mechanisms and resources. However, the mediation of change within health care and education, agricultural land protection, and water pollution prevention and control, remains an important issue for local development.

Within the context of social and environmental change and administrative restructuring, the nature of regulation at the local level in Zhejiang Province is shifting. The critical assessment of the regulatory process through which the local social and

environmental impacts of rural industrialisation are mediated in Huzhou Municipality revealed three emergent themes (Objective 3). These are the changing locus of regulation, the increasing role of local government, and the growing ascendancy of private regulation (see Chapter Six).

Despite the increased role of local governments in the regulatory process, the complexion of local regulatory practices at and below the municipal level remains unclear. As evident in Huzhou Municipality, significant variability exists in the regulation of health care and education, agricultural land protection, and water pollution prevention and control. This is a function of a spatial hierarchy of local regulation, which begins with health care and education at the top, water pollution prevention and control in the middle, and agricultural land protection at the bottom. This is indicated by the direct and active involvement of different levels of local government in the design and planning of local development policy and initiatives.

The active and direct involvement of local government characterises their shifting role in the regulatory process. Local governments are experiencing increasing 'manoeuvrability' in interpreting national and provincial development policies and in implementing local development initiatives. This is evident in Huzhou Municipality in the growing importance of local development initiatives for health care and education and in the increasing opportunity for local agency with respect to agricultural land protection. Accompanying the decentralisation of administrative and fiscal responsibility has been the shifting of regulatory practices away from the state sector. The transfer of regulatory practices outside of the administrative framework has led to the expanding role of the private sector. This is evident in the development of industrial water pollution prevention

and control initiatives in Huzhou Municipality, where it is the local industries that are charged with complying with, and financing, initiatives to meet the standards and regulations established under the Taihu Directive. As noted in Section 6.4, the expanding role of the private sector amid the increasing opportunity for local agency and the growing ascendancy of private interests may be indicative of the emergence of private regulation.

7.2 Conclusions Regarding Local Regulation

The relationship that exists between the changing role of local governments and the nature and extent of social and environmental impacts of rapid economic development envelops this research. The manifestation of this relationship in Zhejiang Province can be seen as a process of regulation in which local governments have become the most important entity in local development decision-making. The inability of the central government to effectively mediate economic imperatives and local social and environmental change has led to decentralisation, economic incentives and local empowerment. This has led to the ascendancy of the direct and active involvement of local governments in the development process. However, it is clear that the local regulatory process is neither transparent nor uniform.

Although health care and education, agricultural land protection, and water pollution prevention and control in Huzhou Municipality are indicative of changing regulatory structures and practices in Zhejiang Province, significant variability exists among them. This is illustrated by the distribution of regulatory responsibility for education and health care. While the provision of education remains almost entirely

collective, regulatory responsibility for health care is being downloaded onto individual institutions, facilities, and households, revealing a disparity in opportunities for local agency with respect to administrative sectors.

Variability in local regulation is further illustrated in the mechanisms in place and resources available for agricultural land protection and water pollution prevention and control. The opportunity for local agency is greatest with respect to the implementation of agricultural land protection, which is left to the discretion of town and township governments. This is the result of the localised nature of agricultural land protection relative to the other social and environmental issues, which necessitates minimal regulatory mechanisms and a dependence upon local collective and private sector resources. Similarly, the expansion of the private sector in the regulatory process is greatest with respect to water pollution prevention and control, which is left in part to the discretion of individual industries. This is the result of the unregulated nature of TVE development, which necessitates the transfer of regulatory practice to the private sector. Furthermore, the development of private sector initiatives to mediate water pollution prevention and control may be indicative of the emergence of private regulation. Despite the significant influence of the changing regulatory framework, the crucial factor affecting the nature and extent of local regulation is the ability of local governments to balance economic, social and environmental interests amid the encompassing market-oriented transition of the Chinese political economy.

The decentralisation of decision-making and the localisation of administrative and fiscal responsibility have, at once, facilitated the transition of the Chinese economy and restructured its administrative landscape. This has significantly affected the local

regulatory process, as the mediation of social and environmental issues becomes increasingly a function of local agency, the private sector, and perhaps private regulation. However, unlike the restructuring of western welfare states, the shift in regulatory practice away from the state sector is tempered by the realities of China's market-socialism, in which central planning and market mechanisms coexist (Lin, 1999). This affects the relationship between local government and social and environmental change because the distinction between local government and the private sector remains blurred. The result is the emergence of local agency and private regulation within the same socio-economic organisation. Local governments are responsible for regulating institutions and industries already under their collective ownership (Tan et al., 2000). This further hinders the addressing of social and environmental issues at the expense of economic growth.

Within national development strategies emphasising economic growth, the regulation of local social and environmental change is not an immediate priority. However, the increasing ability of local governments to influence change has allowed for considerable variations in local development. This is the result of the growing ascendancy of local agency and private sector interests and processes in the interpretation and implementation of development policies. Despite the controlled nature of China's economic transition and subsequent administrative restructuring, the emergence of these themes in Zhejiang Province, and in particular Huzhou Municipality, can be interpreted as 'real' regulation.

Real regulation is manifested in the direct and active role that Huzhou Municipality, Zhili Town, and Daochang Township have in defining their own

development with respect to health care and education, agricultural land protection, and water pollution prevention and control. Specifically, it is the development of local agency with respect to agricultural land protection and the emergence of private regulation with respect to the development of initiatives for industrial water pollution prevention and control that suggests the manifestation of real regulation in Zhejiang Province. The analogies between the processes of restructuring experienced by western welfare states and the Chinese experience are useful in understanding this aspect of local development processes in Zhejiang Province.

Despite the recognition of the social and environmental crises which threaten to limit national economic development (Smil, 1994; Lin, 1997), the prioritisation of economic interests within development strategies continues to hinder the mediation of attendant local social and environmental issues. Furthermore, the intensification of social pressure and environmental degradation will continue to escalate if the impetus for rural industrialisation continues. However, increasing local agency and private regulation amid continued decentralisation and state withdrawal has empowered local governments in the regulatory process. Thus, sustained development of rural areas will become increasingly dependent upon the significance of social stability and environmental integrity within the development strategies of local government.

7.3 Reflections on the Research Process

Although I had direct access to key-informants who are currently involved in the issues at the centre of the research, there were several limitations that are worth discussing. The foremost limitation was language. Having an embarrassingly poor grasp

of Mandarin, my communication with the respondents was entirely dependent upon the interpreter and the Chinese members of the UG-ZAU collaborative project. Despite their proficiency in interpretation, it must be acknowledged that a certain amount of information was lost through the translation process. This was magnified by my limited comprehension of the 'foreign' culture. However, diligent work with, and especially by, the interpreter throughout the interview process hopefully minimised the misinterpretation fostered by the language barrier.

As a foreigner conducting research in China, my access to information was restricted. As noted in Section 3.1, this was the crucial factor in data collection. Since the interviews were with officials or with people approved by officials, privacy and control of the interview process were compromised. Along with limited access to informants, government documents and statistics, certain sensitive topics could not be easily approached through the interview process. These included any disparity in access to health care and education and compensation for the reclamation of land. Despite efforts to communicate the goal of the research, wariness of sensitive topics and wariness with the interview process in general on the part of the respondents also may have introduced an amount of bias into the information provided.

Except for the seven interviews completed in Daochang Township on July 21 and 22, 1999 (see Appendix 1), each interview was conducted in concert with at least one other researcher from the UG-ZAU collaborative project. The team consisted of five graduate students from UG, each with similar but independent research agendas, and their respective interpreters from ZAU. Since each interview took about two hours, the number of questions available to each team member was limited. Although this

compromised the depth of the key-informant interviews, the mutual practical, academic, and emotional support provided through teamwork absolutely outweighed this limitation. Finally, since the research design involved a case study, the specific results presented only apply to Huzhou Municipality, and to some degree Zhejiang Province, and can not be assumed to be representative of the other local governments in China.

This research is distinct because it has taken an in-depth look at the manifestation and local regulation of the social and environmental impacts of rapid rural industrialisation at the municipal, and town and township levels of government. In particular, the research has contributed to a relatively limited base of empirical information on health care and education, agricultural land protection, and water pollution prevention and control in rural areas. At the same time, it has developed insight into the restructured regulatory framework, expanding the base of knowledge on the context within which local governments act to mediate social and environmental change. However, the most significant contribution of this research is the identification of the complexity of local regulatory practices that is emerging in contemporary China. This is an important addition to our overall understanding of the relationships that exist between the changing role of local governments and the nature and extent of the social and environmental impacts of rapid economic growth.

Several opportunities for future research emerge out of this thesis. First, the research focuses on formal organisations, however, as in other political economies, informal organisations such a kin networks often play significant roles in the regulatory process. A consideration of China's 'shadow state' would develop a more comprehensive understanding of local development processes. Second, since the research presents a broad

look at the cross-sector social and environmental transformations occurring in Zhejiang Province, there is a need to consider in greater depth the local mediation of each specific issue. This would provide a specific understanding of the general relationships discussed in this research with respect to health care and education, agricultural land protection, and water pollution prevention and control. Third, a further consideration of local agency and the role of the private sector may be critical in understanding the future of real regulation in China. This is especially true in the areas of agricultural land protection and water pollution prevention and control, where opportunities for local agency and private regulation appear to be greatest. This leads to a final, general opportunity for future research, namely the further application of ideas and theories derived from the analysis of western local government restructuring. Ideas like 'real' regulation will have increasing relevance in a China which is no longer isolated from the western capitalist world.

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APPENDIX (1)

Timeline of Interviews and List of Respondents

Date	Interview (•) and Respondents
1999.05.09	• Mayor, Zhili Town Mayor's Office Vice-mayor, Zhili Town Mayor's Office
1999.05.19	• Township Leader, Daochang Township Leader's Office Vice-director, Huzhou Foreign Affairs Office
1999.06.08	• Director, Huzhou Planning Committee Vice-director, Huzhou Planning Committee Section Chief of Investment, Huzhou Planning Committee Vice-section Chief, Huzhou Planning Committee • Engineers (2), Huzhou Water Conservancy Bureau
1999.06.09	• Planners (2), Huzhou Village and Township Construction Bureau • Vice-directors (3), Huzhou Agricultural Economics Committee
1999.06.10	• Director, Huzhou Environmental Protection Bureau Engineers (2), Huzhou Environmental Protection Bureau
1999.06.11	• Vice-section Chief of Entry / Exit Department, Huzhou Public Security Bureau Officers (2), Huzhou Public Security Bureau
1999.06.14	• Section Chief of Planning, Huzhou Land Management Bureau Planner, Huzhou Land Management Bureau
1999.06.15	• Vice-party Secretary, Zhili Town Mayor's Office Vice-mayor, Zhili Town Mayor's Office Administrative Assistant, Zhili Town Mayor's Office • Manager, Zhili Industrial Development Office
1999.06.16	• Manager, Zhili Land Management Office • Manager, Zhili Urban Construction Office • Headmaster, Zhili High School Party Secretary, Zhili High School

1999.06.17	• Vice-mayor, Zhili Culture, Education and Health Care Office • Director, Zhili Hospital Party Secretary, Zhili Hospital • Manager, Zhili Neighbourhood Residents Committee
1999.06.18	• General Manager, Huzhou Hengfeng Printing and Dyeing Company Limited, Zhili Town • Managers (2), Zhenbei Company Limited, Zhili Town
1999.06.21	• Administrative Assistant, Daochang Township Leader's Office
1999.06.22	• Vice-township Leader, Daochang Education Office (part of CEHO) • Civil Affairs Officer, Daochang Public Health Office (part of (CEHO) • Director, Daochang Hospital Party Secretary, Daochang Hospital • Manager of Urban Construction, Daochang Village and Township Office • Chair and Group President, Zhejiang Jiang Nan Industry and Trading Group Limited-Liability Company, Daochang Township • President, Huzhou Yuandong Gardens Company Limited, Daochang Township
1999.06.26	• Manager, Zhejiang Land Management Bureau
1999.07.01	• Director of Environmental Control Department, Zhejiang Environmental Protection Agency